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Teacher and Technology

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Paweł Kaźmierczak

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Multidisciplinary Journal of School Education

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Editorial

(pp. 9–10)

Despite changing social conditions, schools retain their role as one of the primary educational environments and, most importantly, as cornerstone hubs for learning and personal growth. The school is a place where children and adolescents spend a relatively large portion of their day. As such, it not only supports learning, but also shapes students through everyday interactions, relationships and experiences. Therefore, it matters greatly who students meet and interact with during their daily school activities. Undoubtedly, the person who determines what happens at school each day—both inside and outside the classroom—is the teacher. Indeed, it is almost impossible to imagine a school without this central figure. As a key actor within the school community, the teacher is responsible for creating a safe environment that facilitates engagement in learning and promotes academic success.

The leading topic of issue 26 of our journal is Teacher and Technology. The articles included in this edition largely focus on the role of the teacher and various aspects of their professional activity. The analyses and reflections in this issue look into teachers at different educational stages, from kindergarten to university. Several articles examine teachers' competencies in the broadest sense, taking into account knowledge, skills, and attitudes. One area given particular attention by the authors is communication between teachers and students in diverse educational contexts, especially in scenarios that demand more attention due to the unique circumstances of students. Other articles address an important aspect of school life: teacher collaboration with students' families. These articles raise questions about teachers' understanding of students' personal and family conditions. They also suggest specific actions that teachers and parents can undertake in partnership to enhance students' well-being.

The modern teacher must wrestle with many difficulties, not least among them the effective use of technology, which, by the third decade of the 21st century, has become an integral part of both professional and

personal life. Today, teaching cannot exclude the use of digital tools and technology. Accordingly, several articles in this issue tackle this pivotal subject. It is worth noting that the teacher's role has evolved; they are no longer solely masters of knowledge but often act as animators of learning. This shift necessitates continuous professional development and self-improvement on the part of educators.

The research articles presented in the 26th issue of the *Multidisciplinary Journal of School Education* contribute to the ongoing discourse on the role of the teacher in contemporary education. We also encourage you to explore the *Miscellaneous Articles* section for additional thought-provoking contributions.

The Editor-in-Chief of the *Multidisciplinary Journal of School Education*, Dr. hab. Paweł Kaźmierczak, prof. UIK, collaborated on the development of this 26th issue. Unfortunately, he was unable to see its completion, as he passed away in August 2024. In this volume, we include brief tributes to his memory in the following Editorial Section.

Paweł Kaźmierczak

Ewa Dybowska



dr hab. Paweł Kaźmierczak, prof. UIK
(1970–2024)

Eulogy for Paweł Kaźmierczak, Esteemed Professor of the Ignatianum University in Cracow

(pp. 12–14)

Professor Paweł Kaźmierczak served as a distinguished member of the Ignatianum University in Cracow since 2006. Prior to his tenure as a professor, he completed his Master's degree in 1998 and earned his doctorate in 2002 at the same university. In 2020, he was awarded his habilitation (equivalent to a full professorship) at Cardinal Stefan Wyszyński University in Warsaw, with a dissertation titled "The Neo-Aristotelian Philosophy of Education from the Perspective of Alasdair MacIntyre."

Throughout his extensive academic career, Professor Kaźmierczak devoted much of his intellectual focus to studying the works of Alasdair MacIntyre and made a lasting contribution to popularizing his ideas. Simultaneously, he deeply engaged with the writings of other eminent thinkers such as Karol Wojtyła, whose personalist vision of education and human growth particularly resonated with him, as well as Joseph Seifert, Dietrich von Hildebrand, Feliks Koneczny, and many others.

In the last two years, Professor Kaźmierczak dedicated himself to an in-depth study of Hans Urs von Balthasar's theology and its intricate relationship with the mystical insights of Adrienne von Speyr, some of whose unpublished works he rendered into Polish. In fact, beyond his notable scholarly contributions, he was an accomplished translator, who dedicated substantial time to bringing philosophical and spiritual writings to Polish readers. His translations introduced a wide array of international authors to Poland, including Joseph Ratzinger, David Steindl-Rast, Mark E. Thibodeaux, Laura Swan, Wilfrid J. Harrington, Carol Camp Twork, and Stuart Sacks, among others.

Beyond his impressive scholarly work, Professor Kaźmierczak made meaningful contributions to the academic community through a variety of important administrative roles. Most notably, he served as editor-in-chief of the *Multidisciplinary Journal of School Education*. In this capacity, he

Marcin Kazmierczak
*Eulogy for Paweł Kaźmierczak,
Esteemed Professor of the Ignatianum University in Cracow*
(pp. 12–14)

benefited from the invaluable support of colleagues such as Prof. Krzysztof Biel, Prof. Ewa Dybowska, and Prof. Dominika Ruszkiewicz. His relentless dedication to improving the rigor and reputation of the journal, jointly edited by the Ignatianum University in Cracow and Abat Oliba CEU University in Barcelona, led to a marked rise in its academic standing. Under his leadership, the journal became an important platform for academic dialogue on pressing educational issues.

Another example of Professor Kaźmierczak's generous dedication to the university was his involvement in organizing the International Conference Word in Education. Since its inception in Barcelona in 2012, the conference has been supported by an international scientific committee in which Professor Kaźmierczak, alongside Prof. Krzysztof Biel, Prof. Sylwia Wojciechowska, and other scholars from Ignatianum, actively participated. Two subsequent editions of the conference were held in Cracow in 2016 and 2020, both under the coordination of Professor Kaźmierczak and his close collaborators. A third edition, scheduled for September 2024, was organized posthumously following his passing. Due to his advancing illness, Professor Kaźmierczak entrusted the conference coordination to Prof. Krzysztof Biel and Prof. Miguel Ángel Barbero but continued to provide guidance and support almost to the very end, despite his waning strength.

Finally, it is important to highlight Professor Kaźmierczak's profound dedication to his students at Ignatianum. Many students and faculty members have attested to his steadfast readiness to help with any questions or challenges his students encountered, whether in his courses or while working on their undergraduate, postgraduate, or doctoral dissertations. His heartfelt commitment was always to help his students understand the essence of the topics he lectured on and, in doing so, to enrich their intellectual perspectives through the ideas—often related to education—that he passionately shared in his courses. In June 2024, as he was completing his final academic year, I had the privilege of witnessing firsthand his devotion to his students, even as he struggled to correct final exams and conduct personal interviews amidst his declining health.

It is no exaggeration to state that his unwavering dedication endured until the very end.

Marcin Kazmierczak
*Eulogy for Paweł Kaźmierczak,
Esteemed Professor of the Ignatianum University in Cracow*
(pp. 12–14)

In conclusion, I can say with immense gratitude and pride that, from my perspective—which I am certain is shared by many—Paweł Kaźmierczak was not only a remarkable academic and an exemplary colleague and friend, but also the best brother I could have ever hoped to have.

Requiescat in pace

Marcin Kazmierczak
University Abat Oliba CEU, Barcelona, Spain

Farewell to a Good Man

(pp. 15–18)

It is never easy to write about a truly good man, and it feels even more daunting when that man was your friend. Paweł's life was not punctuated by scandals, dramatic upheavals, or sudden twists of fortune. Instead, it was marked by something far more precious—something intangible yet deeply felt by all who knew him closely. It was a life of quiet resolve, defined by an unwavering commitment to what he held most dear: spiritual and intellectual growth, an unshakable devotion to his family, their safety and well-being, and building authentic relationships. This gentle yet purposeful way of living echoes the ancient ideal of virtue, *arete* the highest form of excellence, and a life lived in harmony with its most meaningful purpose.

When I think of Paweł's character, I am reminded of the words of the Apostle Paul: "He was patient, he did not seek applause, he was not quick to anger, he kept no record of wrongs, but he rejoiced in the truth."

Paweł lived these biblical words. His relationship with God was sincere and deeply personal, nourished by years of study, and inspired by the writings of mystics. Even though such a path may seem an unlikely recipe for worldly success, Paweł's academic achievements were remarkable precisely because they flowed from his rejoicing in truth. He was a true philosopher—a seeker of wisdom—compelled by a deep inner yearning, an abiding need to understand. This pursuit of wisdom blossomed, almost incidentally, into a rich legacy of books, articles, and ideas.

As a colleague and collaborator, Paweł was a man of rare compassion and unfailing dependability. We often remember people by what they did—the moments and events that left their mark. Yet with Paweł, it is equally telling what never happened, what we do not remember. In all the years I knew him, never once did he fail to show concern for someone's plight. Never did he turn down a request for help. Never did he shy away from a task he believed in. And not once did he leave someone feeling let down or disappointed.

In terms of his own career, one might say he was too willing to shoulder the burdens of others, too generous with his time, and too quick to say yes when asked for help. But it was precisely these qualities that made him so widely loved and respected. His students, too, were deeply touched by his generosity and dedication. The outpouring of heartfelt tributes shared online by both current students and alumni after his passing speaks volumes about the lasting impact he had on all who had the privilege of sitting in his lectures.

Professor Paweł Kaźmierczak earned his degree in philosophy in 1998 and was awarded his doctorate in 2002 from the Ignatianum University in Cracow. His dissertation, *The Personalist Concept of Education in the Teachings of John Paul II*, was supervised by Fr. Dr. hab. Stanisław Głaz SJ and later published as a book in 2003. In 2020, his academic career reached another milestone with his habilitation thesis, *The Neo-Aristotelian Philosophy of Education in the Perspective of Alasdair MacIntyre* (Ignatianum Scientific Publishing, Cracow, 2019).

Professor Kaźmierczak was the author of four books and over sixty scholarly articles published in both Polish and English. His academic pursuits reached beyond research and writing; he was also a dedicated editor. As co-founder and editor-in-chief of the *Multidisciplinary Journal of School Education*, he transformed the publication from its inception into a highly-ranked academic journal within just four years—a testament to his organizational talent and tireless efforts.

Equally remarkable was his work as a translator. By translating works from English and German into Polish, he introduced Polish readers to dozens of invaluable scholarly and popular texts.

At the heart of Professor Kaźmierczak's intellectual journey lay a commitment to practical philosophy, particularly in the Aristotelian tradition. In his writings, he consistently engaged with fundamental questions about goodness, the pursuit of a good life, and the means of achieving it. His scholarly interests spanned social and political philosophy—exemplified by his insightful book, *Dietrich von Hildebrand and National Socialism* (Ignatianum, Krakow, 2011)—but his true passion dwelled in the philosophy of education.

The Platonic-Aristotelian tradition, which was closest to Paweł Kaźmierczak's heart, holds that a proper socio-political order is a prerequisite for meaningful education. Viewed through this integral perspective, philosophy is not an insular academic discipline but rather a living tradition of debate and shared moral inquiry that shapes social institutions and practices. One of the central issues within this framework is the influence of the philosophy of education—and more broadly, intellectual culture—on the development of what Alasdair MacIntyre referred to as an “educated public” or a robust intelligentsia. Paweł explored this theme extensively, most notably in his book *The Catholic Intellectuals' Club in Krakow 1956–1989* (Ignatianum, Krakow, 2009) and in numerous articles.

Paweł Kaźmierczak placed great importance on the anthropological and ethical dimensions of pedagogy, especially regarding the teleological nature of education. He demonstrated that the practical solutions in education and pedagogy depend on the adopted conception of the good and the good life. He also illustrated how liberalism and expressivism, when interpreted consistently, can hinder—or, in extreme cases, entirely negate—the possibility of setting meaningful educational goals. Paweł underscored the lifelong necessity of cultivating moral virtues as understood in classical philosophy. Drawing on MacIntyre's work, he explained that the absence of these virtues often leads to a loss of life's purpose and direction. Furthermore, he argued that the proper development of these virtues during childhood is essential for achieving practical rationality later in life, which in turn enables self-education and the ability to independently guide one's life.

This brief glimpse at the scope of Professor Paweł Kaźmierczak's academic legacy reveals not only its breadth (always deliberate and cohesive, never chaotic) but also the intellectual dexterity required to command the methodologies and conceptual frameworks of disciplines such as history, political science, philosophy, and pedagogy. The dedication he poured into mastering these fields resulted in scholarly works marked by extraordinary depth and rigor.

Sadly, as we are reminded by the words of Ecclesiastes, “Of making many books there is no end, and much study wearies the body.” It was

Stanisław Gałkowski
Farewell to a Good Man

(pp. 15–18)

Paweł's body that failed him—he succumbed to cancer, leaving us in the prime of his creative powers, still planning and charting future projects nearly to his final days.

His loss leaves an irreplaceable void not only in the hearts of his family and friends but also in the landscape of Polish philosophy and pedagogy.

Stanisław Gałkowski
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Thematic Articles



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What Do Teachers Know About Student Burnout Symptoms During the COVID-19 Pandemic?

(pp. 21–39)

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Abstract

Research Objectives and Problems: The aim of this article is to analyze the phenomenon of student burnout in the context of the COVID-19 pandemic and examine the extent to which teachers can recognize burnout symptoms in students. The study considers both teachers' and parents' perspectives, highlighting discrepancies in their identification of symptoms.

Research Methods: The study utilized the Perceived School Burnout (PSB) scale and the e-Learning Burnout Scale (E-SBS) to collect data from teachers, parents, and students. Statistical analysis focused on correlations between teachers' assessments and students' subjective experiences of burnout.

Structure of the Article: The article begins with a discussion of the theoretical foundations of school burnout and the role of teachers in identifying students' problems. This is followed by a presentation of research methods,

an analysis of results, and a discussion of the pandemic's impact on exacerbated student burnout.

Research Findings and their Influence on Pedagogical Science: Findings reveal significant differences in how teachers and parents perceive symptoms of burnout. Teachers often fail to detect symptoms, which may delay interventions for students' problems. The study underscores the need for better teacher education in recognizing the early signs of school burnout.

Conclusion and/or recommendations: The findings reveal the importance of introducing comprehensive training in schools to help teachers identify early signs of school burnout and intervene effectively. In light of the data, preventive measures should cover students, teachers, and parents.

Keywords: student burnout, parents' and teachers' perceptions of students' burnout symptoms, COVID-19 pandemic

Introduction

The importance of teachers for the proper educational and mental functioning of young people is unquestionable. Among many professions, the role of the teacher stands out as requiring not only professional qualifications and competencies but also continuous personal growth and self-improvement. Teachers, as mature individuals, must possess a strongly developed sense of self-actualization (Maslow, 1986), which involves embracing and accepting the process of personal development and the resulting continuous change (Rogers, 1983). According to these theories, a teacher will develop at their own pace, according to their unique abilities, thereby expanding their sphere of influence on those around them (Kohlberg & Meyer, 1990).

Today, the role of the teacher is increasingly complex and difficult to define (Remża, 2021). It demands more than was previously expected and necessitates a redefinition of the professional role and, consequently, professional identity. For example, the social and emotional learning model (SEL) highlights the capacity of teachers to effectively guide educational

instruction and manage classroom behaviors, which, in turn, influence key student outcomes such as performance and motivation (Madigan & Kim, 2021).

Szułczyński (2021) points out that a teacher's role now extends beyond developing skills in students to being open and empathetic. This means that pupils, parents, and teachers should interact as equals on a human level. The personal relationship between teacher and student is particularly important, as the teacher bears considerable responsibility for shaping the student's future role in society. In other words, effectively fulfilling the professional role of a teacher relies on developing interpersonal skills and applying them in the educational process (Kwiatkowski, 2018). The above postulates underscore the need to consider teachers' perspectives on students' mental health issues as a component of their professional responsibilities.

Student burnout is a psychological syndrome characterized by exhaustion, cynicism, and inefficiency, with adverse effects that may manifest as long-term impairments in students' mental, social, and educational functioning (Tomaszek & Muchacka-Cymerman, 2022). Numerous internal and external factors contribute to school burnout, with chronic academic stress considered the direct cause of its development (Ang & Huan, 2006). Students who experience stress often have high self-imposed expectations or face excessive demands from their immediate environment, such as parents or teachers. Moreover, Piekarska (2000) found that student stress is related to teaching methods and the way teachers evaluate student performance.

Yang et al. (2023) found that burned-out students report reduced autonomy support from teachers, especially in environments where criticism is prevalent, independent thinking is discouraged, and learning is perceived as purposeless. Additionally, stress and monotony contribute to disengagement and boredom at school (Barska, 2012). Many young people criticize schooling for its focus on rigid standards and behaviors while neglecting guidance on learning itself or the benefits of education (Barska, 2012). Grygiel (2015) revealed that Polish students often endure an overwhelming workload, balancing long hours at school with homework and tutoring, which leads to exhaustion.

The findings by Masluk et al. (2022) identified a link between maladjustments in teacher-student relationships and negative teacher experiences, including workplace violence and complaints about their work. Teachers frequently report emotions such as discomfort, tension, anxiety, and pressure in the classroom. Furthermore, low self-efficacy and high demands have been linked to teacher burnout (Arvidsson et al., 2019), which often results in reduced empathy for students and diminished understanding of their educational problems.

Current Study

This study sought to address five research questions:

1. What are the psychometric properties of the PSB scale?

We hypothesized a three-dimensional structure for the perceived student burnout construct, based on Maslach's classical theory of burnout (Maslach & Leiter, 2016), and its application to educational settings by Salmela-Aro et al. (2009).

2. Do parents and teachers differ in their recognition of burnout symptoms? Do parents and teachers pay attention to different aspects of student burnout?

To our knowledge, no prior studies have explored the perspectives of adolescents, teachers, and parents on student burnout. However, based on findings by Nguyen et al. (2013), which revealed differences between the perspectives of teachers, parents, and youths on mental health problems, we hypothesized that teachers and parents would diverge in detecting symptoms of burnout. Specifically, we anticipated that teachers would pay more attention to symptoms related to learning activities, such as a lack of interest or engagement during online classes, whereas parents would focus on emotional symptoms and

self-critical judgments expressed by their children regarding the learning process.

3. Do parents and teachers differ in their evaluations of changes in school performance and the need for control over students during the COVID-19 pandemic?

We hypothesized that, compared to teachers, parents would report poorer school performance and a greater need for control over students due to the COVID-19 pandemic. We formulated this hypothesis based on findings indicating that parents' perceptions of online learning changed during the pandemic. Specifically, parents more frequently reported that the material provided by teachers was difficult for their children to understand and expressed heightened awareness of the educational demands placed on students (Erlina et al., 2020). Furthermore, the pandemic crisis led to homeschooling-related stress and worry as dominant emotions experienced by parents, often stemming from a lack of preparedness and unfamiliarity with the process of distance education (Rousoulioti et al., 2022).

4. Do changes in school performance and the need for control over students caused by the COVID-19 pandemic correlate with perceived burnout symptoms?

A vast body of literature has established the negative impact of school burnout on academic achievement and school performance (Özhan & Yüksel, 2021). Furthermore, some researchers have confirmed the importance of parental educational support during remote learning and the difficulties parents faced due to limited knowledge and inadequate skills in using digital technologies (Daniela et al., 2022). Based on these findings, we hypothesized that lower school performance and a greater need for control over the learning process would correlate with higher levels of perceived school burnout.

5. Do parents' and teachers' judgments about student burnout symptoms correlate with students' subjective experiences of e-learning burnout?

During the COVID-19 lockdowns, parents had to act as homeschooling tutors, while teachers had to navigate a range of alternatives to traditional distance education. As key stakeholders in the education system, parents' and teachers' observations of children's school performance can be considered key indicators for assessing students' academic difficulties. From an ecological perspective, interactions between a child and their main socializing environment (family) contribute positively to educational and socio-emotional development. For example, parents' involvement in schooling has been shown to positively influence children's academic outcomes (Lara & Saracostti, 2019).

Consequently, we hypothesized that perceived educational difficulties, including school burnout, would positively correlate with the subjective experience of e-learning burnout reported by students.

Materials & Methods

Study Procedure and Participants

The study was conducted between April 16 and May 30, 2021, using the Google Forms application. Twelve elementary and high schools located in different regions of Poland agreed to participate. Parents and students were invited to complete the survey via school emails. Data for the Perceived Student Burnout (PSB) scale comprised 104 observations collected from 34 parents and 8 teachers.

Adult participants also answered three questions assessing: (1) the perceived need for greater control due to the online format of classes; (2) student school performance before the outbreak of the COVID-19 pandemic; and (3) student school performance during the pandemic. The parents' sample consisted of 34 participants aged 31 to 63 years ($M_{age} = 43.77$ years; $SD = 6.86$ years), predominantly mothers (29 mothers, 5 fathers). Among

these parents, 47% (n = 16) had a university degree, 47% (n = 16) had graduated from high school or vocational school, and 6% (n = 2) had completed primary school.

The teachers' sample included six primary school teachers, one vocational school teacher, and one high school teacher.

Sixty students from primary school (grades 7–8), vocational school, and high school completed the e-Learning Burnout Scale (E-SBS) and a one-item short scale assessing their school stress level. Student ages ranged from 11 to 19 years (Mage = 15.66 years; SD = 1.71 years), with 32 girls (52.5%) and 29 boys (47.5%).

The study followed the ethical guidelines outlined in the Helsinki Declaration for research involving human participants. The research project was approved by the Ethical Committee of the Institute of Psychology at the Pedagogical University of Krakow.

Instruments

The Perceived Student Burnout (PSB) Scale was developed based on Maslach's definition of burnout, which identifies three core symptoms. Tomaszek and Muchacka-Cymerman created 11 items to assess observable symptoms, such as a lack of enthusiasm and energy to learn, irritability and nervousness when discussing school duties, anxiety related to school tasks, negative self-beliefs about school performance, feelings of inferiority as a student, disengagement from schoolwork (e.g., negligent performance of tasks), study fatigue, and anhedonia. The scale also allows respondents to add unlisted symptoms. Responses are recorded on a 2-point Likert scale, where 1 = yes and 2 = no. Higher scores indicate higher levels of perceived student burnout. Additionally, the scale contains a control item: "No student burnout symptoms." This concise tool facilitates the quick diagnosis of perceived student burnout.

The e-Learning Burnout Scale (E-SBS) consists of 22 items designed to measure a five-dimensional structure of student burnout related to online learning. Respondents rate each item on a 5-point Likert scale (1 Completely Agree, 5 = Completely Disagree). The scale demonstrated high

reliability, with a Cronbach's alpha of 0.89 for the total score. Reliability for the five components ranged from 0.66 to 0.89 (Tomaszek & Muchacka-Cymerman, 2022).

Perceived school performance indicators were assessed using two items rated on a 3-point Likert scale (1 = poor to 3 = good). These questions explored student performance before and during the COVID-19 pandemic. The perceived need for increased control over the learning process, caused by the pandemic, was evaluated on a 2-point scale (1 = yes, 2 = no).

Statistical Analysis: Basic statistical analyses, including mean scores (M) and standard deviations (SD) for continuous variables, as well as comparative tests (Mann-Whitney U and Pearson's chi-square tests) and Spearman's correlation analyses, were performed using IBM SPSS Statistics 22.0. Exploratory factor analysis (EFA), along with additional fit indices and reliability analysis (Cronbach's alpha and McDonald's omega indicators), were conducted using Jamovi free software. No missing data were identified or excluded from the analysis.

Results

Psychometric Properties of the Perceived Student Burnout Scale *Descriptive statistics*

The distribution of item responses significantly deviated from normal distribution (Kolmogorov-Smirnov normality test: $p < 0.001$). Skewness values ranged from 0.08 to 2.60, and kurtosis values ranged from -2.03 to 4.86. Both indexes exceeded the acceptable range of -2 to +2, which suggests significant deviations. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.784, surpassing the threshold of 0.50, which confirmed that the data were suitable for factor analysis. Additionally, the Bartlett's Test of Sphericity ($\chi^2(55) = 356, p < 0.001$) indicated significant moderate inter-correlations and sufficient shared variance among items. Based on these results, the maximum likelihood method was selected for the exploratory factor analysis (EFA), as it is

relatively robust to deviations from normality in the analyzed items (Fuller & Hemmerle, 1966). The extraction communalities were equal to or greater than the threshold of 0.30 for all items, which supports their inclusion in the factor structure.

Exploratory Factor Analysis Results

EFA was performed using the maximum likelihood method with oblimin rotation. The findings revealed that the first three factors accounted for the majority of total variance in the data (eigenvalues > 1). The goodness-of-fit index for the EFA chi-square test evaluated whether the observed correlation matrix was consistent with the extracted factors. An insignificant p-value for the three-factor model indicated that the number of extracted factors was adequate and consistent with the data.

A one-factor solution accounted for 36.7% of the variance, while a three-factor solution explained 47.7% of the variance in the Perceived Student Burnout (PSB) scale (Factor 1: 18.6%; Factor 2: 16.3%; Factor 3: 12.9%). All three factors met the acceptable criterion of eigenvalues greater than 1 (Factor 1: 2.05; Factor 2: 1.79; Factor 3: 1.42). The first factor captured student exhaustion and anxiety and consisted of 5 items with loadings ranging from 0.45 to 0.67. The second factor, representing student self-negativism and inefficacy, included 3 items with loadings ranging from 0.38 to 0.85. The third factor, describing student disengagement and disinterest, comprised 2 items with factor loadings between 0.59 and 0.81. Only one item simultaneously loaded on multiple factors; item 3 showed a loading of 0.59 on the first factor and 0.37 on the third factor (see Table 1).

Table 1. Exploratory Factor Analysis (EFA): Results (N = 104)

Items	Factor			One-factor solution
	Factor 1 Student exhaustion and anxiety	Factor 2 Student self-negativism and ineffectiveness	Factor 3 Student disengagement and disinterest	
1	0.610			0.541
2	0.588			0.718
3	0.619		0.372	0.577
4	0.672			0.578
5		0.854		0.646
6		0.806		0.620
7			0.586	0.439
8		0.383		0.478
9	0.448			0.608
10			0.811	0.508
11				0.244
Reliability: α/ω	0.774/0.779	0.774/0.776	0.730/0.73	0.813/0.823

Note. 'The' minimum residual' extraction method was used in combination with an 'oblimin' rotation.

A three-factor solution fits the data better than a one-factor solution. Additional fit indexes calculated in the EFA revealed that the Steiger-Lind RMSEA (Root Mean Square Error of Approximation) value was below the acceptable threshold of 0.08 only for the three-factor model (RMSEA = 0.029). Additionally, the Tucker-Lewis Index (TLI = 0.98) and Comparative Fit Index (CFI = 0.92) exceeded the acceptable benchmark of 0.90.

The inter-relationships between the three sub-domains of perceived student burnout were significant (ρ ranged from 0.30 to 0.49), and the correlations to the total score ranged from 0.68 to 0.91. Scale reliability statistics indicated high Cronbach's α and McDonald's ω coefficients for the total score ($\alpha = 0.81$; $\omega = 0.82$), as well as acceptable values for the three distinguished components (α ranged from 0.73 to 0.77; ω ranged from 0.73 to 0.78). It is worth noting that due to the small number of scale items

(Factors 2 and 3 consist of 3 and 2 items, respectively), α values between 0.45 and 0.60 are considered acceptable (Taber, 2018).

Comparison of Frequency of Student Burnout Symptoms Observed by Teachers and Parents

The U Mann-Whitney comparison test revealed that teachers scored significantly lower in the perceived student burnout total score and its two dimensions: student exhaustion and anxiety, as well as student self-negativism and inefficacy. Moreover, teachers believed that students performed worse academically before the outbreak of the COVID-19 pandemic compared to parents' evaluations. However, parents scored significantly lower in their perceived need for control over the study process (see Table 2).

Table 2. Comparison Between Teacher and Parent Samples in School Performance and Problem Indicators

Variables	Teachers (N=70)	Parents (N=34)	U Mann-Whitney	p	
	M(SD)	M(SD)			
Perceived student burnout (PSB)	2.06(2.17)	4.44(3.16)	-3.71	<.0001	
Student exhaustion and anxiety	0.97(1.17)	2.50(1.88)	-4.02	<.0001	
Student self-negativism and ineffectiveness	0.20(.60)	0.85(1.08)	-3.90	<.0001	
Student disengagement and disinterest	0.53(.79)	0.71(.80)	-1.27	0.203	
Perceived school performance (PSP)	before online classes	2.53(.63)	2.82(.39)	-2.37	0.018
	during online classes	2.29(.73)	2.47(.56)	-1.08	0.279
Perceived need for more control due to online classes (PNC) ^a	1.34(.48)	1.71(.46)	-3.47	0.001	

Note: a – PNC is a reverse item: 1 = yes, 2 = no

Spearman's correlation analysis revealed significant negative associations between perceived student burnout (PSB) and perceived school performance in the teachers' sample. Specifically, PSB negatively correlated with perceived school performance before online classes ($\rho = -0.49$, $p < 0.05$) and during online classes ($\rho = -0.60$, $p < 0.001$). In the parents'

sample, PSB was negatively associated with perceived school performance during online classes ($\rho = -0.52, p < 0.01$) and the perceived need for more control caused by online classes (PNC) ($\rho = -0.41, p < 0.05$). However, no significant correlations were found between PSB and PNC in the teachers' sample.

An in-depth analysis using Pearson's chi-square test showed that teachers were less likely than parents to report symptoms from the emotional domain (e.g., exhaustion, loss of enthusiasm and energy, apathy, nervousness, loss of self-control, and anxiety) and the personality domain (e.g., negative self-beliefs, negative self-judgments, loss of positive emotions). Detailed results are presented in Table 3.

Table 3. Comparison of Frequency of Student Burnout Symptoms Observed by Teachers and Parents

List of perceived burnout symptoms		Teachers (N=70)		Parents (N=34)		Pearson's Chi square	p
		n	%	n	%		
1. No burnout symptoms	Yes	21	30%	6	18%	1.82	0.133
	No	49	70%	28	82%		
2. A persistent feeling of exhaustion associated with learning tasks	Yes	1	1%	18	53%	40.67	<0.0001
	No	69	99%	16	47%		
3. Lack of enthusiasm and energy for studying	Yes	27	39%	23	68%	7.75	0.005
	No	43	61%	11	32%		
4. Irritability and nervousness during conversations about school responsibilities	Yes	7	10%	16	47%	18.25	<0.0001
	No	63	90%	18	53%		
5. Anxiety related to school tasks	Yes	9	13%	11	32%	5.60	0.020
	No	61	87%	23	68%		
6. Negative self-perception of academic abilities	Yes	5	7%	11	32%	11.17	0.002
	No	65	93%	23	68%		
7. Belief in being a worse student than peers	Yes	2	3%	9	27%	13.49	0.001
	No	68	97%	25	73%		
8. Lack of involvement in schoolwork (negligent performance of tasks)	Yes	20	29%	10	29%	0.008	0.552
	No	50	71%	24	71%		

List of perceived burnout symptoms		Teachers (N=70)		Parents (N=34)		Pearson's Chi square	p
		n	%	n	%		
9. Loss of joy (or feelings of sadness, anxiety) when the child is about to start lessons	Yes	7	10%	9	27%	4.77	0.032
	No	63	90%	25	73%		
10. Study weariness from studying	Yes	24	34%	17	50%	2.37	0.093
	No	46	66%	17	50%		
11. Lack of interest in acquiring knowledge	Yes	17	24%	14	41%	3.12	0.063
	No	53	76%	20	59%		
12. "Lowering the bar" regarding educational goals, such as setting less ambitious goals for grades or study fields	Yes	25	36%	13	38%	0.063	0.484
	No	45	64%	21	62%		

Correlations Between Perceived Student Burnout and Experienced Student Burnout

Spearman's correlation analysis found no significant correlations between perceived student burnout (PSB) and school stress or e-learning burnout as reported by students. However, parents' perceptions of student burnout significantly positively correlated with both stress ($\rho = 0.37$, $p < 0.05$) and students' reported burnout ($\rho = 0.48$, $p < 0.01$).

Additionally, higher levels of perceived burnout were associated with students' subjective experiences of e-learning burnout across three dimensions: burnout due to parental pressure, loss of educational interest and motivation, and negative attitudes toward school (ρ ranged from 0.40 to 0.51, $p < 0.01$).

Discussion

This study investigated teachers' and parents' perspectives on student burnout, confirming the three-dimensional construct of perceived school burnout as measured by the PSB scale (H1). The results are in line with Maslach's widely accepted theory of burnout, which has been empirically validated in educational settings by Salmera-Aro et al. (2009). The findings revealed that teachers scored significantly lower on the PSB

scale and its two components—students' exhaustion and anxiety (emotional domain) and self-negativism and inefficacy (personality domain)—compared to parents. However, teachers' and parents' observations of disengagement and disinterest (behavioral and cognitive domain) were similar (H2). A key factor in the educational and psychological well-being of students is teacher leadership. Teachers are mainly responsible for organizing the teaching and learning process at school, which requires a constant readiness to support their students' needs and to help them set and achieve goals. These efforts contribute to academic success and bolster students' self-esteem.

The COVID-19 pandemic underscored the irreplaceable value of in-person relationships for student well-being. Among the many educational changes brought about by the pandemic, remote learning created challenges for teachers in maintaining relationships, establishing emotional connections in virtual classrooms, and sustaining student engagement with learning (Hargreaves, 2021). These factors have also been linked to increased teacher stress and burnout (Madigan & Kim, 2021). According to Maslach and Leiter (2016), teacher burnout can result in diminished involvement in lesson planning and less favorable social interactions with students. These factors may impede teachers' ability to detect early signs of student burnout. Our results indicate the inevitable importance of face-to-face interactions in identifying educational and mental health concerns.

The study revealed that higher perceived student burnout was associated with lower perceived school performance both before and during the COVID-19 pandemic in the teachers' sample. In the parents' sample, higher perceived student burnout correlated with lower school performance during the pandemic and a heightened perceived need for control over the learning process (partially confirming H4). While teachers may recognize students' academic difficulties, this recognition does not necessarily translate into initiatives to provide additional support, such as increased oversight of the learning process.

Support and expectations from significant adults have been shown to directly predict adolescents' competence in school (Wentzel et al., 2016). Conversely, when the classroom environment fails to serve as a source

of natural support and instead becomes a source of chronic educational and relational stress, it poses a significant risk to students' development. These stressors are hallmark indicators of school burnout syndrome. Previous research further highlights the importance of autonomy support and the detrimental effects of psychological control on adolescent development (van der Kaap-Deeder et al., 2017).

Every source of support that an adolescent encounters during identity formation is a critical factor in enhancing their resilience and contributing to their overall well-being. Based on the findings of this study, it can be concluded that the COVID-19 pandemic exposed a passive attitude among some teachers toward the teaching process and students' mental health during remote classes. While teachers' perceptions of student burnout were not significantly associated with stress and burnout experienced by students during online classes, such correlations were observed in the parents' sample, partially confirming H5.

The ability of teachers to detect early signs of student burnout is closely tied to the quality of teaching and the development of "teacher expertise." Teaching is increasingly recognized as an "emotional practice" in which the well-being of both students and teachers is reciprocally deeply interconnected (Hargreaves, 2021). Our findings support the widely held belief that "satisfaction with Distant Learning Education is heavily based on teachers' ability to maintain high-quality relationships" (du Mérac et al., 2022, p. 177).

In traditional classroom settings, meaningful teacher-student interactions foster high-quality relationships, intrinsic motivation, and increased school engagement. These elements are essential to active learning and achieving high academic outcomes (Quin, 2017; du Mérac et al., 2022). Schools are not only places for acquiring knowledge and skills but also serve as environments where students develop experiences crucial for broadly defined success in life. However, the COVID-19 pandemic and the resulting shift to remote or hybrid education reduced opportunities for in-person interactions (Hodgman et al., 2021). This disruption in teacher-student relationships frustrated basic psychological needs and negatively impacted the well-being of children and adolescents (Bernasor et al., 2022).

Additionally, during the pandemic, many parents were forced to switch between multiple social roles, including working, managing a household, caregiving, and supporting their children's education at home. These challenges affected interactions between teachers and parents in various ways, such as poorer communication about students' learning difficulties, teachers' struggles to meet parental expectations, parental exhaustion, and teachers' feelings of helplessness (Francis et al., 2022). These dynamics may have further impaired teachers' ability to detect signs of student burnout.

Study limitation

Several limitations of the present study should be acknowledged. First, as all respondents were based in Poland and the sample size was relatively small, the findings have limited generalizability. Additionally, the study focused primarily on the primary education cycle (with six teachers from primary schools); thus, future research should expand to include teaching staff from high schools and universities, as their perceptions may differ significantly due to variations in the quality of interactions at different educational levels.

Conclusion

The key role of teachers in the early identification of school-related issues and the implementation of preventive programs to combat burnout syndrome is well documented in the literature. However, the results of this study highlight the limited knowledge and capacity of teachers to detect early symptoms of student burnout. Therefore, there is a need for professional training programs that equip teachers to recognize chronic school stress symptoms. Such training should also include modules on effective communication and providing emotional support to address the everyday difficulties that students face.

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Emotional and Social Competencies and Their Relationship to the Professional Competencies of Future Preschool and Early Childhood Education Teachers

(pp. 41–64)

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Abstract

Research objectives and problem: Preparing to become a preschool and early childhood education teacher requires five years of academic training and many years of self-education. Success in the profession is not only ensured by strong academic performance and achievement of educational goals, but also by the development of emotional and social competencies, which are closely tied to professional competence. The goal of the study was to identify the relationships between emotional intelligence, social competence, and the self-assessment of professional competence among future preschool and early childhood education teachers.

Research methods: The study utilized the Popular Questionnaire of Emotional Intelligence (PKIE) by Jaworowska, Matczak, Ciechanowicz, Stańczak, and Zalewska, the PROKOS questionnaire by Matczak and Martowska, and an in-house modified version of the Self-Assessment of Teacher Competence survey. Fifty-seven women aged 23 to 48 (mean age: 28) participated in the study.

Research findings and their impact on the development of educational sciences: The findings confirmed a significant relationship between the studied variables. Higher levels of emotional intelligence and social competence correlated with higher self-assessments of professional competence.

Conclusions and recommendations: Emotional and social competencies are strongly associated with readiness for the teaching profession in preschool and early childhood education. These results point out the need for incorporating courses on emotional and social competencies into academic training programs for pedagogical faculties.

Keywords: emotional intelligence, social competence, professional competence, preschool teacher, early childhood education, collaboration with families

Discussions surrounding the reform of Poland’s education system persist regardless of the government in power. After the recent elections (October 15, 2023) and the subsequent change in administration, debates about necessary reforms, system improvements, and the incorporation of innovative solutions have gained momentum. Inherent in this discourse are issues related to **preparation for the teaching profession**.

A modern school demands not only a broad pedagogical education from teachers, but also the competencies necessary for effectively teaching and raising children and adolescents. The interactions facilitated by teachers—particularly those responsible for preschool and early education—require the highest levels of competence. As Stefan T. Kwiatkowski notes, “Comparing these interactions with those directed at adults ...

allows us to conclude that meeting the needs of young people, who are actively developing ... constantly learning about and testing the world around them is a task incomparably more complex and involving in incomparably greater responsibility" (Kwiatkowski, 2017, p. 127).

The importance of developing competencies, including emotional and social ones, has been emphasized by the European Union, which points to key competencies for students and teachers in response to the challenges of the modern world (see Council Recommendations of May 22, 2018, on Key Competencies For Lifelong Learning). Similarly, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the European Higher Education Area (EHEA) stress that training in emotional and social competencies should be integrated into the academic curricula for future educators (Martinez, 2005; Llorent, Zych & Varo-Millán, 2020; Valcárcel, 2005). This approach intends to meet the contemporary professional demands on future teachers (Palomera, Fernández-Berrocal & Brackett, 2008). As Kwiatkowski asserts, this can lead to "an increase in their effectiveness or a closely related increase in job satisfaction, while in the sphere concerning their students—optimal preparation for further education (including self-education) and functioning in the modern, rapidly changing world in general" (Kwiatkowski, 2017, p. 136).

Palomera, Fernández-Berrocal, and Brackett (2008) reviewed teacher education programs and found that while emotional and social competencies were mentioned in numerous official documents, they were rarely explicitly addressed in the curriculum. Similarly, Cabello, Ruiz-Aranda, and Fernández-Berrocal (2010) noted that programs aimed at enhancing emotional and social competencies among teachers were scarce. Valente, Lourenço, and Dominguez Lara (2022) argue that the inclusion of emotional intelligence (EI) training into teacher preparation should be a fundamental aspect of their pedagogical toolkit. However, although teachers are aware of the importance of emotional education, they often lack both the training and resources needed to develop it.

In this context, two closely related constructs—emotional intelligence and social competence—emerge as crucial:

Emotional intelligence is defined as “the ability to process emotional information, which forms the basis for developing competencies that aid effective emotional regulation and successful coping in social and task situations” (Jaworowska & Matczak, 2005, p. 4). This definition—one of many present in the literature, refers to Salovey and Mayer’s model, which identifies four main components of emotional intelligence: the ability to perceive and express emotions, the ability to integrate emotions into cognitive processes, the ability to understand and analyze emotions, and the ability to manage emotions through control and regulation (Salovey & Mayer, 1999, p. 34).

In place of the term “emotional intelligence,” many authors use “emotional competence,” which they argue has a broader scope, emphasizing that the social context plays a key role in a person’s emotional functioning (Saarni, 1999, p. 79). Existing research demonstrates links between emotional intelligence and psychological well-being, self-esteem, life satisfaction, self-development, and career success (Monnier, 2015; Postigo-Zegarra et al., 2019). Additional studies reveal that high levels of emotional intelligence correlate with enhanced social well-being and improved ability to deal with interpersonal conflicts (Palmer, Donaldson, & Stough, 2002).

Given these findings, emotional intelligence is crucial for professions involving interpersonal relations, such as caregiving, parenting, teaching, and teamwork. In addition to emotional competence, social competence represents the second important determinant of a person’s ability to function in social roles including professional ones. The authors of this study adopt Anna Matczak’s (2007, p. 7) definition of social competence as “a set of complex skills that determine the effectiveness of coping with specific types of social situations, acquired by an individual through social training.” These complex skills include the ability to cope with situations involving close interpersonal contact, social exposure and the need for assertiveness.

Research has consistently demonstrated a relationship between emotional intelligence and social competence. According to Jeruszka “people with a high level of emotional intelligence are more socially competent,

exhibit stronger tendencies toward cooperative and pro-social behavior, possess a greater sense of efficacy in helping others, are more socially active, and are more likely to use and derive satisfaction from social support” (2016, p. 74). This theme has also been examined in studies on teachers and trainee teachers (Zbróg et al., 2024; Surma et al., 2024).

Emotional and social competencies play a vital role in both academic (González & Wagenaar, 2003) and professional environments (McClelland, 1999; Repetto & Peña, 2010). These competencies significantly contribute to personal and professional development, as well as to fuller participation in society (Garrido & Gaeta, 2016; Rutkowska, 2012). A notable advantage of possessing a high level of emotional and social competence is the ability to cope more successfully with stress. Additionally, these competencies act as a buffer against professional burnout and its associated negative attitudinal effects, which may manifest in cognitive, emotional-motivational, or behavioral spheres. In other words, emotional and social competencies are protective factors against burnout and attrition in the workplace (Maslach & Leiter, 2011).

A high level of emotional and social competence is also linked to greater flexibility in attitudes and behaviors across various social situations, as well as improved adaptation to change (Strelau, 2002). These skills are particularly critical in the 21st century, where the surrounding reality is often described using the acronym VUCA: volatility, uncertainty, complexity, and ambiguity (Bennett & Lemoine, 2014). These characteristics are especially pronounced in the context of modern schooling.

It is evident that a high level of emotional and social competence is essential for individuals whose work involves frequent interpersonal interactions. These competencies are prerequisites for effectively establishing and maintaining relationships, such as those between teacher and student, teacher and parent, or teacher and colleague, which translates into job satisfaction and professional success. Importantly, only a teacher who possesses a high level of emotional and social competence can shape these qualities in their students—often through modeling (Cywińska, 2017). In such cases, both major groups involved in educational processes benefit: teachers and students alike.

At the same time, it is important to recognize that expectations of teachers possessing high levels of emotional and social competence are not new to social discourse. However, in recent years, these expectations have gained even greater prominence, which signifies the continuous and progressive evolution of the teaching profession and the expanding roles and responsibilities assigned to it" (Kwiatkowski, 2018, p. 106). Preschool and early childhood education teachers face a multitude of tasks, challenges, and difficulties in which emotional intelligence and social competencies play an important role. As Kwiatkowski notes (2017), a high level of these psychological constructs, along with their components, positively influences various aspects of teaching, such as coping with educational uncertainties, mastering and applying required skills effectively, implementing individualized approaches for each student, and managing stress (see Kwiatkowski, 2017).

Given this perspective, reducing the responsibilities of a modern teacher solely to teaching and organizing the educational process is not only unfounded but also unfair. A teacher's professional competence includes not only subject-matter expertise and didactic-methodological and self-educational skills, but also communicative-media and psychological-pedagogical competencies (Strykowski, 2005). Imparting subject knowledge is merely one of many responsibilities a teacher assumes in supporting their students. Today, the teacher's role extends beyond traditional instruction to preparing students to adapt optimally to a rapidly changing society.

Strykowski (2005, p. 16), reflecting on how pedeutologists of the 20th century conceptualized the "teacher's personality," cites descriptions such as "love of human souls" (J. W. Dawid), "parental instinct," and "the ability to express feelings and externalize the psyche" (Z. Mysłakowski), and "the need to communicate with people" or "spiritual affinity with children" (S. Baley). These attributes complement the teacher's substantive and didactic-methodological expertise ("cold," cognitive preparation) with "hot" soft skills related to emotions and experience. In light of the above, both emotional intelligence and social competence respond to the expectations of professional competence demanded of the modern teacher.

Method

Problem and Purpose of the Study

The existing literature includes numerous studies on the emotional intelligence and social competence of students and teachers (e.g., Zych & Llorent, 2020; Twardowska-Staszek & Alberska, 2020), as well as their level of professional competence (Surma, 2019). However, there is a notable lack of research examining the relationship between these competencies.

The aim of this study was to identify the relationships between emotional intelligence, social competence, and the self-assessment of professional competence among future preschool and early childhood education teachers. Building on the preceding discussion, we must consider a pivotal question: What is the relationship between emotional intelligence, social competence, and the self-assessment of professional competence among the surveyed female pedagogy students?

To achieve this, the study formulated the following specific research questions:

1. What is the relationship, if any, between emotional intelligence and the self-assessment of professional competence among the surveyed female students?
2. What is the relationship, if any, between social competence and the self-assessment of professional competence among the surveyed female students?

Instruments

The study utilized a questionnaire to collect descriptive data such as age, work experience, and length of service, alongside three standardized survey instruments.

Emotional Intelligence

The **Popular Questionnaire of Emotional Intelligence (PKIE)** developed by Jaworowska, Matczak, Ciechanowicz, Stańczak, and Zalewska

(Jaworowska & Matczak, 2005) was used to measure emotional intelligence. The PKIE consists of 94 items presented as statements (e.g., *I often can't describe how I feel*). Respondents rate the degree to which they agree with each statement on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

The answers obtained provide the basis for calculating an overall emotional intelligence score and scores on four subscales: AKC: Accepting, expressing, and using one's emotions in action, EMP: Empathy, including understanding and recognizing others' emotions, KON: Cognitive control over one's own emotions, and ROZ: Understanding and awareness of one's own emotions.

Social Competencies

Social competence was measured using the **PROKOS Questionnaire**, developed by Matczak and Martowska (2013). The PROKOS consists of 90 items, each describing specific activities or tasks. These activities span three domains of human social activity: work, social life, and family life (e.g., *At a social gathering, initiate a conversation with a person you don't know*). Respondents rate how well they believe they would perform in a given situation on a four-point scale ranging from 4 (*definitely good*) to 1 (*definitely bad*).

The questionnaire provides an overall score as well as scores on five subscales: Scale A: Assertive competence, Scale K: Cooperative competence, Scale T: Social competence in specific contexts, Scale Z: Social resourcefulness, and Scale S: General social competence.

Self-Assessment of Teacher Competence

The **Self-Assessment of Teaching Competencies Questionnaire** was used to measure participants' evaluation of their professional competencies. This tool was developed based on Strykowski's (2005) classification of teacher competencies. It consists of 20 items, each describing specific competencies required in teaching practice (e.g., *I can plan activities with children according to methodological requirements*).

These competencies refer to five key areas: Substantive competence, Teaching competencies, Psychological-pedagogical competencies,

Communication and media competence, and Self-education competencies.

Respondents rate their own competencies on a scale from 1 (*low*) to 4 (*high*).

Participants

Fifty-seven women participated in the study. Of these, 22 were second-year students enrolled in the complementary part-time master's degree program in Pedagogy (specializing in preschool and early childhood pedagogy), while 35 were full-time students in the five-year master's degree program in the same field. Participants ranged in age from 23 to 48 years ($M = 26.16$, $SD = 4.92$). The study exclusively included women, which mirrors the demographic trend of a predominantly female student body in this field.

Design and Procedure

The study was conducted in June 2023, following the final semester of the academic program. Participants were personally invited to fill out the prepared questionnaires. Participation was entirely voluntary and anonymous. The survey took approximately 30 minutes to complete. The study adhered to all national and international ethical standards and received approval from the University Committee on Research Ethics at Ignatianum University in Cracow (approval dated May 5, 2023).

Data analysis

The analysis was performed using **R software, version 4.3.1**. Correlations between quantitative variables were analyzed using Spearman's correlation coefficient. A significance level of 0.05 was adopted for the analysis, meaning that all *p-values* below 0.05 were interpreted as indicating significant correlations.

Results

Emotional Intelligence and Self-Assessment of Professional Competence

The relationship between emotional intelligence and the self-assessment of professional competence was examined using Spearman's correlation coefficient. The mean level of emotional intelligence among the surveyed students was a sten score of 6, representing an average level.

Table 1 presents the correlations between PKIE (Popular Questionnaire of Emotional Intelligence) and its four scales, as well as the 20 teaching competencies assessed. A total of 24 statistically significant correlations ($p < 0.05$) were identified.

Table 1. Correlation of PKIE and Self-Assessment of Teacher Competence

Self-assessment of teacher competence	AKC	EMP	KON	ROZ	PKIE total score
Substantive competence					
I know what the process of integrated teaching entails	$r=-0.057$, $p=0.672$	$r=0.183$, $p=0.173$	$r=0.244$, $p=0.067$	$r=-0.056$, $p=0.679$	$r=0.181$, $p=0.178$
I have enough subject knowledge to teach mathematics	$r=-0.01$, $p=0.943$	$r=0.032$, $p=0.816$	$r=0.247$, $p=0.064$	$r=0.071$, $p=0.6$	$r=0.134$, $p=0.321$
I have enough subject knowledge to teach nature	$r=0.044$, $p=0.747$	$r=0.231$, $p=0.084$	$r=0.062$, $p=0.649$	$r=-0.032$, $p=0.813$	$r=0.149$, $p=0.268$
I have enough subject knowledge to teach Polish	$r=0.113$, $p=0.401$	$r=0.224$, $p=0.095$	$r=0.162$, $p=0.229$	$r=-0.02$, $p=0.884$	$r=0.237$, $p=0.076$
Teaching competencies					
I am able to plan activities with children according to methodological requirements	$r=0.184$, $p=0.17$	$r=0.131$, $p=0.331$	$r=0.232$, $p=0.082$	$r=0.106$, $p=0.431$	$r=0.21$, $p=0.116$
I can plan goals and check if they have been achieved	$r=0.191$, $p=0.155$	$r=0.387$, $p=0.003 *$	$r=0.05$, $p=0.712$	$r=-0.044$, $p=0.748$	$r=0.301$, $p=0.023 *$
I know the methods of working with children in preschool	$r=0.18$, $p=0.181$	$r=0.245$, $p=0.067$	$r=0.216$, $p=0.106$	$r=-0.09$, $p=0.504$	$r=0.29$, $p=0.029 *$
I interpret the teacher's work (I can evaluate their good and bad approaches to children)	$r=0.31$, $p=0.019 *$	$r=0.26$, $p=0.051$	$r=0.19$, $p=0.156$	$r=-0.007$, $p=0.956$	$r=0.378$, $p=0.004 *$

Self-assessment of teacher competence	AKC	EMP	KON	ROZ	PKIE total score
Psychological and pedagogical competencies					
I can effectively involve students in the learning process	$r=0.393$, $p=0.002$ *	$r=-0.523$, $p<0.001$ *	$r=0.139$, $p=0.302$	$r=-0.038$, $p=0.78$	$r=-0.465$, $p<0.001$ *
I can direct children's activities so that they are focused and interested	$r=0.204$, $p=0.127$	$r=0.273$, $p=0.04$ *	$r=0.244$, $p=0.068$	$r=0.047$, $p=0.729$	$r=-0.28$, $p=0.035$ *
I have sufficient skills and knowledge to diagnose the learning process of children	$r=0.114$, $p=0.4$	$r=0.163$, $p=0.224$	$r=0.151$, $p=0.264$	$r=0.06$, $p=0.66$	$r=0.169$, $p=0.209$
In my work with children, I am guided by empathy	$r=0.188$, $p=0.162$	$r=0.121$, $p=0.37$	$r=-0.364$, $p=0.005$ *	$r=-0.032$, $p=0.816$	$r=0.316$, $p=0.017$ *
Communication and media competence					
I can cooperate with teachers	$r=0.133$, $p=0.325$	$r=0.031$, $p=0.819$	$r=0.257$, $p=0.054$	$r=0.003$, $p=0.984$	$r=0.164$, $p=0.223$
I am prepared to work with parents	$r=0.173$, $p=0.198$	$r=0.106$, $p=0.432$	$r=-0.032$, $p=0.814$	$r=-0.187$, $p=0.164$	$r=0.089$, $p=0.513$
I don't have a problem with networking with others	$r=0.474$, $p<0.001$ *	$r=0.289$, $p=0.029$ *	$r=0.215$, $p=0.109$	$r=0.057$, $p=0.674$	$r=0.435$, $p=0.001$ *
I have no problems with interpersonal communication	$r=0.336$, $p=0.011$ *	$r=0.119$, $p=0.379$	$r=0.257$, $p=0.054$	$r=0.269$, $p=0.043$ *	$r=0.328$, $p=0.013$ *
I have no problems using information technology to conduct activities with children	$r=0.024$, $p=0.859$	$r=0.119$, $p=0.378$	$r=0.294$, $p=0.027$ *	$r=0.198$, $p=0.14$	$r=0.209$, $p=0.119$
Self-education competencies					
I know that it is necessary to keep improving	$r=-0.059$, $p=0.663$	$r=-0.003$, $p=0.983$	$r=0.276$, $p=0.038$ *	$r=-0.003$, $p=0.982$	$r=0.118$, $p=0.381$
I am open to acquiring new knowledge	$r=0.123$, $p=0.362$	$r=0.066$, $p=0.626$	$r=0.281$, $p=0.034$ *	$r=0.01$, $p=0.939$	$r=0.165$, $p=0.221$
I know my strengths and weaknesses	$r=0.345$, $p=0.009$ *	$r=0.364$, $p=0.005$ *	$r=0.25$, $p=0.061$	$r=0.006$, $p=0.964$	$r=0.457$, $p<0.001$ *

* a statistically significant relationship ($p<0.05$).

AKC - accepting, expressing and using one's own emotions in action, EMP - empathy, i.e. understanding and recognizing other people's emotions, KON - control, including cognitive control, over one's own emotions and ROZ - understanding and awareness of one's own emotions. Source: own research.

It is clear that emotional intelligence correlates significantly and positively with the self-assessment of teaching, psychological-pedagogical, communication and media, and self-education competencies. However, no correlation was observed between emotional intelligence and the self-assessment of substantive competence. The items that correlated most

strongly with the overall emotional intelligence scale score were: “I can effectively involve students in the learning process” ($p < 0.001$), “I have no problems with networking with others” ($p = 0.001$), and “I know my strengths and weaknesses” ($p < 0.001$). A slightly weaker relationship was observed for the item “I interpret the teacher’s work (I can evaluate their good and bad approaches to children)” ($p = 0.001$).

A more detailed analysis of teaching competencies reveals that respondents’ self-assessment of their ability to plan goals and evaluate their achievement correlates positively with empathy. Similarly, their self-assessment of their ability to interpret the teacher’s work correlates positively with the acceptance, expression, and use of their own emotions in action. For psychological-pedagogical competencies, a stronger belief in the ability to effectively involve students in the learning process is associated with a greater ability to accept, express, and use one’s emotions in action, as well as higher empathy levels. Similarly, a stronger belief in the ability to guide children’s activities to ensure focus and engagement also correlates positively with empathy. Additionally, the belief in being guided by empathy when working with children correlates positively with control over one’s own emotions.

An analogous analysis was conducted for communication and media competencies. The belief that one has no problems in building relationships with others correlates positively with acceptance, expression, and the use of one’s emotions in action, as well as empathy. Furthermore, the belief that there are no issues with interpersonal communication correlates positively with the understanding and awareness of one’s own emotions. Notably, greater cognitive control over one’s emotions is associated with a stronger belief in the ability to use information technology effectively when conducting activities with children.

Finally, the relationship between emotional intelligence and self-education competencies is evident across all studied aspects. Awareness of self-improvement and acquiring new knowledge correlates positively with cognitive control (KON), while knowledge of one’s strengths and weaknesses correlates positively with acceptance, expression, and use of one’s own emotions (AKC) and empathy (EMP).

Social Competence and Self-Assessment of Teacher Competence

Spearman’s correlation coefficient was used to examine the relationship between social competence and the self-assessment of professional competence. The mean level of social competence among the respondents was found to be a sten score of 5, indicating an average level.

Table 2 shows the correlations between the PROKOS questionnaire and its five scales and 20 teaching competencies. A total of 43 statistically significant correlations ($p < 0.05$) were identified.

Table 2. Correlation of PROKOS and Self-Assessment of Teacher Competence

Self-assessment of teacher competence	A scale	K scale	T scale	Z scale	S scale	PROKOS total score
Substantive competence						
I know what the process of integrated teaching entails	$r=-0.026$, $p=0.846$	$r=0.233$, $p=0.082$	$r=0.21$, $p=0.117$	$r=0.16$, $p=0.234$	$r=0.077$, $p=0.568$	$r=0.184$, $p=0.171$
I have enough subject knowledge to teach mathematics	$r=0.148$, $p=0.272$	$r=0.209$, $p=0.119$	$r=0.087$, $p=0.521$	$r=0.061$, $p=0.654$	$r=0.265$, $p=0.047$ *	$r=0.189$, $p=0.158$
I have enough subject knowledge to teach nature	$r=0.191$, $p=0.154$	$r=0.181$, $p=0.177$	$r=0.043$, $p=0.749$	$r=0.145$, $p=0.283$	$r=0.248$, $p=0.063$	$r=0.219$, $p=0.102$
I have enough subject knowledge to teach Polish	$r=-0.124$, $p=0.36$	$r=0.217$, $p=0.105$	$r=0$, $p=0.998$	$r=0.102$, $p=0.449$	$r=0.067$, $p=0.623$	$r=0.078$, $p=0.565$
Teaching competencies						
I can plan activities with children in accordance with methodological requirements	$r=0.281$, $p=0.034$ *	$r=0.313$, $p=0.018$ *	$r=0.204$, $p=0.127$	$r=0.216$, $p=0.107$	$r=0.102$, $p=0.449$	$r=0.292$, $p=0.027$ *
I can plan goals and check if they have been achieved	$r=0.243$, $p=0.068$	$r=0.299$, $p=0.024$ *	$r=0.297$, $p=0.025$ *	$r=0.289$, $p=0.029$ *	$r=0.183$, $p=0.173$	$r=0.346$, $p=0.008$ *
I know the methods of working with children in preschool	$r=0.038$, $p=0.777$	$r=0.35$, $p=0.008$ *	$r=0.152$, $p=0.258$	$r=0.206$, $p=0.124$	$r=0.09$, $p=0.506$	$r=0.241$, $p=0.071$
I interpret the teacher's work (I can evaluate their good and bad approaches to children)	$r=0.104$, $p=0.442$	$r=0.435$, $p=0.001$ *	$r=0.33$, $p=0.012$ *	$r=0.395$, $p=0.002$ *	$r=0.242$, $p=0.07$	$r=0.385$, $p=0.003$ *
Psychological and pedagogical competencies						
I can effectively involve students in the learning process	$r=0.149$, $p=0.268$	$r=0.423$, $p=0.001$ *	$r=0.261$, $p=0.049$ *	$r=0.312$, $p=0.018$ *	$r=0.132$, $p=0.329$	$r=0.344$, $p=0.009$ *
I can direct children's activities so that they are focused and interested	$r=0.039$, $p=0.771$	$r=0.344$, $p=0.009$ *	$r=0.19$, $p=0.156$	$r=0.133$, $p=0.325$	$r=0.078$, $p=0.565$	$r=0.187$, $p=0.164$

Self-assessment of teacher competence	A scale	K scale	T scale	Z scale	S scale	PROKOS total score
Psychological and pedagogical competencies						
I have sufficient skills and knowledge to diagnose the learning process of children	r=0.344, p=0.009 *	r=0.262, p=0.049 *	r=0.163, p=0.227	r=0.345, p=0.008 *	r=0.228, p=0.088	r=0.339, p=0.01 *
In my work with children, I am guided by empathy	r=-0.038, p=0.78	r=0.295, p=0.026 *	r=0.204, p=0.128	r=0.346, p=0.008 *	r=0.147, p=0.275	r=0.244, p=0.067
Communication and media competence						
I can cooperate with teachers	r=0.023, p=0.864	r=0.296, p=0.025 *	r=0.333, p=0.011 *	r=0.238, p=0.075	r=0.114, p=0.4	r=0.214, p=0.109
I am prepared to work with parents	r=0.109, p=0.419	r=0.131, p=0.332	r=0.338, p=0.01 *	r=0.213, p=0.113	r=0.236, p=0.078	r=0.217, p=0.105
I don't have a problem with networking with others	r=0.263, p=0.048 *	r=0.434, p=0.001 *	r=0.548, p<0.001 *	r=0.322, p=0.015 *	r=0.28, p=0.035 *	r=0.451, p<0.001 *
I have no problems with interpersonal communication	r=0.358, p=0.006 *	r=0.317, p=0.016 *	r=0.49, p<0.001 *	r=0.193, p=0.15	r=0.318, p=0.016 *	r=0.399, p=0.002 *
I have no problems using information technology to conduct activities with children	r=0.328, p=0.013 *	r=0.219, p=0.102	r=0.118, p=0.382	r=0.145, p=0.283	r=0.199, p=0.137	r=0.237, p=0.076
Self-education competencies						
I know that it is necessary to keep improving	r=0.042, p=0.755	r=0.143, p=0.288	r=0.024, p=0.857	r=0.058, p=0.67	r=0.181, p=0.178	r=0.112, p=0.405
I am open to acquiring new knowledge	r=0.17, p=0.206	r=0.197, p=0.141	r=0.177, p=0.187	r=0.167, p=0.213	r=0.376, p=0.004 *	r=0.258, p=0.053
I know my strengths and weaknesses	r=0.217, p=0.105	r=0.449, p<0.001 *	r=0.276, p=0.038 *	r=0.368, p=0.005 *	r=0.221, p=0.099	r=0.411, p=0.002 *

* a statistically significant relationship ($p < 0.05$).

Scale A - assertive competence, scale K - cooperative competence, scale T - social competence in specific contexts, scale Z - social resourcefulness, scale S - general social competence. Source: own research.

The analyses indicate a correlation between social competence and self-assessment of professional competence across all areas studied. The weakest correlation with social competence was observed in the self-assessment of substantive competence. In this area, no significant relationships were found between the overall scale score and individual aspects of self-assessment related to teaching competence. The items showing the strongest correlations with the overall scale score were: "I don't have problems with networking with others" ($p < 0.001$), "I don't have problems with interpersonal communication" ($p = 0.002$), "I know my strengths and

weaknesses” ($p=0.002$), and “I interpret the teacher’s work (I can evaluate their good and bad approaches to children)” ($p=0.003$).

A detailed analysis of self-assessed skills necessary for preschool and early childhood education teachers, along with individual scales in the domain of social competence, reveals a significant positive correlation. These analyses are discussed in detail below. In the domain of substantive competence, only the belief that one has sufficient knowledge to teach mathematics demonstrates a connection with social competence. Specifically, higher levels of social competence correspond to higher self-assessments of background in teaching mathematics.

Regarding teaching competencies, two areas are particularly related to social competence. A strong belief in one’s ability to set goals and assess their achievement, as well as the ability to evaluate a teacher’s work, correlates significantly and positively with cooperative, social competence in specific contexts, and social resourcefulness scales. Similarly, a high self-assessment of the ability to plan activities with children in accordance with methodological requirements is linked to assertive and cooperative competencies. Additionally, knowledge of methods for working with preschool children is associated with cooperative competencies.

The next analysis focuses on psychological and pedagogical competencies, where a significant positive correlation is observed between the belief in one’s ability to effectively engage students in the learning process and cooperative competence, social competence in specific contexts, and social resourcefulness. Additionally, cooperative competence contributes to greater confidence in managing children’s activities to keep them focused and interested. Similarly, higher scores on the A, K, and Z scales are associated with a stronger belief in one’s preparedness to design children’s learning. In contrast, self-assessment of the ability to empathize correlates with the K and Z scales.

Each communication and media competency also shows a significant positive correlation with individual social competencies. Specifically, the belief in one’s ability to cooperate with teachers correlates positively with cooperative and social competence in specific contexts. However, the ability to work with parents is associated solely with social competencies

in specific contexts. An interesting result emerged among the students surveyed: higher levels of social competence in all dimensions correspond to higher self-assessments of their ability to relate to others. A similar trend was observed in the self-assessment of interpersonal communication, though no significant correlation was found with social resourcefulness in this area. Lastly, the communication and media competency, defined as confidence that there are no problems using information technology in activities with children correlates positively with assertive competence.

The final area of teacher competencies, self-education competencies, indicates no relationship between social competencies and awareness of the need for self-improvement. However, a significant positive correlation exists between a positive attitude toward acquiring new knowledge and general social competencies, as well as between knowledge of one's strengths and weaknesses and the K, T, and Z scales.

Discussion

Preparation for the profession of a preschool and early childhood education teacher involves equipping individuals to work not only with individual children, but also with groups of children, parents, and other stakeholders involved in the process of upbringing and education. This work requires not only subject matter knowledge but also strong intra- and interpersonal skills. Furthermore, research indicates that soft skills are more essential than hard skills in the teaching profession.

Our study revealed statistically significant correlations between emotional intelligence, social competence, and self-assessment of professional competence among students in their final year of studies preparing for the preschool and early childhood education teaching profession. Before analyzing the detailed results and offering interpretations, it is important to point out some similarities between the two correlation matrices. Both emotional intelligence and social competence exhibit little to no correlation with self-assessment of substantive (content) competence. However,

they strongly correlate with certain items, including: “I have no problems with networking with others,” “I know my strengths and weaknesses,” and “I interpret the teacher’s work (I can evaluate their good and bad approaches to children).”

This observation raises questions about the competency model used in training future teachers. Teachers need training that equips them not only to function as “cold” professionals but also as reflective practitioners capable of building relationships, self-reflection and critical thinking. Discussions about teacher education models often incorporate three approaches: technological, humanistic, and functional (Klus-Stańska, 2009; Kwiatkowska, 1989; Lewowicki, 1991). Given the rapid pace of social change and the necessity of preparing young people to cope with constant change, the humanistic model and the concept of the reflective practitioner should be taken into account in professional teacher education (Skrzetuska, 2022).

Based on the research findings, it is reasonable to conclude that a good preschool and early childhood education teacher is characterized by a high level of emotional intelligence and social competence. Therefore, both aspiring and current teachers must actively work to strengthen and develop these competencies. Failing to do so could lead to significant difficulties in their professional lives, with negative repercussions not only for themselves, but also for the children in their care.

As the study results indicate, students who accept their own emotions—both positive and negative—and can express them to others tend to evaluate their competence in tasks that require collaboration with others more favorably. This may be because others can easily recognize what these individuals are experiencing and respond appropriately. Similarly, respondents with high levels of empathy, who can recognize and understand the emotions of others, rate their preparedness to lead a group and collaborate with others more highly. The ability to interpret children’s emotional states is undoubtedly an asset when working in a preschool group or school classroom.

Respondents who are skilled at controlling their own emotions rated their teaching competencies highly, particularly in terms of their ability

to use information technology and their self-education skills. This may reflect an overall sense of control and influence over various aspects of life. Notably, the study took place during the COVID-19 pandemic, which required a shift to online instruction and greater self-directed effort from students. Additionally, students who understand and are aware of their own emotions rated their interpersonal communication skills highly. Being conscious of what one is experiencing and why makes it easier to articulate emotions and expectations to others. Students who excel at recognizing social needs and goals, organizing activities to meet those goals, and involving others in the process also rated their knowledge and preparation for teaching mathematics higher.

One noteworthy finding is that all subscales of social competence correlate with self-assessed ability to relate to others. Specifically, the more students demonstrate the ability to express their needs and influence others (A), the more effective they are at helping and supporting others (K), the better they handle social situations and social exposure (T), the more proficient they are at carrying out tasks that require support from others (Z), and the more they demonstrate the ability to perceive social needs and goals, organize activities to achieve them and include other people in those activities (S), and the better they feel prepared to establish and maintain relationships with others.

The need to develop emotional intelligence and social competence in future teachers is clear. A growing number of initiatives for teachers and as well as academic-level programs are being introduced to accommodate this need. Students themselves recognize the importance of developing soft skills. Findings from a focus group study conducted by Irena Przybylska (2024) show that students view academic training as crucial for the development of their social competences. Furthermore, over two-thirds of participants emphasize the role of the university in diagnosing students' social problems and deficits early in their educational journey (Przybylska, 2024).

Applications

Based on the data presented, there is no doubt that modern teachers—especially those responsible for the education of preschool and elementary school children—must possess high professional competence, including emotional and social competence. These emotional and social competencies should be nurtured and developed both during the academic training of pedagogy students and throughout the careers of active teachers. As Kwiatkowski (2017) notes, “this will undoubtedly require coordinated efforts by educational authorities and universities that train teachers—using so-called ‘best practices’” (p. 156). Participants in Przybylska’s studies proposed several methods to foster these competencies, including mentoring, workshops and training sessions on soft skills, participation in the social and cultural life of the university, group project work, collaborative projects with academic teachers, volunteering, participation in local pro-social initiatives, and coaching programs (2024).

Additionally, it should be emphasized that soft skills, particularly emotional intelligence and social competence, are developed in diverse contexts as part of lifelong learning. Therefore, educational processes—especially methodological classes—should include opportunities for students to assess their current level of social competence and plan their further development, e.g. through tutoring sessions. Social competence and emotional intelligence are indispensable in fulfilling the various roles of teachers, including care, education, diagnostics, and instruction, at both kindergarten and school levels. These competencies are particularly important for recognizing children’s needs, supporting their development, resolving conflicts, and building strong relationships with families.

Limitations of the study

The authors acknowledge several limitations of this research. First, the study group was not representative due to purposive sampling and a small sample size, which limits the generalizability of the findings

and conclusions to the broader population of students preparing for preschool and early childhood education teaching roles. Additionally, the study relied on self-report surveys, which are inherently declarative and do not provide direct insight into actual competencies but rather into respondents' perceptions of their competencies.

Despite these limitations, the relationships observed between variables in this study could likely be replicated in future research conducted on larger, more representative samples.

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Reflections on Education for Sustainable Development: Insights from Icelandic Preschool Teachers on Concepts, Curriculum, and Teacher Training

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Abstract

Research Objective: This study has two main objectives: (1) to investigate Icelandic preschool teachers' reflections on concepts, curriculum, and teacher training related to education for sustainable development (ESD), and (2) to explore any differences in reflections between more experienced and less experienced teachers.

Research Method: Eight preschool teachers participated in this study, which involved semi-structured interviews and thematic analysis.

Structure of the Article: The article begins with an introduction discussing the importance of ESD for teachers' pedagogical content knowledge (PCK) and teaching models. Next, it reviews previous studies on ESD in early childhood education and the concept of PCK. The method, findings, and discussion sections then follow.

A Brief Description of the Context of the Issue: Education for sustainable development (ESD) demands the involvement of multiple stakeholders, with teachers playing a key role. Despite UNESCO's call for teacher training in ESD over a decade ago, research on teachers' concepts, curriculum design, and related training remains limited.

Research Findings and Impact on Educational Sciences: The results indicated that teachers' understanding of ESD was largely ecological in focus. The curriculum and teacher training were found to be critical for effective ESD. No significant difference in reflections was found between more experienced and less experienced teachers.

Conclusions and Recommendations: Both in-service and pre-service teacher training that incorporates PCK and teaching models for ESD is highly needed and recommended. Teachers require cross-curricular knowledge and teaching strategies to address the complex, multidisciplinary nature of ESD.

Keywords: preschool teacher, reflection, ESD concept, curriculum, teacher training

Introduction

The concept of sustainability has been widely discussed, debated, and developed globally in recent years, particularly during the Decade for Education for Sustainable Development (DESD) from 2005 to 2014. Despite the emphasis on the critical role of educators and trainers in promoting sustainability since the DESD (UNESCO, 2014; 2020), challenges surrounding ESD remain. The concept of ESD is still vague, with misunderstandings and misuse persisting (Block & Paredis, 2019; Chang Rundgren & Yamada, 2023). Studies have shown that teachers' understanding of ESD tends to be superficial and mainly focused on ecological or environmental aspects while overlooking social and economic dimensions (Aksland & Chang Rundgren, 2020; Borg et al., 2014; Hedefalk et al., 2015; Waltner et al., 2020). This limited understanding and lack of effective teaching strategies for ESD are also prevalent among early childhood

education (ECE) teachers (Davis, 2009; Dymont et al., 2014; Hedefalk et al., 2015). Dymont and colleagues describe early childhood education as “the natural starting point” for all ongoing education (2014, p. 661), and further emphasize the need for ECE teachers’ professional development in understanding and confidently teaching ESD (Dymont et al., 2014). For teachers to incorporate ESD effectively, they must first understand its scope and learn how to teach it (Chang Rundgren, 2023), which aligns with Shuman’s (1986; 1987) concept of pedagogical content knowledge (PCK). Given the complexity of ESD (Birdsall, 2015), both PCK (Forsler, Nilsen, & Walan, 2024a, 2024b) and didactical models are necessary for teachers and teacher training (Aksland & Chang Rundgren, 2020; Chang Rundgren, 2023).

ESD, with its focus on values such as democracy, human rights, equality and environmental stewardship, resonates strongly with the Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden), which have a long history of embracing these values (Aksland & Chang Rundgren, 2020; Cars & West, 2015). ESD is integral to Norway’s new curriculum as one of three interdisciplinary cornerstones, alongside public health and life management, and democracy and citizenship (Norwegian Directorate for Education and Training, 2019). In Iceland, sustainability has been one of the six pillars in the national curriculum for all educational levels since 2011, along with literacy, ESD, democracy and human rights, equality, health and welfare, and creativity (Ministry of Education, Science and Culture, 2011, p. 14). These pillars are intended to be recognized and implemented holistically through related practices, and are aligned with UNESCO’s statement that “ESD is holistic and transformational education which addresses learning content and outcomes, pedagogy, and the learning environment” (2014, p. 12). In Iceland, a country with a population of just 350,000, there are 200 Eco-Schools, including 77 preschools (Landvernd, 2019). Despite this engagement, to our knowledge, little focus has been placed on ESD research in Iceland, especially at the preschool level. Thus, it seems timely to examine Icelandic preschool teachers’ PCK on ESD after over a decade of its inclusion in the curriculum. The following sections discuss ESD in early childhood education and related PCK in detail.

ESD in Early Childhood Education (ECE)

Sustainable Development Goal (SDG) number four calls for every child to receive quality education (United Nations, n.d. a), while Siraj-Blatchford et al. (2010, p. 6) point out that, even from an early age, children have the capacity to think about socio-environmental issues in a sophisticated manner. Early childhood is a time of significant brain development, and according to Siraj-Blatchford et al. (2010, p. 6), the earlier children are introduced to ESD and the underlying concepts, the more likely it is that ESD will have a lasting impact. They stress that ECE is the first step of many towards ESD in a child's educational journey; hence, it plays a vital role in cultivating a sustainable, action-oriented mindset in future generations (Ibid., p. 7). In a review study of ECE teachers and ESD, Hedefalk et al. (2015) identified three major views about the purposes of ESD among ECE teachers:

1. Teaching children environmental facts
2. Influencing student behavior
3. Developing children's critical thinking skills

The first group of teachers, who viewed ESD as *educating children about their environment*, approached it from an ecological perspective, focusing on nature and science. Instruction centered on environmental topics such as pollution, the cycle of nature, facts about animals and plants, and deforestation. Teaching tended to be more closed, relying on question-and-answer techniques, and knowledge was transmitted from teacher to child with the assumption that if children were sufficiently informed about the environment, they would automatically start taking action for change. However, their understanding of nature was limited and superficial, and their teaching did not incorporate other aspects of ESD, such as social or economic dimensions (Aksland & Chang Rundgren, 2020). Moreover, these teachers did not encourage action for social improvement (Flogaitis & Agelidou, 2003; Hedefalk et al., 2015; Lee, 2001; Årlemalm-Hagsér & Sandberg, 2011).

The second group of teachers understood ESD to be something that should *influence children's behavior* to act for sustainability. By raising children's awareness of the environment and encouraging environmentally friendly approaches, these teachers believed that children would learn to protect the environment, both immediately and in the future. However, these children may not have been taught to think critically or make their own decisions about the environment and sustainability but instead encouraged to act according to the teachers' instructions or modeled behaviors (Kennelly et al., 2008; Lee, 2011; Sandberg & Ärlemalm-Hagsér, 2011).

The third group of teachers understood *ESD as a means to educate* children to think critically by exploring the relationship between the environment and society. For example, Kennelly et al. (2008) observed that teachers taught children about recycling and engaged them in discussions about its importance. One preschooler in the study expressed concern that pollution would prevent "forests and fields from breathing," which Kennelly et al. (2008) interpreted as a sign of critical thinking. The child was contemplating the human-nature relationship and how they could make a difference. The goal of the teachers in this group was to encourage children to think about environmental issues and consider what they could do to effect change. The teachers had the children participate in problem identification and decision-making and required them to make judgments and compare different outcomes. By examining various perspectives, the children came to understand that decision-making is often complex and sometimes requires risk evaluation, a skill the teachers helped them develop (Dyment et al., 2014; Hedefalk et al., 2015; Kennelly et al., 2008; Sandberg & Ärlemalm-Hagsér, 2011; Ärlemalm-Hagsér & Sandberg, 2011). These findings demonstrate the importance of preschool teachers' ESD teaching strategies, specifically the relevance of their pedagogical content knowledge (PCK) in ESD.

Pedagogical Content Knowledge (PCK)

Shulman's (1986, 1987) work on teacher knowledge emerged from a debate in the U.S. on the professionalism of teachers. In 1986, Shulman published a paper titled "Those Who Understand: Knowledge Growth in Teaching," which investigated U.S. teacher training examinations dating back to the 19th century. He found that about 95% of these exams focused on how much teachers knew about the content of their subjects—what he called subject matter knowledge—and only about 5% addressed pedagogy (Shulman, 1986). When comparing these exams to those in current teacher training programs, Shulman found that the emphasis had shifted from subject matter knowledge to pedagogical knowledge. At that time, teacher preparation focused on planning and organizing lessons, evaluating students, recognizing individual differences, understanding young people, classroom management, cultural awareness, and knowledge of educational procedures and policies. Subject matter knowledge played an insignificant role; in fact, Shulman drew attention to what he called the "missing paradigm" of subject matter knowledge in both research and policy (Ibid., p. 6). Specifically, there was an absence of detailed analysis on the types of questions asked and the explanations teachers provided.

Shulman proposed that teacher knowledge could be categorized into three areas: subject matter knowledge, pedagogical content knowledge (PCK), and curricular knowledge (ibid., p. 9). He pointed out that PCK, in particular, needed more attention, as it represents a unique body of knowledge specific to teaching (Shulman, 1987, p. 8). Content and pedagogy are intertwined, as teachers combine their teaching strategies with their knowledge and understanding of a subject. As Shulman (1987, p. 8) explained, PCK is:

the capacity of a teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by the students. (Shulman, 1987, p. 8)

Later, Kind (2009) defined PCK as the knowledge that teachers need and use in the teaching process, where subject knowledge intersects with teaching strategies. He suggested that it is not enough for teachers to just know a lot about the subject content, as they must also possess the tools and strategies to successfully deliver that knowledge to their students (Kind, 2009). Baumert and Kunter (2013) demonstrated that PCK is related to student comprehension and learning and that the development of PCK is linked to teaching experience. Abell (2008) observed that besides subject content knowledge, teachers should develop teaching strategies that integrate this knowledge. These strategies are enriched as teachers gain classroom experience, become more confident in their roles, and learn which methods resonate most with students and yield the greatest impact. Similarly, Kini and Podolsky (2016) found that teachers' teaching effectiveness and student outcomes improve with teaching experience.

It is worth mentioning that in Nordic countries, like Iceland, preschool education (for children aged two to five) emphasizes social pedagogy and learning through play (Einarsdottir et al., 2015; Siraj-Blatchford, 2010, p. 151). Therefore, teaching practices vary between primary and higher grades. In Iceland, preschool teachers' PCK focuses less on subject matter knowledge—since there are no distinct subjects—and more on being knowledgeable about various topics that children might encounter or find interesting in their daily lives. They must also have the tools to explore and learn about the environment and life alongside the children (Einarsdottir, 2006, p. 167).

Aim of the Study and Research Questions

To promote ESD in early childhood, this study has two main aims: (1) to investigate Icelandic preschool teachers' reflections on concepts, curricula, and teacher training related to ESD, and (2) to explore whether differences exist in these reflections between more experienced and less experienced teachers. The research questions guiding this study are:

1. What are Icelandic preschool teachers' reflections on concepts, curricula, and teacher training related to ESD?
2. Are there differences in preschool teachers' reflections on ESD based on their teaching experience?

Methodology

This study employed semi-structured interviews with participants recruited through purposive and snowball sampling (Bryman, 2012). In the spring of 2021, the second author posted a shareable status on her Facebook page introducing the aim of the research. Preschool teachers and preschool teacher candidates were invited to contact the second author via email or Facebook Messenger if they were interested in participating. The post emphasized that participants did not need any prior knowledge or specific opinions about ESD to join the study.

The second author received responses from interested participants and from friends and acquaintances who referred potential participants. These individuals were then contacted to set up interviews. To expand the participant pool, the second author reposted the invitation in a Facebook group for preschool employees and enthusiasts in Iceland which generated additional responses. However, recruitment during the COVID-19 pandemic was not easy, and eventually only eight individuals participated in the study. Given the qualitative nature of this research, the small sample size was deemed sufficient for achieving data saturation. However, the authors acknowledge the limitations this poses for the generalizability of the findings. The participants' backgrounds, as well as the methods of data collection and analysis, are described in detail below.

Participants' backgrounds

Eight preschool teachers participated in the study. All were either currently working in or had previously worked in preschools run by municipalities, not private preschools. Three participants lived and worked in the center of Iceland's capital, Reykjavik; three were from a large municipality in Reykjavik; one was from a small rural town in the west of Iceland; and one was from a town in the northwest. All participants were Icelandic females, which was expected given the low number of male preschool teachers in Iceland. Participants' ages ranged from 25 to 60 years. Their experience as preschool teachers varied from one to 27 years, and they were categorized as more experienced teachers (METs), with five or more years of experience, and less experienced teachers (LETs), with fewer than five years of experience (see Table 1).

Table 1. Participants' backgrounds

	License	Work experience (years)	Green Flag School	Position	Location	Year of Studies	Additional Information
MET1	Yes	19	Yes	Head of unit	Capital city	Not a student	15+ years since graduation
MET2	Yes	27	Yes	Head of unit	Capital city	Not a student	15+ years since graduation
MET3	No	13	Yes	Head of unit	Capital city	First year of Masters	Licensed elementary school teacher (B. Ed)
MET4	No	12	Yes	Head of unit	Capital city	First year of Masters	
LET1	No	4	No	Special education teacher	Rural	First year B. Ed	
LET2	No	1	No	Assistant teacher	Rural	First year of Masters	Not currently working in a preschool
LET3	No	4	No	Head of unit	Capital city	Finishing Masters	
LET4	No	4	No	Head of unit	Capital city	Finishing Masters	BA Degree in Humanities

Data Collection

Data were collected through semi-structured interviews conducted by the second author. An interview guide (see Appendix 1) was developed to ensure all relevant information for the study was gathered from each interview. A pilot study was conducted with two teachers who were not part of the main group of eight participants. Both the interview technique and guide were revised based on feedback from the pilot. The interviews ranged from 20 to 36 minutes, with a mean length of 28 minutes. They were conducted in Icelandic, the native language of both the second author and the participants. Due to the Covid-19 pandemic, all interviews were conducted via Zoom, as the second author was unable to travel to Iceland or conduct face-to-face interviews.

The audio data were recorded on the second author's mobile phone. After all interviews were completed, the recordings were transferred to a secure online data storage cloud at the university and deleted from the phone. Verbal consent from each participant was recorded at the start of each interview, and participants were reminded that they could withdraw from the study at any time by contacting the first author. The second author transcribed the interviews verbatim using VLC media player.

Data Analysis

Thematic analysis, useful for identifying patterns or themes in data and interpreting different aspects of a topic (Braun and Clarke, 2006), was used to analyze the data. We considered this method suitable due to our interest in exploring the participants' teaching experiences and their understanding of ESD. Both authors collaborated to ensure the validity and reliability of the analysis. The first author, a senior researcher with expertise in ESD and over 20 years of experience in educational research, contributed significantly to this process.

Results

Based on interview data from the eight teachers (four METs and four LETs), we found that the participants recognized the complexity of ESD and found it difficult to explain what ESD and sustainability meant. They tended to associate ESD with the environment or ecology, lacking a more holistic grasp of the concept. While the teachers connected other aspects of ESD, such as democracy, equality, and gender, to their practices, they did not explicitly link these elements to ESD until the second author read a description of ESD from the curriculum. The teachers identified policy documents like the curriculum, teacher training, and school culture as crucial for ESD. Although the LETs felt that ESD training was included in their teacher training program, they still found it difficult to define sustainability or ESD. We use the term “sustainability” more frequently than “ESD” in our results section, as the teachers themselves used this term more often in their responses.

The concept of ESD is broad and complex

The participants were asked if they were familiar with the terms “sustainability” and “ESD” All but one said they associated sustainability with nature conservation or discussed it from an ecological perspective. However, some noted that even though the ecological perspective was the first thing that came to mind, they were aware that the concept had a broader meaning but could not elaborate on this. A few mentioned that sustainability had become a popular term in recent years and some even felt that it might have been overused to the point of losing some of its meaning. When asked to define or explain sustainability, all participants found this difficult. For example, LET2 said that she had certainly heard the term and recognized it as prevalent in contemporary society and present in the national curriculum. She mentioned that the word had been used in many different contexts, maybe even overused, and that it was hard to understand and explain it.

LET2: *In my experience, it's mainly about awareness of nature and the environment. It's maybe an abstract concept ... but also involves sustainable cultivation and eating locally produced foods.*

MET4 and LET3 expressed similar views, noting the difficulty in understanding what people actually meant when they talked about sustainability, whether it truly was sustainability or not. They felt that the concept was often vague and ambiguous. MET3 felt that businesses and policymakers had a tendency to use the term under false pretenses with the intention of attracting environmentally conscious consumers.

MET3: *I also think about greenwashing and how it's become a buzzword because I feel like we've started to overuse it. Many things might not necessarily be sustainable or nature-friendly by definition... But of course, anyone can use the concept, and it's also used in greenwashing.*

MET1 and MET2 both admitted that the concept of sustainability was hard to explain, but they associated it with reusing everyday items.

MET2: *Like what we do at work; it's something I can't quite explain; it's really hard to put into words now that I'm talking to you... Everything we use at our school, well, it's not a lot, at least not where I work. I don't think it's exactly how I imagined sustainability should be, where we'd make more use of the resources in our surroundings.*

...

Interviewer: *But when you think about sustainability, are there any specific things that come to mind in relation to it? You mentioned working with the resources around you—anything else?*

MET2: *No, not right now. I don't know.*

LET4 and LET1 were the only teachers who mentioned having heard or known that sustainability and ESD were possibly broader than the ecological perspective alone. LET1 recalled that, when she thought about it more deeply, she remembered sustainability being discussed in one of

her teacher training courses in a somewhat broader sense, incorporating aspects like the economy.

LET1: *We were talking about how we could teach children about sustainability, and that was what I was recalling before, and its relation to the economy, but we didn't go any deeper into it.*

Interviewer: *I see, and did you discuss it in any context other than the ecological one?*

LET1: *No, there was nothing more.*

This teacher did recall that there was a somewhat broader aspect to ESD, but she could not remember the specific context. Clearly, the holistic view of ESD was not explored in depth during her teacher training, as she remembered these discussions but noted they were not pursued beyond that point.

Similarly, LET4 remarked:

LET4: *Yes, it [the concept of sustainability] is, of course, part of the curriculum, and science is one of the categories, but I've always had a hard time relating sustainability to anything other than, you know, recycling and nature conservation ... I think that this [recycling and nature conservancy] is what I relate to the most.*

The teachers often circled back to discussing sustainability rather than ESD, but did not have a clear understanding of the broader concept, even though some had more teaching experience and worked in Green Flag schools. Both groups of METs and LETs did not distinguish between sustainability and ESD, and they tended to use only the term “sustainability.”

Although all the teachers were familiar with the term sustainability, their understanding was largely limited to the ecological perspective—they tended to stress the importance of using and reusing available resources, with many teachers focusing on recycling. Two teachers mentioned having some awareness of the broader aspects of sustainability, though neither could clearly explain what those aspects entailed.

The need for policy and teacher training for ESD

Some teachers referenced the curriculum policy document in discussions about sustainability and ESD and were all aware that ESD is one of the six pillars of education in the curriculum. When the concept of sustainability was mentioned, LET2 described it as a “very popular topic in the community, as it appears often in the national curriculum.” However, when asked if she remembered the specific context in which it appeared, she could not recall this. She added that they had received some training on ESD in preschool, but her only memory was a focus on the ecological perspective, specifically, a discussion on carbon footprint.

MET1 remembered that the curriculum included a section titled “Sustainability and Science” and added, “which makes it a special study element for preschools.” She explained that her municipality evaluates one of the six pillars each year, and in 2021, the focus was on sustainability and science. MET3 commented that, in her view, the Eco-School Project supported the curriculum’s sustainability goals. LET3 said that she wished she had received more training on being nature-friendly, indicating that the program had not provided sufficient training.

LET4 acknowledged, *Of course, sustainability and science are part of the national curriculum*, but mentioned that this pillar was the hardest for her to understand, as she struggled to connect it to anything beyond ecology.

Many METs had completed their teacher training more than ten years before (before or during the DESD), a period when ESD had not been extensively covered. MET4 said that she had received “incredibly little” training on sustainability and ESD in her teacher training program, and what little she had received was quite superficial:

MET4: During my undergraduate studies, we were immersed in arts and crafts and nature science courses, but I didn't feel that they addressed [ESD] specifically. It was mostly about arts, and yes, there was some mention of reusing things ... but it was mostly just looking at insects and flowers, which, of course, falls into that category, but I didn't feel like I got any real education about precisely this topic.

Did less experienced teachers feel more prepared by their teacher training programs, given that their studies had taken place closer to the time of the DESD? LET1 recalled a group project from her teacher training, where the objective was to reflect on how teachers could engage four- to five-year-old children with sustainability concepts, *How to use nature and the things around us, and learn about natural cycles and phenomena*. The group came up with activities such as holding awareness campaigns, picking up trash on walks, singing seasonal songs, having each child act as a meteorologist for a day, observing insects, and introducing children to natural features like waterfalls and mountains. LET4 felt that her teacher training had also been valuable. She mentioned that before starting her program, while working in a preschool, she had attended a teacher conference day focused on the national curriculum. Reflecting on that experience, LET4 said:

LET4: The units were divided, and each group picked a few pillars from the national curriculum to discuss. Now I'm really sorry that I hadn't started my studies at that point because ... now I see it from a completely different perspective. I would like to redo some of it.

After asking the participants about the meaning of sustainability and receiving responses that were mostly or exclusively related to ecology, the second author read aloud a paragraph about sustainability and ESD from the national curriculum. This was intended to provide them with an understanding of how the curriculum that they work with defines the concept and which aspects of their work might fall under the ESD umbrella. The paragraph reads as follows: *Education for sustainability encompasses creating a society of collective responsibility, where individuals develop as active citizens, conscious of their own values, attitudes, and feelings for global impact and equality for all the inhabitants of the earth, for nature and the environment, for democracy, human rights, and justice, for equality and multiculturalism, for welfare and health, and for economic development and a vision of the future.* (Ministry of Education, Science and Culture, 2011, p. 18)

One example of how the paragraph was rephrased:

Interviewer: So, yes, you've mentioned the curriculum a couple of times, so you're aware that sustainability is one of the six pillars of education, so, like, in the 'official' definition of ESD, concepts like democracy, human rights, citizenship, economic growth, welfare, sustainable economy, and health are related to sustainability.

It was clear that this prompt encouraged participants to reflect further. The most frequently mentioned aspects were democracy, gender equality, and human rights. Each participant provided examples of how they incorporated democracy in their work. LET2, when asked if there was an emphasis on democracy with the children at her workplace, responded: "Yes, definitely, though unofficially... for example, listening to the opinions of others or feeling free to voice your own opinions."

LET2, who taught at a preschool that practiced The Leader in Me philosophy (which emphasizes each individual's successes and personal growth; Franklin Covey, n.d.), felt this philosophy was a beneficial tool to encourage democratic values, with focus areas like being proactive and taking initiative. She described a course from her studies that had focused on democracy and civic consciousness in children and youth. She found it helpful in connecting concepts like multiculturalism, democracy, and equality to civic consciousness but noted that sustainability was rarely, if ever, mentioned in that context.

However, both MET2 and MET4, who worked with younger children, expressed that teaching the values of democracy to very young children was more difficult, especially in terms of using the actual word "democracy," compared to working with older children:

MET2: I'm working with the youngest kids now, but when I worked with older children, it was a lot different. Then, it was more like, 'What do you want?' and 'What do you think?' and questions like that ... and I just take, for example, when you're doing a play, and everyone wants to be the

wolf, you explain that not everyone can play the main role. You don't really do that with the youngest kids.

MET4: You know, my kids are just that little; you're not going to go very deep into concepts like that.

The need for a guiding policy, like the curriculum, was recognized. LET1 felt that there should be more emphasis on curriculum, both in her studies and at her workplace.

LET1: I'd like it to be more like—why not just take this paragraph from the national curriculum? I mean, since I'm studying, having this text in front of us, printed out somewhere in our office or something, where it's more visible as a reminder. Then I could have answered you right away.

Conclusion and discussions

This study found that the eight preschool teachers had difficulties explaining the meanings of sustainability and ESD, even though ESD has been addressed in their curriculum since 2011. The teachers tended to associate ESD with ecological perspectives but when presented with a text about ESD from their curriculum, they were able to recall school practices that related to other aspects of ESD, such as democracy and social aspects. Despite this, they did not initially associate democracy and equality education with ESD. Curriculum and teacher training were found to be critical for ESD—one teacher emphasized the importance of using the curriculum in teacher training for ESD, while another referenced a municipal policy involving annual evaluations to encourage teachers to engage more explicitly with ESD within the curriculum framework.

Block and Paredis (2019) noted that the term sustainability has become so omnipresent that it can be challenging to determine if it is being applied correctly and honestly. This issue was also evident in our research, where teachers spoke of their difficulties in defining and, to some extent, fully understanding the terms *sustainability* and *ESD*. We found that

the teachers connected sustainability and ESD only with the ecological perspective, which aligns with previous research findings that the ecological aspect often dominates, and in some cases, is the only perspective that teachers are familiar with (Aksland & Chang Rundgren, 2020; Borg et al., 2014; Chang Rundgren, 2023). Some teachers in our study felt that sustainability had become an overused buzzword, and one teacher associated it with greenwashing. Rist (2007) has even called sustainable development an oxymoron. While the teachers did not go that far, they were aware that businesses sometimes abuse the term for economic gain.

The lack of any mention of the economic perspective by study participants may be due to the fact that this perspective is entirely absent from the preschool curriculum (Jóhannesson, 2017). One teacher explained that the reason she linked sustainability with the ecological perspective more than anything else likely reflected her real-life experiences. It may be that teachers find it difficult to connect the economic aspect to their personal encounters with sustainability, as they may not perceive economics through a sustainability lens themselves. Interestingly, while the term *democracy* does not appear in UNESCO's definitions of ESD, the two concepts are very closely linked in the Icelandic curriculum. The Nordic Council of Ministers' 2021 report on the status of ESD in the Nordic countries also highlights this connection, as the Nordic region has a tradition of intertwining democracy and ESD. This linkage is deeply rooted in Nordic culture and society, as exemplified by the "Nordic model" (Einarsdóttir et al., 2015; Siraj-Blatchford, 2010). Consequently, it is difficult to distinguish how much of this connection has been inculcated through teacher training and work experience versus how much has become ingrained in teachers' identities simply by growing up in Iceland, a society that has long emphasized values such as democracy, equality, and human rights.

This study found teacher training and the use of policy documents, such as the curriculum- to be important for ESD. However, teachers' understanding of ESD was relatively superficial, as observed in previous studies (Aksland & Chang Rundgren, 2020; Borg et al., 2014; Hedefalk et al., 2015; Waltner et al., 2020). When examining teaching strategies, it was clear that teachers focused mainly on children's participation. Sterling (2004)

advocated for a participatory approach in sustainable education. By involving children in decision-making and day-to-day school activities, teachers are moving towards transformative, sustainable education. Some teachers mentioned that their work on ecological topics with children had inspired them to adopt more nature-friendly habits in their personal lives. Additionally, some reported that parents had told them their children were scolding them for not being environmentally conscious enough. This suggests that both teachers and parents are beginning to challenge their established habits.

In the teachers' interview data, there was no evident influence of ESD on their teaching experiences. While pedagogical content knowledge (PCK) has been shown to develop over time (Abell, 2008), ESD did not appear to follow the same pattern in this study. This shows that ESD should be embraced as part of PCK (Aksland & Chang Rundgren, 2020; Forsler, Nilsson, & Walan, 2024a, 2024b) and included in didactic models for both pre-service and in-service teacher training (Chang Rundgren, 2023).

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Appendix 1—Interview Guide

Introduction Questions

I'd like to start by asking you to introduce yourself briefly.

Follow-up: What is your occupation? What are your main interests?

What comes to mind when you hear the words “sustainable development?”

Have you heard of ESD?

What meaning do you associate with ESD, or what comes to mind when you hear the term ESD?

Do you know what the preschool curriculum says about ESD?

(For reference): “Education for sustainability encompasses creating a society of collective responsibility where individuals develop as active citizens, conscious of their own values, attitudes, and feelings for global impact and equality of all the inhabitants of the earth, for nature and the environment, for democracy, human rights and justice, for equality and multiculturalism, for welfare and health, and for economic development and vision of the future.” (Ministry of Education, Science, and Culture, 2011, p. 18).

Did you receive any training or courses on ESD in your teacher training program?

Do you remember anything specific about it? What was the main focus?

Have you ever worked, or are you currently working, in a preschool that emphasizes ESD?

If so:

Did your workplace explain what ESD is? How?

What does your workplace do to emphasize ESD?

Are/were students involved? How?

Did you receive any ESD-related training or courses from your workplace?

What were those courses about? Were they useful? Who conducted them?

Do/did you have anyone at your workplace to consult about ESD-related matters?

Have you ever worked, or are you currently working, in a preschool that participates in any development programs?

If so:

What is/was the program?

What actions were/are taken as part of the program?

Are/were students involved? How?

In what ways, if any, do you discuss with your students the projects or topics you're working on?

Can you give some examples?

Do you apply, or do you plan to implement, ESD in your teaching? (If appropriate: How do you implement democracy/multi-culturalism/ecologic thinking etc. into your teaching)?

If so:

Could you describe what you do or how you plan to do it?

Have you encountered any challenges in implementing ESD?

What are some of those challenges?

Why do you think they arise?

Can you think of any possible challenges you might meet?

If you haven't faced challenges yet, can you anticipate any?

What might they be, and why do you expect them to be challenging?

Do you think ESD has made or will make a difference for you or your students?



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Motivation and Satisfaction with Choosing a Teaching Career as Perceived by Students and Teachers

(pp. 91–113)

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Abstract

Research Aim: The aim of the study was to identify differences in motivation for and satisfaction with choosing the teaching profession between working teachers and students preparing to become teachers.

Research Methods: The study used an original survey created by the author and a motivation questionnaire based on Deci and Ryan's self-determination theory, adapted to the teaching profession. The questionnaire consisted of 19 items measuring three dimensions of motivation for choosing the teaching profession: autonomous motivation (intrinsic motivation, integration, and identification), controlled motivation (extrinsic motivation and introjection), and amotivation (lack of motivation). The questionnaire also included two other questions, about satisfaction with the choice of profession and the extent to which the choice of the career had been thought over. The statistical analysis was performed using TIBCO Statistica 13.3 software.

Brief Description of the Issue Context: The self-determination theory (SDT) allows for extensive research on human motivation (Liu et al., 2016). In this context, fostering the autonomy of both teachers and students has significant advantages in terms of educational outcomes compared to control-oriented strategies, i.e., those which rely more on extrinsic motivation (Deci and Ryan, 2016).

Research Results: There were no statistically significant differences in the individual dimensions of motivation between working teachers and students. Among the respondents, autonomous forms of motivation were at the highest level, controlled motivation was at a slightly lower level, and amotivation reached the lowest level. However, it was noted that as many as one third of the teachers were not satisfied with their chosen career and were thinking of changing jobs. Those studying preschool and early childhood pedagogy had higher levels of autonomous and controlled forms of motivation and lower levels of amotivation compared to female students of speech therapy.

Conclusions and Recommendations: Due to the high percentage of people thinking about changing their profession, changes are needed that could increase the sense of satisfaction among teachers. It is also worth designing behavioral interventions that could encourage behavior that supports autonomous forms of student motivation.

Keywords: motivation, job satisfaction, teacher, SDT theory

Introduction

The pace and scope of changes that are taking place in the modern world can be seen in all areas of our lives. As a consequence, education is a space full of challenges for all the subjects involved: teaching staff, students, and parents (Tchorzewski, 2018, pp. 178–181). The study examines teachers and students preparing for this profession, who—in deciding to choose this career path—should constantly improve their work, develop their skills of organizing the educational space in the changing reality, and, above all, try not to forget that their profession is perceived “as a vocation

and mission, and passion which is above the average level” (Kwiatkowski, 2008, pp. 27–28). This article analyzes the motives behind the decision to follow a teaching career and examines how the challenges of the changing reality affect job satisfaction in those who have taken it up.

The Teaching Profession

Over the centuries, the role and significance of the teacher in society has changed. This has been conditioned primarily by the needs of the society creating an ideal image of those performing this function (Dąbrowska, 1999). As Bogdan Suchodolski pointed out, the teacher’s role in the didactic/educational process is unique because

all didactic ideas, aims, content, methods and principles of education and upbringing do not work automatically, but are fulfilled and brought to life thanks to the teacher [...] for he/she is the organizer, the manager, and the guardian of this process. (Suchodolski, 1980, p. 698)

However, in the contemporary world, there is “a dissonance between social expectations of the teaching profession and the possibilities of meeting them” (Królikowska & Topij-Stepmińska, 2014). As the authors point out, it would be necessary to make expectations towards teachers more realistic, which, in practice, would mean lowering societal expectations and moving away from “the traditional role of the teacher as an ‘information tube’: an expert with a monopoly on the truth about the world and life who eagerly ‘distributes’ ready-made scenarios for successfully pursuing a career in life” (Królikowska & Topij-Stepmińska, 2014, p. 22). Remaining in such a model may lead to the total collapse of the profession’s prestige.

As indicated by reports from the Center for Public Opinion Research (CBOS), the prestige of the teaching profession has been decreasing since the end of the 1990s. As late as 1999, it occupied third place in the classification (CBOS, 1999). In the 2013 research, out of 30 professions, the teacher

was already in seventh place (CBOS, 2013), which was also true in 2019 (CBOS, 2019). In turn, research conducted in 2023 by the SW Research Institute on the most respected professions shows that teachers are in 11th place among the 40 professions on the list (SW Research Institute, 2023). As the results of the research show, unfortunately, the prestige of the teaching profession is decreasing with each decade and, although it still oscillates around the top ten, a downward trend is noticeable.

In 2015, the Educational Research Institute presented a report on the social and professional position of teachers. According to the data they presented, apart from the above-mentioned social change, the factors (mentioned by teachers) that reduce the prestige of the teaching profession include

the lack of knowledge among the majority of society about the specific features of the job; teachers' self-presentation; the negative role of the media; low economic status; the low quality of teachers' education and work; the system of professional promotion; the lack of approval for increasing students' rights; the perception of the teaching profession in the eyes of students' parents; the relationships within the teaching community; and the role of trade unions. (Smak & Walczak, 2015)

The long list of factors lowering the prestige of the profession according to teachers participating in the research shows how multifaceted is the problem we are facing today. It is also worth emphasizing that this research noted the existence of a hierarchy of prestige within the teaching profession.

Factors that differentiate respect for teachers include the size of the town or village, institutional factors embedded in the educational system (e.g., the importance of particular subjects or the specific features of educational stages), the organizational culture of the school (management style, relationships with the headmaster, or atmosphere within the teaching community), contact with others, student performance, and the personal characteristics of teachers. (Smak & Walczak, 2015)

Given the numerous factors that lower the prestige of the profession and differentiate the respect towards its members, it is worth considering the sense of satisfaction from work among this professional group. The aforementioned factors may affect “the emotional reaction of pleasure or annoyance experienced in connection with the performance of specific tasks, functions, and roles” (Bańka, 2000, p. 329). Although professional satisfaction among teachers is primarily related to the sense of doing work that is helpful to others, treating the profession as a social mission, and an individual belief in their special professional role (Bajcar et al., 2011), in the current educational climate in Poland, many teachers may lose their sense of professional satisfaction, and, as a consequence, their motivation as well.

Motivation to Work

Deci and Ryan’s (1985) theory of self-determination (SDT) assumes that there are three basic human needs: competence, autonomy, and relationship with others. The need for competence refers to effectiveness in performing tasks and achieving goals; the need for autonomy is the willingness to act according to one’s own preferences, values, and goals, without external pressure; and the need for relationships is related to being with other people and experiencing acceptance and support from others. These needs are combined with the individual’s own goals, which can be extrinsic or intrinsic, which is why it is important to differentiate intrinsic motivation from extrinsic motivation (Gillet et al., 2012).

Deci and Ryan (1985, 2000a) distinguished motivation from the lack of motivation, a lack of desire to act (Ryan, 2006), a lack of a sense of competence to act (Bandura, 1986; Deci, 1975), or a perceived inability to achieve a desired goal (Seligman, 1975). Motivation occurs when an individual believes that involvement in a behavior will lead to a desired outcome (Eyal & Roth, 2011). Motivation in the SDT is seen as a kind of fluid process of interpenetration of motivational impulses, from fully autonomous internal regulation to non-autonomous external regulation

(Ryan & Deci, 2000a). We can further distinguish between partially controlled introjection, when an individual performs an activity in order to increase or maintain self-esteem, and partially autonomous identification and integration, which are associated with increasing internalization of motives (Ryan & Deci, 2000a, 2000b). Research indicates that extrinsic motivation and introjection are associated with negative psychological consequences even when the assumed task has been completed (Ryan et al., 1983), whereas autonomous types of motivation are associated with better performance and the individual's well-being (Baard et al., 2004; Gagné & Deci, 2005).

Taking into account the positive outcomes of employees' autonomous motivation and the costs associated with controlled motivation, it seems important to identify what may contribute to motivation of a particular type. Research within the SDT indicates that autonomous motivation increases in environments that support autonomy. They can be called democratic because they provide choice, encourage critical thinking, and communicate one's opinion (Assor et al., 2002; Gagné & Deci, 2005; Roth et al., 2009). In work environments characterized by pressure to behave in a certain way and not allowing for critical thinking, extrinsic motivation is more likely to be encountered (Stone et al., 2009). Teacher motivation determines the quality of teaching (Ahmadi et al., 2023; Colares et al., 2019). The more autonomous the teacher's motivation, the more democratic the teacher's teaching style (Pelletier et al., 2002), the higher the students' autonomous motivation to learn (Roth et al., 2007), and the lower the risk of the teacher suffering burnout (Roth et al., 2007).

Research Methodology

The aim of the study was to identify differences in motivation for the teaching profession and satisfaction with the choice of the career between working teachers and students preparing to become teachers. The following research questions were formulated:

1. Does the level of autonomous, controlled motivation and the level of amotivation differ between future teachers and working teachers?
2. Does the level of satisfaction with the choice of the career differ between future teachers and working teachers?
3. What are the relationships between age, work experience, place of residence, degree of professional advancement, degree of consideration of the decision to choose a teaching profession, and the type of teaching specialization with the level of autonomous motivation, controlled motivation, and amotivation?

A total of 138 women participated in the study: 75 students preparing to be teachers (53 students of preschool and early childhood pedagogy and 22 students of pedagogy with a specialization in speech therapy) and 63 teachers (15 working in preschools and 48 working in primary schools). The group selection resulted from the desire to learn about the motivation to pursue the teaching profession among people who work with children at the first stage of education and with those with special educational needs. The average age of the study group was 32 ± 12.95 years, 22 ± 1.75 in the student group and 43 ± 11.50 in the teacher group. The teachers represented all three levels of professional promotion: 13 (20.63%) held the rank of a teacher trainee, 18 (28.57%) a nominated teacher, and 32 (50.8%) a diploma teacher.

The study used an original survey created by the author and a motivation questionnaire based on Deci and Ryan's self-determination theory and relating to the teaching profession. Self-report questionnaires are the most common method of measuring motivation in studies based on the SDT theory. The questionnaire consisted of 19 items that measured three dimensions of motivation for the teaching profession: autonomous motivation (intrinsic motivation, integration, and identification), controlled motivation (extrinsic motivation and introjection), and amotivation (lack of motivation). The autonomous motivation scale consisted of 10 items (for example: intrinsic motivation—"Teaching makes me happy"; identification—"Teaching allows me to shape values in children and young people"; integration—"Because teaching others has a personal

meaning for me"). Its internal consistency coefficient (Cronbach's alpha) had a value of 0.82. The controlled motivation scale consisted of six items (for example: extrinsic motivation—"Being a teacher provides a steady income"; introjection—"Because I would feel bad about not giving anything of myself to others"). Its internal consistency value was 0.53. The amotivation scale consisted of three items (for example, "I don't know why I do this job, as it serves no purpose"), and its internal consistency value was 0.63.

The respondents rated each of the 19 statements on how much it applied to them, using a scale of 1 to 5, where 1 meant "definitely not true about me" and 5 meant "definitely true about me." The questionnaire consisted of eight or nine questions related to the place of work (teachers) or residence (students); age; the type of school/type of studies; years in the profession (teachers) or year of study (students); coming from a family with a teaching tradition; satisfaction with the choice of the profession (two questions, including one descriptive question); the degree to which the choice of the career path was considered (scale of 1 to 5); and the degree of professional promotion (teachers).

The research was conducted in January 2024. All the participating students are studying at two Krakow pedagogical universities. Forty-four of the teachers (69.84%) who completed the questionnaire work in Krakow kindergartens and schools. The remaining respondents work in smaller towns and villages near Krakow. The respondents were personally asked to complete the questionnaires anonymously, each doing so at their own pace with unlimited time to share their reflections.

Statistical analysis was performed using TIBCO Statistica 13.3. Basic descriptive statistics of the research variables (mean, median, minimum, maximum, standard deviation, count, and percentage) were performed, along with chi-square tests for comparisons of the proportion of responses in a given category. Due to the non-normal distributions of the research variables, non-parametric analysis was carried out. The non-parametric Mann-Whitney U test (for comparisons between two groups) and non-parametric Kruskal-Wallis ANOVA (for comparisons between more than two groups) were used to determine differences between groups. Friedman's non-parametric analysis of variance, along with Wilcoxon's paired t-test comparisons,

were used to determine differences in the dimensions of individual motivation (Bonferroni correction was applied for three comparisons; the established significance level for Wilcoxon's paired t-test was 0.017). Spearman's non-parametric correlation analysis was used to determine the relationships between variables. A significance level of $\alpha = 0.05$ was adopted.

Research Results

Due to the non-normality of the distribution of all variables under study, median was chosen as the measure of central tendency. Among the teachers surveyed, the average length of service in the profession was 14 years; across the group, the degree of thinking over the decision to choose the teaching profession averaged 4 on a five-point scale, indicating a usually well-thought-out decision (Table 1). Variation was observed in the dimensions of individual motivation (Friedman's ANOVA = 206.17, $n = 138$, $df = 2$, $p < 0.001$). A detailed analysis comparing all dimensions of motivation showed that autonomous motivation was the highest, controlled motivation reached a significantly lower level, and amotivation, or the lack of motivation, was the lowest among the three dimensions of motivation.

Table 1. Descriptive Statistics of the Variables

Variables	n	Mean	Median	Minimum	Maximum	Standard Deviation
Autonomous motivation	138	41.80 (4.18)	43.00 (4.30)	23.00	55.00	6.88
Controlled motivation	138	18.99 (3.16)	19.00 (3.17)	9.00	28.00	3.91
Amotivation	138	5.18 (1.33)	4.00 (1.33)	3.00	12.00	2.42
Consideration before deciding	138	3.54	4.00	1.00	5.00	1.07
Age	138	31.58	24.00	20.00	71.00	12.95
Number of years in the profession	63	16.19	14.00	1.00	40.00	11.43

Values in brackets are given for the totals divided by the number of items.

Traditions of teaching were more frequent among the working teachers than among the students (Table 2). Rural areas were more often indicated as students' place of residence, while large cities were more often indicated by teachers (Table 3). In general, most of the respondents were satisfied with their choice of career, but there were more such respondents among the students than among the teachers (Table 4). The majority of the respondents did not express a desire to change their job/discipline, but one in three teachers and one in five students considered such a possibility (Table 5).

Table 2. Number of Respondents Coming from a Family with Teaching Traditions

Teaching tradition	Total		Teachers		Students		Difference of proportions	
	n	%	n	%	n	%	Chi-square	p-value
No	88	63.77	32	50.79	56	74.67	8.45	0.004
Yes	50	36.23	31	49.21	19	25.33		
Missing	0	0.00	0	0.00	0	0.00		

Table 3 Number of respondents by place of work/residence

Place	Total		Teachers, Work/Residence		Students, Origin		Difference of proportions	
	n	%	n	%	n	%	Chi-square	p-value
Village	55	39.86	6	9.52	49	65.33	61.86	<0.001
Small town	13	9.42	4	6.35	9	12.00		
Medium-sized city	19	13.77	9	14.29	10	13.33		
Large city	51	36.96	44	69.84	7	9.33		
Missing	0	0.00	0	0.00	0	0.00		

Table 4. Number of respondents satisfied with their career choice

Satisfied	Total		Teachers		Students		Difference of proportions	
	n	%	n	%	n	%	Chi-square	p-value
No	23	16.67	20	31.75	3	4.00	18.38	<0.001
Yes	113	81.88	43	68.25	70	93.33		
Missing	2	1.45	0	0.00	2	2.67		

Table 5. Number of Respondents Willing to Change Job/Specialization

Willing to change	Total		Teachers		Students		Difference of proportions	
	n	%	n	%	n	%	Chi-square	p-value
No	102	73.91	42	66.67	60	80.00	3.16	0.076
Yes	36	26.09	21	33.33	15	20.00		
Missing	0	0.00	0	0.00	0	0.00		

No differences were noted in the level of motivation or the degree of thinking over the career decision between the teachers and the students (Table 6).

Table 6. Differences in Motivation and Degree of Thinking over the Decision Between Teachers and Students

Motivation	Teachers, median	Students, median	U	Z	p-value	Teachers, n	Students, n
Autonomous	44.00	42.00	2144.00	0.93	0.351	63	75
Controlled	19.00	20.00	2087.50	-1.17	0.241	63	75
Amotivation	4.00	5.00	2130.50	-0.99	0.322	63	75
Decision to choose the profession	Teachers, median	Students, median	U	Z	p-value	Teachers, n	Students, n
	4.00	4.00	2249.00	0.48	0.629	63	75

Among the teachers, there were no statistically significant differences in the individual dimensions of motivation or the degree to which the career decision was considered between those teaching in kindergartens and primary schools (Table 7).

Table 7. Motivation and Degree of Thinking over the Career Decision by Type of School

Motivation	Kindergarten teachers, median	Primary school teachers, median	U	Z	p-value	Kindergarten teachers, n	Primary school teachers, n
Autonomous	44.00	42.52	345.50	-0.23	0.821	15	48
Controlled	19.00	18.65	357.00	0.04	0.968	15	48
Amotivation	6.00	4.73	271.00	1.43	0.153	15	48
Decision to choose the profession	Kindergarten teachers, median	Primary school teachers, median	U	Z	p-value	Kindergarten teachers, n	Primary school teachers, n
	3.60	4	340.00	-0.31	0.753	15	48

Among the pedagogy students, however, differences in all dimensions of motivation and the degree of thinking over the decision to choose the teaching profession were observed between those studying preschool and early childhood pedagogy and students of pedagogy with a specialization in speech therapy (Table 8). Students of preschool and early childhood pedagogy had higher levels of autonomous and controlled motivation, lower levels of amotivation (lack of motivation), and a higher degree of considering the career choice than students of pedagogy with a specialization in speech therapy.

Table 8. Motivation and Degree of Thinking over The Career Decision by Field of Study

Motivation	PECE, median	ST, median	U	Z	p-value	PECE, n	ST, n
Autonomous	43.00	37.50	309.00	3.18	0.001	53	22
Controlled	21.00	16.50	257.00	3.79	<0.001	53	22
Amotivation	4.00	5.50	398.50	-2.14	0.032	53	22
Decision to choose the profession	PECE, median	ST, median	U	Z	p-value	PECE, n	ST, n
	4.00	3.00	388.00	2.26	0.024	53	22

PECE – preschool and early childhood education; ST – pedagogy, specialization in speech therapy.

Those who expressed a desire to change jobs/specializations had lower levels of autonomous and controlled motivation and significantly higher levels of amotivation (lack of motivation) than those who had not considered such a change (Table 9).

Table 9. Motivation and Degree of Thinking over the Career Decision by Willingness to Change Jobs/Specializations

Motivation	Willingness to change		U	Z	p-value	Willingness to change	
	No, median	Yes, median				No, n	Yes, n
Autonomous	44.00	38.00	1144.50	3.35	0.001	102	36
Controlled	20.00	17.00	1046.00	3.83	0.000	102	36
Amotivation	4.00	7.00	1122.00	-3.46	0.001	102	36
Decision to choose the profession	No, median	Yes, median	U	Z	p-value	No, n	Yes, n
	4.00	3.50	1586.00	1.21	0.226	102	36

It was also noted that the higher the degree of thinking over the decision to choose the teaching profession, the lower the level of amotivation (lack of motivation) and the higher the level of autonomous and controlled motivation (Table 10). The age and number of years

in the teaching profession were not statistically significantly related to motivation in the study group.

Table 10. Motivation vs. Age, Degree of Thinking over the Career Choice, and the Number of Years in the Profession

Variables	n	Spearman's Rho	t(N-2)	p-value
Age & Autonomous	138	0.06	0.74	0.462
Age & Controlled	138	-0.09	-1.06	0.291
Age & Amotivation	138	-0.08	-0.95	0.342
Decision to choose the profession & Autonomous	138	0.27	3.29	0.001
Decision to choose the profession & Controlled	138	0.31	3.83	<0.001
Decision to choose the profession & Amotivation	138	-0.20	-2.35	0.020
Number of years in the profession & Autonomous	63	0.02	0.17	0.865
Number of years in the profession & Controlled	63	0.14	1.09	0.281
Number of years in the profession & Amotivation	63	0.07	0.53	0.597

Among teachers, differences in levels of autonomous motivation ($H = 9.55$, $df = 3$, $n = 63$, $p = 0.023$) and amotivation ($H = 8.83$, $df = 3$, $n = 63$, $p = 0.032$) were found depending on the size of the town/village in which they worked. Those working in medium-sized towns had the lowest levels of autonomous motivation and the highest levels of amotivation (lack of motivation). There were no significant differences in the level of motivation according to the level of career promotion (autonomous motivation: $H = 3.84$, $df = 2$, $n = 63$, $p = 0.146$; controlled motivation: $H = 0.15$, $df = 2$, $n = 63$, $p = 0.928$; amotivation: $H = 5.69$, $df = 2$, $n = 63$, $p = 0.058$). Among the students, differences were found in the level of controlled motivation according to place of residence ($H = 7.82$, $df = 3$, $n = 75$, $p = 0.049$). Those living in rural areas and medium-sized cities had higher levels of this dimension of motivation than those living in small and large cities.

Discussion

Understanding the role of motivation in human behavior is particularly important in education, as we prepare children to be autonomous and meet the challenges of living in the 21st century. The self-determination theory (SDT) allows for extensive research on human motivation (Liu et al., 2016). In the context of the SDT, fostering the autonomy of both teachers and students has significant advantages in terms of educational outcomes over control-oriented strategies, i.e., those that rely more on extrinsic motivation (Deci & Ryan, 2016). Autonomous motivation was the largest contributor for the respondents, which leads us to believe that individuals with such motivation can enhance their students' intrinsic motivation. Research indicates that autonomously motivated students are more engaged, satisfied, and happy and less bored, anxious, and depressed (Howard et al., 2021); they are also able to learn more and they enjoy school (Taylor et al., 2014; Vasconcellos et al., 2020). It also indicates that most of the respondents are people for whom teaching is a passion (Vallerand, 2016). Interestingly, no statistically significant differences were noted in the individual dimensions of motivation between working teachers and students preparing to become teachers. The differentiation was only apparent after taking into account the place of work or residence of the respondents, which may be related to the socioeconomic conditions of the given locations. Particularly in the case of students, it can be seen that levels of extrinsic motivation and introjection were higher in rural areas, suggesting that in those locations the teaching profession is more likely to provide social recognition and satisfying financial gratification than in large cities. Perhaps greater differentiation would be visible when considering all five types of motivation or the needs that are key to the SDT: the need for autonomy, competence, and relationships with others (Deci & Ryan, 1985). However, we can also consider the possibility that the teaching profession allows us to meet these needs, which is why autonomous motivation was so high in the study group. It is worth adapting the methods of educating future teachers to the changing world, e.g., introducing more distance learning methods and using advanced

technologies and activation methods, so that the need for competences is met at an increasingly higher level.

An interesting result was obtained with regard to satisfaction with having chosen the teaching career path. Among the working teachers, as many as one third of the respondents were not satisfied, while it was only four percent among students.

It is worth quoting a few statements from the teachers who are less satisfied with their career choice after years of work:

“I enjoy working with children; it gives me satisfaction, but, at the same time, the demands, e.g., from parents, and the imposed pace of work, make me feel overloaded, so this job satisfaction is not a constant” (teacher trainee; 3 years of experience)

“The current educational situation in Poland is very disappointing to me. When I started my job, I had enthusiasm and joy for what I was doing, I still love the contact with the young generation, but it is killing me to hear in the media what people think of us. The reality has nothing to do with it: although the salary is fixed, it is ridiculously low; I would prefer not to have two months of holiday, but to take holidays when I feel like it, not when I have to. And the frustrations of parents and their demanding attitude is the ‘icing on the cake’!!!” (nominated teacher; 8 years of experience)

“The earnings are inadequate for the commitment, preparation time, and responsibility” (nominated teacher; 14 years of experience)

“There are pros and cons; the work is difficult, and the motivation is weak. People judge us more often by seeing our failures than our successes. I think if there was more support from the parents’ community, it would be more pleasant to work” (diploma teacher; 18 years of experience)

These statements may indicate diminishing satisfaction as the teachers clash with the reality of schools, or the reality of the whole education

system in Poland. In recent years, a number of developments have made Polish teachers feel increasingly uncomfortable in their role. The factors that have contributed to this situation include frequently changing regulations, frequent and large-scale reforms, low salaries compared to the average salary in the country, and the COVID-19 pandemic, which separated teachers from their students and forced them to deliver the school curriculum in a way they had not been prepared for, i.e., through remote teaching. Those who are studying pedagogy may have a more idealized image of the teacher's work that has not yet been verified. The finding that one third of teachers are unsatisfied is an alarm bell for the system, as exactly this percentage of people are considering changing their jobs. In large cities, there is already a shortage of teachers and many vacancies. In smaller towns, the situation is less acute for the time being, but, without change it will only get worse. Also, one cannot assume that young people will stay in the profession for long: there may be an increase in teachers resigning after a few months on the job. The quality of education is also important. If teachers stay in the job but do not find it a source of satisfaction, it will be difficult for them to trigger autonomous forms of motivation, which will result in the students' performing poorly at school (Deci & Ryan, 2016; Pelletier & Rocchi, 2016).

Limitations and Future Research

The research was conducted on a small sample of people, which means that it was not possible to achieve a wide diversity of respondents in terms of the type of workplace, place of residence, and field of studies. In such a situation, it is also more difficult to identify weaker effects (Cohen, 1992). Cross-gender comparisons would also be of interest, especially with regard to gender stereotypes and the declining prestige of the teaching profession.

Generalizing the results to the general population of teachers and students should be approached with caution, also because the respondents may have avoided giving very frank answers. Such objections may

have been the result of uncertainty about the actual anonymity of the research, as the respondents knew that one of the authors was not only a school teacher, but also an instructor of pedagogy. This may have shifted the responses towards what the respondents consider positive.

It would also be important to tailor the motivation questionnaire more to the teaching profession, because only the autonomous motivation scale showed high reliability in this study. It would be worth creating a tool that would allow for the proper examination of all five types of motivation and amotivation in the context of the teaching profession and to develop standards for assessing a particular type of motivation in a particular individual with reference to the population. The tool could then serve as a self-reporting tool and could be used for preventing burnout or for interventions to enhance autonomous motivation. Such behavioral interventions are highly beneficial in relation to teachers since they have a strong influence on students and because teachers' behavior is susceptible to change (Reeve & Cheon, 2021; Ryan & Deci, 2020; Su & Reeve, 2011).

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Professional Competence of Senior-Grade Primary School Teachers in Educating Students with Disabilities in an Inclusive Education Model

(pp. 115–135)

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Abstract

Research Objectives and Problems: The aim of this study is to analyze teachers' self-assessment of their professional competence in educating students with and without disabilities in grades IV–VIII of primary school. The study investigates two specific questions: (1) What differences can be observed in the self-assessment of professional competence among teachers when educating students with and without disabilities? (2) What is the relationship between the overall assessment of competence for educating

students with disabilities and the assessment of specific competencies for educating students without disabilities among the surveyed teachers?

Research Methods: The data for this analysis was collected using the *Questionnaire of Teacher's Perceived Professional Competence* (KPKZN). A total of 107 teachers of grades IV–VIII (the 2nd stage of primary education) participated in the study.

Structure of the Article: The article begins by introducing the concepts of competence, inclusion, and subject-specific teacher preparation for working with students with disabilities based on existing literature. It then outlines the research methods, followed by an analysis and discussion of the results.

Research Results and Their Impact on the Development of Educational Sciences: The research findings indicate that teachers' self-assessments of most competencies, as well as their overall evaluation of competence when working with students with disabilities, are significantly lower compared to their self-assessments of competence when working with students without disabilities.

Conclusions and Recommendations: Teachers working with students with disabilities require specialized competencies—such as evaluative, psychological, substantive-methodological, innovative, and communicative skills—that enable them to effectively support and teach their students.

Keywords: competence, teachers, education, students, disability

Introduction

Fostering a holistic view of the world and the neurodiverse nature of students, which enables their personalistic and social functioning in daily school life, is an important task for schools as they strive to shape students' futures based on their occasionally unobvious skills and abilities. Bridging gaps in the educational process as well as managing the often difficult and multifaceted work with students who require additional support are both much needed, if not indispensable, for ensuring equal educational opportunities. Approaching each child or student as an

individual while respecting the needs of other participants in the educational process requires the active involvement of students and their parents, but perhaps more importantly, it calls for professionally trained staff who understand and are committed to this demanding process. It is precisely through specific teaching-learning methods, successful communication, and classroom management that teachers can create a learning environment that either promotes or disrupts the educational and formative success of their students (Gümüş, 2022; Peklaj, 2015).

The professional formation of a teacher involves acquiring knowledge and skills as well as developing appropriate attitudes. These elements can collectively be conceptualized using the notion of competence, defined as “the capacity and readiness of a subject to perform tasks at a certain level,” emerging “as a result of the integration of knowledge, a substantial number of minor skills, and proficiency in value judgments” (Kwiatkowska, 2008, p. 35). Such an approach underscores the complex nature of both professional preparation and its outcomes: a set of particular dispositions that enable teachers to plan educational activities, efficiently employ various tools of educational influence to accomplish goals, and evaluate the latter.

In order to function effectively in their professional roles, teachers must achieve the highest possible level of a wide range of specific competencies, which pedagogical literature has long presented in classifications that range from less detailed (Dylak, 1995; Hamer, 1994; Kwaśnica, 1995) to more elaborate (Kupisiewicz, 2016; Mandal, 2018; Rubacha, 2000; Strykowski, 2003). There is broad consensus that teachers’ professional competencies follow a factorial structure. Within the diverse classifications, one can distinguish both broadly defined competencies—such as soft and hard skills—as well as those tied to specific areas of knowledge, skills, or experience. These may include competencies related to substantive expertise, psychological-pedagogical approaches, research, socio-cultural engagement, emotional intelligence, communication, IT proficiency, curriculum design, and the implementation of lifelong learning strategies (Kazanowski et al., 2024).

It has become a particular challenge for teachers to supplement their existing competencies in response to the changes brought about by the

development of inclusive education (Chrzanowska & Szumski, 2019; Gajdzica, 2020; Kołodziejczyk, 2020). Three competencies are considered key in this respect: a personalized approach to learning, understanding and respect for diversity, and commitment to the values of social inclusion (Kafedzić et al., 2010). Teachers with a high degree of competence can significantly contribute to student success and positively influence the development of all learners, including those with disabilities (Ahsan et al., 2012). Conversely, insufficient competence, manifesting in negative attitudes toward the inclusion of students with disabilities in mainstream schools, and the absence of individualized approaches may hinder the inclusion process (Lee et al., 2014).

Inclusive education operates within a multi-layered framework (encompassing institutional, interpersonal, and intrapsychic dimensions) in which attention is focused on the future of individual students (Krause, 2002). For students who require specific accommodations in inclusive education settings, it is necessary to broaden the scope of professional education for all groups involved in the educational process. This requires revisiting the current standards of mainstream school education and devising forms of teacher support that are informed by both individual teacher needs and the entire educational environment (cf. Gajdzica, 2022).

At the second stage of education, the so-called “subject teachers” play a crucial role in creating a friendly environment in which all students have the opportunity to succeed (Shevchenko et al., 2020). Equipping these teachers with factual knowledge about the inclusive education process is vital. The educational standards for teacher preparation are outlined in Annex 1 of the Regulation of the Minister of Education and Science of July 25, 2019, on the Educational Standard for the Teaching Profession (Journal of Laws of 2019, item 1450, as amended). The Annex specifies that graduates should understand the concept of “inclusive education,” its implementation, the diverse needs of students, and the corresponding responsibilities of schools in adapting educational processes (III. Learning Outcomes; 1. General Learning Outcomes).

However, the “Minimum number of hours of structured classes and ECTS credits” table in Annex 1 does not allocate specific courses or hours

to this instruction (Journal of Laws of 2019, item 1450, as amended). While more detailed requirements could be excessive, the lack of dedicated provisions raises concerns that some higher education institutions may address these issues only superficially. This limited instruction risks falling short of achieving the intended learning outcomes in inclusive education, particularly in preparing teachers to work with students with diverse needs, including disabilities.

This paper analyzes the competencies that teachers identify as relevant to educating students with and without disabilities at the second stage of education. Self-evaluation in this regard holds importance for behavioral adjustment, as research suggests that evaluating one's own competencies promotes in-depth reflection on one's professional role. We believe that research on teachers' self-assessment of their competencies in teaching students with disabilities can help them better understand their needs for effective preparation to work with this group of students.

Such reflection is important for teachers as they seek "paths of personal development" (Grochowalska, 2013, p. 217) as an expression of "self-awareness and a sense of professional value" (Szempruch, 2012, p. 197). According to Grochowalska (2013), the belief in one's own competencies empowers teachers to "act effectively, take on new challenges, and handle new situations well" (p. 224).

Research method

This research explores the professional competence of teachers in primary school grades IV to VIII.¹ The aim of the study is to analyze teachers' self-assessment of their professional competence in educating students with and without disabilities. The principal research question was formulated as follows: How do teachers of grades IV to VIII in primary

¹ In Poland, primary school spans eight years (grades I–VIII), with pupils beginning compulsory education at the age of seven. It is divided into two stages: the first educational stage (grades I–III) and the second educational stage (grades IV–VIII).

school assess their own professional competence to educate students with disabilities?

The specific research questions addressed are:

1. What differences can be observed in the self-assessments of professional competence for educating students with and without disabilities among the surveyed teachers?
2. What is the relationship between the overall assessment of competence to educate students with disabilities and the assessment of specific competencies for educating students without disabilities among the surveyed teachers?

The study received approval from the Ethics Committee of the University of Warmia and Mazury in Olsztyn, Poland (Decision No. 14/2024).

The following tool was used to collect the research material:

The *Questionnaire of Teacher's Perceived Professional Competence* (Byra & Kazanowski, 2015) measures professional competence across five factors or dimensions:

1. **Evaluative Competence:** Comprising 8 items and explaining nearly 30% of the variance, this factor covers statements related to teachers' competence in evaluating student achievements and applying these evaluations into their didactic and educational work.
2. **Psychological Competence:** Comprising 9 items and explaining 17% of the variance, this factor focuses on competencies such as effectively and consistently handling difficult situations, building authentic relationships with students, and demonstrating sensitivity, patience, openness to their needs, and full acceptance of their uniqueness.
3. **Substantive-Methodological Competence** includes 10 items that collectively account for approximately 7% of the variance in results. This factor encompasses competencies related to substantive professionalism and the optimization of methodological activities.

4. **Innovative Competence** contains 9 items, explaining more than 4% of the variance. This factor represents the ability to fulfill professional roles innovatively, reflected in novel approaches to teaching and education.
5. **Communicative Competence** consists of 7 items, explaining over 4% of the variance. This factor covers the ability to communicate effectively, tailor communication to match the individual perceptual abilities of students, and initiate authentic dialogue with them (Byra & Kazanowski, 2015).

In total, the questionnaire comprises 43 statements, and the extracted factors collectively explain 61.30% of the variance (Byra & Kazanowski, 2015). The questionnaire is divided into two parts:

- **Part A:** Self-assessment of competence in working with students without disabilities.
- **Part B:** Self-assessment of competence in working with students with disabilities.

Parametric tests were applied to analyze the survey results statistically. Differences between dependent groups (self-assessment of competence to educate students with and without disabilities) were measured using Student's t-test. The Cohen's d statistic was employed to calculate the effect size for observed differences, while Pearson's correlation coefficient (r) was used to examine relationships between variables. This analysis was followed by a multiple regression analysis to investigate the relationship between the overall self-assessment of competence to educate students with disabilities (KOuzn) and the assessment of specific competencies to educate students without disabilities (ubn).

Description of the Surveyed Group

The study involved 107 teachers of grades IV–VIII working in primary mainstream schools in the Lubelskie, Mazowieckie, and Warmińsko-Mazurskie Voivodeships. The mean age of the participating teachers was 43.24 years, and the mean duration of their teaching experience was 17.02 years.

**Table 1. Socio-Demographic Characteristics
 of the Surveyed Teacher Group**

Socio-demographic variables	Teachers in senior primary school grades (N = 107)	
	N	%
Gender		
Female	93	86.92
Male	14	13.08
Place of residence		
Village	48	44.86
Town (up to 20,000 residents)	23	21.50
Medium town (20,000–100,000 residents)	18	16.82
Large town (over 100,000 residents)	18	16.82
Social surroundings of the school		
Village	63	58.88
Small town (up to 20,000 residents)	18	16.82
Medium town (20,000–100,000 residents)	10	9.35
Large town (over 100,000 residents)	16	14.95
Educational background		
Bachelor's degree	4	3.74
Master's degree	102	95.33
Doctoral degree	1	0.93
Declared background in special education		
Yes	62	57.94
No	45	42.06

Socio-demographic variables	Teachers in senior primary school grades (N = 107)	
	N	%
Dominant teaching modality		
Group	87	81.31
Individual	20	18.69
Experience in working with students with disabilities		
Yes	93	86.92
No	14	13.08

The surveyed group was predominantly composed of women (86.92%) and residents of towns (55.14%). However, the majority of the teachers worked in schools located in rural areas (58.88%). Over 95% of the participants held a master's degree (95.33%) and mainly taught groups of students (81.31%). Notably, most teachers reported having some background in special education (57.94%) and experience working with students with disabilities (86.92%), such as mild intellectual disabilities (66; 61.68%), autism (46; 42.99%), aphasia (17; 15.89%), physical disabilities (17; 15.89%), multiple disabilities (16; 14.95%), hearing impairments (13; 12.5%), moderate or severe intellectual disabilities (8; 7.48%), and visual impairments (7; 6.54%).

Analysis of Survey Results

A comparison of self-assessments of professional competence for educating students with and without disabilities revealed significant differences (Table 2). Interestingly, background in special education, declared by more than 57% of respondents, did not sufficiently influence their competence assessments to equalize these for both groups of students, even in a single dimension.

**Table 2. Self-Assessment of Competence to Educate Students
 With and Without Disabilities Among Teachers in Mainstream Schools
 (N=107)**

Competence type	Educating students without disabilities		Educating students with disabilities		t	p	d
	M _{ubn}	SD _{ubn}	M _{uzn}	SD _{uzn}			
Evaluative competence (KE)	27.91	3.98	30.24	5.96	-5.363	<0.001	0.59
Psychological competence (KP)	40.10	3.63	38.73	5.55	3.343	0.001	0.38
Innovative competence (KI)	34.25	6.31	31.85	7.10	4.615	<0.001	0.38
Communicative competence (KK)	31.44	3.24	29.88	4.76	4.581	<0.001	0.48
Substantive-methodological competence (KM)	43.92	5.29	39.75	7.31	7.433	<0.001	0.79
Competences—summary assessment (KO)	20.63	2.19	19.87	3.23	3.38	0.001	0.34

M – mean, SD – standard deviation, ubn – students without disabilities, uzn – students with disabilities, t – t-test value for dependent variables, p – probability level of the t-test for dependent variables, d – effect size

Statistically significant differences were observed in the self-assessment of professional competence for educating students with and without disabilities across all competencies included in this analysis. Respondents rated their preparation for professional roles with students without disabilities significantly higher for psychological (KP), innovative (KI), communicative (KK), and substantive-methodological (KM) competencies compared to when students with disabilities were involved. The only exception was evaluative competence (KE), wherein higher scores were recorded for working with students with disabilities.

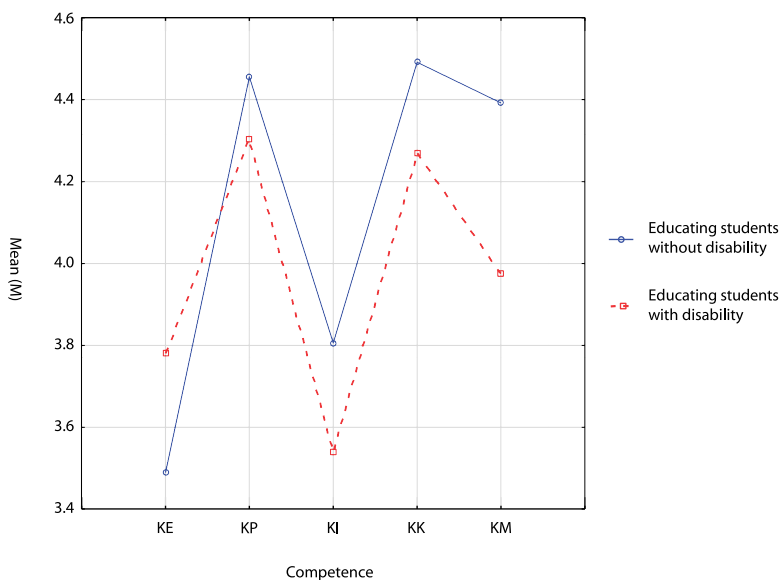
Based on computations that account for the number of items comprising each specific dimension of the studied competencies, it can be further concluded that:

- When working with students without disabilities, communicative competence received the highest ratings (MKK_{ubn} = 4.49), while evaluative competence ranked the lowest (MKE_{ubn} = 3.49);

- When working with students with disabilities, psychological competence was rated the highest (MKPuzn = 4.30), whereas innovative competence received the lowest rating (MKIuzn = 3.54).
- The largest discrepancies were observed in the self-assessment of substantive-methodological competence.

Based on the obtained results, it may be concluded that student disability has the greatest impact on the self-assessment of substantive-methodological competence ($d = 0.79$, indicating a strong effect). Teachers identified this competence as the most important for preparing to work with students with disabilities and recognized its greatest practical value (given its effects). Effect sizes were moderate for evaluative and communicative competencies and low for the remaining dimensions.

Figure 1. Self-Assessment of Professional Competence to Educate Students With and Without Disabilities Among Teachers in the Second Stage of Education



KE – evaluative competence; KP – psychological competence; KI – innovative competence;
KK – communicative competence; KM – substantive-methodological competence

Thus, it appears that differences arise not only when comparing various types of competencies with one another but also when analyzing their profiles to identify the strongest and least developed dispositions for educating students with and without disabilities.

Table 3. Correlation Matrix for the Self-Assessment of Competence to Educate Students With and Without Disabilities Among Teachers Working in Primary School Grades IV–VIII (N = 107)

Variable	KE _{ubn}	KP _{ubn}	KI _{ubn}	KK _{ubn}	KM _{ubn}	KO _{ubn}	KE _{uzn}	KP _{uzn}	KI _{uzn}	KK _{uzn}	KM _{uzn}	KO _{uzn}
KE _{uzn}	–											
KP _{ubn}	0.65 ***	–										
KI _{ubn}	0.82 ***	0.52 ***	–									
KK _{ubn}	0.51 ***	0.84 ***	0.42 ***	–								
KM _{ubn}	0.69 ***	0.71 ***	0.64 ***	0.65 ***	–							
KO _{ubn}	0.88 ***	0.85 ***	0.84 ***	0.77 ***	0.87 ***	–						
KE _{uzn}	0.65 ***	0.55 ***	0.55 ***	0.54 ***	0.53 ***	0.67 ***	–					
KP _{uzn}	0.38 ***	0.64 ***	0.31 ***	0.69 ***	0.47 ***	0.56 ***	0.71 ***	–				
KI _{uzn}	0.65 ***	0.45 ***	0.68 ***	0.44 ***	0.52 ***	0.67 ***	0.89 ***	0.57 ***	–			
KK _{uzn}	0.39 ***	0.58 ***	0.34 ***	0.67 ***	0.46 ***	0.55 ***	0.74 ***	0.92 ***	0.66 ***	–		
KM _{uzn}	0.53 ***	0.53 ***	0.51 ***	0.55 ***	0.62 ***	0.65 ***	0.89 ***	0.77 ***	0.82 ***	0.80 ***	–	
KO _{uzn}	0.58 ***	0.60 ***	0.54 ***	0.63 ***	0.58 ***	0.69 ***	0.94 ***	0.86 ***	0.88 ***	0.90 ***	0.95 ***	–

*** $p < 0.001$; KE – evaluative competence; KP – psychological competence; KI – innovative competence; KK – communicative competence; KM – substantive-methodological competence; KO – summary assessment of competence; ubn – students without disabilities; uzn – students with disabilities

All relationships between the self-assessments of competence for educating students with and without disabilities among the surveyed teachers proved statistically significant ($p < 0.001$). For a considerable majority of the variables, the correlation values were high to very high. As expected, the highest correlations were observed between the overall self-assessment of competence to educate students without disabilities (KOubn) and its components, and, similarly, between the overall self-assessment of competence to educate students with disabilities (KOuzn) and its components.

Particular attention should be drawn to the relationships between specific dimensions of competence to educate students without disabilities (KEubn, KPubn, Klubn, KKubn, KMubn) and the overall self-assessment of competence to educate students with disabilities (KOuzn). Among these variables, the strongest relationship was found between communicative competence (KKubn) and the overall self-assessment of competence to educate students with disabilities (KOuzn) ($r = 0.63$).

Subsequently, a multiple regression analysis was performed (see Table 4) to estimate the significance of how the self-assessment of each type of competence to educate students without disabilities (independent variables) translates into the overall self-assessment of professional preparation to educate students with disabilities (dependent variable).

**Table 4. Regression Analysis Results: Overall Self-Assessment
 of Competence to Educate Students With Disabilities (KOuzn) and
 Specific Competencies for Educating Students Without Disabilities (Ubn)
 Among Second-Stage Teachers**

N=107	Summary of Regression for Dependent Variable: KOuzn; R=0.709; R ² =0.503; Adjust. R ² =0.478; F(5.101)=20.414; p<.000; Standard error of the estimate: 2.335					
	BETA	SE with BETA	B	SE with B	t (99)	p
Intercept			-2.027	2.530	-0.801	0.425
KEubn	0.192	0.138	0.156	0.112	1.389	0.168
KPubn	-0.041	0.150	-0.037	0.134	-0.273	0.785
KLubn	0.165	0.125	0.084	0.064	1.322	0.189
KKubn	0.446	0.133	0.445	0.132	3.365	0.001
KM-Mubn	0.080	0.115	0.049	0.070	0.693	0.490

KOuzn – overall assessment of competence to educate students with disabilities; R – multivariate correlation coefficient;
 R² and Adjusted R² – coefficients of determination; F – F-test value; p – significance level;
 BETA – standardized regression coefficient; B – unstandardized regression coefficient; t – t-test statistic.

The regression model was significant ($F(5, 101) = 20.414$; $p < 0.001$) and accounted for 50.3% of the variation in the dependent variable ($R^2 = 0.503$). The multivariate correlation coefficient ($R = 0.709$) indicates a strong relationship between the overall self-assessment of competence to work with students with disabilities and the combined independent variables. However, among the independent variables, only the self-assessment of communicative competence had a statistically significant effect on the overall self-assessment of competence to educate students with disabilities ($\beta = 0.45$; $t = 3.37$; $p = 0.001$). The positive relationship suggests that higher communicative competence contributes to an increased overall assessment of one's competence to educate students with disabilities ($B = 0.445$).

It is noteworthy that communicative competence was rated fairly high by the surveyed teachers ($M_{KKubn} = 4.49$ on a scale of 1–5). This finding highlights its key role in developing professional competence for inclusive education, but also suggests the need to identify additional

factors—beyond the variables included in this model—that could enhance the preparation of second-stage teachers for working with inclusive classes.

Discussion and Conclusions

Regarding the first specific research question (*What differences in self-assessments of professional competencies to educate students with and without disabilities may be observed among the surveyed teachers?*), it was observed that teachers rated most of their competencies—including their overall self-assessment—to teach students with disabilities in the second phase of education (grades IV–VIII) significantly lower than their competencies to teach students without disabilities. Similar findings were reported in previous research conducted among teachers in the first phase of education (Kazanowski et al., 2024).

This assessment might indicate that teachers' willingness to apply principles of inclusive education in practice is significantly limited, as they may not feel adequately prepared to teach all children, regardless of their abilities. An especially notable finding is the discrepancy in the self-assessment of substantive-methodological competence, which pertains to subject-specific knowledge and the didactics of teaching. In the opinion of the surveyed teachers, their knowledge of the subject and didactic experience were the least sufficient when applied to teaching students with disabilities. These results may suggest that a proportion of teachers still operate within the framework of the medical model of disability, which emphasizes differences rather than the common traits shared by individuals with and without disabilities. This model tends to attribute learning difficulties to the individual with a disability rather than to an exclusionary educational environment (Skóra, 2021).

Moreover, the overall self-assessment of competence in educating students with disabilities is significantly lower than that for educating students without disabilities. These findings are concerning, as insufficient preparation for teaching students with disabilities has been highlighted

in the literature for some time (Chrzanowska & Szumski, 2019). Although the relationship is complex, this discrepancy may also reflect a reluctance or disapproval toward the inclusion of students with disabilities in mainstream schools (cf. Ćwirynkało & Myśliwczyk, 2016; Ćwirynkało & Żyta, 2015; Uberman & Mach, 2016), which could be masked by teachers' negative self-assessments of their competence to work with these students. If true, this would imply a deeper and more serious issue tied to attitudes—including stereotypes, prejudices, and discriminatory inclinations—that cannot be resolved solely through standard training programs designed to improve teachers' skills in recognizing and meeting students' needs. Such measures would remain insufficient without a fundamental shift in teachers' beliefs regarding the value and validity of inclusive education.

In addressing the second research question (*What is the relationship between the overall assessment of competencies to educate students with disabilities and the assessment of specific competencies to educate students without disabilities among the surveyed teachers?*), a strong, positive, and statistically significant correlation emerged. Teachers who rated themselves highly in general teaching effectiveness for students without disabilities also tended to rate themselves more confidently in teaching students with disabilities. Further analysis revealed that communicative competence in teaching students without disabilities appears to have the strongest influence on teachers' overall self-assessment of competence to educate students with disabilities, despite their lower ratings in substantive-methodological skills. This finding suggests that strengthening teachers' substantive-methodological skills could play a crucial role in improving their overall confidence and effectiveness in inclusive classrooms. It also underscores the importance of substantive-methodological competence in shaping positive attitudes toward inclusive education.

These results attest to the long-recognized need for better professional preparation of mainstream education teachers to work with students with disabilities. Such preparation should ensure that students with disabilities can fully participate in school life on equal terms with their peers (Chrzanowska & Szumski, 2019; Gajdzica, 2013, 2020; Kochanowska, 2015; Kołodziejczyk, 2020). The degree to which teachers are equipped to educate

students with disabilities is not currently a criterion in staff hiring procedures or in decisions regarding the enrollment of students with disabilities. Admissions of children with disabilities to mainstream schools are likely to continue increasing regardless, and the lack of teacher preparation does not seem to be a significant obstacle. However, the successive changes to the educational model introduced in recent years have not yielded any clear improvements in terms of teacher preparation for inclusive classrooms.

Substantial research into the contributing factors and available support mechanisms is required to ensure that this process of change is better managed and effectively steered in the right direction. Therefore, it is certainly worthwhile to consider placing greater emphasis on courses addressing the needs and functioning of individuals with diverse educational requirements in teacher education curricula. Expanding obligatory instruction in this area—specifically focused on the challenges faced by children and young people—would offer teachers more tools to identify and meet students’ individual educational needs within the limits of the school’s available resources and conditions. This, in turn, would help ensure that lessons run smoothly and effectively, ultimately achieving a synergy of thought and action among all participants in the teaching and learning process.

The present study has certain limitations. It was conducted using a set of professional competencies that, in previous research (Byra & Kazanowski, 2015), were identified by teachers as particularly important to their professional work. Moving forward, it may be valuable to supplement this set with competencies specifically required for work in inclusive education settings. It would also be valuable to pay more attention to factors within the professional environment of the surveyed teachers that support the development and enhancement of their professional competencies.

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Teacher in Scientific Research by Bishop Zygfryd Ignacy Kowalski (1910–1995) (pp. 137–152)

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Abstract

Research aims and problems: The aim of this article is to present the pedeutological views of Bishop Zygfryd Ignacy Kowalski, who lived from 1910 to 1995. He studied pedagogy at Nicolaus Copernicus University in Toruń (UMK). Alongside his pastoral duties, he worked as a religion teacher in schools in Toruń, including at the Pedagogium, and later lectured in pedagogy and didactics at the Seminary for Priests in Pelplin. The main focus of this paper is Fr. Kowalski's pedeutological thought. The article seeks to answer specific questions concerning: his pedagogical studies as a preparation for his pedagogical studies, his research on teachers in both published and unpublished works, and his research methods.

Research methods: This article employs historical research methods. In order to examine the issues outlined above, sources from the Archives of Nicolaus Copernicus University (AUMK), the Archives of the Diocese of Pelplin, as well as published texts on pedeutology, were analyzed.

Structure of the article: The article is organized around two main topics: 1. Fr. Kowalski's pedagogical studies at UMK, which served as his foundation for scientific research. 2. His pedeutological views, which form the core of the discussion. These sections are dedicated to his academic curriculum and

the essence of his pedeutological thought. The article is further structured with an introduction and concluding remarks that summarize the analysis of the sources used.

Research results and their influence on the development of pedagogical sciences: This article is a contribution to the advancement of research on the teaching profession in Poland. Using Fr. Kowalski's writings as a case study, it shows methodological aspects of designing pedeutological research projects, analyzing results, and formulating theories based on those findings.

Conclusions and/or recommendations: The conclusions drawn from the source analysis refer to both pedagogical education and pedeutological theory. They underscore the significance of Fr. Kowalski's research and its continuing relevance to the training of future teachers. A key contribution of his work was identifying the determinants of the teaching profession, with particular emphasis on its religious, moral, and social determinants. These aspects continue to be of relevance today.

Keywords: Zygfryd Kowalski, pedagogical studies, teacher, pedagogue, pedeutological research

Introduction

This article presents Fr. Zygfryd Kowalski's perspective on the role of a teacher, analyzed within the context of his pedagogical education and career, primarily his studies at Nicolaus Copernicus University (UMK). While previous biographical accounts have highlighted his pastoral activities and contributions to the development of catechetics, his pedagogical views, which also merit attention, have largely been overlooked in existing educational historiography.

The first part of this text briefly discusses the pedagogical curriculum at UMK during Fr. Kowalski's time, indicating the outstanding group of academic teachers whose lectures he attended. It is emphasized that, throughout his studies, he received thorough preparation for pedagogical research. The second part concerns Fr. Kowalski's views on teacher's work

and his pedeutological research projects. The sources that were mainly used to examine these topics include documents from the UMK Archives, such as Fr. Kowalski's master's thesis on pedeutology, biographical materials from the Archives of the Pelplin Diocese,¹ and published texts on teaching.

Fr. Zygfryd Kowalski—Student at Nicolaus Copernicus University

Father Zygfryd Kowalski was born in 1910 in Koronowo. He studied at the Seminary for Priests in Pelplin, where he was ordained in 1932 (Student files of Zygfryd Kowalski; Doctoral files of Zygfryd Kowalski; Kasyna, 2001, pp. 449–459; Mross, 2003, pp. 11–112; Nadolny, 2021 p. 325; Nitecki, 1992, p. 111; Prokop, 1998, pp. 71–73). During the interwar period, alongside his pastoral duties, he also taught religion and catechetics at the State Pedagogical College (Pedagogium) and a vocational school in Toruń. Beginning on 1 March 1945, he served as a religion teacher at the 1st Nicolaus Copernicus State Junior High School and Secondary School in Toruń. In 1962, he was consecrated as a bishop (see photo No. 1).

Photo 1. Bishop Z. Kowalski, 1962



Source: Archives of the Pelplin Diocese

¹ A special thanks is owed to Fr. Professor Anastazy Nadolny for granting me access to materials from the Archives of the Diocese of Pelplin, for which I am sincerely grateful.

Father Kowalski was among the first students to enroll at Nicolaus Copernicus University in Toruń after its establishment. He received an excellent education in pedagogy there (Student files of Zygfryd Kowalski; Nitecki, 1992, p.111; Prokop, 1998). It should be mentioned that he had dreamt of studying at a university during the interwar period. However, due to the outbreak of the Second World War, he was unable to pursue his planned studies at Jan Kazimierz University in Lviv, where he had enrolled in the Faculty of Theology shortly before the war (as mentioned in his CV) [Enrollment card, Curriculum Vitae] (n.d.). After the war, he obtained permission from the Pelplin Curia for taking up studies at Nicolaus Copernicus University in Toruń.

Beginning on 5 January 1946, Fr. Kowalski studied pedagogy at the university under the supervision of Professor K. Sośnicki (Góra, 2014, pp. 13–15; Kalemka, 2006; Lipowska, 1974, pp. 29–32; Nalaskowski & Szulakiewicz, 2009, pp. 60–63 and 134; Moroz, 1974, pp. 25–28; Pólturzycki, 2003, pp. 19–27; Wołoszyn, 1974, pp. 19–24; Wołoszyn, 1989, pp. 295–301). Prof. Sośnicki served as the supervisor for both his master's thesis and doctoral dissertation.

Details about the curriculum of pedagogical studies at Nicolaus Copernicus University in the post-war years can be gleaned from the exam protocols that Fr. Kowalski had to complete to finish his degree. Between 1948 and 1950, he took these exams at the Faculty of Humanities before the Commission for Master's Degree Examinations. The commission was chaired by Tadeusz Czeżowski, a philosopher and student of Karol Twardowski, who was also the supervisor of Fr. Kowalski's master's thesis (Szulakiewicz, 2010). The then curriculum included exams administered by eminent academic teachers and creators of scientific schools, many of whom had come to Toruń from Stefan Batory University in Vilnius and Jan Kazimierz University in Lviv.

Fr. Kowalski's diploma and exam records (n.d.) list the following subjects: "Outline of the History of Philosophy"; "General Psychology"; "History of Education, Including History of Education in Poland against the Background of Social Development and Ethical Trends"; "Logic with the Methodology and Theory of Cognition"; "Pedagogy and Didactics,

Including a Review of Modern Trends in These Areas of Science, with Particular Emphasis on the Views of a Contemporary Pedagogical Authors.”; “School Law and Organisation”; “Developmental Psychology and Experimental Pedagogy”; and “Outline of Sociology.”

An important aspect of the studies at that time was the examination process, which took place under strict supervision. Each student taking the written exam was presented with three topics and required to select one. Fr. Kowalski chose the topic: “Aspects of the Psychology of Moral Feelings.” He sat for this exam on 26 June 1950. According to the records, the exam lasted from 10:30 a.m. to 3:15 p.m., resulting in a 10-page thesis. In his work, Fr. Kowalski discussed the following issues: terminological issues, the formation of moral feelings, the relationship between moral and social feelings, and existing research on the subject. Prof. K. Sośnicki evaluated the thesis positively, noting both its strengths and weaknesses ([Opinion by K. Sośnicki] 1950, 27 June).

Following the written exam, Fr. Kowalski underwent an oral exam (on 28 June 1950) before K. Sośnicki and A. Lewicki. According to the protocols, he answered questions related to the issues discussed in his master’s thesis. One of the significant questions concerned the qualities of a teacher: “The methods and techniques of research on the features of a good teacher; assessment of their value.” Overall, both parts of the examination were deemed successful, and Fr. Kowalski received a very good mark.

Regarding the examinations, it should be emphasized that the academic staff responsible for the pedagogical education of students at UMK were distinguished scholars (Kalembka, 2006). These professors were not only prolific authors of important scientific works but also influential organizers of academic life. K. Sośnicki was a renowned author in the fields of pedagogy, the history of education, and theory of education; T. Czeżowski specialized in philosophy, ethics, and logic; A. Lewicki contributed significantly to developmental, educational, and experimental psychology; H. Elzenberg was an expert in the history of philosophy, aesthetics, and ethics; J. Lechicka dealt with the history of education and the didactics of history; and T. Szczurkiewicz was a respected scholar in the history of sociology and social thought. The publications and knowledge of these

distinguished academics inspired many graduates to pursue further research and earn doctoral degrees. This was also the case for Fr. Zygfryd Kowalski, who, shortly after obtaining his master's degree, initiated the process of obtaining his doctoral degree (Doctoral files of Z. Kowalski).

The Teaching Profession in the Research of Fr. Zygfryd Kowalski

Father Zygfryd Kowalski's interest in the teaching profession was already apparent before World War II, which was likely influenced by his role as was a member of the pedagogical staff of the State Pedagogical College in Toruń (Pedagogium) and his position as a teacher at the Vocational School (see photograph No. 2).

Photo 2. Vocational School in Toruń, 1938/1939. Fr. Z. Kowalski is pictured with students and teachers. He is the fifth person from the left in the first row.



Source: Archives of the Pelplin Diocese.

During this period, many outstanding teachers worked at the Pedagogium in Toruń, including Jan Schwarz (Szwarc), the school's director and editor of *Pedagogium*, a magazine dedicated to teacher psychology and

pedagogy, published between 1938 and 1939 (Schwarz, 1938, pp. 54–62). Fr. Kowalski's first article on pedeutology was published in this magazine. Titled "Podłoże religijne u kandydatów do stanu nauczycielskiego. Przyczynki ankietowy" [The Religious Background of Candidates for Teachers: A Survey] (Kowalski, 1938, pp. 22–47), this important work examined the religious influences on prospective teachers.

The article presented the results of a survey carried out among students from institutions that trained teachers. All the respondents were graduates of secondary schools and came from various regions of Poland (most of them from the west). The participants, who ranged in age from 18 to 27, included 81 individuals—18 men and 63 women.

The questionnaire was constructed with the guidance of J. Schwarz, the aforementioned director of the Pedagogium, who had also published works on pedeutology during that period (Schwarz, 1935, pp. 1–56). The survey itself was mainly retrospective, and asked participants to answer the following questions:

1. Please recall the first prayer you said in childhood that came from a genuine, inner need.
2. Please specify the periods of your most intense religiousness, including the years, causes, and circumstances.
3. Please describe any periods of religious doubt or indifference, including the causes and the time when they occurred.

The final question referred to the respondents' current situation:

4. Please describe your current attitude towards religion (faith, practices).

The analysis of the collected material yielded a wealth of information about the religiousness of teacher candidates and its importance in their future work. The theoretical reflection was supported by data presented in 13 tables and charts. Given the limitations of this article, it is not possible to present the final results of the study in full detail. Therefore, I will only hint at some key findings. Overall, Fr. Kowalski's analyses

offer insight into the development of religious life, religious awareness, and religious activity, along with their various manifestations. He discussed the origins of young people's religious awareness and engagement, the intensification of their religiousness, and the reasons behind their faith.

He devoted considerable attention to a discussion of religious crises and their causes. Above all, he acknowledged that neglecting the religious dimension contributes to the failure of the educational process. Of particular interest in this study are Fr. Kowalski's reflections on the motives for prayer, as well as its objects and forms. The research showed that the subjects of prayer included health, living conditions, children's motives, and deeper motives. According to the collected material, the factors leading to religiousness and its intensification were (in order of significance): First Holy Communion, life difficulties, retreats, religious instruction, environmental influences, religious associations, pilgrimages, and deeper emotional experiences.

In Fr. Kowalski's view, the intensity of religiousness can fluctuate following psychological patterns. He devoted an exceptional amount of space to the problem of religious crises and indifference. It is worth recalling the causes of these crises, as cited by the respondents in this study: family problems, the existence of evil in the world, life difficulties, environmental influences, books, and inner conflicts. Regarding religious crises, one significant conclusion stands out:

The phenomenon of religious crisis during adolescence is normal, and... it is very important for the formation of the individual's personality. It is beneficial when adolescents are aware of this: then, a crisis of faith will never turn into an apodictic and sinful religious negativism that doubts merely for the sake of doubting (Kowalski, 1938, p. 45).

From his analysis of the questionnaire responses, Fr. Kowalski drew conclusions about the respondents' attitudes towards faith, and in particular religious practices, which, according to him, shape what he called a "religious background," which, in turn, has an influence on their professional

work, specifically the work of teachers. Kowalski's conclusion on the importance of the religious dimension in teachers' lives is as follows:

The great ideal of education is to shape a valuable and happy person and a useful citizen. This goal will be met by a teacher who possesses a well-rounded personality: only a harmony between life goals and educational goals can ensure the fruitfulness of this difficult and responsible task. Convinced of the existence and value of the ultimate and highest truth, a teacher will in turn inspire conviction in others (Kowalski, 1938, p. 47).

Fr. Zygfryd Kowalski continued his research on the teaching profession as a student of Prof. Sośnicki, as previously mentioned. The results of this work were documented in his master's thesis, which he completed under the guidance of the founder of academic pedagogy in Toruń. In this thesis, Fr. Kowalski explored the religious and social foundations of the teaching profession and the significance of a teacher's role in social life (Student Files of Zygfryd Kowalski). On June 23, 1950, he submitted his thesis, titled *Analiza socjologiczna wpływu moralnego wychowawcy* [Sociological Analysis of the Teacher's Moral Influence] (Kowalski, 1950), to the Commission of the Faculty of Humanities for Master's Degree Examinations at Nicolaus Copernicus University (UMK). The thesis, consisting of 120 pages, formed the basis for his master's degree and was based on survey analysis.

The bibliography, which provided the theoretical framework for his research consisted of 47 publications spanning psychology, sociology, pedagogy, and ethics. Fr. Kowalski also incorporated data from personal diaries. The empirical material for his thesis was drawn from three questionnaires, two of which were conducted before World War II and one in 1947. The questions posed in these surveys were designed to investigate moral phenomena, which, in Fr. Kowalski's opinion, were connected with religious consciousness in Polish society.

The first survey was carried out in towns such as Brodnica, Gdynia, Grudziądz, Stargard, Tczew, and Działdowo. The second survey, targeting

young people from cities like Nowy Sącz, Kraków, Lviv, Vilnius, Warsaw, Łódź, and Pińsk, was prepared by a charitable institution in Kraków. In 1938, this institution held a competition titled “My Life,” and Fr. Kowalski, as he noted, borrowed material from this source. The questionnaire was addressed to proletarian youth, including orphans and children under the care of the institution. These questionnaires covered religious life, the conditions of moral life and accounts of how respondents celebrated Christmas and Easter. Additional questions addressed social issues, family dynamics and relationships with parents and siblings, all examined in the context of religious life.

The religious dimension was explored through specific questions, such as: What do you do in religious education lessons? What is your relationship with the catechist? What are your teachers like? Do you respect them—if not, why? What is the religious atmosphere in your home? What are your expectations from priests? What does your homeland mean to you? What do you believe you owe it as a citizen? What would you like to do for it? Which political system do you prefer (democracy, communism, dictatorship, liberalism)?

The third survey, conducted in Toruń schools in 1947, was titled “The Influence of the Educator-Teacher on My Inner Life.” However, this survey was primarily concerned with the moral qualities that Fr. Kowalski deemed essential for the teaching profession. He collected 141 responses from students in Toruń, and across all three surveys, he amassed a total of 929 responses.

Overall, the theoretical reflections in Fr. Kowalski’s master’s thesis, supported by extensive survey research, yielded a detailed account of the educator-teacher’s role, particularly regarding the possibilities of education, the teacher’s authority, character, and personal attributes essential to effective teaching. When discussing what he called “moral teacher,” Fr. Kowalski distinguished between lay and clerical moral teachers. He believed that the latter sometimes faced fewer challenges in their work.

It should be emphasized that Fr. Zygfryd Kowalski continued his research on the teaching profession after completing his studies, while working as both a teacher and a lecturer in pedagogical subjects. Of particular

interest is his perspective on the role of the teacher-educator, as presented in *Elementy nauk pedagogicznych* [Elements of Pedagogical Sciences], a handbook on pedagogy based on his lectures at the Seminary for Priests in Pelplin (Kowalski, 1957, pp. 252–263). In this work, Kowalski explores the teacher's personality, concentrating on the qualities of a good educator, the determinants of the personality of a good teacher, and the essential traits that define such a person. He begins by discussing the external attributes of a good teacher (Kowalski, 1957, p. 253) and continues to outline the spiritual dimension, which he views as encompassing both professional expertise and general knowledge. He asserts that knowledge should be accompanied by "active intelligence," mental sharpness, moderate wit, and cheerfulness, where cheerfulness is understood as optimism and natural gaiety. Furthermore, he stresses that calmness and seriousness are important elements of a teacher's proper spiritual disposition.

In his reflections, Kowalski also enumerates several traits that negatively impact an educator's influence on young people. These include a lack of sound knowledge, narrow-mindedness, a gloomy or malicious disposition, impulsiveness and irritability, awkwardness in and lack of determination, weakness of character, negligence and lack of conscientiousness in work, greed, and careerism (Kowalski, 1957, pp. 253–254). He underscores the importance of a teacher-educator's attitude towards young people, which can have either a negative or positive impact. According to Kowalski, in order to have the proper attitude towards young people, it is necessary to get to know them. A good educational attitude manifests itself, he argues, in fairness and impartiality toward students. A teacher must not be coarse, unapproachable, overly demanding, harsh, sarcastic or sneering. On the other hand, excessive leniency, lack of firmness, and over-familiarity are serious faults in some teachers (Kowalski, 1957, p. 254).

Kowalski also touches on the concepts of pedagogical talent and authority in his lectures. He notes that pedagogical talent is not a singular concept but a complex one, which includes qualities such as intuition and tact. He provides several criteria that indicate a teacher's talent:

the ability to organize students' independent work, motivate them to learn and apply effort; to trigger their intellectual curiosity, and inspire a love for learning and knowledge. He also emphasizes the importance of progress of students; and shaping their internal discipline and responsibility.

Regarding authority, Kowalski distinguishes between its liberating and restrictive forms. He asserts that a teacher's personality is an important element in establishing their authority, but also stresses that the student's psyche and life environment, particularly the family and school, significantly shape this dynamic. He believes that these environments should meet certain criteria to have a positive educational influence. Fr. Kowalski further classifies authority into higher and lower orders. Higher-order authority, he claims, is based on artistic, scientific, moral, and religious virtues, whereas lower-order authority relies on physical power. He also discusses factors that can undermine authority, such as a lack of consensus among the teaching staff and the negative influence of political activities on the teacher-educator's role.

In analyzing the content of Kowalski's pedagogical lectures in *Elementy nauk pedagogicznych*, one may view them as a guide on how to work with young people. The text offers practical guidelines for aspiring educators on how to become good teachers.

Final Remarks

Bishop Zygfryd Kowalski devoted a considerable amount of attention in his writings to issues related to the teaching profession. His publications on pedeutology could be collectively titled, *How to Be a Good Teacher-Educator*. In his research, he mainly showed the religious and moral aspects of a teacher's work. For Kowalski, the religious context of the teaching profession was an important determinant of both educational and didactic work. His key categories defining the essence of being an effective teacher included notions such as talent, tact, and authority. He instructed his students and readers on how these categories should be properly understood and embodied, and how they can contribute

to practical actions. For Bishop Kowalski, the religious factor in pedagogical work was linked to moral issues, as well as to social issues. In the social dimension, the religious aspect was connected to the role of a teacher within broader social environments, including family, school, and various associations.

The enduring value of Bishop Kowalski's pedeutological research, both in his time and today, stems from several key factors that allow for a positive assessment of his output in this field. First, the issues he discussed were firmly grounded in the contemporary (then) literature on the subject. Second, his work demonstrated an excellent command of pedagogical research techniques, particularly survey research. The questions in his surveys were closely aligned with the core of his research and the subject matter under analysis. Another strength of his research was the thorough analysis and clear presentation of the collected data, with a substantive discussion of the most significant results. Lastly, an important characteristic of his work was his caution and objectivity in drawing final conclusions from the collected material, a principle likely to have been learned from the scientific methodology of K. Sośnicki.

It is also worth noting that numerous insights on how to be a good teacher and societal educator can be found in studies of his pastoral work, even in those that highlight the repressive actions of the communist Security Service (SB) against him (Rozynekowski, 2012). In SB reports, Bishop Kowalski is depicted as a figure of universal respect who remained impervious to the SB's attempts to compromise him. As a result, despite detailed operational plans, the SB found themselves powerless against his influence and activities.

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Multidimensional Work Addiction in Upper Secondary School Teachers

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Abstract

Research Objectives and Problems: The aim of this research is to determine the level and structure of multidimensional work addiction among the surveyed secondary school teachers. The main research question is: What is the level and structure of multidimensional work addiction among the surveyed secondary school teachers?

Research Methods: The empirical material was collected using a diagnostic survey approach. The primary tool utilized was the *Multidimensional Workaholism Questionnaire (WKOP)*, developed by Szpitalak (2012).

Structure of the Article: The article begins with an introduction to the research that describes the phenomenon of teachers' work addiction and characterizes the teaching profession. The empirical section outlines the research program and methodology. This is followed by an analysis of the results, verification of the working hypotheses, and a summary.

Research Findings and Their Impact on Educational Sciences: The analysis of the research results confirmed the validity of the adopted research assumptions.

Conclusions and Recommendations: The results prove the high professional commitment of teachers, with diagnosed work addiction ranging from

positive commitment and intrinsic motivation to potentially destructive effects on their health (cf. Golińska, 2008). It is essential to implement a transparent motivation system that ensures respect for teachers, supports their professional development, and provides them with a sense of agency and purpose.

Keywords: career, upper secondary school teacher, work addiction

Introduction

It is commonly believed that the teaching profession is hard and highly responsible, with teachers expected to fulfill numerous vital roles within the education system. These roles are related not only to education itself but also to upbringing, childcare, community involvement, research, and providing life guidance to youth. Each of these functions entails specific tasks and responsibilities that teachers are expected to carry out. Scholars frequently emphasize that teaching requires self-reliance, creativity, and the development of personalized strategies. As a result, the professional activity of a teacher is often likened to art, which is highlighted by the creative nature of their work (Lewowicki, 2007, p. 57).

Teacher's responsibilities primarily include supporting student growth and creating an environment conducive to this in consideration of available resources and conditions (Szempruch, 2001, p. 107). Bogusław Śliwerski describes teachers as "professionals whose activities involve transmitting knowledge, shaping attitudes, and skills as specified in curricula. According to Śliwerski, a teacher is "one of the essential factors in the learning process, being a vocationally trained educator who shares responsibility for the preparation, organization, and outcomes of this process" (Śliwerski, 2006, p. 295).

Teachers are expected to exhibit "a wide array of qualities, such as intelligence, brilliance, creativity, resourcefulness, innovation, and courage. In fulfilling their entrusted tasks, teachers should be active, hard-working, responsible, conscientious, modest, reliable, systematic, practical and diligent. In their relationships with students, they should be fair, demanding

yet supportive, empathetic, friendly, kind-hearted, tolerant, patient, well-intentioned, and open-minded. Furthermore, teachers are encouraged to be dynamic, self-directed, well-organized, aspirational, genuinely passionate about their vocation, honest, open to change, practical, down-to-earth, dignified, culturally aware, and attuned to the modern world. A healthy sense of self-esteem is essential for teachers to maintain authenticity in their roles (Zubrzycka-Maciąg & Kirenko, 2015, p. 7).

According to Wincenty Okoń, teachers educate, nurture, and support the development of students under their care. The effectiveness of their work depends on the learners, the education system, and, most importantly, the teachers themselves (Okoń, 1998, p. 761). This can lead teachers who are passionate about working with young people, deeply engaged, and fascinated by their jobs to lose balance in their professional lives. Striving for perfection and driven by an inner compulsion to work, they may overextend themselves in their quest for conscientiousness and diligent performance. In extreme cases, this imbalance can lead to reliance on psychoactive substances to boost productivity or compensate for dissatisfaction with their job performance.

Classical work addiction in teachers can also manifest as continually escalating demands on themselves, taking on new challenges and responsibilities, or being overly critical of their peers. Work addicts of this kind are often perceived by others as seeking to control those around them while simultaneously craving acknowledgment and acceptance (cf. Rowicka, 2015, pp. 140–160). Teacher work addiction can be examined on three levels: behavioral, cognitive, and emotional. The behavioral aspect encapsulates indicators such as working overtime, working on weekends (e.g., grading assignments or preparing lessons), and sacrificing personal time for professional tasks. While these behaviors alone do not definitively signify work addiction, they often indicate excessive work habits.

Cognitive work addiction, on the other hand, involves a compulsive need to work, driven by an inner urge to stay constantly productive. It may include incessant rumination about work the moment it is discontinued, loss of control over one's work habits, irrational beliefs about work, and work-related thoughts overshadowing other aspects of life. Emotional

indicators of work addiction include experiencing positive emotions, such as satisfaction or excitement, while working and negative emotions, such as frustration, anger, or irritation, when not working (cf. Paluchowski et al., 2014; Malinowska, 2015).

The phenomenon of work addiction, as examined here, may progress at varying paces. In the case of teachers, its development depends on their personality, values, and attitudes, as well as on the school environment and educational policies. Three stages of this disorder can be identified. In the first stage, referred to as the *prodrome*, individuals take on an increasing number of responsibilities, consequently spending more and more time at work. These behaviors gradually aggravate, even as the teacher begins to experience both psychological symptoms, such as stress, emotional tension, anxiety, or depression, and somatic symptoms, primarily manifested as gastrointestinal and cardiovascular system disorders. Affected individuals become excessively tired, have difficulty concentrating, suffer from headaches, and experience balance disturbances. Despite these warning signs, they often attempt to ignore them, which leads to the emergence of the second stage.

The second stage, referred to as the *critical stage*, is characterized by a strong internal compulsion to work. Failure to engage in work exacerbates anxiety, and the person feels mounting pressure to perform, becoming increasingly demanding of themselves, even without external expectations. Even during moments of rest, they think incessantly about their work and exhibit less control over their behaviors than in the first stage. Psychosomatic symptoms begin to develop into conditions requiring medical assistance, such as hypertension, peptic ulcers, myocardial infarction, or stroke. If the individual's attitude remains unchanged despite these symptoms, they begin to transition to the third stage.

The third stage of work addiction is referred to as the *chronic stage*. During this phase, the individual's life becomes entirely centered on work. Sleep and rest are reduced to a minimum, and the person has no time for anything other than work. They remain constantly focused on and constantly ruminate about their work, but instead of achieving satisfaction or fulfillment, they only experience heightened anxiety and tension.

Naturally, this leads to a decline in the quality of their work performance, which may result in physical exhaustion and the onset of fatigue-related illnesses. General health of the individual deteriorates rapidly, and such extreme exhaustion poses a growing risk of life-threatening consequences (cf. Mieścicka, 2002, p. 145; Wojdyło, 2003, pp. 124–126).

Long-term work addiction can have severe negative consequences for an individual's health, professional functioning, and social life. Work addiction must not only be acknowledged but also actively counteracted through proper diagnosis and the implementation of educational and psychotherapeutic measures (Nowosad, 2022). Considering various theoretical concepts, it is advisable to assume a holistic approach to the study of this issue, operationalizing workaholism as a multidimensional phenomenon. This is precisely the research approach that I adopted when designing this study. I referenced the concept proposed by M. Szpitalak (2012), which takes into account the typical aspects of work addiction.

Study Design

The purpose of this research was to examine multidimensional work addiction in upper secondary school teachers. I aimed to diagnose this phenomenon by assessing its overall level, structure, and the relationships between the salience of work, the compulsive need to work incessantly, and other analyzed factors of work addiction. This revealed the scope and prevalence of work addiction as well as the interrelations among its specific components.

The main research problem was framed as the following question: **What is the level and structure of multidimensional work addiction among the studied upper secondary school teachers?**

Additionally, two supplementary research questions were posed:

1. What are the relationships between the salience of work, the compulsive need to work, and other aspects of work addiction among the responding teachers?

2. To what extent do demographic and social factors influence the study variables related to work addiction in the responding teachers?

Based on these research questions, the following hypotheses were formulated:

- **H1.** There are significant relationships between the salience of work, the inner compulsion to work, and the analyzed aspects of work addiction among the responding teachers.
- **H2.** Demographic and social factors significantly influence both the level of work addiction in the responding teachers and the analyzed components of this phenomenon.

The empirical data was collected using a diagnostic survey in the form of a questionnaire. The tool utilized for this purpose was the *Wielowymiarowy Kwestionariusz Pracoholizmu* (WKOP) [Multidimensional Workaholism Questionnaire], designed by Szpitalak (2012). The WKOP consists of 94 items rated on a 7-point Likert scale and encompasses 13 factors: 1) Salience (viewing work as a highly important value and prioritizing it above other activities); 2) Conscientiousness; 3) Difficulties Engaging in Activities Unrelated To Work; 4) Stress and Anxiety; 5) Stimulants (abuse of psychoactive substances); 6) Inability to delegate (a tendency to perform tasks independently due to a lack of confidence in others' abilities); 7) Strained Relationships; 8) Enthusiasm (experiencing work satisfaction and positive emotions); 9) Destructive perfectionism; 10) The need for predictability; 11) Strong sense of duty; 12) Preoccupation (being preoccupied with work and, consequently, forgetting about other significant activities); and 13) Inner compulsion to work.

To analyze the collected empirical data, I employed descriptive statistics (e.g., means, standard deviation, and median) and correlational statistics, including Pearson's Chi-squared test and Spearman's rank correlation test. The study was conducted in the first quarter of 2023 in the Lublin region. A total of 128 teachers from general upper secondary schools participated, with the sample selected based on accessibility to

the research sites and the teachers' willingness to participate. Of these, 120 fully completed questionnaires were qualified for analysis. Female respondents accounted for 82% of the sample. The mean age of respondents was 32.6 years. Regarding professional experience, 35.8% of respondents had less than 5 years of experience, 41.7% had between 6 and 15 years, and 22.5% had more than 16 years of teaching experience. The average professional experience across the sample was 10.5 years. The mean tenure at the respondents' current workplace was 6.4 years.

Analysis of Study Results

The analysis of the collected data provides a general score for respondents' workaholism, calculated as the mean of scores for specific items rated on a scale from 1 to 7, as included in the subscales of the measure. The obtained general score is 3.86, which represents an average result. Therefore, the responding teachers assign an average level of importance to their profession and demonstrate moderate enthusiasm, work engagement, preoccupation with work, professional perfectionism, and inner compulsion to work. Thus, the respondents exhibit an average level of workaholism, which has a relatively limited influence on performing tasks that extend beyond their basic professional duties. It can therefore be concluded that this group is likely in the initial stage of developing work addiction (cf. Wojdyło, 2003).

The analysis further indicates that the overall level of work addiction among the responding teachers increases with the number of years they have worked as teachers ($p < 0.000$). However, no significant differences were observed with respect to the respondents' gender or the length of their employment at their current educational institution. In accordance with the adopted study design, work addiction among the responding teachers was examined as a multidimensional phenomenon, and specific factors displayed varying levels. The obtained data is presented in Table 1.

**Table 1. Descriptive Statistics of Analysed Factors of Work Addiction
in Responding Teachers**

Factors of work addiction	Descriptive statistics			
	N significant	Mean	Median	Standard deviation
Salience of work	120	3.45	3.40	1.06
Conscientiousness	120	4.22	4.22	1.06
Difficulty engaging in non-work activities	120	3.81	4.00	1.10
Stress and anxiety	120	3.80	3.78	0.92
Use of stimulants	120	2.72	2.50	1.39
Inability to delegate	120	3.82	3.83	0.98
Strained relationships	120	3.47	3.60	1.18
Enthusiasm for work	120	4.00	4.25	1.19
Destructive perfectionism	120	3.83	4.00	1.12
Need for predictability	120	4.87	4.83	1.03
Strong sense of duty	120	4.42	4.33	1.32
Preoccupation with work	120	3.78	3.83	1.29
Inner compulsion to work	120	3.98	4.00	1.01

The obtained data shows that the highest scores were reported for the *need for predictability* ($M = 4.87$), *strong sense of duty* ($M = 4.42$), *conscientiousness* ($M = 4.22$), and *enthusiasm at work* ($M = 4.00$). These scores place the above-mentioned factors above the average level on the 1–7 scale. It can, therefore, be concluded that nearly two-thirds of the responding teachers (64.2%) highly value transparency in their work environment. They want to maintain control, feel anxious when things are not going as they planned, and experience discomfort when they are surprised by unexpected situations and demands. Additionally, 61.7% of respondents feel enthusiastic about their work, find it satisfying and fulfilling, and view it as a means for professional growth. More than half of the respondents (55.8%) prioritize their duties over leisure; they demonstrate conscientiousness, dependability, adherence to deadlines, and diligence in their actions. These factors appear to constitute an important source of work motivation. Notably, conscientiousness is more frequently exhibited

by respondents with tertiary education compared to those with secondary education ($p < 0.000$) and by teachers with leadership roles ($p < 0.010$).

To a slightly greater than average extent, the responding teachers display *inner compulsion to work* ($M = 3.98$), *destructive perfectionism* ($M = 3.83$), *inability to delegate* ($M = 3.82$), *difficulty engaging in non-work activities* ($M = 3.81$), *stress and anxiety* ($M = 3.80$), and *preoccupation* ($M = 3.78$). Half of the respondents (53.4%) report feeling uneasy when not working; they experience anxiety and guilt as they perceive themselves as lazy and believe they are wasting valuable time, which generates strong feelings of guilt. Consequently, one-third of respondents (32.7%) strive to remain constantly active, always finding tasks to do even during their leisure time. More than half of the respondents (54.2%) exhibit *destructive perfectionism* in their work consisting in excessive attention to details at the expense of the general purpose and context of their duties. They often experience difficulty completing tasks as they are constantly dissatisfied with their quality. As a result, they spend so much time deliberating on how to perform a task and make so many continuous modifications that it makes it difficult for them to complete the task on time. Additionally, many respondents prefer to handle tasks themselves rather than delegate them, believing that others cannot achieve a satisfactory outcome. *Inability to delegate* is more frequently observed in male respondents than female respondents ($p < 0.005$).

This dynamic results in nearly half of the respondents (47.8%) leading extremely busy lives, often feeling tired, lacking time for leisure, and believing that their work engagement negatively affects their social and family lives, which could otherwise bring them greater satisfaction. This burden causes one-third of respondents (39.1%) to experience a lack of self-confidence and intense anxiety under time pressure. Although they wish to approach life with greater calm, their high preoccupation with work stands in the way.

Furthermore, one in four respondents (26.4%) admitted being so preoccupied with their work and teaching duties that they were unaware of what was happening around them. They often lose track of time. This tendency is most commonly observed in older individuals and those with the longest teaching experience ($p < 0.032$). Less-than-average scores

were reported for factors of work addiction such as *strained relationships* ($M = 3.47$), *salience* ($M = 3.45$), and *use of stimulants* ($M = 2.72$). It was found that nearly one-third of respondents (31.9%) prefer to read a book or watch TV rather than meet with friends. When invited to social gatherings, they often refuse as they believe that they have more important tasks to attend to. Additionally, they see little opportunity to establish new relationships outside of their schoolwork. Strained relationships were found to be more characteristic of older individuals ($p < 0.017$) and those with longer teaching experience ($p < 0.017$).

Approximately one in five respondents (19.2%) admitted to having used psychoactive substances, including difficulty refraining from consuming alcohol after a stressful workday. Some respondents reported relaxing with alcohol or smoking cigarettes as a way to unwind after the demands of their job. The next step in the research procedure involved identifying the significance of various aspects of workaholism in contributing to the *salience of work* and *inner compulsion to work*. These two factors have been shown in previous studies to exhibit the strongest associations with the overall score of work addiction (cf. Szpitalak, 2012). The results are summarized in Table 2.

Table 2. Relationships Between the Salience of Work and Inner Compulsion to Work among Respondents and Other Aspects of Their Work Addiction

Explanatory variables	Dependent variables			
	Salience of work		Inner compulsion to work	
	R	p	R	p
Salience of work			0.340	0.000
Conscientiousness	0.165	0.072	-0.147	0.108
Difficulty engaging in non-work activities	0.409	0.000	0.193	0.036
Stress and anxiety	0.109	0.235	0.314	0.000
Use of stimulants	0.093	0.314	0.214	0.019
Inability to delegate	0.403	0.000	0.183	0.046
Strained relationships	0.201	0.027	0.145	0.145

Explanatory variables	Dependent variables			
	Salience of work		Inner compulsion to work	
	R	p	R	p
Enthusiasm for work	0.267	0.003	-0.016	0.860
Destructive perfectionism	0.304	0.001	0.398	0.000
Need for predictability	0.373	0.000	0.130	0.016
Strong sense of duty	0.455	0.000	0.195	0.033
Preoccupation with work	0.522	0.000	0.312	0.001
Inner compulsion to work	0.340	0.000		

The study found that work, conceptualized by responding teachers as *salience*, is positively associated with *preoccupation with work* ($R = 0.521$; $p < 0.000$), *strong sense of duty* ($R = 0.455$; $p < 0.000$), *difficulty engaging in non-work activities* ($R = 0.408$; $p < 0.000$), and *inability to delegate* ($R = 0.402$; $p < 0.000$).

This indicates that as responding teachers become increasingly preoccupied with their work—meaning they become deeply absorbed in their professional tasks—they develop a stronger belief that duties should take precedence over leisure. This is accompanied by increasing difficulties engaging in activities unrelated to work and a growing tendency to perform tasks independently, spurred by the belief that others are less capable or will not carry out the tasks successfully. Consequently, the significance of work increases, with work becoming both an intrinsic value and an instrumental means to satisfy other needs and meet professional expectations.

Much weaker, but still positive associations were also observed between *salience* and other aspects of work addiction. These include *need for predictability* ($R = 0.373$; $p < 0.000$), *inner compulsion to work* ($R = 0.340$; $p < 0.000$), *destructive perfectionism* ($R = 0.304$; $p < 0.001$), *enthusiasm for work* ($R = 0.267$; $p < 0.003$), and *strained relationships* ($R = 0.201$; $p < 0.027$). The study found that the growing need for control among responding teachers—along with their desire to predict outcomes in their work environment, an exacerbating inner compulsion to work, and excessive

attention to details at the expense of the overall purpose of the task—is accompanied by the growing importance that they ascribe to their work.

This heightened significance of work also results from their passion for working with young people, the satisfaction from achieved outcomes, and their commitment to work, often at the expense of their social life and non-professional relationships. In addition, no significant relationships were found between the importance assigned to work by the studied teachers and their conscientiousness, experienced stress and fear, or the use of psychoactive substances. Subsequent analyses examined the relationships between inner compulsion to work and other factors of work addiction considered in the study. These analyses revealed that the inner compulsion to work exhibited by responding teachers showed the strongest positive associations with *destructive perfectionism* ($R = 0.398$; $p < 0.000$), *saliency* ($R = 0.340$; $p < 0.000$), *preoccupation with work* ($R = 0.312$; $p < 0.01$), and *stress and anxiety* ($R = 0.314$; $p < 0.000$).

The findings indicate that inner compulsion to work, as an internal drive, increases significantly with higher levels of destructive perfectionism, characterized by excessive attention to details that detracts from the essence of tasks. As teachers prioritize their work more in their lives and become increasingly preoccupied with their profession and job-related tasks, stress and anxiety build up, leading to chronic fatigue, reduced immunity, and, ultimately, career burnout. The data also reveals significant relationships between the *compulsion to work* and *the use of stimulants* in difficult situations ($R = 0.214$; $p < 0.019$), *strong sense of duty* ($R = 0.195$; $p < 0.033$), *difficulty engaging in non-work activities* ($R = 0.192$; $p < 0.036$), and *inability to delegate* ($R = 0.183$; $p < 0.046$). These relationships, while statistically significant, are relatively weak. Based on these findings, it can be concluded that in the context of teachers' work, an increased inner drive to perform tasks raises the likelihood of more frequent use of stimulants to relieve stress, voluntarily taking on additional responsibilities, neglecting non-professional activities (e.g., family life, socializing, participation in cultural activities, or sports), and completing all tasks independently due to a lack of confidence in others' abilities to perform them to a high standard or within a specified timeframe.

The analyses further indicate that the inner compulsion to work exhibited by the responding teachers was not associated with aspects of work addiction such as conscientiousness, strained relationships, enthusiasm for work, or the need for predictability in various situations.

Summary

The analyses of the obtained results confirm the validity of the research assumptions. The above-average level of work addiction observed among the responding upper secondary school teachers from the Lublin region is primarily characterized by a need for predictability in their professional environment, a strong sense of duty, conscientiousness, and enthusiasm for work. These factors coincide with the first stage of workaholism, which involves assuming an increasing number of responsibilities and devoting more and more time to completing them. This stage often leads to mental fatigue and, in some cases, somatic symptoms.

Respondents also reported experiencing an inner compulsion to work, destructive perfectionism, and an inability to delegate responsibilities, which stems from a belief that others will not perform tasks as effectively or within the required timeframe. These behaviors leave no time for non-professional activities such as family life, socializing, or other pursuits and lead to heightened anxiety and job-related stress. This engagement and preoccupation with work often cause respondents to feel disconnected from their personal lives.

Two significant aspects of work addiction—*salience of work* and *inner compulsion to work*—were found to be positively associated with numerous analyzed components of workaholism. *Salience of work* in the lives of the responding teachers is strongly linked to being preoccupied with work, prioritizing it above all else, and a strong sense of duty, which prompts them to take on additional responsibilities of their own accord. This leaves little time for family life or other non-professional activities and fosters a lack of confidence in others' abilities, compelling the respondents to perform tasks on their own. These behaviors are accompanied by

a need to control situations, inner compulsion to work, destructive perfectionism, enthusiasm for work, and withdrawal from social life, leading to isolation and strained relationships.

Inner compulsion to work, on the other hand, is primarily motivated by destructive perfectionism, the meaning of work in the lives of responding teachers (both intrinsic and instrumental), preoccupation with school-related tasks and professional duties, stress and anxiety about performance standards, and frequent use of stimulants (e.g., drugs). It is also influenced by a strong sense of duty, the absence of activities outside work, and an inability to delegate tasks and responsibilities to other teachers.

The obtained results indicate a high level of work engagement among teachers, wherein diagnosed work addiction manifests both as positive engagement and inner drive, as well as having harmful and detrimental effects on their health (cf. Golińska, 2008). This group can be classified as *caring workaholics*—individuals who place a high priority on promoting their students' growth and take personal responsibility for the outcomes of their teaching, upbringing, and caregiving work (cf. Wojdyło, 2003; Dudek, 2008).

The issue of work addiction, therefore, warrants careful attention and reflection by school authorities. While striving for high performance is commendable, it should not come at the expense of teachers' health. For this reason, system-level solutions have gained importance. Unhealthy competition and rivalry should be replaced by rational workloads and collaborative work environments based on cooperation (cf. Nowosad, 2022, p. 201). To achieve this, it is essential to develop a transparent system of incentives that promotes respect, supports professional growth, and empowers teachers with a sense of autonomy and agency. Further research is needed to explore this issue in greater depth and should be designed to provide representative data on the experiences of the entire population of upper secondary school teachers.

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Education Policy Strategies and Applications for Metaverse Environments in Teaching

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Abstract

Research Objectives and Problems: The focus of this research is the virtual learning environment, which is a priority in developing new learning strategies. The aim is to analyze the process to describe policies related to changes in learning environments. The research objectives include examining theoretical approaches to modeling virtual learning environments and highlighting the signs of change in virtual teaching/learning environments from various perspectives. The research focuses on how virtual teaching and learning environment modeling is contextualized within the evolving Lithuanian education policy. This study explores questions regarding the perception of changes in learning environments and the key trends shaping virtual learning within the framework of new education policies.

Research Methods: This study employs a combination of literature analysis and semi-structured focus group interviews to gather insights from teachers,

education experts, and policymakers. The findings offer a deeper understanding of the virtual teaching and learning environment modeling process and its implications for educational policy and practice.

Structure of the Article: The paper is structured into five main sections: an introduction, a literature review, a methodology description, an analysis of the main findings, and a discussion and conclusions section. A list of references is provided at the end.

Research Findings and Their Impact on Educational Sciences: This research explores the modeling of virtual teaching and learning environments and its implementation within educational contexts. As schools navigate a rapidly evolving world, understanding and shaping virtual learning environments is crucial. The study aims to analyze the process of modeling virtual teaching and learning environments, particularly in terms of the inclusive and operationalizing context of open learning spaces, content elements, and learning styles. Through a reflexive approach, the paper investigates how modern schools are transitioning toward more organized teaching and learning services and identifies new directions in skill development, knowledge acquisition, learner networking, and value creation. The virtual teaching and learning environment is presented as a central vision for learner-centered education, promoting personalized learning, diverse learning styles, and trust-based learning cultures.

Conclusions and Recommendations: Lifelong learning emerged as a central theme across all concept maps. This cluster was not only deemed pivotal for the future of learning but also served as a unifying element for other clusters. According to experts, the anticipated shifts in learning strategies and approaches are closely tied to the notion that skills and competencies will increasingly be acquired through lifelong learning.

Keywords: metaverse, digital learning environment, learning policy, curriculum contexts, educational policy, teaching

Introduction

Discussions on shifts in the educational landscape are often led by politicians and educational experts who seek to characterize these changes, establish a framework for understanding them, and integrate them into ongoing educational reform efforts (Affouneh et al., 2020; Dhawan, 2020). In response, education policymakers work to shape visions of how teaching and learning should progress. These narratives are crafted by experts and function to promote specific ideologies for educational reform. By exploring these representations, we see a continual re-shaping of educational settings, presenting a modality framework that provides meta-theoretical tools for describing and categorizing the learning environment, thereby defining key contextual dimensions.

Changes in educational spaces reflect shifts in prevailing paradigms. As Dhawan (2020) and Donahoe et al. (2019) suggest, these changes constitute a socially conceptualized domain, aiming to delve into subjective interpretations and constructs. This analysis aligns with social phenomenology, explaining how educational shifts are perceived in policymaking discourse and within broader social groups. Bourdieu's perspective on social phenomenology is particularly relevant here, as it highlights how practical knowledge and everyday understanding contribute to a knowledge-based society (Martin, 2020; Affouneh et al., 2020).

Preliminary investigations into perceptions of the educational environment reveal that influential perspectives shape general views on these settings and the culture of change around them. Mehall (2020) argues that the evolution of educational environments is shaped by the definitions and semantics of space, where group identities adapt to and are transformed by spatial dynamics. Memory, which helps delineate the meaning of spaces, plays a pivotal role in this relationship, providing an ideological framework to understand the educational environment.

Europe's 2030 Strategy (EC, 2010) recognizes the need for smart, sustainable, and inclusive growth to stay competitive and address contemporary challenges. Achieving these aims requires investing in citizens' skills and competencies. Thus, a key goal for Europe's 2030 Strategy (EC, 2010)

includes modernizing education and training systems. With rapid technological and socio-economic changes, learning strategies and structures have evolved significantly over the past two decades (Affouneh et al., 2020; Mehall, 2020), prompting new approaches to knowledge, communication, and learning methods that align with emerging competencies (Mehall, 2020). Understanding how these opportunities evolve within educational spaces is essential to advising policymakers as they plan reforms from 2013 to 2022.

Preparing students for future societal roles requires anticipating essential competencies and how they will be nurtured within a student-centered virtual learning environment (Huang et al., 2020). This study thus seeks to address a central research question: how the development of virtual teaching and learning environments is situated within evolving Lithuanian educational policies. The study is guided by the following research questions: (i) How are changes in the learning environment discussed in policy discourse? (ii) What are the significant trends in virtual learning as new policies take effect in education?

This research centers on the virtual learning environment as a key element in applying modern educational strategies. Its purpose is to examine the development process of virtual learning spaces within schools, emphasizing policy perspectives on educational environment changes.

Research objectives

1. To investigate theoretical frameworks for designing a virtual learning environment.
2. To identify indicators of change within the virtual teaching and learning environment from the perspectives of general education teachers, education leaders (school administrators), and policymakers (education department officials).

The study used two main methods for data collection: a scientific literature review to explore theoretical foundations of virtual learning

environment design and semi-structured focus group interviews to capture practical insights into changes and their manifestations in general education. The focus group data's validity and reliability were supported by an adequate sample size, participant homogeneity, and questions grounded in relevant academic literature.

This article relies on research from general education schools to provide a clearer understanding of participants' viewpoints. For assembling the reference list, AI tools like Copilot and Litmaps were utilized to align with the standards of the chosen citation style.

Praxeology of Change in the Teaching/Learning Environment: New Virtual Environment Modeling Approaches

Europe is increasingly recognizing that learning within a fully digitalized, networked knowledge society will differ fundamentally from traditional learning methods. Advances in information and communication technologies (ICTs), combined with socio-economic and demographic changes, are creating not only new learning opportunities but also a demand for new skills essential for work, education, self-development, and active societal participation (Affouneh et al., 2020; Mehall, 2020; Dhawan, 2020; Donahoe et al., 2019).

The process of shaping virtual teaching and learning environments is driven by a vision of digital literacy, which includes acquiring skills to effectively navigate and engage in these digital spaces. Beyond familiarity with ICT tools, digital literacy also requires advanced cognitive skills for full engagement. Key competencies include the ability to search, assess, organize, and effectively utilize digital information and resources. This encompasses structuring knowledge according to individual needs and creating personalized systems for tracking and managing information.

In a connected knowledge society, communication is also highly valued, with interaction skills becoming an essential component of digital literacy. Through ongoing participation in ICT-supported virtual learning environments and through interactions with peers and mentors,

individuals develop both technical and communication skills. These competencies are integral to lifelong learning and are continuously reinforced through engagement in virtual learning spaces, supporting the development of comprehensive digital literacy (Huang et al., 2020).

Policy Guidelines for Virtual Teaching/Learning Environment Modeling

Policymakers and stakeholders in Europe largely agree that achieving key policy objectives—such as enhancing competitiveness, promoting growth, increasing employment, and strengthening social cohesion—requires fundamental changes in education and training. This vision aligns with the Lisbon Strategy goals (ES 2000; E&T 2010). Education, along with research and innovation (the “knowledge triangle”), is seen as essential for creating a competitive and inclusive knowledge-based society. ICT, in particular, plays a critical role in these transformations, as virtual learning environments increasingly rely on it as a core or supplementary tool. Although technology alone cannot drive change, the impact of ICT becomes significant within a social, economic, and organizational landscape that encourages innovation and is supported by progressive policy (Punie & Cabrera, 2006; Donahoe et al., 2019).

The main focus is on how to integrate these new demands into Europe’s formal education and training systems. Many agree that substantial advancements in educational reforms are still required to accelerate the knowledge society’s growth (Donahoe et al., 2019; Mehall, 2020). Learning contributes greatly to personal growth, social development, and self-expression, making skills like critical thinking, social skills, and collaboration even more crucial. As the nature of information and knowledge evolves, so does the concept of essential skills and methods for acquiring them. In today’s networked society, knowing where and how to find information, who can access it, and understanding its relevance are vital. Social skills and “relationship capital” are also becoming integral parts of digital literacy in the knowledge economy, especially

as web 2.0 and social computing applications expand (Dhawan, 2020; Mehall, 2020; Huang et al., 2020). Various European stakeholders are now focused on defining the digital literacy and skills needed for full participation in the digital age and to keep educational institutions competitive. These skills are categorized into ICT work skills, ICT user skills, and e-business skills (COM, 2007).

As society becomes more digital, ICT user skills are essential for everyone. While younger generations tend to be more adept with technology, simply knowing how to use ICT is not enough; it is equally important to grasp its applications in new work and communication methods. These are the foundational skills needed to succeed in a knowledge-based society. Recognizing this, the European Commission has incorporated digital literacy into the “key competences” for lifelong learning, a set of skills promoting personal growth, active citizenship, social inclusion, and employability (Mehall, 2020; Donahoe et al., 2019). Digital literacy encompasses the skilled, thoughtful use of Information Society Technologies (ISTs) in work, recreation, and communication, building on foundational ICT skills such as gathering, evaluating, organizing, presenting, and exchanging information, and collaborating through online networks (COM, 2007). This article explores the competencies that make up the digital literacy necessary for effective learning in a knowledge-based society.

Modeling a Virtual Learning Environment: A Vision for Learning in a Knowledge Society

As educational institutions adapt to new learning models, ICT plays a pivotal role in redefining education for a knowledge-based society. Virtual learning environments (VLEs) embody a forward-looking vision for education that demands both fundamental ICT skills and the cultivation of new competencies. In this framework, ICT serves as a central, though not exclusive, catalyst for the development of these environments, which are crafted to be interactive and personal rather than solely digital constructs. Despite shifting educator roles, leadership and communication

remain essential elements (Mehall, 2020; Huang et al., 2020). VLEs are envisioned as dynamic, learner-centered spaces that position education as a collaborative social experience. These environments exhibit several core characteristics:

- *VLEs as Personalized Digital Spaces:* Learners and educators have access to tailored digital learning environments, accessible anytime and across devices, providing resources that support lifelong learning outside of traditional settings. This personalized approach fosters self-confidence and personal growth, allowing learners to customize their educational journey and present their skills securely online (Martin, 2020; Dascala & Maghiros, 2007).
- *VLEs as Social and Interactive Spaces:* These environments bring together various participants—students, educators, family members, and experts—fostering collaboration and sharing through a mix of real-time and asynchronous communication channels. This interaction allows students to connect with mentors and experts globally, promoting self-directed learning that blends real-world insights with academic concepts (Martin, 2020; Mehall, 2020; Huang et al., 2020).
- *Trust-Centered VLEs:* Trust is integral to VLEs, as it supports open communication, critical thinking, and secure knowledge exchange. While private VLEs protect sensitive information, public certification systems validate the expertise of those providing instruction, establishing a trusted foundation for learning (Donahoe et al., 2019; Mehall, 2020).
- *Flexible and Engaging VLEs:* Adapting to diverse learning styles, VLEs accommodate a variety of instructional formats—such as video lessons, group projects, or self-study. This flexibility helps bridge formal, informal, and self-directed learning, catering to the needs of individuals and communities alike.
- *Certification Opportunities in VLEs:* In addition to formal certification, VLEs offer recognition from informal networks, peers, and tutors, accommodating different learning experiences and reinforcing lifelong learning. Learners can showcase their achievements in personal portfolios, documenting skills acquired through their digital environment.

- *Controlled and Accessible VLEs*: Open access allows learners to engage at their convenience with modular systems that encourage reflection and review. These environments can simulate complex tasks or scenarios, offering safe practice spaces for skill development, particularly in ICT literacy.
- *VLEs as Knowledge Management Systems*: VLEs provide a structured means for learners to manage resources and knowledge by linking personal spaces with others. This facilitates collaborative growth and fosters connections that support both individual and institutional learning.
- *Inclusive VLEs*: Designed for accessibility, VLEs welcome people of diverse backgrounds, abilities, and languages, offering flexible learning paths that cater to various needs. These environments emphasize social interaction and enable digital literacy for learners from all walks of life.

Strategic VLE Modeling

To achieve the full potential of VLEs, strategic changes are needed across educational structures, accreditation processes, and institutional support. A holistic understanding of VLE design includes three interrelated dimensions: personal and social skills, learning design, and learning structure. These components are fundamental for aligning personal engagement with the digital tools necessary to foster inclusion and innovation.

- *Learning Design*: This approach accommodates diverse talents, allowing people to align learning with personal goals and self-directed study. ICT-based environments support situational learning and real-world application, though effective integration also requires educators to adapt to evolving roles and facilitate open, innovative learning cultures (Mehall, 2020; Martin, 2020; Dhawan, 2020).
- *Teaching and Learning Structure*: Enabling open access to educational resources requires substantial institutional collaboration. While

educational change is challenging, involvement across the entire educational ecosystem—from students and educators to technology providers and policymakers—is essential for systemic progress (Punie & Cabrera, 2006; Martin, 2020; Donahoe et al., 2019).

- *Inclusion*: Ensuring broad access to technology and digital literacy is vital. For inclusive learning environments, barriers such as limited access to computers and internet skills must be addressed. ICT-based learning initiatives linked with social inclusion efforts can provide opportunities for disadvantaged individuals to re-engage with education (Punie & Cabrera, 2006; Martin, 2020).

Therefore, the vision for VLEs relies on user-friendly technology and equitable access, laying the foundation for lifelong learning that is inclusive and adaptable to diverse learners' needs.

Research Methods and Methodology

This study adopted a qualitative research approach aimed at exploring perspectives from those actively engaged in the educational process. A semi-structured focus group interview method was applied (Denzin & Lincoln, 2017), involving discussions with educational experts (N = 10), teachers (N = 100), and policy-makers (N = 10) during public consultations and seminars. This approach served two main purposes: first, to foster discussion and gather insights grounded in practical experience, and second, to create a reflective educational environment where participants could voice opinions and consider potential personal contributions and collaborative opportunities for improvement (Denzin & Lincoln, 2017). During the discussions on virtual teaching and learning environment modeling, the group dynamics offered additional qualitative insights. Concept maps were also created, illustrating key shifts in learning strategies and the adaptive responses of educational systems to evolving challenges. Each vision developed by participants had its unique emphasis, collectively contributing to a comprehensive and adaptable model where technological

trends and socio-economic factors impact teaching and learning approaches. This research, conducted in May 2021, highlights several aspects relevant to future studies on changes within educational environments.

Research Process and Key Findings

The study’s primary research questions were carefully crafted beforehand. During focus group sessions, all participants were actively engaged, encouraged to share their thoughts, and given the chance to respond to open-ended questions, which often centered on their roles and experiences. This qualitative exploration of virtual learning environment modeling shed light on stakeholders’ perspectives regarding the virtual learning landscape, revealing their expectations and attitudes.

Teachers’ Perspectives on Changes in Education

In the study, teachers were asked to identify notable changes within school-based education. Their responses were organized into clusters, each with subtopics, to categorize the primary transformations within the overarching theme of optimizing the learning process (Table 1).

Table 1. Contexts for changes in the learning process

Category	Subcategory	Contextual learning
Changes in the learning process	Learning objectives	“Promoting values, respect, diversity...”; “Learning ‘how’ instead of ‘what’”; “A new balance between content and competencies...”; “Learning about one’s own culture and the culture of others...”
	Learning methods	“task-based learning”; “learning by doing”; “interactive learning”; “understanding the subject matter, not just receiving information...”; “practical, not just abstract, learning.”
	Learning roles	“reduced hierarchy”; “students develop their knowledge individually, under the guidance of a teacher”; “teachers are moderators”; “teachers are not the owners of information.”
	Student-centered learning	“learning is more individualized”; “greater account is taken of individual progress”; “constructive learning”; “specially adapted for pupils.”
	Learning spaces	“a high-tech environment”; “ICT employed everywhere, not just at school”; “mobile technologies”; “iPads for every learner”; “learning should be open to the public.”
	Learning links	“global learning”; “involving the local community.”

Upon comparing the research findings to primary educational objectives, it becomes apparent which priorities should shape education policy to enhance learning quality by 2022. The *Strategic Framework for Education* (2014) identifies several actions to improve the effectiveness and alignment of efforts to enhance the learning process. Key among these actions is promoting a student-centered approach, focusing on personalized learning (e.g., “more individualized attention” and “emphasis on individual progress”), fostering global and community engagement, and upholding principles of social justice, inclusivity, and equitable access to education. Consequently, learning quality becomes central, supported by the integration of inputs, processes, environments, and outcomes that collectively enhance the learning experience (Donahoe et al., 2019).

Two primary levels are noted: the internal level, where students learn within a structured environment (e.g., “individual knowledge building with teacher guidance”), and the external level, representing the broader education system that supports and facilitates learning (e.g., “learning ‘how’ over ‘what,’” and balancing content with competencies). Within this model, educational organizations focus on centering the student experience.

At the student level, learning materials and tools are adapted to reflect modern societal and individual needs. Teachers are therefore increasingly incorporating: 1) active learning strategies, emphasizing experiential and hands-on approaches, collaboration, and evidence-based activities, where students construct their own knowledge through tasks and peer communication. This student-centered learning model adapts to individual progress and needs, shifting traditional teacher roles towards mentoring, while students engage in collaborative, self-driven learning; 2) revised learning objectives, highlighting skills alongside knowledge, and fostering competencies that emphasize respect, cultural understanding, and responsibility, which have become vital in a highly connected and information-rich world; and 3) the development of new learning environments and contexts. Learning goals now call for dynamic and adaptable virtual environments that connect learning to both local

and global contexts, supporting collaboration and removing physical and virtual boundaries. This holistic, socially connected learning environment integrates community relevance.

In the consultation's second phase, teachers discussed key competencies necessary for future learners. The identified competencies largely align with those prioritized across Europe, affirming their continued importance. However, participants suggested ways to refine these competencies for the future, such as expanding digital literacy to incorporate ongoing online engagement and versatile communication tools (e.g., Web 2.0, digital identity management).

Teachers highlighted the importance of multifaceted learning strategies in response to the rapid expansion of information and technological advances. In the 21st century, new learning needs necessitate that individuals in any field can identify, understand, and address emerging problems, applying knowledge adaptively in varied situations.

Insights from education experts (school heads, N = 10) on changes in teaching and learning environments were also gathered, providing a broader perspective on national learning trends. When juxtaposed with teachers' school-focused feedback, several shared themes emerged. Both teachers and experts identified technological change as a major force influencing educational transformation. Central to both perspectives are key shifts in learning strategies, focusing on competencies and attitudes rather than solely on knowledge. They prioritize learner-centered approaches, personalized learning, and collaboration-based strategies that transform both student-teacher dynamics and integrate learning into real-world contexts (Table 2).

Table 2. Contexts for changes in the learning system

Category	Subcategory	Proving statements
Changes in the learning process	Socio-economic trends (Lifelong learning)	<i>"Increasing importance of lifelong learning, but also the separation of institutions"; "Balance between primary education and training, and lifelong learning"; "More reliance on lifelong learning"; "Personal lifelong learning becomes an advantage"; "New ways of learning will emerge, tailored to future skills-related needs in line with the demands of the labor market";</i>
	Learning processes and strategies: assessment, personalization	<i>"There will be more research-based learning, the development, testing, and continuous improvement of personal theories"; "New models of assessment (especially formative assessment)"; "Personalization of learning strategies"; "Less unnecessary skills and expertise will be required from students when learning"; "Holistic learning management"; "Learning in project teams."</i>
	New skills: collaboration	<i>"Learning from peers will be part of the learning process"; "The market will decide what we will need to learn (loss of knowledge about our cultural heritage)"; "The need to learn how to educate oneself"; "Need for multiple skills (multidisciplinary and 'do-it-yourself' practice)"; "Problem-solving and adaptation skills"; "Focus on knowledge creation"; "Skills development takes precedence over knowledge."</i>
	The science of educating oneself	<i>"To integrate, test, and continuously improve"; "Teachers will be more involved in team training activities"; "Leadership-based learning."</i>
	New strategies and technologies	<i>"Strong artificial intelligence."</i>
	Learning with technology	<i>"High-quality digital learning environments"; "Learning without physical classrooms"; "Augmented reality and innovative modeling"; "Learning motivation will be based on social networks"; "... Mobile tools will be a substitute for learning and memory"; "Mobile tools support learning."</i>
	Content and education programs	<i>"The content and environment of learning will change"; "A proportionately growing knowledge base."</i>

Education experts are envisioning a rapidly transforming world where the principles of integration, collaboration, coordination, and personalization will become essential strategies for equipping citizens with the skills and mindsets necessary for active, meaningful participation in society. In this emerging framework, individuals are not only prepared to engage with current social and professional landscapes but are also empowered to adapt to ongoing shifts in these environments. Recognizing the diverse skills needed in a dynamic world, experts emphasize that educational systems must now prioritize creating environments that foster adaptability, creativity, and resilience among learners.

According to experts, education and training institutions are undergoing a profound evolution, shifting from traditional, isolated learning models into interconnected “learning communities.” These communities are designed not only to deliver knowledge, but also to engage directly with industry and employers. Through these partnerships, educational institutions can better identify and respond to specific skill demands in the workforce, thereby tailoring learning experiences to meet both societal needs and individual aspirations. This collaboration between learning institutions and employers results in more targeted, practical learning opportunities, helping students acquire relevant skills that enhance their employability and social contribution.

In the idealized future teaching and learning environment, as described by education specialists, a highly flexible and inclusive approach to learning prevails. This future envisions a diverse array of learning opportunities accessible to all, with resources readily available and adaptable to the unique needs, interests, and backgrounds of each learner. In such an environment, learners are encouraged to direct their educational journey, accessing a broad spectrum of freely available resources that enable them to learn at their own pace and in a manner best suited to their individual preferences.

Insights gathered from education policymakers, specifically municipal education department specialists, reflect a similar commitment to the principles of flexibility and inclusivity within the educational system. These policymakers recognize that to achieve effective systemic educational change, there must be a deliberate shift in focus from traditional, standardized approaches to more holistic and adaptive models that support lifelong learning (Table 3). Such a system would actively dismantle barriers to access, ensuring that students of all backgrounds have equal opportunities to learn and thrive. Furthermore, the incorporation of new technologies and digital learning tools would enhance the accessibility and personalization of learning experiences, supporting students in shaping their own learning paths.

The systemic changes outlined by policymakers indicate a growing understanding of the complex nature of modern education, where

learning extends beyond formal institutions and becomes a continuous, life-spanning endeavor. This reformed system would promote not only academic excellence but also social equity and inclusion, cultivating an educational environment where diverse learners can come together, exchange perspectives, and build on shared experiences. Ultimately, the envisioned model of education aims to create a society where knowledge is not confined to the classroom but accessible everywhere, preparing citizens to engage meaningfully and effectively in an ever-evolving world.

Table 3. Contexts of systemic changes in education

Category	Subcategory	Proving statements
Contexts of systemic changes in education	Institutions	<i>“more integrated into the world”; “accessible to the needs of pupils and society”; “the boundaries of formal and informal learning are exceeded.”</i>
	New skills	<i>“technological, digital literacy skills”;</i>
	Compatibility of education and training with labor market objectives	<i>“matching programs to the needs of the labor market”; “improving the transition from training to the labor market”; “employees are more involved in education and training.”</i>
	Technologies	<i>“ICT will be commonplace and integrated into the education program.”;</i>
	Challenges	<i>“implementation gap”; “to respond to technological and demographic changes.”</i>

Like teachers and education experts, policy-makers recognize technology as a key force driving transformation in the learning environment. They suggest that as personalization and collaborative learning methods become more widespread, both teachers and students will have greater opportunities to design learning experiences tailored to individual needs, while remaining adaptable to ongoing societal shifts. Policy-makers emphasize that although the current core competencies will continue to hold value, the future will see a heightened focus on the skills and attitudes cultivated through lifelong learning, rather than solely on the accumulation of knowledge.

Policy-makers anticipate that learning will increasingly align with labor market demands, with curricula, content, and learning goals being

more directly connected to the skills required in the workforce. They argue that the labor market should play a more proactive role in shaping and updating educational programs, thereby smoothing students' transition from education and training into the job sector. Education and training institutions, according to policy-makers, will need to enhance transparency, be more publicly accountable, and responsive to the evolving needs of learners. Additionally, they advocate for greater recognition of non-formal learning activities as part of a more inclusive educational system.

A central challenge for the future of education, policy-makers note, is closing the "implementation gap," which requires turning longstanding insights and recommendations into effective action (Mehall, 2020; Dhawan, 2020). This task will be complex, given expected budget constraints, rapid technological advancements, and shifting demographics. Furthermore, barriers to adopting innovative learning strategies—such as ethical concerns around data privacy and inadequate or misaligned teacher training—must be addressed to enable meaningful, lasting educational reforms.

Discussion and Conclusions

The preferences of teachers, experts, and policy-makers were carefully compiled and analyzed, utilizing multidimensional scaling and hierarchical cluster analysis to reveal the structure of the resulting data. Experts organized the various statements on a concept map, where each item's placement reflected its relationship to others, either by proximity or distance. Through an analysis of the content across groups (clusters), four broad directions were identified.

The first cluster group illustrates anticipated changes in formal education. Experts project that educational institutions will shift towards being more empowering and interconnected within an increasingly globalized education market. Informal skills will receive greater recognition and will be more seamlessly integrated into qualification frameworks, aligning educational outcomes with the needs of modern careers.

A significant trend observed within this cluster is a shift in responsibility for competency acquisition from institutions to individual learners, fostering a culture of self-directed learning.

The second cluster highlights a growing role for teachers as mentors, guiding learning strategies that cater to both individual and professional growth. At the core of these concept maps lies the theme of lifelong learning, which not only plays a central role in the future of education but also connects all clusters. Experts emphasize that future learning strategies and skill development will hinge on lifelong learning, allowing individuals to continuously adapt in a world that values ongoing skill renewal. The role of Information and Communication Technology (ICT) is underscored in shaping future learning landscapes. While all groups acknowledge the evolving nature of learning models influenced by ICT, three groups explicitly demonstrate that new technologies are central to developing future learning strategies. Among the anticipated transformations, several key changes stand out: learning will increasingly center on student engagement, with personalized and socially oriented approaches tailored to meet the needs of individuals. ICT will facilitate innovative pedagogical methods, such as experiential and inclusive learning, which integrate both social and cognitive processes into the learning journey. This requires educational institutions to be agile and responsive, offering learning opportunities that are embedded into daily life and accessible to all citizens.

A particularly noteworthy outcome of the research is the profound impact of ICT on future learning strategies. Experts anticipate that ICT will play a transformative role, not only as a tool but as an essential infrastructure in both society and education. With advancements in high-quality, mobile, and affordable technologies—as well as the emergence of user-friendly, customizable, and secure applications—the integration of ICT into everyday life will be seamless. Experts foresee potential developments in sophisticated technologies, such as inclusive 3D learning environments and powerful AI applications, which could drive further changes by making personalized and adaptive learning tools widely available.

The rise of adaptable and integrated technological solutions will underscore the importance of new skills. Evolving communication and interaction patterns will prioritize interpersonal abilities, including communication, collaboration, and problem-solving skills. With vast amounts of information at everyone's fingertips, metacognitive skills—such as critical thinking, self-reflection, and effective information management—will be crucial (Martin, 2020; Mehall, 2020). The ability to navigate complex learning environments will also require self-determination, resilience, creativity, and an entrepreneurial mindset to actively manage one's personal and professional growth.

ICT will not only influence what people learn but also how they learn. Its widespread accessibility and adaptability to diverse learning needs will enable a range of personalized learning paths. Experts predict that future learners will access a variety of flexible and adaptive educational options, including self-paced courses, interactive assessments, virtual reality experiences, serious games, and modeling activities. Learning environments will increasingly cater to individual learning preferences, objectives, and developmental goals, allowing for a dynamic interaction between learners and virtual learning communities. Peer networks and collaborative platforms will promote mutual support and help individuals track progress.

In formal education, including schools and universities, ICT will reshape pedagogical strategies, transforming curricula to better match real-world demands. Mobile learning tools and immersive technologies will bring real-life experiences into classrooms, aligning student skills with the needs of modern workplaces. Teachers will be empowered to create tailored learning materials, monitor student progress through digital portfolios, and adjust instructional approaches in real-time. Engaging, interactive content will become standard, enhancing learning effectiveness and fostering continuous improvement.

For these technological advancements to be truly inclusive, education policy-makers must ensure equal access to ICT and equip all citizens, especially those from vulnerable groups, with the skills needed to thrive in an increasingly digital educational landscape. Policy efforts must focus

on making technology-based learning opportunities equitable and accessible, thus fostering an educational ecosystem where every learner is prepared to participate actively and adaptively in a tech-driven world.

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The Role of New Technologies in Enhancing Primary School Students' Language Skills

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Abstract

Research objective and problems: The utilization of modern technologies into various forms for primary English language teaching and learning has progressively become standard practice worldwide, largely because the new generation of students has grown up in a digital era. It is undeniably true that technology continues to play a significant role in contemporary society. In today's globalized world the English language holds a dominant position influencing nearly every aspect of human life, including education, politics, trade, communication and science. Consequently, the importance of teaching English as a foreign language (EFL) in schools has increased around the world. For 21st century learners, new technologies are second nature, as children interact with them from early age. Therefore, teaching

methods and techniques must be adapted to meet the actual needs of today's learners.

Research methods: The study employed a quasi-experimental research design, which involves manipulating an independent variable, without randomly assigning participants to conditions or orders of conditions.

Structure of the article: The article begins with an introduction followed by a detailed description of the research methods and findings. It concludes with a discussion of key conclusions and research limitations.

Research findings and their influence on the development of pedagogical science: The study demonstrated incorporating various technological tools enhances the quality of instruction, fosters genuine interest in the subject matter, and encourages student creativity throughout the process of learning a second (foreign) language. Moreover, the use of technology noticeably reduces instances of classroom disruptions caused by students.

Conclusions and/or recommendations: The results clearly indicate that the introduction of new technologies in teaching and learning a new language is much more beneficial than the traditional teaching methods, as evidenced by statistical analysis.

Keywords: new technologies, teaching and learning EFL, primary school students, language skills

Introduction

The fundamental skills of English language instruction include listening, reading, speaking, and writing. With the advent of various ICTs (Information and Communication Technologies) each of these language skills can now be mastered in a modern, engaging and student-centered way. Devices such as mobile phones, computers, laptops, tablets and other technologies, along with Internet resources and diverse ICT applications, enable students and teachers to learn and teach more conveniently and comfortably. These tools increase students' motivation to learn and explore the English language, while providing teachers opportunities

to improve the quality of their lessons and actively engage students to boost their language skills. There is a constant need to raise awareness among students, teachers and parents about the benefits that ICTs can bring to the educational process. As technology permeates daily life, its application in the educational system must be thoughtful and purposeful.

The main aim of this paper is to illuminate the importance of adopting new technologies into English language teaching and learning for primary school students. Additionally, this study seeks to assess the extent to which modern technologies can support the development of primary students' language skills. To answer the primary research questions and test the hypothesis, an experimental study was conducted. Another important goal of this study was to demonstrate how carefully selected ICT tools can contribute to achieving the objectives of education for sustainable development (Brooks, 2012). This form of education is recognized as a key to advancing progress across all global development goals. Students should be taught to make informed decisions and take action, both individually and collectively, to catalyze social change and protect the planet. This goal can be obtained by equipping students with the knowledge and skills necessary to tackle an array of global issues such as climate change and the overuse of resources, both of which profoundly impact the well-being of people and the world.

The following research activities were planned for this study: First, two groups of elementary school children (6th and 7th grade) were selected using the convenience sampling technique and in accordance with the principles of experimental research design. Before beginning the experiment, both groups took a pre-test. The experimental phase then proceeded, with the experimental group (hereafter referred to as G1) engaging in lessons incorporating various new technologies for six months, while the control group (hereafter referred to as C) was taught using traditional teaching methods. At the conclusion of the study, both groups took a post-test, followed by a retention test two weeks later.

The primary research hypothesis anticipated that G1 would achieve better results compared to C. If validated, this would provide strong evidence supporting the necessity of introducing new technologies into

classrooms, regardless of the age of the language learners. Naturally, all pre-research and research activities—including the experiment phases and subsequent analyses—were carried out collaboratively. The teaching activities for both groups, including lesson design, were handled by a single teacher, whereas the two other authors of this paper oversaw all post-teaching research activities.

Ethical considerations were carefully addressed. First, the families of the participating students were informed about the experiment and assured that the planned procedures would not negatively affect the students' ultimate academic outcomes. This assurance stemmed from the fact that the students were not complete beginners and that the primary aim of the teaching methods was to demonstrate the benefits of using ICTs to promote sustainable development in learners. Second, the school principal was fully briefed on the planned study, and her permission was obtained to proceed with the outlined procedures. The principal was also informed about the final results of the study. Additionally, approval was secured to alternate the teaching methods used for the two groups in the following term to ensure that the overall instructional outcomes for both groups would be balanced by the end of the year-long process of foreign language instruction.

Lastly, an unexpected outcome of this study, which took place in a rural school, was the demonstration that the application of ICT tools is effective regardless of the setting in which they are implemented.

Literature Review

The way teachers teach and students learn has significantly changed in recent years as a result of the growing use of new technologies in English language education. ICT tools have become an inseparable part of EFL (English as a Foreign Language) classrooms. In the context of English teaching and learning, ICT primarily refers to computer-based technologies such as desktops, laptops, tablets, and smartphones, as well as software and internet-based resources like email, webpages, and social

networking sites (Davies & Hewer, 2009). The integration of technology into EFL is now widely recognized as a crucial element of effective teaching and learning.

Today, both students and instructors can utilize technology-assisted EFL as a tool for accelerating the teaching and learning of English. At many educational institutions worldwide, technology has become an essential component of the curriculum and of language study and instruction. However, conventional methods of teaching foreign languages are still used in certain schools and institutions, particularly in developing countries. The adoption of a wide range of technologies can enhance and support the teaching and learning of foreign languages for both students and teachers. Moreover, it could potentially displace more traditional approaches to language acquisition (Liu, 2011).

The importance and global status of the English language have risen substantially due to globalization. As a result—and partly due to the internet revolution—English language education has become increasingly significant. Advances in science and technology have facilitated the development of numerous technological tools, including computers, mobile devices like smartphones and tablets, digital cameras, social media platforms, software applications, and the Internet. These resources make teaching and learning English more accessible and efficient. The concept of “integration” is frequently discussed in relation to how technology is employed in teaching and learning. Eady and Lockyer (2013) argued that it is time to move beyond merely incorporating technology into the curriculum and instead focus on embedding it into teaching practices to enhance the learning process. As technology becomes an intrinsic part of the educational experience, it poses challenges for instructors from the initial stages of designing learning experiences to the implementation of teaching and learning.

The classroom environment has improved with the integration of new technologies, which assist instructors in meeting the educational needs of their students (Bennett *et al.*, 2000). According to Bransford *et al.* (2000), the use of computer technology empowers both educators and students to create local and global communities that foster connections

and expand learning opportunities. Research by Baytak *et al.* (2011), further demonstrates that incorporating technology into the classroom enhances student learning. Their findings reveal that technology not only improves learning outcomes but also makes the learning process more enjoyable. Additionally, it boosts students' motivation, social connections, engagement, and overall learning experience. Numerous technological tools are available for use in EFL classrooms to help students develop both technological proficiency and language skills. Gholaminia Tabari (2014) sheds light on the growing demand for technology that provides resources and instructional methods for creating an exciting, motivating, and engaging environment for language acquisition.

The use of technology in foreign language learning also impacts the development of communicative skills. By incorporating Internet resources into both classroom activities and independent study, students can improve their listening, speaking, reading, and writing skills. As Oxford (1990, p. 79) points out, new technologies offer more than just drills, as they can serve as "a medium of real communication in the target language, including composing and exchanging messages with other students in the classroom or around the world." Through the use of ICTs and the World Wide Web, students develop online communication skills, participate in discussions, analyze issues, solve problems, think critically, and negotiate meaning. In general, technology provides foreign language learners with limitless educational resources, and enables them to master a variety of English language skills as a second language.

Sabti and Chaichan (2014) note that advancements in educational technology have gradually introduced new teaching and learning approaches in EFL classrooms. The rapid growth of technology has transformed education as a whole and significantly expanded its role in language learning and instruction, particularly in English language teaching. Similarly, Kim (2008) argues that the use of technology in learning settings has shifted the nature of interaction between students and teachers, moving foreign language education from teacher-centered to learner-centered approaches. The integration of technology places the focus of the learning process on the learners themselves regardless of their age.

Technology enhances the classroom environment and allows students to take control of their own learning processes.

Human beings cannot exist without communication and language is the primary tool for this purpose. It is the medium through which we express ideas and connect with one another. Therefore, we need to learn how to use language effectively in real-world, practical contexts. Acquiring language skills—defined as the ability to use a language accurately and appropriately—is fundamental to achieving this goal. The four core language skills—listening, reading, speaking, and writing—are indispensable components of language education. For successful and effective instruction in foreign language courses, each of these skills must be developed and reinforced in accordance with the learners' levels and needs.

As Scrivener (2011) observes, both receptive skills (reading and listening) and productive skills (speaking and writing) are commonly used interactively and in combination rather than in isolation. Incorporating new technologies into teaching and learning processes can greatly enhance access to materials where these skills are integrated.

Effective language learners must develop all four language skills to communicate proficiently in a variety of contexts. Each skill complements and reinforces the others, and they all contribute to overall language proficiency. Learners can improve their language abilities through a variety of methods, including consistent practice, exposure to authentic materials, and targeted instruction in grammar and vocabulary.

Reading, in particular, is the foundation for studying across disciplines. In every area of life, efficient reading enhances a person's ability to function effectively. Many scholars agree that reading is one of the most crucial abilities for academic and professional success. According to Kim & Krashen (1997), those who read more tend to have larger vocabularies, perform better on grammar tests, and write better. Millions of students worldwide prioritize learning to read in a second or foreign language. Aebersold & Field (1997) observe that there is an increasing need for both effective reading programs and high-quality second language reading resources. Similarly, Maduabuchi (2007) stresses that comprehension, as a receptive language process, is the result of an interaction between

the reader and the text. This interaction involves language and thought, as the writer encodes ideas into language, and the reader decodes them into meaning. Since reading is such a crucial ability, teaching it is inherently complex and demanding. Reading comprehension is described by Oakhill *et al.* (2015) as a complex task that integrates cognitive abilities and skills such as word recognition, decoding, and mastery of the language presented in the text. Readers must decipher the codes that the authors frequently use, such as idioms, synonyms, and antonyms. This implies that readers must acquire language knowledge to recognize words, decode text, and ultimately comprehend what they are reading.

Listening, on the other hand, is the receptive aspect of spoken communication and involves to the capacity to understand what is heard. Effective listening requires not only grasping the content of the spoken message but also interpreting, analyzing, evaluating, and assessing what is being said. As an essential component of foreign language (FL) teaching and learning, listening skills are integral to language acquisition. Sevik (2012) asserts that listening is as important as reading since both are receptive skills that focus on acquiring information from an external source. Unlike productive skills, listening and reading allow students to receive and understand language without producing it. However, despite being a receptive skill, listening is a sophisticated interpretative process in which listeners compare the input they hear with their existing knowledge.

According to Harmer (1998, p. 79), writing proficiency “has been acknowledged as one of the essential skills for language learning.” Harmer emphasizes the importance of teaching writing to EFL students and points out factors that support this skill, including reinforcement, language growth, learning preferences, and writing as a valuable skill in its own right. Similarly, Al-Buainain (2009) describes writing as a language skill that requires multiple competencies, including handwriting, punctuation, spelling, vocabulary, grammar, and techniques for planning, reviewing, and editing written work. Writing, therefore, is the ability to communicate ideas through the graphic representation of language.

Speaking is a productive skill that learners must develop to communicate effectively and fluently. Mastering speaking skills is a priority for

many EFL learners, who often evaluate their success in language learning based on their improvements in spoken language proficiency (Richards, 2009). Davis & Pearse (2000) similarly observe that the primary goal of teaching English is to equip students with the skills necessary for successful communication in the language. Speaking instruction has historically been underestimated, which led to the adoption of ineffective teaching methods such as drill repetition and dialogue memorization as the sole strategies for teaching speaking. However, in the 21st century, speaking instruction must help enhance students' communication skills in meaningful ways. According to Nunan (2003), effective speaking instruction should teach learners to: (1) produce English speech sounds and sound patterns, (2) use word and sentence stress, (3) apply patterns of intonation and rhythm in the language, (4) choose appropriate words and sentences based on the social setting, audience, situation, and subject matter, (5) organize their thoughts in a meaningful and logical sequence, (6) use language to express values and judgments, and finally (7) communicate quickly and confidently with natural pauses, which is recognized as fluency.

New technologies offer English language learners a range of tools and resources to enhance their language skills in a variety of ways. By utilizing these tools and platforms, students can gain a deeper understanding of the English language while becoming more confident and fluent communicators. Furthermore, integrating new technologies into the classroom benefits teachers as well. These tools can help educators support their students in developing English language skills more efficiently and effectively.

Method

This study investigated the influence of new technologies on enhancing primary students' language skills using a pretest-posttest quasi-experimental design with a paired control group. This method was chosen based on the core principle of quasi-experimental research, which involves

the manipulation of an independent variable without the random assignment of participants to conditions or orders of conditions (Fraenkel, Wallen, & Hyun, 2012). Random assignment was not feasible in the school where the study was conducted because the groups consisted of equivalent classes from higher grades (6th and 7th). Therefore, the quasi-experimental model was deemed appropriate. The authors strongly believe that this methodological choice provides a robust framework for answering the main research question.

Drawing from the literature and recent studies on the impact of new technologies on developing EFL students' language skills, as well as our personal interest in the topic, the study aimed to answer the following primary research question: To what extent does the use of selected new technologies help Polish primary school students enhance their language skills?

In an attempt to answer this research question, four hypotheses were formulated:

- H1:** There is a difference in students' proficiency in reading when they are taught using new technologies compared to traditional methods.
- H2:** There is a difference in students' proficiency in writing when they are taught using new technologies compared to traditional methods.
- H3:** There is a difference in students' proficiency in listening when they are taught using new technologies compared to traditional methods.
- H4:** There is a difference in students' overall English proficiency in reading, writing, and listening when they are taught using new technologies compared to traditional methods.

Participants

An experimental study was conducted, with the experimental and control groups selected using the convenience sampling technique in line with the principles of experimental research design. The research was carried out in our private school, which we have operated for two years. The school is located in Goczałkowice-Zdrój, a village in southern Poland

in the Silesia Province. Both the experimental and control groups were designed to be comparable. Factors such as the students' prior English proficiency, gender, and age were taken into consideration when selecting participants for the two groups. Each group consisted of 10 eighth-grade Polish primary school students from the same public school in Goczałkowice-Zdrój who had been attending extra English classes at our private school for the past two years. The selected students are believed to be the most relevant participants due to their current level of English proficiency. Moreover, we have been monitoring their progress during the past year of extra classes and were able to confidently assign students to the control and experimental groups without hesitation.

Instrument

Experimental models are governed by three fundamental guidelines: (1) control group, (2) pre- and post-testing, and (3) random assignment. Table 1 provides an overview of the experimental design employed in this study.

Table 1: Overview of the Research Design

Groups	Pre-test	Experimental Process	Post-test	No practice	Retentiontest
G1	T1	ICT-enhanced English teaching and learning	T2	2 weeks	T3
C	T1	Traditional English teaching and learning	T2		T3

In this study, G1 stands for the experimental group, which followed an ICT-enhanced English teaching program, while C represents the control group, which received traditional English language instruction. Both groups completed a pre-test (T1) before the experiment began. After the experimental process concluded, a post-test (T2) was administered to both groups. Both the pre-test and post-test were English achievement tests. Two weeks after the post-test, the English achievement test was administered again to both groups as a retention test (T3).

Procedure

The study employed *A2 Key* standardized tests provided by Cambridge Assessment English. To be able to answer the main research question and evaluate the listed hypotheses, we designed the pre-test and post-test based on sample tasks from the *A2 Key* exams. It is believed that the tasks on the *A2 Key* examination are comparable to those on the English Eighth-Grade Exam, which the participants are scheduled to take in May 2023. The structure of the *A2 Key* examination enables an assessment of three specific language skills: reading, listening, and writing. These skills are also tested in the Eighth-Grade Exam, so we anticipate that the participants will not only benefit from improved language skills but also be better prepared for their final primary school foreign language examination in May.

At the beginning of the 2022/2023 school year, the first part of the study—the pre-test—was conducted. Ten students in the experimental group (G1) and ten students in the control group (C) were asked to take Test 1. Clear instructions were provided for each task, and the students were expected to complete the test within the allotted 90 minutes. Once the students submitted their tests, we began checking them and comparing the results. Following the analysis of the pre-test results, the experimental process commenced. Over six months (from September 2022 to March 2023), the two groups participated in lessons using the selected teaching methods. Classes were held once a week and each session lasted 60 minutes, amounting to a total of 24 lessons for each group. The control group was taught using traditional methods of English language instruction. The lessons were mainly based on the students' course books and workbooks. Additionally, the students were given paper worksheets to complete and were asked to take paper-based achievement tests to assess their current level of knowledge. Reading skills were developed through various exercises in the course books and workbooks. Learners were also taught the rules for writing short e-mails and stories. Listening skills were practiced through tasks from the course books.

However, we observed that these lessons were not interesting enough for the students. Very often they displayed a lack of interest in the materials

and topics presented. A noticeable lack of motivation for doing additional work was also noted. Student participation during the classes was not satisfactory, as the classes were largely teacher-centered. The materials were presented by the teacher, then the students practiced them; the classes were conducted in a monotonous and repetitive manner, without new technologies integrated into these lessons.

The experimental group was taught using various new technologies that we proposed. Course materials were mainly presented in an interactive format, with the use of tools such as interactive whiteboards, laptops, and smartphones. All tested skills were enhanced through the use of websites, applications, and other modern technologies. The students practiced their reading skills using various Internet resources and mainly engaging with interactive, online texts. Writing skills were developed through numerous interactive exercises. Students were asked to compose short e-mails and stories to their peers using smartphones and social networking sites such as Facebook and WhatsApp. Listening skills were mainly developed through the use of authentic materials readily available online.

Our observations revealed that the students had a highly positive attitude toward the classes. Attendance was consistent, with students rarely absent, and their participation in class activities was impressive. They displayed a high level of motivation when requested to do some extra work. The classes were predominantly student-centered. Very often the students suggested topics of interest for class discussions. This resulted in noticeable engagement, as well as consistent preparation for each lesson. In March 2023, the post-test was administered to both groups. The results of the post-test, along with a detailed comparison with the pre-test results collected at the beginning of the experimental process, will be presented below. There was no instruction or practice for two weeks after the post-test. This deliberate pause allowed the researchers to assess the students' retention of knowledge after this interval. At the end of March, the students were asked to complete a retention test to evaluate the knowledge they retained.

Results

The principal aim of this research was to test the four stated hypotheses, which were intended to help find the answers to the main research question. With the use of a pretest-posttest quasi-experimental design, we were able to evaluate these hypotheses and make some general conclusions on the potential benefits of new technologies for primary school students' achievements in English, especially in enhancing their language skills.

At the beginning of the 2022/2023 school year, students from both groups were asked to take a pre-test designed to assess three specific language skills: reading, writing, and listening. Following this, the experimental method was implemented over a six-month period.

The control group participated in extra English language classes conducted using traditional methods that primarily relied on standard paper-based course books, workbooks, and other teacher-provided materials, with a marked absence of the selected new technologies.

In contrast, the experimental group attended extra English language classes where numerous selected new technologies were incorporated into the teaching and learning processes. These students predominantly used electronic versions of course books and workbooks, e-dictionaries, different kinds of educational applications and websites, as detailed in the theoretical section of this study.

After six months of implementing the experimental process, both groups took a post-test, once again assessing the three targeted language skills: reading, writing, and listening. The results from both the pre-test and post-test were analyzed and compared to identify changes in the students' performance across the three language skills, with separate evaluations for reading comprehension, writing, and listening comprehension. Finally, the results for all three skills were aggregated for both the pre-test and post-test to evaluate the overall change in students' proficiency.

To test the first hypothesis, the reading comprehension scores from the pre-test and post-test for the two groups of students were compared. The results showed an increase in the number of points scored on the

post-test for both groups. The mean score for the control group increased from 18 to 20.7 points, while the mean score for the experimental group rose from 17.8 to 24.9 points. After the pre-test, the mean scores in both groups were very similar: 18 points for the control group and 17.8 points for the experimental group.

However, after the post-test, the difference in mean scores between the two groups became more pronounced. The control group achieved a mean score of 20.7, whereas the experimental group achieved a mean score of 24.9. This indicates a difference in reading proficiency between students taught using new technologies and those taught using traditional methods. Students in the experimental group outperformed their peers in the reading comprehension section of the test. These findings suggest that the integration of new technologies into the learning and teaching process helped students achieve better results in reading comprehension.

To test the second hypothesis, the writing scores from the pre-test and post-test for the two groups of students were compared. The results also showed an increase in post-test scores for both groups. The mean score for the control group rose from 16.9 to 19.7 points, while the mean score for the experimental group increased from 18.4 to 23.3 points. Notably, the mean score for the control group remained lower than that of the experimental group in the post-test, with scores of 19.7 and 23.3 points, respectively. This demonstrates a difference in writing proficiency between students taught using new technologies and those taught using traditional approaches. The experimental group outperformed the control group in this part of the test as well. These findings reveal that the learning and teaching process involving new technologies helped students achieve better results in the writing section of the test.

To test the third hypothesis, the listening comprehension scores from the pre-test and post-test for the two groups were compared. The results showed an increase in post-test scores for both groups. The mean score for the control group increased from 17.5 to 18.6 points, while the mean score for the experimental group rose from 18 to 23.2 points. After the post-test, the difference in mean scores between the two groups

became more noticeable, with the control group achieving a mean of 18.6 points and the experimental group achieving 23.2 points. These findings suggest a difference in listening proficiency between students taught using new technologies and those taught using traditional practices. Students in the experimental group performed better in this part of the test, which indicates that the inclusion of new technologies into foreign language learning and teaching contributed to improved listening comprehension results.

To test the fourth hypothesis, the combined scores for reading, writing and listening comprehension from the pre-test and the post-test were compared between the two groups. The results showed an increase in post-test scores for both groups. The mean score for the control group climbed from 52.4 to 59 points, while the mean score for the experimental group grew from 54.2 to 71.4 points. After the pre-test, the mean scores in both groups were relatively similar: 52.4 points for the control group and 54.2 points for the experimental group. However, following the post-test, the difference in mean scores between the groups became significantly larger, with the control group scoring 59 points and the experimental group scoring 71.4 points.

These results indicate a clear difference in proficiency in reading, writing, and listening between students taught using new technologies and those taught using traditional methods. Students in the experimental group performed better overall in the test. This demonstrates that the adoption of new technologies in foreign language learning and teaching helped students enhance all three examined language skills. The hypotheses allowed us to conclude that the process of teaching and learning using new technologies has a positive impact on students' academic achievements. Moreover, new technologies significantly enhance learners' language skills.

During the experimental process, we made additional observations regarding differences in the behavior of the two groups. Students in the control group, who were taught using traditional methods, exhibited less motivation and considerably lower levels of engagement during lessons. They often expressed frustration with completing yet another paper

worksheet or exercise in their course-books or workbooks. Many students explicitly requested more interactive versions of the exercises. They showed interest in learning new vocabulary or grammar, but this interest was limited to activities presented through traditional language games, such as memory games, flashcards, and Kahoot!. They were generally disengaged when asked to complete extra exercises and often displayed disappointment when assigned homework for subsequent classes.

In contrast, students in the experimental group were notably more motivated and engaged. The use of different interactive tools greatly enhanced their participation during the lessons. The interactive presentation of materials and the incorporation of educational applications were particularly appealing to them. They asked numerous questions and were highly focused on their class activities. Vocabulary learning through applications such as Kahoot!, Quizizz, Wordwall, Quizlet, and others was their preferred method of study. Similarly, grammar instruction became engaging and enjoyable when facilitated through different apps and websites. It was observed that by the end of the experimental process, students in the experimental group demonstrated significantly greater vocabulary knowledge and a better understanding of grammar compared to their peers in the control group.

Therefore, speaking skills were significantly more developed in the experimental group. Compared to the control group, students in the experimental group felt more comfortable answering questions and frequently used English to communicate both with us and with their peers. These students consistently demonstrated that they were well-prepared for classes. Moreover, completing additional tasks assigned as homework was not a problem for them. They actively participated in material presentations and often expressed a desire to create extra projects on their own initiative.

The observed differences in behavior between the two groups helped us understand the importance of new technologies for students. It became evident that foreign language teaching and learning processes are less effective without the application of ICTs.

Conclusion

This paper focuses on the role of new technologies in enhancing foreign language (FL) skills among primary school students. The findings of the study indicate that teaching and learning with new technologies is statistically more effective than traditional teaching methods. Students who were taught using various ICT tools achieved higher results compared to those taught using traditional methods. Additionally, it was observed that the inclusions of new technologies is essential to meet the needs of modern students. Given these findings, we strongly believe that implementing new technologies into foreign language education is not only beneficial but necessary for achieving effective learning outcomes.

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Distance Learning as a Means of Innovative Teaching for University Students During the COVID-19 Pandemic

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Abstract

Research objectives and problems: The aim of the study was to investigate students' opinions on distance education. The following research questions were posed: 1: How effective was the communication between lecturers and students? 2: What problems did students encounter during remote education? 3: What were the advantages of remote education in the opinion of students? 4: How did students assess the overall quality of remote education?

Research methods: The study employed a questionnaire developed by the researchers to gather the views of students about distance education. The questionnaire was informed by a literature review examining student attitudes

toward remote learning. Based on the research questions, the questionnaire items were revised and compiled into a comprehensive item pool.

A brief description of the context of the presented issue: Distance education requires a reorganization of the teaching and learning process, particularly concerning the roles of both teachers and students. The purpose of this article is to contribute to pedagogical knowledge by discussing innovative approaches adopted at the Pedagogy Department of the National Education Commission University in Krakow during the COVID-19 pandemic.

Research findings and their influence on the development of pedagogical science: The widespread adoption of distance learning was initially fueled by the urgent need for adaptation measures during the pandemic. However, the demand for new teaching models is also a response to rapid societal shifts, increasing digitalization, and evolving student expectations. The integration of modern educational methods at the university level is becoming not only a necessity, but also a challenge that requires updating curricula to meet current needs and technological advancements.

Conclusions and/or recommendations: The findings indicate that students are receptive to modern forms of education, in which digital competences play an important role. This study, conducted during the COVID-19 pandemic, is not exhaustive; it merely serves as a starting point for further reflection and analysis. It would be interesting to carry out a similar follow-up study to compare student opinions from different time periods.

Keywords: distance learning, remote education, innovation, lecturer, MS Teams platform, university students

Introduction

For a long time, higher education was traditionally organized through direct, in-person interaction between lecturers and students. However, this changed dramatically when full-time teaching was suspended on March 16, 2020, due to the pandemic. The entire academic community had to rapidly transition to ensure the continuity of education through

remote learning, using information and communication technologies as a teaching medium. Within just a few days, both lecturers and students had to bridge several years of delay in the adoption of these technologies in education. Distance learning demanded new skills from both teachers and students. Unlike traditional in-person learning, distance learning relies entirely on online communication, supported by technology (Gunawan & Amaludin, 2021; Hollister, 2022). The interaction between lecturers and students became limited only to verbal messages and basically devoid of non-verbal cues such as eye contact, facial expressions, gestures, and body posture, elements that are critical to effective communication (Sufa, 2008).

The purpose of this article is to contribute to pedagogical knowledge on the implementation of innovative solutions in higher education. Specifically, it seeks to understand students' perspectives on remote learning as an educational innovation during the COVID-19 pandemic.

Innovation—An Overview of the Concept

Innovation is commonly understood as the process of generating novel ideas and translating them into practical, implementable solutions (Barak et al., 2020). The term is closely tied to concepts like change and invention and refers to any alteration based on a new idea or concept. In order for an innovation to be meaningful, it must be implemented in practice. Changes related to innovation can be occasional, planned, or systematic.

In education, innovation is inseparable from introducing changes within educational institutions, including new or significantly improved products (such as goods or educational services), educational processes, teaching methods, or new or organizational practices, whether in the workplace or in the interactions between educational institutions and their communities. Innovations of this kind may impact the entire education system or specific components (Vincent-Lancrin et al., 2019, p. 17). Teresa Bauman (2011, p. 267) notes that "the university is not a place where innovations are introduced particularly often or willingly, but

it is where young people are prepared to implement change in their future work, improving companies and perhaps even the world.”

Universities have two primary roles: conducting research and educating students. However, in the past decade, the conversation around innovation in higher education has grown considerably, largely due to the digital revolution. Digital technologies have facilitated the spread of innovation at universities. On the one hand, universities respond to a social context in which digital technology shapes societal attitudes and expectations, and on the other hand, they must take into account the students’ shifting approaches to learning. Technological advances have promoted innovations in educational delivery, including distance learning, one of the major education modes, which heavily relies on technology (Li, Wong, & Chan, 2023). Information and communication technologies have transformed all aspects of education, with distance education becoming a rapidly expanding field (Natarajan, 2005).

During the COVID-19 pandemic, distance learning became a mandatory practice, which required both students and lecturers to adapt to a new educational reality. Distance learning is defined as “an approach to teaching and learning that is based on the use of electronic media and devices as tools for improving access to training, communication, and interaction” (Sangra et al., 2012, p. 152). What had long been considered a supplement to traditional education was now recognized as the foundation of the education system. This shift demanded changes in standard educational practices, learning new behaviors, and a different approach to achieving educational goals and tasks. Distance learning leverages information technology to provide flexible education at the convenience of the student.

Reflecting on the specifics of distance learning allows for a deeper understanding of students’ attitudes towards this technology-based form of education, which represents a type of innovation. It also helps tailor educational offerings to better meet students’ needs and expectations, which can ultimately contribute to both their satisfaction and the effectiveness of their learning.

Methodology

Purpose of the Study

The aim of the research was to examine students' opinions on distance education. The following research questions were posed:

1. How effective was the communication between lecturers and students?
2. What problems did the surveyed students encounter during remote education?
3. What were the perceived advantages of remote education according to students?
4. How did students assess the overall quality of remote education?

In this diagnostic research, guided by the principle of openness, hypotheses were not formulated. Instead, research questions, data collection methods, and interpretations were precisely established (Łobocki, 2013).

Participant Group

This research was carried out among students in the pre-school and early childhood education program at the University of the National Education Commission in Krakow, who were taking classes remotely via the Teams platform. A non-random, voluntary sampling method was used for sample selection, allowing participants to voluntarily participate in the study. The online survey was anonymous. The selected student population (230) received a link on the Teams university platform directing them to the research tool hosted on Google Forms. No email addresses or identifying information were collected. The final sample group consisted of 180 students who completed the questionnaire in full. All participants were female, and they included students from the first (23.3%), second (38.9%), third (26.7%), fourth (23.3%), and fifth (14.5%) years of study. Participants were enrolled in both full-time (76.6%) and part-time (23.3%) programs. The research was conducted from January to May 2021.

Data Collection Method

A questionnaire developed by the researchers was used to determine the views of students on distance education. To create the questionnaire, a literature review was first conducted to investigate student perspectives on distance learning. Existing survey items on this topic were then reformatted in line with our research questions and an item pool was created. This draft questionnaire was reviewed by experts to ensure its content validity, and several statements were revised following their recommendations. The finalized survey, consisting of 34 questions, was administered to 230 students. It was divided into two sections: the first section contained 4 closed-ended questions on student demographics, and the second section comprised 30 questions (both closed- and open-ended) aimed at understanding students' views on distance education.

Data Analysis

In this study, we have tried to present students' perceptions of distance education through descriptive analysis. After data collection from the research sample, the data were analyzed using quantitative methods, specifically the Pearson Product-Moment Correlation.

Results

1: Communication between lecturers and students

According to surveyed students, lecturers preferred synchronous communication and utilized reliable hardware and software to ensure quality interactions, primarily using Microsoft Teams (99.4%) and university email (98.9%).

Respondents noted that lecturers provided materials in various formats, including multimedia presentations (92.8%) and digital or text-based materials (66.6%). Most students rated these materials as high quality (77.8%), interesting and relevant to the subject matter (58.3%), and presented in a clear and organized manner (46.7%). Most students

reported revisiting these materials several times to better understand the topic, though some provided negative feedback on the materials.

Distance learning also encourages independent information-gathering and problem-solving. Beyond ready-made content, lecturers prepared materials that required students to think independently and take initiative (e.g., recorded videos—41.1%; self-completed projects—73.3%). The variety of technological tools, such as learning platforms, email, and video conferencing software, has equipped students with digital skills that are essential in today's world. Access to a variety of online resources allows students to reread and review difficult content, which can enhance their comprehension.

Distance learning extends beyond technology; it also involves the ability to communicate effectively at a distance and to work as a team in virtual settings. When assessing lecturers' communication skills, most students indicated that instructors skillfully conveyed knowledge and experiences, with about one-third responding "yes" and nearly two-thirds selecting "rather yes." Additionally, the majority rated the lecturers' engagement level during the classes as very high (13.3%) or high (67.2%).

Distance education can be implemented not only in a vertical (top-down) structure, where communication flows from lecturer to learner, but also in a horizontal structure that actively promotes student-to-student communication. In the perception of the respondents, instructors put emphasis primarily on group work (collaborative work in teams of several students—95%), and individual work (70.6%), while collective (whole-class) activities were less common (26.7%).

In describing the emotional atmosphere of the classes, participants largely confirmed that lecturers strived to create a positive environment, with nearly three-quarters (71.7%) selecting "rather yes," and one-quarter "yes." In addition, most students did not experience any problems in communicating with instructors, with responses of "rather not" (67.8%) and "no" (12.2%) that indicate a lack of communication difficulties. About one-fifth of students, however, declared that they were experiencing some issues.

2: Challenges in remote education

Like any educational format, distance learning has its limitations. Respondents pointed to a number of difficulties that they encountered during remote learning. A significant percentage (71.1%) complained of physical discomfort, including eye strain, muscle pain, and back pain, while many also struggled with concentration (64.4%). Additionally, a considerable portion of students (60%) felt affected by the absence of direct social contact. About half of the respondents mentioned the monotony of classes and an excessive study load, along with feelings of exhaustion and stress. Roughly 30% of respondents reported discouragement and difficulty absorbing information. Many also noted fatigue from prolonged screen time and mental exhaustion. Some respondents faced a number of difficult situations and felt a lack of understanding from their lecturers regarding their experiences.

3: Advantages of remote education

Distance learning, as a key component of modern education, offers many benefits, such as accessibility, flexibility, the possibility to adjust learning pace individually, and access to a variety of tools, devices, and educational techniques. In evaluating remote education during the pandemic, the surveyed students highlighted safety as a primary advantage, with the majority (79.4%) noting time savings and financial savings (73.9%), as well as the ability to learn in different locations (67.8%) using devices like computers, laptops, and even mobile phones. In addition, about half of the respondents rated the following aspects of remote communication highly: access to diverse materials, the ability to learn at your own pace, convenience, the ability to balance study with work, and improved time management. One-third of respondents also noted reduced stress related to learning.

4: Evaluation of communication between lecturers and students and evaluation of the quality of remote education

Through qualitative and quantitative analysis of the collected empirical data, it was possible to examine the interdependence of various

factors with students' assessments of the quality of distance education. Pearson's chi-squared test of independence was applied, and Pearson's r-correlation coefficient was calculated. It was assumed that variables associated with material, social, and operational aspects of remote communication would influence students' assessments of the overall quality of remote education. These assessments were then compared with the following variables:

- Opinions on the lecturers' use of equipment and software for effective communication with students: A positive correlation was identified, with a moderate Pearson's r correlation coefficient ($r=0.310$); ($\chi^2=19.533$; $df=3$; $p<0.001$);
- Opinions on lecturers' efficiency in using e-learning tools: The correlation was positively directed, with a moderate Pearson's r correlation coefficient ($r=0.452$); ($\chi^2=51.618$; $df=9$; $p<0.001$);
- Opinions on lecturers' ability to share their knowledge and experience with students: A statistically significant, moderately positive relationship was found ($r=0.421$); ($\chi^2=61.874$; $df=6$; $p<0.001$);
- Opinions on lecturers' clarity in formulating requirements: A statistically significant, moderately positive correlation was observed ($r=0.333$); ($\chi^2=80.737$; $df=9$; $p<0.001$);
- Assessment of lecturers' level of involvement during classes: A statistically significant positive correlation was found, with a moderate Pearson's r coefficient ($r=0.389$); ($\chi^2=32.847$; $df=6$; $p<0.001$);
- Opinions on lecturers' ability to engage students: The analysis revealed a statistically significant, moderately positive correlation ($r=0.407$); ($\chi^2=54.313$; $df=9$; $p<0.001$);
- Opinions on lecturers' efforts to create a positive atmosphere and supportive emotional climate in class: A statistically significant, positively directed correlation was observed, with a moderate Pearson's r coefficient ($r=0.355$); ($\chi^2=33.409$; $df=6$; $p<0.001$);
- Opinions on the presence of communication issues with lecturers: A statistically significant negative correlation was found (indicating that more frequent problems in communication correlate with

a poorer rating of distance education quality), with a weak Pearson's r coefficient ($r=-0.198$); ($\chi^2=28.339$; $df=9$; $p<0.001$).

Discussion

The implementation of new tools and technologies during online learning, necessitated by the constraints of the COVID-19 pandemic, posed challenges for both lecturers and students. Lecturers had to modify their teaching methods, create new learning resources, and adjust class guidelines, while students needed to adapt to a new learning environment. This shift required not only technical changes but also a transformation in the perceptions, attitudes, and skills of both parties.

An analysis of students' opinions on distance learning provided valuable information about the educational landscape today. Students generally held a positive attitude towards online learning. This finding was also confirmed in a study conducted among students at three major Polish universities (Kocot & Kwasek, 2023), which found that online learning tools effectively supported communication, were familiar and acceptable to students, and positively influenced the effectiveness of the teaching process.

The students we surveyed rated their technological skills in using new technologies, teaching equipment and software positively, and their overall perception of distance education was similarly favorable. These findings align with other studies on students' views of remote learning during the pandemic, such as research by Brzózka et al. (2021), Gurbisz (2021), Heród et al. (2021), Jawor-Joniewicz (2023), and Kwasek et al. (2023). These studies show that the majority of students had a favorable view of distance learning. Overall, the research findings suggest that, in the opinion of the surveyed students, remote education is closely tied to communication effectiveness in class, and its advantages clearly outweigh any drawbacks. Students, working in groups preferred by lecturers rather than individually, were able to communicate, collaborate, and share knowledge and experiences with one another.

Nearly half of respondents reported that communication occurred within a positive atmosphere. The analysis shows a moderate positive relationship between students' assessment of educational quality and their view of lecturers' efforts to create a favorable emotional climate. In contrast, a weak negative relationship was found between the assessment of educational quality and the occurrence of problems in communication with lecturers. This indicates that frequent communication issues are associated with lower evaluations of remote education quality.

These findings suggest that effective communication between lecturers and students significantly impacts the perceived quality of remote education. However, examining additional variables could further clarify these relationships and their implications. The qualitative and quantitative analysis of the collected empirical material also revealed the interdependence of certain variables with respondents' overall evaluation of distance education. Factors related to material, social, and implementation aspects of distance communication influenced students' perceptions of remote learning quality, although these associations were moderate, which suggests that while there are some links between the variables, they are not as strong as the relationship between communication quality and the overall evaluation of distance learning.

Research conducted among Italian lower secondary school students indicates that a positive classroom climate and strong teacher-student relationships promote better learning outcomes and help students manage emotions more effectively in stressful situations (Pozzoli, Gini, & Scrimin, 2021). Moreover, specific beliefs and attitudes of adult educators, including academic instructors, along with the messages they convey to students also influence students' future learning activities and play a very important role in shaping their self-regulation and learning behaviors (Kolber, 2021, p. 147).

The surveyed students reported that the content presented by the lecturers was clear, accessible, and well-organized. The provided materials varied in form, were not only engaging, high-quality, and relevant to the subject, but also encouraged independent thought and activity, which helped students develop their creativity, self-control and self-discipline.

Numerous studies indicate that, from the perspective of pupils and students, distance education was generally not perceived positively (Abasi et al., 2020). In addition to commonly reported technical problems (Agarwal & Kaushik, 2020), students encountered difficulties in mastering particularly difficult concepts without direct teacher contact, maintaining high motivation during online classes, managing time effectively, and engaging in independent learning. Research by Długosz (2020) indicates that students reported monotony in classes, lack of group work, rapid presentation of material, and limited flexibility.

In contrast, in our study, students positively assessed the quality of remote classes, including the organization and structure of both group and individual work. They expressed appreciation for the quality of the presented materials and the methods of their delivery. Additionally, students reported few major reservations about the lecturers' performance; they perceived lecturers as well-prepared, committed, and skilled in using modern technologies to encourage active participation, which further motivated students to learn and engage. The overall quality of remote classes, including lecturers' contributions, was similarly rated positively by more than half of the surveyed students of applied linguistics at the University of Gdansk (Toporek, 2023), though the effects of distance learning remained somewhat inconclusive.

Nonetheless, over half of our respondents reported difficulties associated with remote communication, including health problems, difficulty concentrating, fatigue, excessive workload, mental exhaustion, stress, and a perceived lack of empathy from lecturers. Furthermore, the absence of direct social interactions was noted as a factor that may lead to discouragement, lower motivation, learning difficulties and a sense of isolation in pursuing academic goals.

Conclusions and implications for policy and practice

The widespread adoption of distance learning was initially a necessary adaptation during the pandemic. However, the shift toward a new teaching model is also due to rapid societal changes, increasing digitalization, and evolving student expectations. The use of modern formats of education at university level has become not only a necessity, but also a challenge that requires curricula to be adapted to contemporary needs and technological advancements.

Survey results on students' attitudes toward remote learning show a notable adaptation to digital forms of education. Although remote learning emerged as a response to the new challenges posed by the COVID-19 pandemic, its acceptance and effectiveness suggest that students view it as a potentially sustainable component of higher education. In this context, it is important to adapt the tools to meet students' needs. Despite generally positive assessments of remote learning, universities should regularly update the tools they use, and ensure that learning methods are diverse, flexible, and tailored to individual student needs and expectations. Universities should also offer support to help students make the most of remote learning resources. Initiatives that could make distance learning more appealing include developing more interactive learning platforms, creating engaging and interactive learning materials, holding regular online sessions, and providing technical and pedagogical support. Furthermore, student feedback surveys can help refine teaching strategies to better meet the needs of students in the Education 4.0 era.

These research findings lead to several recommendations for educational practice:

1. New educational strategies should be incorporated into the teaching process to keep students motivated and engaged in learning.
2. Materials created for remote education should be clear, accessible, engaging, and of high academic quality, while also being cognitively diverse to support independent learning.

3. Teachers' professional development should be promoted by expanding opportunities for them to gain expertise in new technologies and strategic training. Teachers' digital competences should be developed as necessary for creating cognitively and creatively stimulating teaching materials, and fostering educational innovations that drive greater educational effectiveness and satisfaction in learning.
4. Cognitive, metacognitive, affective, and social strategies should be integrated into the school curriculum.
5. New educational strategies should be embedded in teaching to promote students' motivation, engagement, and self-regulation in learning. Students should be provided with pedagogical, psychological, and social support, which includes strengthening teacher-student relationships, creating space for reflection and self-reflection, building self-regulatory skills, encouraging creative problem-solving, and helping students recognize and manage their thoughts and emotions. Additionally, students should be introduced to stress coping techniques, the development of self-efficacy, and an entrepreneurial mindset, understood as resourcefulness in life. Coaching techniques, for example, may support these objectives.
6. In order to stimulate and sustain students' engagement, teachers should bolster motivation through creating a positive atmosphere and transparency during classes, ensuring clear communication and grading criteria, offering relevant topics and tailoring instruction to students' needs, capabilities, and interests.
7. Strong relationships between students and teachers should be established and maintained to promote a supportive learning environment. Teacher training should also focus on enhancing emotional connection with students in virtual settings and improving live interactive communication through platforms like Zoom or Google Meet.
8. Research analysis suggests that students' perception of distance education is heavily influenced by factors related to the material, social, and communicative aspects of remote interactions. When communication between students and lecturers is smooth and effective,

the overall assessment of distance education improves. Therefore, it is necessary to eliminate barriers in student-lecturer communication, by providing consistent feedback, practicing active listening, and creating a positive atmosphere in class.

These findings attest to students' openness to modern educational methods that prioritize digital competences. Since this study was conducted during the COVID-19 pandemic, it does not exhaustively address all aspects of the issue; rather, it is merely a starting point for further exploration and analysis.

As the study relied solely on feedback from students at a single university, some subjectivity or limitations may be present. It would be worthwhile to carry out a similar study to compare student opinions over different periods. Such an analysis could provide a more complete picture of university students' evolving preferences for teaching methods and techniques. Despite the study's limitations, the findings contribute meaningfully to discussions on the role of distance learning in higher education.

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Enhancing Interaction: The Crucial Role of Eye-Tracking Technology in Assessing Children with Profound Intellectual and Multiple Disabilities in Poland

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Abstract

The Objective of the Research: This research focuses on the pivotal role of utilizing eye-gaze assistive technology (EGAT) in diagnosing individuals with profound intellectual and multiple disabilities (PIMD). The study included six children aged 5–12 with PIMD who do not use speech. The primary aim was twofold: first, to assess and validate diagnoses (certificates) issued by Psychological and Pedagogical Counselling Centres in Poland, which traditionally do not use eye-gaze assistive technology (NEGAT); second, to identify specific exercises from the *Look to Learn* and *eyeLearn* software that facilitate the examination of various cognitive abilities. These abilities include visual-spatial skills (e.g., perception ability, visual-auditory coordination, and precision of vision), language skills (both comprehension and expression), and logical thinking (ranging from cause-effect actions to making choices among multiple elements).

Research Method: The study employed an action research approach with methodological triangulation, including:

- Analysis of medical and therapeutic documents (certificates from Psychological and Pedagogical Counselling Centres)
- Participant observation (both open and structured), and
- The multiple (collective) case study method.

Sessions using EGAT were developed, and exercises that could be used to verify specific skills were selected. The PCEye Mini Track & Learn tool—featuring Gaze Point & Gaze Viewer—was used in the research.

Structure of the Article: The article is organized into eight sections: introduction; a brief overview of the current diagnostic procedures in Poland; objectives; methods; results; discussion on improving access to EGAT; and conclusions.

Research Findings and their impact on the Development of Educational Sciences: The findings indicate that diagnoses provided by Psychological and Pedagogical Counselling Centres in Poland may require reconsideration. By incorporating eye-gaze assistive technology (EGAT) and re-diagnosing six children previously identified as having profound intellectual disabilities, we identified previously unrecognized abilities in speech comprehension, logical reasoning, visual-spatial skills, and learning pace. The research brings attention to the necessity for standardized tests using eye-tracking technology to assess the intellectual functioning of children with disabilities.

Conclusions and Recommendations: It is recommended that Psychological and Pedagogical Counselling Centres be equipped with EGAT to ensure more accurate diagnoses of children suspected of having profound intellectual disabilities. The study advocates discontinuing the issuance of certificates indicating profound intellectual disability and instead implementing functional assessments using EGAT.

Keywords: profound intellectual multiple disabilities (PIMD), assistive technology (AT), eye-gaze assistive technology (EGAT), non-eye-gaze assistive technology (NEGAT), *eyeLearn* software, *Look to Learn* software, functional assessment

Introduction

The WHO-UNICEF Global Report on Assistive Technology (2022) reveals that more than 2.5 billion people require one or more assistive products. For children with disabilities, access to assistive technology is often the first step toward development and education. In the *Digital Inclusion: White Paper*, the authors note, “At this moment still too many people worldwide are disabled by inaccessible technology, or do not have access to assistive technology (AT-based) solutions that could help them to participate on an equal footing in modern society” (Hoogerwerf et al., 2016, p. 4). Further, they caution that “The rapid rate of innovation in Information and Communication Technologies (ICT) brings the risk that some groups remain, often unwillingly, behind in the adoption of new technologies” (Hoogerwerf et al., 2016, p. 4).

The initial quote underscores the challenges faced by children with profound intellectual and multiple disabilities (PIMD), highlighting the regrettable reality that they often encounter obstacles in obtaining accurate diagnoses. This difficulty frequently arises from their limited access to cutting-edge diagnostic technologies. Our research reveals that this group is disproportionately affected by the lack of advanced and accurate tools in the Psychological and Pedagogical Counseling Centres in Poland. Children with PIMD represent a diverse population that includes individuals with severe to profound cognitive disabilities, statistically estimated IQs below 20–25, and developmental ages of 24 months or less. They also often exhibit significant motor limitations (Nakken & Vlaskamp, 2007). The second quote points to challenges encountered by educators and professionals who work with this group. In Poland, many teachers remain unfamiliar with essential concepts such as “universal design” and “assistive technology” and lack proficiency in ICT-AT skills (Kochanowicz, 2023a).

Specialist knowledge is crucial for providing children with PIMD with the tailored support they need for holistic development in an increasingly digital and accessible world. This accentuates the urgent need for teachers to acquire both basic and advanced knowledge and to develop

specialized skills, particularly in Information and Communication Technology for Assistive Technology (ICT-AT). Numerous scholars have extensively discussed the profound impact of the ongoing digital revolution, highlighting how it rapidly reshapes lifestyles, work dynamics, learning methodologies, social interactions, and community engagement (Guillén-Gámez et al., 2023).

In recent studies focusing on PIMD, researchers have actively sought avenues to integrate individuals with PIMD into scientific research (Skarsaune, 2023). There is limited knowledge about the quality of assessment methods used for diagnosing individuals with PIMD. Most tools currently employed are not specifically designed for this population, and information regarding their effectiveness is scarce. There is a pressing need for guidelines on developing and utilizing assessment methods tailored specifically to individuals with PIMD (Wessels et al., 2021). It is imperative to recognize that achieving social inclusion and accurate diagnosis requires a fundamental understanding of individuals with PIMD and direct engagement with this population. Such an approach enables researchers to gain comprehensive understanding of the challenges associated with this group (Maes et al., 2021). Inclusive research and knowledge production involving people with profound disabilities should be based on a fundamental understanding of individuals with PIMD as equal citizens and contributors to research (Gjermestad et al., 2023). Including individuals with PIMD in research is fundamental to ensuring their genuine participation and representation in studies focusing on profound intellectual and multiple disabilities (de Haas et al., 2022).

Eye-tracking technology has emerged as a powerful tool, enabling researchers to gain deeper insights into children's interactions with their surroundings. For instance, recent studies demonstrate that even short-term use of eye-gaze assistive technology (EGAT) can have a significant positive psychosocial impact (Andreassen et al., 2024). Eye-tracking technology proves to be highly suitable and effective as an assistive technology for enhancing learning environments, leisure activities, and communication for children with disabilities (Andreassen et al., 2024; Donmez, 2023; Kochanowicz, 2021).

To elucidate the utility of eye-tracking technology, researchers adopt a straightforward approach by posing fundamental questions about the information gleaned through this innovative tool. Questions such as, “What attracts the attention of users or learners?” and “Which elements in a user interface or educational material capture or divert their focus?” aid in unraveling the intricacies of visual engagement. Researchers also investigate factors influencing attention, ranging from identifying focal points to understanding distractions, and tracking the chronological sequence in which users or learners navigate information on a screen (Molina et al., 2024; Błeszyński et al., 2019).

The significance of this technology lies in its capacity to objectively and non-invasively measure various aspects of attention and cognitive processes. Through meticulous examination, researchers aim to discern how users or learners locate targeted elements in specific configurations, whether in an interface or instructional material. Additionally, the temporal aspect is scrutinized, encompassing the time required for users to find and recognize specific targets—a critical dimension explored in the 2024 study by Molina et al.

Research conducted in Sweden, involving a total population survey, demonstrates that eye-gaze control devices (EGCD) contribute to constructing new knowledge about individuals, both children and adults, with multiple disabilities (Hemmingsson & Borgestig, 2020). Additionally, comparative studies on the use of eye-gaze assistive technology (EGAT) for communication versus its absence (NEGAT) have been carried out in Sweden, Dubai, and the USA (Hsieh et al., 2021). In autism research, eye-tracking technology has proven to be an effective tool for evaluating social cognition, revealing associations between visual social attention and autism characteristics. Meta-analyses have been used to explore whether visual attention to socially salient regions (SSRs) of stimuli correlates with autism characteristics assessed by clinical tools (Jenner et al., 2023).

The results of a 2022 study confirm the feasibility and importance of using eye-tracking as a new theoretical and practical framework for studying profound intellectual and multiple disabilities (Cavadini et al., 2022). The authors noted that “through daily exposure to repeated perceptual

events associated with subjective experience, PIMD individuals may have developed unsuspected cognitive skills that cannot be assessed with existing evaluation methods and instruments but that eye-tracking-based training programs could help to identify, thus contributing to better understanding the perceptual learning process in this population. This would be particularly important for the support persons who work with individuals with PIMD” (Cavadini et al., 2022, p. 23). Similar conclusions were drawn in recent studies conducted in Taiwan on children with disabilities (Hsieh et al., 2023; Hsieh et al., 2022).

At the 2023 AAATE conference in Paris, one of the authors of this article participated in a scientific session, contributing to the discussion on the important role of educators and teachers in uncovering the educational potential of children with PIMD through the use of eye-tracking technology (Kochanowicz, 2023b). Initially, research in this field was expected to direct efforts toward outlining the educational opportunities for non-speaking children with multiple disabilities using eye-tracking technology. This included identifying modern educational solutions—devices and software—that could transform the child’s experience in learning, communication, and leisure activities (Andreassen et al., 2024; Hsieh et al., 2022; Kochanowicz, 2019).

Attempts have also been made to use EGAT in art therapy sessions for children with PIMD. Eye-tracking technology as an assistive tool (EGAT) in art therapy has been shown to provide children with PIMD a degree of autonomy and independence in their creative activities. It enables them to express emotions and often serves as their only means of independent activity. Participation in these sessions brought notable improvements in well-being and quality of life for the children involved (Kochanowicz, 2021).

Furthermore, during these art therapy sessions, children with PIMD were observed to display abilities that exceeded the descriptions in their certificates from the Psychological and Pedagogical Counseling Center. These abilities included enhanced visual-auditory coordination, comprehension and expression through augmentative and alternative communication (AAC), cognitive skills, and memory (Kochanowicz, 2021).

Diagnosing profound intellectual disabilities in children with conditions such as cerebral palsy or rare genetic disorders poses major barriers due to the absence of verbal communication. This difficulty is attributed to the lack of eye-tracking technology, which could optimize interaction during diagnostic processes at Psychological and Pedagogical Counseling Centres. The implementation of eye-gaze assistive technology (EGAT) can uncover unexpected intellectual abilities in non-speaking children, as highlighted by researchers such as Hemmingsson and Borgestig (2020). EGAT facilitates the assessment of eye movement patterns, visual attention, field of vision, preferences, and the ability to make selections using eye movements.

A Brief Overview of the Current Diagnostic Procedure in Poland

According to data from the Central Economic Information Center for 2023, there are 1,218 Psychological and Pedagogical Counseling Centres in Poland. These centres play a crucial role in supporting children with PIMD. Upon an assessment, a child diagnosed with profound intellectual disability typically receives a certificate confirming their condition, which serves as a gateway to lifelong educational paths. For compulsory schooling, children with PIMD can either participate in rehabilitation and educational classes or receive individualized instruction at home, as regulated by the Ministry of Justice and the Ministry of National Education (Regulation of the Minister of National Education of April 23, 2013).

Specialized diagnosticians within these centers primarily rely on information provided by parents to evaluate a child's development. However, these centers often lack the necessary devices or tests to verify the accuracy of this information. As of 2023, data from the Polish Data Portal indicates that 7,890 individuals under 25 years old (including 3,404 girls) hold certificates authorizing their participation in rehabilitation and educational classes due to a diagnosis of profound intellectual disability.

Children and young individuals with profound intellectual disabilities in Poland are excluded from the mainstream education system, despite the state's constitutional mandate to provide universal and equitable

access to education for all citizens. Instead of being formally recognized as students, they are categorized solely as participants (without *student* status) in rehabilitation and educational classes (Zaorska, 2023). These classes lack divisions based on age groups or educational stages.

Researchers and practitioners suggest revisiting the educational provisions for individuals with PIMD to facilitate their integration into the mainstream education system. Children and youth aged 3 to 25 with PIMD participate in rehabilitation and educational classes tailored to their specific needs through individually designed programs. However, unlike mainstream students, there is no legal requirement to develop standardized curricula or frameworks for these programs for each school year. The regulations only outline a few broad areas that such classes should address over their entire duration, which can span up to 22 years (Kopeć, 2021).

Findings at the macrosystem level indicate a lack of transparency in legal provisions, while at the microsystem level, there is a pressing need to establish applicable standards for the education of children with PIMD (Kopeć, 2020). Furthermore, there is an urgent need to create a comprehensive and detailed account of the legal diagnostic procedure for children with PIMD in Poland. This need arises because these children were first formally recognized within the Polish education system from a legal perspective only in 1997 (Regulation of the Minister of National Education of January 30, 1997). However, carrying out this task necessitates dedicated scientific research focused on this particular aspect. Such research should identify the obstacles to accessing education for this group of children in Poland based on the last regulation from 2013 and formulate recommendations and solutions accordingly.

Objectives

The primary aim of this research is diagnostic and exploratory, aimed at assessing and validating the diagnoses (certificates) issued by Psychological and Pedagogical Counseling Centres in Poland that do not utilize eye-gaze assistive technology (NEGAT). The practical objective is to iden-

tify types of exercises from the *Look to Learn* and *eyeLearn* software that facilitate the assessment of visual-spatial skills (e.g., perception ability, visual-auditory coordination, precision of vision), language skills (e.g., comprehension and expression), and logical thinking (e.g., cause-effect actions and choosing from multiple elements). As part of this research, sessions using EGAT were developed and applications and exercises that could be used to verify specific skills were selected.

Methods

The study employed the action research method with methodological triangulation, which included:

1. Analysis of medical and therapeutic documents (certificates from the Psychological and Pedagogical Counseling Centres),
2. Participant observation techniques (both open and structured), and
3. The multiple (collective) case study method.

The research began with a fundamental question: *How could eye-tracking technology be used to re-diagnose children with profound intellectual disabilities?*

The PCEye Mini Track & Learn tool—featuring Gaze Point & Gaze Viewer—was used in the research. This tool records gaze and sound, or sound alone, and allows playback and basic data analysis using heat maps and gaze plots. It facilitates the assessment of physical capabilities and cognitive understanding. However, the software is not used for making medical diagnoses, such as identifying neurological diseases.

The first software used in this research, *eyeLearn*, was developed by combining academic knowledge with practitioners' experience in Poland (AssisTech). From the 170 available exercises, 4 were selected for this study:

- **Locating (bee),**
- **Horizontal tracking (snails),**

- **Developing thinking (toys),**
- **Visual perception (blocks)**

Additionally, a simple communication board (yes/no; stop/more) was included.

The second software, *Look to Learn*, was used to examine activities in five key areas of learning and development (Tobii Dynavox). From this software, 40 exercises were selected, categorized into:

- **Sensory**
- **Exploration**
- **Purpose**
- **Selecting, and**
- **Control**

The research was conducted at the Rehabilitation and Education Center in Poland and involved 73 participants aged 3 to 25 years with diagnoses of profound intellectual disability. Six children aged 5 to 12 years were selected for the study.

Case Descriptions (Ch= child; G-girl; B-boy):

- **Ch1G:** Born in 2010; diagnosed with cerebral palsy, increased muscle tone (lower limbs), and features of cerebellar ataxia (Dandy-Walker syndrome).
- **Ch2B:** Born in 2012; rare genetic defect (lack of white matter myelination in the brain) and a tracheostomy tube.
- **Ch3G:** Born in 2013; diagnosed with Rett syndrome and reliant on PEG enteral feeding.
- **Ch4B:** Born in 2013; syndrome of birth defects, pontocerebellar hypoplasia, and severe amblyopia (retinopathy of prematurity, stage III, post-laser therapy).
- **Ch5G:** Born in 2014; diagnosed with cerebral palsy (quadriplegia), drug-resistant epilepsy (West's syndrome).
- **Ch6G:** Born in 2015; diagnosed with a cyst in the right frontal lobe, cerebral palsy (quadriplegia), regressed changes from retinopathy of prematurity, myopia, and drug-resistant epilepsy.

Sessions were conducted once a week for 30 minutes per child, from September 2022 to March 2023, in a speech therapy office. When strategizing and designing experiments involving eye-tracking technology, it is imperative to consider several critical factors. These include meticulous attention to:

1. **Configuration:** Thoughtful setup and arrangement are crucial to optimizing the functionality of the eye-tracking technology.
2. **Calibration:** Accurate calibration is essential for reliable and precise tracking, requiring meticulous attention.
3. **Equipment Selection:** Selecting appropriate equipment that aligns with the research objectives plays a pivotal role in the success of the experiment.
4. **Environmental Factors:** It is vital to consider the physical properties of the environment, such as lighting conditions, noise levels, and potential distractions.
5. **Testing Environment:** Deliberate planning of the testing location is crucial and should account for layout and potential variables that might impact results.
6. **Child's Sensory and Motor Capabilities:** The experimental design should be adapted to accommodate and respect the unique sensory and motor abilities of the child participants.

This comprehensive approach ensures methodological soundness and reliability in experiments using eye-tracking technology, ultimately enhancing the credibility of research results (Brunyé et al., 2019).

Creating the right atmosphere and preparing the room appropriately (e.g., darkening the space) were important steps. Given that the children had significant motor impairments and problems with auditory and/or visual perception, it was necessary to properly position both the child and the computer screen equipped with the PCEye Mini camera. This process required additional competencies from the therapist, tailored to each child's individual needs and capabilities.

Results

During sessions utilizing EGAT, children with PIMD discover their potential for creative tasks and new ways of engaging in activities. The research demonstrated that EGAT is an effective intervention for diagnosing children with complex communication and developmental needs. It also brought to light that the diagnoses issued by Psychological and Pedagogical Counselling Centres in Poland could be reconsidered. Through the implementation of eye-gaze assistive technology (EGAT) and the re-diagnosis of six children previously classified as having profound intellectual disabilities, higher levels of skills in speech understanding, logical thinking, visual-spatial abilities, and learning speed were identified.

Figure 1. Example of eyeLearn Video Featuring Gaze Point & Gaze Viewer—Ch6G

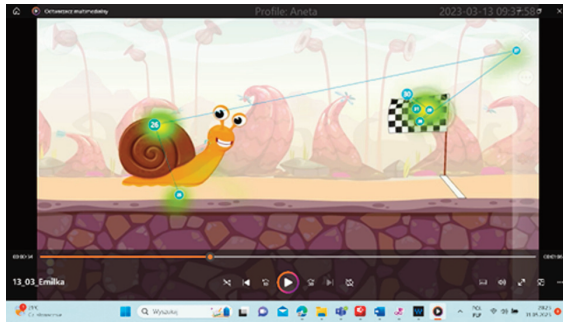


Figure 2. Example of eyeLearn Video Featuring Gaze Point & Gaze Viewer—Ch1G

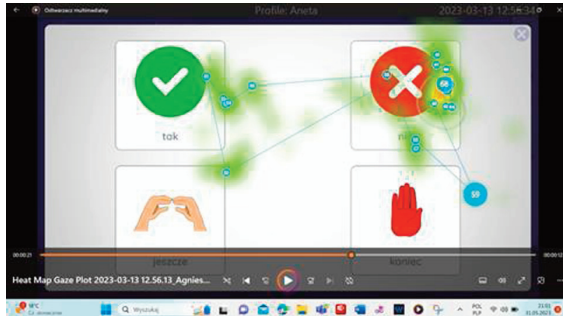


Table 1. Research Sessions Using *EyeLearn* Software

eyeLearn/ Children	Locating (a bee)	Horizontal Tracking (snails)	Developing Thinking (toys)	Visual Perception (blocks)	A Simple Communication Board (yes/no; stop/more)
Ch1G	1,2,3 levels of difficulty done	1,2 levels of difficulty done	1 level of difficulty done	1,2,3 levels of difficulty done	answer impossible to interpret
Ch2B	1 level of difficulty done	1 level of difficulty done	1 level of difficulty done	1 level of difficulty done	intentional response
Ch3G	1,2,3 levels of difficulty done	1,2 levels of difficulty done	1 level of difficulty done	1,2,3 levels of difficulty done	answer impossible to interpret
Ch4B	1,2 levels of difficulty done	1,2 levels of difficulty done	1 level of difficulty done	1 level of difficulty done	intentional response
Ch5G	1,2 levels of difficulty done	1,2 levels of difficulty done	1 level of difficulty done	1 level of difficulty done	intentional response
Ch6G	1,2,3 levels of difficulty done	1,2 levels of difficulty done	1 level of difficulty done	1,2,3 levels of difficulty done	intentional response

1. All the children successfully completed exercises in the categories of *Locating* (finding a bee), and *Horizontal Tracking* (tracking snails) using the *eyeLearn* software. Each child also engaged in activities targeting cognitive development (using toys) and visual perception (using blocks) with the *eyeLearn* software. Additionally, three children (Ch1, Ch3, Ch6) demonstrated proficiency not only at the initial difficulty level but also at two or even three higher difficulty levels.
2. Four children (Ch2, Ch4, Ch5, Ch6) were able to answer closed-ended, yes-or-no questions on a simple communication board by pointing with their eyes using EGAT.

Table 4. Research Sessions Using *Look To Learn* Software

Look to Learn/ Children	Sensory (Magic Mouse)	Explore (Classroom)	Target (Fruit punch)	Choose (Dinner time)	Control (Woodland/Forest)
Ch1G	done	done	done	difficulty completing the task	exercise not done
Ch2B	done	done	sometimes done to the end	difficulty completing the task	exercise not done
Ch3G	done	done	done	difficulty completing the task	exercise not done
Ch4B	done	done	done	sometimes done to the end	exercise not done
Ch5G	done	done	done	sometimes done to the end	exercise not done
Ch6G	done	done	done	sometimes done to the end	exercise not done

3. The children mastered basic skills such as looking at the screen, tracking, understanding the principles of eye control (e.g., cause-and-effect relationships), experimenting, early exploration, and making simple choices. However, they were unable to move and hold elements with their eyes, as required in the *Control (Forest)* exercise from *Look to Learn*. Exercises in this category proved to be too difficult.

It was noted that the children preferred sessions with a speech therapist over the research sessions recorded as part of the study. During the research sessions, it was necessary to interrupt the exercises to save recordings on the computer, which required selecting a different exercise for the child. This interruption often caused surprise and discomfort among the children, as they were unable to choose their exercises, and felt that their “classes” were disrupted.

For four children (Ch2B, Ch4B, Ch5G, Ch6G), generalization of skills was observed in arranged therapeutic situations that examined language skills (comprehension and expression), and logical thinking (from cause-and-effect actions to making choices among multiple elements). However, for two girls (Ch1G, Ch3G), the level of speech comprehension and expression in communication situations using augmentative and alternative communication (non-EGAT) was difficult to interpret. These two girls demonstrated high precision in solving tasks using EGAT, but this precision and understanding were not consistently observed in everyday life communication situations.

The results were influenced by several factors, including the child’s health condition, medications taken, and general well-being on a given day. The best performance in exercises was achieved by two children (Ch4B, Ch6G), who always participated in a seated position, answered many closed-ended yes-or-no questions, using a communication board, and had stable health conditions.

Two other children (Ch2B, Ch5G), who also exhibited high skills in speech comprehension, logical thinking, and memory, showed variability in their active participation depending on their well-being on a given day. Their performance was impacted by additional medical conditions

(including pain) and difficulties with positioning due to quadriplegia and the need for a lying position during sessions.

For the two girls (Ch1G, Ch3G), despite their precise eye-pointing skills, interest in tasks, stable health conditions, and correct performance of many exercises using EGAT, their results were difficult to interpret due to the lack of skill generalization to everyday life situations.

Certainly, this type of research session has inherent limitations, especially when there is no control group for comparison and when the children participating in the study are familiar with one of the researcher-practitioners who understands their communication abilities as well as their therapeutic and educational contexts. It is important to note that even during regular therapy sessions using EGAT, valuable data about a child with PIMD can be obtained by observing and analyzing exercises, even without using Gaze Viewer software. However, in such cases, it is not possible to record, systematically compare, or interpret the results.

Discussion: Improving Access to EGAT

The implementation of eye-gaze assistive technology (EGAT) has proven to be particularly beneficial for children with cerebral palsy, rare genetic disorders, neurodegenerative diseases, muscle atrophy, and multiple disabilities. These include children with intellectual disabilities combined with mobility problems, sensory impairments, and communication disorders, for whom sight is the primary communication channel. EGAT has also shown remarkable benefits for children who do not use their hands intentionally and find interaction with a computer both engaging and predictable, enabling their first intentional actions.

Eye-tracking technology has been shown to positively impact the well-being and quality of life of children participating in the study (Kochanowicz, 2021; Kochanowicz, 2019). For these children, EGAT revealed previously unmeasurable abilities such as information acquisition and processing, memory utilization, and conscious, controlled, and intentional visual attention, as opposed to unconscious, automatic, or reflexive

responses. Furthermore, it allowed for the generalization of these skills to everyday life contexts (Erhard & Falcomata, 2023). The aesthetic appeal of interactive digital programs such as *eyeLearn* and *Look to Learn* captures the attention of children with multiple disabilities and helps them develop entirely new skills. These range from spontaneous “cause-and-effect” actions and screen exploration to precise pointing, intentional looking, and even computer control.

It is recommended that Psychological and Pedagogical Counseling Centres be equipped with EGAT to ensure more accurate diagnoses of children suspected of having profound intellectual disabilities. The research also advocates discontinuing the issuance of certificates indicating profound intellectual disability and instead adopting a functional assessment model (Vlaskamp, 2005) that incorporates EGAT.

Conclusions

In Poland, the educational future of a child with multiple disabilities—including the place of education and the ability to obtain student status—continues to depend on certification from a Psychological and Pedagogical Counseling Centres. Eye-tracking technology is progressively gaining traction in educational research and has the potential to fundamentally transform the diagnostic process. As outlined in the *Digital Education Action Plan 2021–2027*, Member States will receive support to secure assistive technology and provide accessible digital learning environments and content.

Standardized tests for assessing intellectual and adaptive functioning are generally difficult to administer to very young children, and their results may lack reliability and validity (American Psychiatric Association, 2013; Patel et al., 2020). Understanding and supporting children with PIMD can therefore be viewed as a co-production effort that combines the experiential, embodied knowledge of parents with the expertise of professionals (Kruithof et al., 2020). Despite the limitations of this study, it offers crucial foundational information for future research in this area.

The results undoubtedly illuminate the necessity of gaining a deeper understanding of the barriers and facilitators associated with using eye-tracking technology in diagnosing children with disabilities (Cavadini et al., 2022). Our research underscores the pivotal role of access to assistive technology, primarily in facilitating accurate diagnoses to uncover the abilities of children with PIMD.

The children in this study had prior and subsequent experience using eye-tracking technology at the rehabilitation and education center, extending beyond the scope of this study. Thus, a more in-depth individual case study is warranted to fully characterize their learning abilities. Moreover, the study highlights the imperative of revising educational regulations to better accommodate the unique needs of children with PIMD in Poland. These children represent one of the most vulnerable groups in society, who often encounter significant challenges in accessing awareness of their fundamental rights. The evaluation of access to accurate diagnoses and assistive technology outlined in this study also reveals deficiencies in the legal framework governing the Polish education system.

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A Three-Dimensional Account of Teacher–Student Communication: An Account and Its Application

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Abstract

Objective of the Article: The article develops a potentially comprehensive and philosophically informed model of classroom communication—which is called three-dimensional—as well as to test its plausibility by conducting tentative empirical research.

Research Method: We draw on the hypothetico-deductive inquiry model (following Popper’s concept), according to which the research starts as a response to a problematic situation (*P1*) and assumes the form of a tentative theory (*TT*) to be tested empirically. If it is not refuted, it can be accepted as binding and its errors (*EE*) can be eliminated. In case it is falsified, a new problematic situation (*P2*) appears. The empirical part of theory testing is based on the technique of observation and the analysis of teachers’ utterances.

A Short Description of the Context of the Presented Issue: We introduce the concept of three-dimensional communication in education, which involves (1) the transmissive dimension, where the teacher provides information and students receive it; (2) the constitutive dimension, which promotes social bonds in the classroom; and (3) the interpersonal dimension, which includes individualization in communication and teaching and helps build the teacher–pupil relationship. Then, the empirical part of the article presents the model being applied in research conducted in an elementary school in the Lower Silesia region of Poland.

Research Findings: It is claimed that this model can be used as a reference for analyzing actual communication processes, which is shown by the example of the empirical part.

Conclusions and Recommendations: The plausibility test of the theory succeeded. However, questions are raised for further exploration: the *normativity* of such a model, its context-sensitiveness, its referring to schools with student-centered and teacher-centered education, the effectiveness of a teacher’s communication within the three dimensions (which may vary), and different teaching styles being referred to advanced three-dimensional communication between teachers and students

Keywords: communication, three-dimensional model of communicating, individualization in communication, teacher–student communication

Introduction

Communicating with others is one of the most essential skills to be mastered by a person living in society and taking part in shared activities and daily interactions. However, it seems that no convincing, exhaustive explanation of communication has been provided, despite the multitude of competing solutions presented so far (Dance, 1970; Hetmański, 2015; Kulczycki, 2012a; Moreale et al., 2007). In the literature, one can find numerous studies on communication that have emerged from various disciplines (Kulczycki, 2012a, pp. 15–16). On the other hand, communication itself is considered the primary, fundamental factor through which we can

comprehend various sociological, psychological, or economic factors. This perspective assumes that communication is a social relationship that cannot be reduced solely to the mental states of the individuals involved or other sociological, biological, or cybernetic factors (Kulczycki, 2012a, p. 16).

In this article, we accept the view that communication has a primary and intrinsically irreducible character. We also acknowledge that it is not possible to provide a cross-disciplinary, unifying definition of communication. However, we believe that presenting particular, field-specific models is feasible and can be practically valuable. Therefore, we provide an account that we call a *three-dimensional model*, which is specifically applicable to educational (i.e., teacher–student) communication. This model comprises the transmissive, constitutive, and interpersonal communication dimensions. Additionally, we test how it can be empirically employed when observing and analyzing classroom communication.

Methods and Materials

The methodological strategy employed in this research involves proposing a theoretical, predominantly philosophical, explanation of communication. Subsequently, this explanation is applied within the pedagogical context of the classroom. The final step involves empirically testing or demonstrating how this explanation works in a specific context. An example of this research was conducted in an elementary school in the Lower Silesia region of Poland. Therefore, from a methodological perspective, this research is not based on induction. It does not develop the theoretical explanation solely based on empirical findings (see Ajdukiewicz, 1974, pp. 285–337; Babbie, 2014, pp. 127–162). Instead, our strategy is closer to the hypothetico-deductive inquiry model (formulated by Popper), with a primary focus on the empirical sciences (see Popper, 1972). According to this model, the research starts as a response to a problematic situation (*P1*) and assumes the form of a tentative theory (*TT*) to be empirically tested for its logically (“deductively”) drawn consequences. If it is not refuted, it can be accepted as binding; at the same

time, it is possible to eliminate its errors (*EE*). In case it is refuted (or “falsified” in stricter Popperian terminology), a new problematic situation (*P2*) appears—in response to which a new tentative theory is sought (Popper, 1972, pp. 119, 164–165).

The problematic situation that has motivated our research is the need for a theoretical, comprehensive account of teacher–student communication. This account should synthesize the main features of its philosophical bases and, more specifically, pedagogical reflection about classroom communication. In response to this need, we propose a hypothesis (“a tentative theory”) called *the three-dimensional view of communication*. Through literature studies and conceptual analysis, we then analyze and assess this hypothesis. The empirical part of the research, which is regarded as a test of its consequences, will demonstrate how it can be employed and lead to the conclusion that the proposed account is valid and valuable. However, further testing is still necessary. The potential perspectives for its further elaboration and application are outlined in the Discussion section.

The empirical research consisted of 70 openly observed lessons conducted in an elementary school in Poland, specifically in Lower Silesia. Thirty-five hours of observations were conducted in 1st–3rd grade classes (integrated education) and 35 hours in 4th–8th grade classes (subject-based teaching). The lessons were led by a total of 10 teachers: five 1st–3rd grade teachers (coded as T1–T5) and five from 4th–8th grades (T6–T10). All of the teachers were women, as the teaching profession in Polish elementary schools is predominantly female. The observations were conducted over a span of 60 days, from January to March 2020 and then from March to June 2021. The COVID-19 pandemic caused an interruption, but no distance learning was observed during this time. The observed classes consisted of 18 to 27 children, whose ages ranged from 7 to 15 years, depending on which grade they were in. The groups were culturally uniform: they consisted of Polish students living in small towns (of about 5,000 inhabitants) and the surrounding countryside.

The observation was conducted using an observation sheet; it focused on the teachers’ methods of communicating with the students. The goal

was to assess whether and how the theoretical three-dimensional model of communication is reflected in their teaching practices. The observation sheet primarily included questions about the teachers' speech acts or communication, such as how they begin and end the lesson, how they address the students, how they provide feedback, what questions they ask students, and the topics of those questions (e.g., the subject being taught, classroom dynamics, or specific student issues). The utterances were recorded on the observation sheet and, in some cases, with the teachers' consent, the lessons were recorded on a voice recorder and transcribed manually in a traditional manner (see Kvale, 2007, pp. 92–100). In addition to the observations, the researcher made notes in their notebook regarding the context of the learning situation, the subject being taught, and the theme of the particular lesson.

Three-Dimensional Account of Communication

According to the etymology of the word *communication*, the term stems from the Latin noun *communicatio*, which may be translated both as “imparting” and as “making common” (Perseus Digital Library, 2023). The verb *communicate*—which comes from the Latin *communicare*—means “to impart” and “to discuss,” but also “to divide with” or “to share” (Perseus Digital Library, 2023; Online Latin Dictionary, 2023). The cognates of *communication* are words such as *common* (i.e., shared) and *community* (i.e., society). It can therefore be assumed that “the meanings of these words are closely intertwined ... communication and communication as an instrument are used to create a community, and the basis for both is common” (Hetmański, 2015, pp. 87–88; Młynek, 2015, p. 9). It appears that, in addition to transmitting information, there is another equally important aspect of communication which serves to build and sustain community, nurture daily rituals (such as schooling), maintain bonds between members, and guarantee participation in a common activity. The first aspect, referred to as *transmissive*, was emphasized in the 20th century by thinkers such as Shannon (1948), Weaver (Shannon & Weaver, 1964),

and Dretske (1988). An emphasis on the second aspect of communication can be found in the writings of philosophers such as John L. Austin (1962), John Searle (1969, 1997), the late Ludwig Wittgenstein (2009), and partially Jürgen Habermas (1985a, 1985b). This perspective can be called *constitutive* (see Młynek, 2015, p. 53).

However, apart from the two dimensions explicitly stressed in the etymology, there is also an implicitly embedded dimension: the psychological aspect of communication, which involves an individual approach to a speaker. This can be referred to as the *interpersonal communication* dimension, which is discussed by Berger (2008), McCroskey et al. (2002), Ekron (2015), McKey et al. (2009), Stewart (2011), and Majewska-Opiełka (2015). In our view, these three dimensions might relate to the pedagogical background, as noted by Kupisiewicz et al. (2018), who stated that communication has “important cognitive, social, psychological, and pedagogical functions” (p. 82). Here, the cognitive function is aligned with the transmissive dimension, the social function with the constitutive dimension, and the psychological and pedagogical functions with interpersonal communication.

The *transmissive* understanding of communication accentuates the process that serves our conveying (transmitting): information, knowledge, ideas, etc. The sources of such an approach in the 20th century can be traced back to research conducted by Shannon, who first published in 1948 an article called *A Mathematical Theory of Communication* (Shannon, 1948; see also Wiener, 1961). The approach draws on mathematical models and may be interpreted as “the transmission of encoded and then decoded information” (Młynek, 2015, p. 53). It consists of the six following constituents: a source, a transmitter, a channel, a receiver, a destination, and noise (Shannon, 1948). This process is supposed to proceed linearly, with the final success depending, among other things, on reducing or minimizing noise and correctly decoding the transmitted content.

The proponents of the transmissive account referred to metaphors such as “moving,” “transferring,” “transporting,” or “sending” and is sometimes called a “telegraphic,” “transport,” or “hydraulic” view of communication (Kulczycki, 2012b, p. 22; Peters, 2006, p. 84). Therefore, the core concept

is “any form of exchange of information by means of signs between living beings (humans or animals), as well as between humans and machines” (Polański, 1999, p. 306). In the educational context, the transmissive aspect is primarily manifested in the teacher’s adherence to the curriculum, specifically in the transmission of knowledge to the pupils.

The *constitutive* aspect of communication can be distinguished from the transmissive aspect. While it can be assumed that the transmission models of communication are rather similar, the situation is different for those adhering to the constitutive understanding of communication. This is since these researchers have generally belonged to different strands and schools of research. Among the “classics” of such an approach is John L. Austin, who emphasized not only locutionary speech acts, but also illocutionary and perlocutionary ones—which also have an essential and effective impact on social reality. Additionally, Austin discussed performative acts, which create and sustain a new social reality (1962; see Oishi, 2006). Thus, to Austin, language can play many different roles apart from stating facts and transmitting information about them. This constitutive role of language is even more evident in the writings of John Searle, Austin’s student and follower, who claimed that

language is the fundamental human institution in the sense that other institutions, such as money, government, private property, marriage, and games, require language, or at least language-like forms of symbolism, in a way that language does not require the other institutions for its existence. (Searle, 1999, p. 153)

In his view, language underlies all of our practices. Therefore, through linguistic practices, our social world and communal life can be formed, fostered, and changed.

In school, these rituals may be carried out through regularly repeated actions that are “rich in meaning and poor in message” (Peters, 2006, p. 86). One example of such a ritual is the daily greeting between teachers and students, which includes checking attendance, assigning and reviewing homework, grading students, reminding them of school rules,

assigning chores, preparing occasional performances, and organizing school assemblies or class events (e.g., on the occasion of Boys’ Day, Women’s Day, Children’s Day, or National Education Day). To some extent, this aligns with the perspective that Michał Wendland referred to as “communicative constructivism,” which suggests that the human construction of the world primarily occurs through interpersonal acts such as linguistic communication (Wendland, 2011, pp. 21–29). In turn, these constructed practices are upheld by the school’s predictable routines and rules—which shape habitual patterns of activity (see Giddens, 2001, pp. 50–51).

It seems that the view of communication as dancing, as metaphorically described by Robert Brandom in his concept of *inferentialism* (Brandom, 1998), also includes the constitutional dimension of communication—even though he primarily emphasizes the semantic and cognitive aspects of conversation. While the “game of giving and asking for reasons” is central to his understanding of linguistic practice, communication is not just about transmitting semantic content.

Conversational partners should not be pictured as marching in step, like soldiers on parade, but more as ballroom dancers, each making different movements (at any moment, one leads and the other follows, one moves forward and the other back, one sways left, the other right, and so on) and *thereby* sharing a dance that is constituted precisely by the coordination of their individually different movements. Understanding—whether one-sided understanding of another or mutual understanding of each other—is a product of discursive co-ordination in which the distinctness of perspectives is maintained and managed. What is ‘shared’ in such a process is in principle not specifiable except by reference to the various perspectives from which it can appear. (Brandom, 2000, p. 383)

It is worth noting that an analogous situation seems to exist in the case of mutual cooperation between teacher and student, where such a communicative dance takes place, with the teacher typically being the more skillful interlocutor-dancer. Their perspective is broader in terms

of experience, knowledge, and the command of the didactic process itself. On the other hand, the student, operating on a different level, typically has a narrower perspective. Admittedly, the student makes simpler and more limited movements while acquiring knowledge, but the teacher leads the “dance” by navigating between different perspectives, ultimately making the student’s perspective more comprehensive. However, this can only happen through common practice—not only construed in purely linguistic terms, but also rooted in ordinary school life, with all its rituals and social activities.

Brandom’s metaphor can lead us to the interpersonal dimension of communication, which involves the dual communication between a teacher and an individual student. From a strictly logical perspective, in terms of systematization, this dimension might be included in the constitutive one since it favors building social ties through psychologically adequate messages. However, in an educational context, it should be distinguished as separate due to its significance in the process of individuation in communication and education. This individuation should be understood as adopting a form of communication appropriate to the learner’s needs. More specifically, it should consist of the teacher adapting their message to the individual child, paying attention to the child’s character traits, knowledge, or cultural capital, for instance – as these factors affect the student’s performance. In line with this, interpersonal communication is understood as relationship-making (Stewart, 2011, pp. 14–56), which indicates that every act of communication is a process of establishing or defining a relationship with others. We all live in a variety of relationships with others that are created, maintained, and dissolved through communication (Morreale et al., 2007, p. 158; see also Gadamer, 1997).

Consequently, individualization in teacher–student communication is essential in the educational environment, as it places significant emphasis on the diversity of individuals and their unique needs. The concept of student-centered teaching within the organized education system is closely related to John Dewey and the broader New Education Movement (or Educational Progressivism). It was based on the ideas

of progressive educational reform, which aimed to transform how we think about the educational process. The fundamental assumption of this concept was the belief that educational praxis, in order to meet the individual students' needs, should include their active participation in the learning process (Dewey, 2001, p. 54). Indeed, Dewey believed that the traditional model of teaching, which focused on the unilateral transmission of knowledge by the teacher, was inappropriate because it failed to take into account not only the needs of the child, but also—ultimately—the needs of society, which was intended to be built by those who were then children and would become adults. Instead, Dewey advocated for interactive education, where the students would be active participants, engaging in hands-on experiences and experimentation to gain a deeper understanding of the world (see also Purkey, 1992; Rogers, 1961).

The more specific account of individualization in learning—which may also be connected with teachers' utterances—is set out by Neumann under the label of “student-centeredness” (Neumann, 2013). It advances the view that learning is directed at three contexts that are focused on what happens *in* students, *on* students, and *with* students (2013, pp. 164). The differences between them are summed up in the following passage.

Who selects the content to be studied? In contexts centered *in* students, students select the content; in contexts centered *on* students, educators select the content; and in contexts centered *with* students, teachers and students collaboratively select the content. This simple distinction makes all the difference. (2013, p. 171)

The aspects of individualization mentioned above appear to manifest themselves in the language used by teachers. Therefore, the specific aspects of student-centeredness are believed to be reflected and identifiable in their language choices.

Three-Dimensional Model: Empirical Exemplifications

The research indicated that the three dimensions of communication, as outlined in the model described above, are evident in the language used by teachers. Consequently, this language serves various purposes, including transmitting knowledge, fostering a sense of community within the school, and cultivating relationships between teachers and students, all while considering the individual needs and interests of the students.

Transmission Dimension

During the observed lessons, it was noted that the majority of teachers' time was dedicated to the one-way conveyance of knowledge. This indicates that the teachers' communication primarily revolved around the transmission dimension. This is illustrated by the following examples:

In the 1st century AD, Rome boasted a population of over a million inhabitants. The Romans, perceiving the power of their city as immense, bestowed upon Rome the epithet of the Eternal City. Concurrently, the economy of the Roman Empire relied heavily on the labor of slaves. Those who found themselves enslaved in Rome included prisoners of war and debtors who were unable to repay their debts, among others. (T6, a History lesson for the 5th grade: "The society of ancient Rome")

Kakadu National Park is the largest national park in Australia. It is located in its northern part. There, you can encounter crocodiles living in the rivers. You can also explore eucalyptus forests and waterfalls in the park. Intermittent rivers, which form after heavy rains and dry up during droughts, are also present there.

(T8, a Geography lesson for the 7th grade: "Amazing places in the world")

The above examples illustrate the transmission dimension undisturbed by any disruptions. This dimension is essentially predictable and unidirectional, with the conveyance of knowledge flowing from the teacher to the students. The teachers position themselves as the sole holders of

knowledge, depositing it into the passive students. This process is reminiscent of what Paulo Freire famously termed the “banking concept of education” in his (now classic) book, *Pedagogy of the Oppressed* (Freire, 2005, p. 72).

In the younger grades, in order to maintain attention, the teachers vary the intonation of their voice and adjust their vocabulary to suit the children’s age. However, their communication remains rooted in a one-way deposition of knowledge, from the teacher to the pupils. This is exemplified below.

Frogs are amphibians, but interestingly, they do not drink water; instead, they absorb it through their skin. They live only in freshwater; that is, they do not inhabit oceans and seas. The largest frog is called the Goliath Frog, the shy and elusive goliath, which can weigh up to three kilograms! And now I will show you frogs and other amphibians. See what they look like; they are amazing! Have you ever seen such frogs? [...] And have any of you, my honeybuns, seen such a toad? [...] I’m about to show you on the board how you can draw a frog. Then, you will draw it in your notebooks and sign the drawing [...]. Do the sketch first in pencil; only later, color with crayons. Remember not to go beyond the lines; draw with pencils, only one way, so that it’s nice and try to draw very accurately, leaving as few white spots as possible. [...] Matthew, can you divide the word “frog” into syllables and spell it out? Okay, I’ll write it for you on the board now, and you can nicely rewrite it in your notebook under the drawing of the frog.

(T1, a Nature Education lesson within the integrated education system:
 “The world of amphibians”)

The teacher directs the entire process that occurs in the lesson, gives precise instructions for drawing a frog, and warns against undesirable behavior (“I’m about to show you [on the board] how you can draw a frog. Do the sketch first in pencil, only later, color with crayons. Remember not to go beyond the lines [...] only one way [...] leave as few white spots as possible”). Her language is full of precepts, prohibitions, and commands that must be complied with.

Also noticeable in this example is a much closer relationship with the children (*my honeybuns*), which is because in 1st to 3rd grades, one teacher spends several hours a day with one class at a time. In follow-up questions, the teacher checks that the students have correctly decoded the content she is “sending.”

Sometimes, unexpected disruptions in communication occur during the transmission of knowledge, but after the troublesome situation is managed, the transmission returns to its daily track. This happens in the following example.

As we already know, a verb is a different part of speech, just like, for example, a noun, an adjective, or a numeral. A verb answers the following questions: What does he/she/it do? What is happening to her/him/it? What state is it in? It is conjugated by persons, numbers, tenses, gender, and/or modes. We distinguish between the passive and active and reflexive voices of verbs. Verbs come in personal and non-personal forms. [...] Martynka, what happened? Are you feeling unwell? [...] Now, please solve the exercises from page 14; for now, exercises 1 and 2. (T7, a Polish language lesson for the 4th grade: “The inflected parts of speech: A review”)

There was a disruption during the teacher’s transmission of knowledge, as one of the students reported feeling unwell. After attending to the student (a form of “noise reduction” in the transmission model), the teacher resumed the transmission.

Constitutive Dimension

Despite the fact that the transmission dimension is dominant, it should be noted that messages from the teacher also reinforce school routines and rituals (Giddens, 1984, p. 50–51). Activities such as checking attendance during lessons, assigning homework, introducing new topics, and giving assignments largely constitute these daily school routines. Similarly, celebrating holidays, birthdays, and school events collectively are considered school rituals. The following examples illustrate this.

I'll take attendance: Kasia, Ania, Nicholas, Sebastian [...]. Well, today—fortunately—only two people are absent. Valentine's Day is coming up soon, and we need to prepare a Valentine's Day school newspaper for our classroom. Please bring the materials needed for this by the end of this week, such as cut-out colorful hearts, etc. [...]. Additionally, there will be a Valentine's Day Post Office and a Valentine's Day Fair at school, where you'll be able to send a Valentine's wish and purchase cards that other students have prepared. There will also be lollipops and other candies available. [...] Now, let's move on to check the homework. (T9, a Math lesson for the 4th grade: "Review of section one")

Today, 20 minutes before the end of the lesson, we'll go to the school assembly held in the gym. The performance for the assembly was prepared by the 5th-grade A group to celebrate the first day of spring. Additionally, there will be various games and a sports tournament for you in the gym. (T2, Polish language education for the 3rd grade (integrated): "The first day of spring")

Routine plays a vital role in everyday school life because it provides a sense of stability and predictability with its familiar sequence of individual activities. However, students agreeing to such daily routines may feel trapped in a repetitive school pattern. Teachers' language and their messages concerning school life reinforce a sense of community, which may persist throughout the school year. At the beginning of the school year, students are acquainted with the grading system for each subject and the school. They are also presented with the school statute, various school regulations, the school's work schedule, and the calendar of school events and competitions. The school's method of informing students about the rules strengthens the school's constitutive dimension.

As the constitutive aspect of communication is seen as pervasive in human linguistic relationships and as maintaining those relationships, it encompasses various speech acts: greetings, salutations, goodbyes, or small talk between teachers and students during lessons. It consists

of many expressions and phrases, such as “Good morning! Welcome to our next lesson,” “Goodbye, see you tomorrow!” “Nice to see you again!” and “See you after the weekend!” (almost every observed lesson); “What’s up with you guys?” (T3, 4, 7); “How are you doing today, my little sweet-hearts?” (T3); “How are you feeling today?” (T7); “You guys seem kinda tired today—maybe it’s because of the weather?” (T8); “Nice weather today. It’s worth going for a walk after school” (T6); “But it’s hot today, drink lots of water!” (T4).

Interpersonal Dimension with Individualization in the Communication Process

The prevailing one-way transmission of messages on the part of the teacher, although rooted in routines and rituals, may suggest that the interpersonal dimension at the school is rather limited. Indeed, based on observed lessons at the school across all grades, the interpersonal dimension was not often apparent in the teacher’s interactions with the whole class. It is likely that this lack is due to the teachers’ chosen learning style for the students, or alternatively, it may be attributed to the school’s teacher-centered approach.

In the 4th through 8th grades, subject-based teaching is implemented, meaning that the students have daily lessons with several teachers in different classrooms. Some teachers see their students only once or twice a week (e.g., in the case of Geography or History), while others see them on a daily basis (e.g., in the case of Mathematics or Polish). The examples of individualization were primarily observed in the latter.

The interpersonal dimension, considering students’ learning styles and opportunities for free self-expression, occurred during a Polish lesson for the 6th grade. At the end of the lesson, the teacher gave the students the following task.

For homework, please prepare a presentation of your favorite book. You can describe the book, create illustrations, and discuss it. Additionally, you may create a multimedia presentation or, if you prefer, work together in groups to develop a short theatrical scene based

on the book. I am counting on your creativity, so feel free to choose the method that suits you best. I'm already curious about the results of your work!

(T7, a Polish lesson for the 6th grade: "How to write a short story")

Most often, however, the interpersonal dimension took the form of a single message directed to a single student who was presumed to have either a special gift, interest, or some learning difficulty. Sometimes, it occurred in unexpected situations that the teacher sought to address and integrate into their instructional practices.

During a Math lesson for the 8th grade, the teacher, taking into account a student's mathematical aptitude, addressed him as follows:

Matt, I have prepared additional, slightly more challenging tasks for you so that you won't get bored. Once you've solved all of them, you can choose two to present to the class in a future lesson. Similar tasks may also appear in the next math competition, so it's good practice for us.

(T10, a Math lesson for the 8th grade: "Solving equations with a single unknown")

In the 4th–8th grades, there was individualization concerning students (usually two or three in each observed class) with special educational needs, as indicated by a report from the Psychological and Pedagogical Counseling Center. Other students were also engaged through general inquiries, such as checking whether everything was understood, if anyone had questions, if anyone needed further explanation, and if it was possible to move on to the next task, etc. However, these questions were typically addressed to the whole class.

In one of the 5th-grade classes, there was also a girl with autism spectrum disorder who sat at a bench together with a support teacher. This teacher assisted the girl with her work and ensured her emotional well-being. Consequently, the teachers conducting the lessons felt somewhat relieved from the need to provide special care for her.

In the 1st–3rd grades, integrated teaching is led by a single teacher who conducts most lessons (only foreign language, PE, and IT lessons are led by other teachers). Individualization was observed in this setting. After assigning exercises, the teachers approached each student in turn, checking on their progress and providing assistance as needed. Gifted students were given additional tasks without waiting for others to catch up. Although the communications were directed at individual students, they often consisted of standard questions about understanding the tasks or having any questions for the teacher, etc. Only in some cases was the communication tailored to a specific student’s circumstances or abilities. One example was a situation during a PE lesson for the 2nd grade, where the teacher communicated in the following way:

Victoria, you have just recovered from a knee injury. You will only do some of the exercises in class today. If your knee hurts again, please report it to me in advance. You need to rest it.

(T3, a PE lesson for the 2nd grade)

However, learning based on the students’ initiative was not identified. The observed lessons did not draw upon children’s experiences and interests. Individualization primarily involved teachers adapting their messages to match students’ skill levels and cognitive capabilities. In these cases, the context was student-centered, but specifically, it was centered on teachers selecting the content to be learned and creating “activities that lead students to predetermined goals” (Neumann 2013, pp. 166).

Joint Dimensions of Communication

The aforementioned communication from teachers was regarded as representing one dimension of communication. However, it was mostly distinct from other communication in the school, even if they followed one after the other. Nevertheless, there were also situations in which the dimensions intermingled and complemented each other. This can be observed in the following example.

Today, we'll begin the lesson with a review of what we've covered in the last three lessons, focusing on the inflectional and non-inflectional parts of speech, among other topics. Anna and Kacper, since you were absent last week, you won't be asked questions today; please make sure to catch up at home. Everyone, please remember that after Polish class today, we have a meeting to discuss plans for organizing Talent Day. Now, Michael, can you name all the inflectional parts of speech? (T7, a Polish lesson for the 6th grade: "Inflectional and noninflectional parts of speech—Exercises")

It was also observed during a Music lesson:

The whole note is divided into two half notes. [...] Additionally, I have prepared a song about winter for you. You need to learn it for a grade, but if any of you don't enjoy singing, you may simply learn the lyrics of the song well and recite it. Alternatively, you may sing the song in pairs. You can pair up after the lesson. However, you may also choose to sing individually. How would you prefer to do it? (T10, a Music lesson for the 4th grade: "The rhythmic values of notes")

In these examples, the transmissive dimension, characterized by the repetition of information about the parts of speech or learning a song by heart, is dominant. However, it is enriched by the interpersonal dimension, as seen in the consideration of absent pupils and the accommodation of the children's preferences for mastering the material. The constitutive dimension, as observed in the first example regarding the organization of Talent Day, merely interjects the main thematic line of the lesson.

Concluding Remarks: The Perspectives of Further Exploration

The aim of the article was to develop a potentially comprehensive and philosophically informed model of classroom communication and to test it by conducting tentative empirical research. This methodological

approach was inspired by Karl Popper's hypothetico-deductive model of theory formation within a field of rational activity (Popper, 1972, pp. 164–165). Based on our research, the plausibility test tentatively succeeded, suggesting that it could serve as an overarching framework for analyzing teacher–student communication. However, considering its rudimentary and general nature, the prospects for further exploration need to be discussed. The first pressing issue concerns the *normativity* of such a model: when viewing a class as a small community composed of diverse individuals, the question arises whether any correct balance between the three dimensions can be established, and what the divisions between them should entail. Secondly, does the balance in question differ depending on various class situations, such as students' age or the difference between integrated and subject-based teaching? Does it need to, or should it, change based on the number of pupils in the class (in our research, the number of pupils in each class was comparable)? Furthermore, how does it depend on the cultural and linguistic backgrounds of the students and the presence of special needs among them (in our research, the classes were culturally homogeneous, but this would have been different if conducted after the Russian invasion of Ukraine in 2022, which resulted in a significant increase in Ukrainian immigrants in Polish schools)? Thirdly, in what ways has the COVID-19 pandemic altered the communication patterns in our school? The fourth, *empirical* issue pertains to the differences in teacher–student communication between schools with student-centered and teacher-centered education. The fifth concern, also empirical, revolves around the effectiveness of teacher's communications within the three dimensions, which may vary in efficiency. This would also involve analyzing the students' reactions and responses to the teachers' remarks. The sixth and final question is *theoretical* in nature, characterizing or supplementing accounts of different teaching styles in terms of the variations in communication between teachers and students. Additional perspectives may emerge during further research.

Research Ethics Statement

The project received approval from the Research Ethics Board of the Research Federation of WSB & DSW Universities (number 4/2024). The researchers obtained informed consent from the teachers and approval from the schools' front offices for conducting the research.

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Problems of Reversed Roles in the Family: Necessary Knowledge of the Teacher and Measures to Help Parentalized Students

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Abstract

Research objectives (aims) and problem(s): The aim of this article is to examine the phenomenon of parentification, exploring its concept, characteristics, underlying causes, and both short-term and long-term consequences. Special attention is given to the imperative of spreading awareness of this phenomenon among educators. The research questions addressed include: What defines role reversal in families and what are its repercussions? How can teachers leverage specialized knowledge to implement support measures in schools?

Research methods: The article takes a theoretical and review-based approach, employing methods such as analysis of scientific literature and examination of existing data.

Structure of the article: The author delves into the phenomenon of parentification, beginning with an exploration of its definition and classification, while also considering the mechanisms that contribute to its occurrence. Additionally, she underscores its significance for the child's present and future functioning, with both immediate and long-term consequences.

Furthermore, the author emphasizes the necessity of diagnostic and supportive actions to be undertaken by teachers in response to this issue.

Research findings and their impact on the development of educational sciences: In this analysis, it was posited that parentification, defined as a reversal of roles within the family dynamic between parent and child, represents a complex and multifaceted process that is increasingly widespread in contemporary society. The ongoing societal shifts affecting modern families significantly contribute to the emergence of family role reversal. The article explores the current understanding of the phenomenon and highlights its practical implications for the role of teachers within the school environment.

Conclusions and/or recommendations: The article underscores the importance of enhancing teachers' understanding of parentification and the challenges inherent in diagnosing this phenomenon. It suggests the utilization of specific projective methods for diagnosis, along with outlining potential forms of support and preventive measures that teachers can implement within the school setting.

Keywords: family role reversal, parentification, teacher role, diagnosis, assistance for parentified students

Introduction

Parentification, characterized by a reversal of roles within the family between parent and child, is a complex, diverse, and multifaceted process. Moreover, it is a prevalent phenomenon today, closely linked to the challenging circumstances faced by many families. Factors contributing to this include the growing number of divorces and separations, the rise of blended families, single-parent households, temporary parental absences, a mounting prevalence of addiction and mental health issues, and economic hardships. The ongoing civilizational shifts affecting modern families are significantly contributing to role reversals in this context.

In Polish psychological and pedagogical literature, parentification remains poorly understood and documented, both theoretically and

empirically. This lack of understanding hampers the dissemination of knowledge and the development of specific strategies to support affected children and families, as well as the implementation of preventive measures, including those within school settings.

This article takes a theoretical and review-oriented approach, employing methods such as the analysis of scientific literature and existing data from various studies. Its aim is to provide a scientific reflection on parentification, explore its concept, nuances, underlying causes, and both immediate and long-term consequences. Particular emphasis is placed on the importance of spreading awareness of this phenomenon among educators, thus empowering them to take appropriate action concerning students and their families.

The process of parentification—terminology

The term “parentification,” as discussed by Jolanta Żarczyńska-Hyla and Jolanta Piechnik-Borusowska (2018), entered the scientific literature in the 1970s, thanks to American psychiatrists Ivan Boszormeny-Nagy and Geraldine Spark. The term comes from the Latin words *parentes* (parents) and *facere* (to do). Parentification occurs when one or both parents partially or completely give up their parental tasks and responsibilities, delegating these roles to one of the children, usually the eldest and often a girl. This results in the child acting as a substitute for the parents rather than simply supporting them. In academic literature, this concept is also referred to as inverted parental role, parental role inversion, filial responsibility, or role confusion (Żarczyńska-Hyla & Piechnik-Borusowska, 2018, p. 291).

Role inversion in the family (parentification), according to Katarzyna Schier (2018, p. 29), occurs when a child sacrifices their own existential and emotional needs to secure parental care: The child must fulfill the needs of their caregivers to gain their care, which leads to a disruption in the parent-child relationship. Similarly, Żarczyńska-Hyla and Piechnik-Borusowska (2018) note that a parentified child submits to the caregivers’ demands to meet their needs for safety, closeness, comfort, consolation,

and play, at the expense of their own needs for autonomy, separation, and making personal choices. This disrupts the child's development. Parentification violates the boundaries between parents and children, upsets the family hierarchy, and causes numerous adverse consequences for the child. However, the authors also point out that "a certain degree of parentification is experienced and present in the life of every child, and its positive consequence is that the child learns responsibility, caring, and higher empathic abilities" (Żarczyńska-Hyla & Piechnik-Borusowska, 2018, p. 291).

An important aspect of parentification is its transgenerational nature. This means that the mechanism of its formation should be considered across at least three successive generations (grandparents, parents, and children), with particular attention to role reversal with one's own parents. Often, parents replicate the patterns they experienced with their parents onto their children. This intergenerational transmission results from a disruption in bond formation (Grzegorzewska, 2016; Schier, 2016; Schier, 2018).

The literature highlights the complexity and heterogeneity of parentification, emphasizing the need to distinguish it from related processes to appropriately tailor support and assistance measures for families. Stephanie Haxhe (2016) identified three related processes besides parentification, each characterized by different parental expectations of the child, the child's needs, the type of burden placed on the child, its suitability to the child's abilities and competencies, the child's level of sacrifice, and the context. Haxhe described paternalization as parents receiving assistance from the child in their parental roles and support at certain times, without overwhelming the child's capabilities, which can promote maturity. Adultization involves pushing the child to grow up quickly, gain autonomy, and maturity, without performing parental functions. Delegation, in turn, occurs when the child is given a mission by the parents to provide direction and purpose to the parents' life. Haxhe (2016) stresses that all three processes can turn into parentification when they become too demanding and taxing on the child, and surpasses what the child can reasonably handle.

Parentification is a complex process. When a child does not take on parental roles, they may resort to other coping mechanisms related to the potential for parentification. These can include running away from

problems, escaping into illness, displaying apathetic behavior, aggression, indifference, and passivity (Żarczyńska-Hyla & Piechnik-Borusowska, 2018).

Types of parentification - detailed overview of the phenomenon, its determinants and effects

Early research on parentification primarily focused on the risk factors and developmental threats faced by parentified children. This phenomenon was often linked to neglect, humiliation, and emotional rejection by parents, leading to potential social dysfunction. In the 1980s, the concept of grooming, a subtype of role reversal, emerged. Grooming involves parents using their children to fulfill their own needs for intimacy, flirtation, or excessive physical closeness. Today, parentification is also strongly associated with over-protection. Over-protected children fail to develop autonomy and independence because their parents treat them as extensions of themselves. These children become vehicles for fulfilling their caregivers' unfulfilled ambitions and dreams. Consequently, parents may dictate their children's educational and professional paths or influence their choice of life partners. As a result, many adults who were overprotected in childhood expect their own children to take care of them and assume the role of a child, reversing the parent-child roles (Żarczyńska-Hyla & Piechnik-Borusowska, 2018).

Parentification is commonly categorized into two types: instrumental (action-based) parentification and emotional parentification (Jurkovic, 1997; Rostowska & Borchet, 2016; Schier, 2018; Żarczyńska-Hyla & Piechnik-Borusowska, 2018; Żłobicki, 2018). Instrumental parentification involves children taking on responsibilities typically borne by adults, such as earning money, caring for siblings or an ill/disabled parent, and managing household tasks like cleaning, shopping, and meal preparation. This form of parentification is sometimes seen in immigrant families, where children act as cultural guides and interpreters. Some scholars believe that instrumental parentification is less detrimental to children than emotional parentification because it is easier for children to adapt to practical

roles than to emotional ones, which entail greater psychological stress (Rostowska & Borchet, 2016; Żłobicki, 2018).

Emotional parentification, on the other hand, involves children meeting the emotional and social needs of other family members. This can include providing emotional support, being sensitive to others' moods, and being cast in a variety of roles: a parent's comforter or confidant, a parent's therapist or caregiver, a buffer, mediator or judge in marital conflicts, a partner (including a sexual partner), or a scapegoat. The child might also serve as a narcissistic extension of the parent, embodying the parent's ideal self, offering admiration over the parent's behavior or appearance, or as a container for the parent's negative emotions (Scheir, 2018, pp. 29–30). When a child fulfills multiple emotional roles simultaneously, the psychological consequences can be profound and multifaceted.

Considering the consequences of parentification, scholars have differentiated between two types: destructive (pathological) and constructive (adaptive) parentification (Chase, 1999; Rostowska & Borchet, 2016). Destructive parentification occurs in atypical family conditions, such as parental addiction or mental and physical illness, which force a reversal of roles and hierarchies within the family. This form of parentification is often seen as a type of emotional abuse, neglect, or hidden child abuse. Researchers (e.g., Scheir, 2018; Żarczyńska-Hyla & Piechnik-Borusowska, 2018; Żłobicki, 2018) suggest that the child's sense of injustice or harm is a crucial criterion for assessing the experience of parentification. The absence of reinforcement, lack of recognition for the child's efforts, criticism, or unfair treatment while imposing long-term responsibilities inappropriate for the child's age and capabilities can disrupt the child's functioning and heighten their sense of harm.

Schier (2018, p. 32) notes that children who are destructively parentified are often labeled as "brave," "good," or "grown-up" because they become invisible to themselves and are forced to grow up prematurely. These children, burdened with adult roles, cannot pursue their developmental tasks, including educational ones, or experience childhood like their peers. This situation, which exceeds the child's capabilities and depletes their resources, may lead to numerous adverse outcomes: substance

abuse, depression, high emotional control, academic difficulties, feelings of loneliness and social isolation, mental disorders, challenges in forming relationships and building healthy bonds, poor parenting skills in adulthood, the replication of parentification patterns, and low levels of security in their relationships with parents (Rostowska & Borchet, 2016). Schier highlights the paradox of parentification, noting that these children often suffer in silence, unaware of their burdens, and may even take pride in their commitment to their caregivers (2018, p. 33). Destructive parentification leaves no room for the child's individual development.

In contrast, constructive parentification provides an environment conducive to developing independence without imposing excessive emotional or physical burdens on the child. In such cases, families recognize and value the child's contributions to the community, express gratitude, validate them, and reward them. These circumstances enable the child to feel valued, loved, and essential, fostering a sense of reciprocity in familial relationships. Consequently, the child develops a sense of competence and agency, acquiring skills related to maintaining relationships and assuming responsibility (Schier, 2018; Rostowska & Borchet, 2016; Żarczyńska-Hyla & Piechnik-Borusowska, 2018). Constructive parentification may be temporary, such as during a family crisis, where the child may not experience adverse effects but instead develops a heightened sense of responsibility (Schier, 2018).

Constructive parentification, as emphasized by Teresa Rostowska and Judyta Borchet (2016), can also nurture the development of psychological resilience in response to adversity. Resilience is characterized by adaptive coping mechanisms, healthy psychological growth, and the capacity to form meaningful relationships. The level and robustness of resilience are shaped by various factors, including a child's physical appearance, personality traits, social acumen, sense of humor, temperament, and social support. The presence of a nurturing adult figure, often termed the "caregiver of resilience," can mitigate the effects of parentification by providing essential support and guidance. Moreover, adaptability which is a characteristic of resilience enables the child to navigate diverse challenges, develop autonomy, and acquire a repertoire of skills essential for future challenges.

Żarczyńska-Hyla and Piechnik-Borusowska (2018) identified a multitude of factors correlated with the assumption of reversed parental roles by children. These include poor family dynamics, prolonged conflicts, parental substance abuse, personality disorders, parental immaturity, chronic physical and mental illnesses, familial disintegration, significant life events, as well as the unique personality and demographic traits of parentified children. Furthermore, the perpetuation of parentification can be attributed in part to contemporary cultural norms, which either tolerate or actively endorse role reversal within families (Schier, 2018; Żłobicki, 2018). This phenomenon is particularly pronounced in the media, where children exhibiting behaviors associated with destructive parentification are often portrayed as “everyday heroes,” showcasing their efforts in rescuing parents or caring for siblings.

Despite its prevalence, parentification is not classified as a psychiatric symptom in ICD-10 or DSM-V, as emphasized by Iwona Grzegorzewska (2016, p. 28). However, research suggests that parentification is a significant predictor of the development of narcissistic and masochistic personality disorders.

The role of the teacher in recognizing parentification and carrying out psycho-educational measures

The phenomenon of role reversal in children is often identified by individuals outside the immediate family, such as grandparents, teachers, or sports coaches. Parentification is a latent experience, which makes it challenging to diagnose in children. In contrast, diagnosing this issue in adults is easier due to the visibility of long-term effects, including specific personality traits, depression, social isolation, trust issues, social anxiety, pervasive feelings of shame and guilt, somatization of mental states, psychosomatic disorders, and body image disturbances. In children, diagnoses are typically made incidentally, often occurring while other issues such as anxiety, low self-esteem, or social phobia are being addressed. Currently,

there are no established psychological or pedagogical tools specifically for diagnosing role reversal in children. Schier (2018), drawing on her experience with parentified individuals, suggests that determining role reversal requires analyzing the child's narrative and play behavior (e.g., Scenotest), assessing selected projective tests (e.g., the Three Wishes test), and conducting problem-oriented interviews with parents.

It is crucial to note that parents often do not recognize the role reversal process occurring within their family and may exhibit conscious or unconscious resistance. In such cases, it is beneficial for parents to consider their multigenerational context and experiences. Parental resistance often hinders providing help to parentified children, who may only seek assistance in adulthood when the burden of parentification becomes overwhelming. Considering the transgenerational perspective and seeing one's family history in a broader context can be very helpful in letting go of the desire to blame and take revenge on one's caregivers. (Schier, 2018). This perspective enables a person to examine their family's history with its complex conditions in mind, which can lead to acceptance of the past and changes in their own life.

Therefore, it is essential for teachers and educators to be informed about this phenomenon, as they can play a key role in averting the emergence of harmful parentification symptoms in children, provided it has not occurred already. A teacher's diagnosis can serve as a protective factor and a form of support for the child since the child and their problems will be noticed. In both diagnosing and working with students experiencing role reversal, projective methods are crucial due to the uniqueness and complex consequences of the phenomenon.

To identify a parentified child in the classroom, special attention should be paid to students coming from dysfunctional families. These children often exhibit distinct behaviors compared to their peers. They may appear more serious and mature, struggle with spontaneous play and behavior, and have difficulty working together with others. Instead, they tend to be very accommodating, take on responsibility for others, prefer working independently, to handle everything on their own and prioritize others' needs over their own, often struggling to articulate their own

needs. They also frequently volunteer to assist teachers and staff with various tasks and demonstrate perfectionist tendencies in their actions. Additionally, when experiencing difficulties, they may experience feelings of guilt (Grzegorzewska, 2016; Schier, 2016).

An educator well-versed in the mechanisms of parentification can discern nuanced behaviors among students within the classroom setting. Children who are overly helpful and caring, “polite,” accommodating and brave may belong to the risk group. However, identifying a child undergoing parentification may prove elusive for educators, as such children are unlikely to manifest disruptive behaviors in class; on the contrary, they tend to be helpful, eager to assist with various tasks and facilitate the teacher’s responsibilities. If educators lack an understanding of familial role reversal, they may exacerbate these tendencies by inadvertently perpetuating behaviors associated with excessive care for others, and with being “a brave child.” Consequently, it becomes imperative for teachers to refrain from augmenting the child’s “grown-up” role through additional tasks, while simultaneously engaging in transparent dialogue to elucidate the rationale behind their instructional strategies (Schier, 2016). Nonetheless, efforts should be directed towards fostering the student’s resilience.

The teacher or educator may collaborate with a school counselor or psychologist to conduct a targeted assessment of parentification and formulate an intervention plan tailored to the needs of specific students, also involving consideration of other family members who could potentially serve as sources of support or compensatory roles. Additionally, diagnosing parentification may prompt the child’s family to seek therapeutic interventions, including individual, family, or marital therapy, at specialized institutions possibly recommended by the school (Schier, 2018; Żłobicki, 2018). Moreover, as part of preventive measures, educational initiatives targeting caregivers can be organized within the school premises as part of parental education endeavors, aimed at disseminating knowledge and enhancing parental awareness of parentification dynamics. The school’s collaboration with the family and local community resources, such as psychological-educational counseling centers, may entail the development and distribution of informative materials, as well as

the organization of workshops tailored for parents, families, and children on this pertinent issue.

Conclusion

The examination presented in this article regarding parentification and its implications for teacher actions within the school setting yields several key insights. Firstly, given the multifaceted nature and growing prevalence of parentification, educators must continually enhance their understanding of this phenomenon (e.g., through appropriate training), in order to make informed decisions both in the classroom and in collaboration with parents. Secondly, there is a pressing need to disseminate knowledge about role reversal and its ramifications within Polish families and society at large, a goal that can be pursued through preventive measures implemented by schools. Knowledge serves as a catalyst for change. Effective diagnosis and support strategies for parentified students and their families necessitate close collaboration between teachers and school counselors/psychologists, as well as partnerships with specialized counseling centers within the local community. As part of comprehensive parental education initiatives, schools can offer psychoeducational workshops aimed at enhancing parental skills and promoting effective communication within families, thereby empowering parents to establish resilient family structures and mitigate the risk of role reversal. Concurrently, preventive and educational efforts within schools should also target students, recognizing the influence of contemporary societal changes that may contribute to parentification and the corresponding need for intensified interventions.

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Generational Transmission of Parenting Values: Parental Goals and Their Impact on Shaping Children's Personalities— from Baby Boomers to Millennials and Generation Alpha

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Abstract

Research objectives (aims) and problem(s): The study aimed to understand how parenting goals have changed across generations, with a focus on the role of mothers in shaping children's traits. It analyzed shifts in parenting values from Baby Boomers and Generation X to Millennials and their impact on raising daughters and sons from Generation Alpha. Key issues examined included differences in parenting approaches between fathers and mothers and the evolution of parental values in response to societal changes.

Research methods: The study employed semantic analysis and Singular Value Decomposition (SVD) to investigate shifts in parenting goals. Data were collected from 402 mothers through an online research platform. Statistical methods and text analysis tools were used to identify the key personality traits valued by parents and their perception by adult daughters.

Structure of the article: The article is organized into several sections. It begins with an exploration of parenting values and their evolution across

generations. It then discusses differences in raising daughters and sons, along with the influence of parental goals and cultural factors on shaping a child's personality. The empirical section presents data analysis, while the final sections discuss the results and provide conclusions.

Research findings and their impact on the development of educational sciences: The study found shifts in parenting goals. Traditional values such as courage, often promoted by fathers, have been replaced by mothers emphasizing independence, empathy, and creativity. For sons, mothers focus on practical skills and independence, while for daughters, they prioritize strength of character. These differences reflect changing social realities and a growing awareness of gender equality.

Conclusions and/or recommendations: The study highlights the need for a holistic approach to parenting that addresses both emotional and intellectual development in children. The findings indicate that evolving parenting goals play a crucial role in shaping future generations. Further research is recommended to explore how these changes affect education and parenting, considering broader societal expectations.

Keywords: Parenting values, Intergenerational transmission, Gender differences in upbringing, Evolution of parental goals, Personality development

Introduction to Parenting Values

Parenting values, such as honesty, responsibility, independence, empathy, and diligence, play a key role in shaping children's personalities and behaviors which affect their ability to cope with challenges and build relationships (Grusec & Goodnow, 1994). Cultural background influences the values transmitted to children, reflecting the diversity of norms, traditions, and living conditions, educating children in a manner consistent with a given culture (Hofstede, 2001).

The changing social, economic, and technological realities contribute to the evolution of parenting values between generations. Modern approaches emphasize independent thinking and creativity over obedience

and traditional gender roles. Such shifts can lead to intergenerational conflicts but also enrich the social discourse on upbringing (Twenge, 2017).

In the face of increasing diversity and pluralism, understanding the impact of parenting values on children's development is crucial for creating inclusive, supportive, and adaptive educational environments. Research in this field can contribute to a deeper understanding of the dynamics between cultural values and children's needs, supporting their well-being and development.

Differences in Raising Girls and Boys: The Impact of Social Expectations on Parental Approach

Analyzing the upbringing of girls and boys reveals the influence of gender-based social expectations on parenting methods. Despite efforts to dismantle stereotypes, parents often shape children's behaviors differently based on gender. Girls are typically guided toward empathy and cooperation, which reflects traditional roles that may promote the development of social skills (Gilligan, 1982; Leaper & Bigler, 2004). Boys, on the other hand, are encouraged toward independence and competition, which can influence their propensity for risk-taking and preference for physical activities (Pleck, 2010; Eagly & Wood, 2013).

These differences affect children's development and personalities. Critically reflecting on these stereotypes is key to balanced upbringing, allowing children to develop comprehensively and free from gender-based limitations. Research into these differences helps determine areas of focus to ensure equitable development for all children.

The Impact of Parental Goals and Culture on Shaping a Child's Personality

Shaping a child's personality is a complex process in which parents, guided by cultural values, impart desired traits and values to their children. Gurycka (1979) and Muszyński (1972) emphasize that purposeful

and conscious upbringing actions are the foundation for the development of character traits. Culture influences upbringing goals, shaping parental expectations and directly affecting the upbringing process. These goals, reflecting cultural values, shape key aspects of personality, preparing the child for life in society.

Parents use upbringing goals to convey values such as respect, responsibility, and empathy, which are expressions of cultural belonging and methods for providing children with tools for social functioning. This process, rooted in cultural values, is crucial for a child's personal development and adaptive abilities in society.

Changes in Parenting Values: The Evolution of Intergenerational Approaches

We observe significant changes in parenting values, driven by social evolution, shifts in gender roles, an emphasis on individualism, and technological advancements. Inglehart and Baker (2000) note a transition from traditional to post-materialistic values, leading to more democratic parenting styles. Bourdieu (1984) indicates that values are rooted in culture and social class, emphasizing their connection to social changes.

Twenge (2017) and Bronfenbrenner (1979) highlight the impact of individualization and social structures on parental expectations and upbringing methods. Putnam (2000) records a shift in parenting values towards achievement at the expense of social skills. Foucault (1977) and Steinberg & Morris (2001) observe a trend towards supporting a child's autonomy.

Livingstone and Smith (2014) and Twenge and Campbell (2018) examine the impact of digital media on upbringing, indicating changes in expectations towards parenting and the promotion of digital competencies. Arnett (2002) and Kymlicka (1995) discuss educational challenges related to globalization and multiculturalism. Arnett (2002) introduces the concept of "emerging adulthood" in the context of globalization, illustrating how global cultural flows affect young people's values and create new challenges for parents in transmitting traditional values.

In summary, changes in parenting values reflect broad social and cultural shifts, requiring the adaptation of parenting methods to prepare younger generations for life in a changing world. Understanding this evolution requires an interdisciplinary approach that combines various fields of study.

Intergenerational Transmission of Parenting Values: From Baby Boomers and Generation X to Millennials and Generation Alpha

In recent decades, generational awareness has become a key element of social, psychological, and educational analysis. Understanding the characteristics unique to each generation allows for better interpretation of family dynamics, especially in the context of the transmission of parenting values. This chapter examines how parents from the Baby Boomer and Generation X cohorts shaped the parenting goals of their Millennial daughters and how these daughters, now mothers, pass on values to their Generation Alpha children.

Over the last few decades, interest in generational studies has become a crucial component of social, psychological, and educational research. As noted by Howe and Strauss (2000), understanding the distinct characteristics and traits of each generation enables deeper insights into social changes, family dynamics, and the transmission of parenting values. This paper delves into how Baby Boomers and Generation X have shaped the parenting goals of their Millennial daughters and how these daughters, now mothers, pass on values to their Generation Alpha children.

Baby Boomers: Foundation of Family Values

Baby Boomers (born between 1946 and 1964) grew up in a post-war era of optimism, which often inspired strong trust in institutions and a belief in steady progress. Values such as teamwork, loyalty, respect for

authority, and the pursuit of economic stability were central to their upbringing. Raised in more traditional family structures, Baby Boomers often passed on to their children the importance of hard work, striving for security, and respect for hierarchy and social structures.

As described by Inglehart and Baker (2000), Baby Boomers' upbringing in a post-war period of optimism solidified their faith in continuous progress and respect for authority. Their approach to parenting, based on hard work and loyalty, reflected the societal expectations of their time.

Generation X: Independence and Adaptation

Generation X (born between 1965 and 1980) came of age amid world-changing social and economic shifts. This generation is characterized by a greater skepticism toward authority and a stronger desire for independence. Their traits include adaptability, pragmatism, and the ability to cope with changing circumstances. In raising their Millennial children, Generation X often emphasized education, self-sufficiency, and adaptability to a rapidly changing world, while encouraging independent thinking.

Twenge (2006) describes Generation X as particularly independent and adaptable, a result of the need to adjust to rapid social and economic changes. In parenting, as Arnett and Fishel (2013) highlight, their emphasis on self-sufficiency and flexibility translates into promoting skills in children that help them navigate a changing world.

Millennials: Contemporary Values and Transmission to Generation Alpha

Millennials (born between 1981 and 1996) are the generation that grew up alongside technological advancements and globalization. They stand out for their high levels of education, openness to change, and embrace of diversity. Values such as equality, sustainability, empathy, and work-life balance are particularly significant to them. As parents of

Generation Alpha children, Millennials strive to cultivate traits like creativity, collaboration, emotional independence, and adaptability, preparing their children for life in a rapidly changing world.

According to Howe and Strauss (2000), Millennials represent a highly educated and change-oriented generation. Their parenting approach, as Nelson and Quick (2012) assert, focuses on promoting creativity, empathy, and adaptive skills in Generation Alpha children, preparing them for life in a complex, global world.

Research Objectives

The study aimed to examine how Baby Boomer and Generation X parents shaped the parenting goals of their Millennial daughters, and how these daughters, now mothers, are currently shaping values for Generation Alpha. Specifically, the research sought to explore how parenting values are transmitted and transformed across generations, which traits are prioritized in different historical and social contexts, and how the perception of the parental role evolves over time.

Drawing on the works of Howe and Strauss (2000), Inglehart and Baker (2000), and Twenge (2006), this study explored how parenting goals have changed across generations—from Baby Boomers through Generation X to Millennials—and how Millennials are now defining parenting goals for Generation Alpha.

Empirical Section Research Objectives

The study aims to thoroughly examine the parenting goals promoted by parents, taking into account differences, evolution, and their impact on subsequent generations. Particular attention is paid to the following objectives:

1. **Understanding the parenting goals promoted by parents:** The study seeks to identify which personality traits fathers and mothers consider important in the upbringing of daughters, which parenting goals they value most, and how these preferences differ between fathers and mothers.
2. **Comparing the parenting goals of fathers and mothers:** The goal is to explore how the parenting goals set by fathers differ from or overlap with those set by mothers, identifying areas of common ground and divergence.
3. **Analyzing the parenting goals applied by adult daughters:** The study aims to understand how adult daughters, now mothers, implement the parenting goals inherited from their parents when raising their own children, focusing on both sons and daughters.
4. **Comparing the parenting goals applied to sons and daughters:** The objective is to determine whether and how parenting approaches differ depending on the child's gender, analyzing women's parenting goals for their sons and daughters.
5. **Understanding the evolution of parenting goals across generations:** The study seeks to examine how parenting goals are transformed, adapted, or rejected by subsequent generations, shedding light on the dynamics of change in parenting approaches.

In summary, the study strives for a deep understanding of the parenting goals promoted by parents, the differences between fathers and mothers, the ways in which adult daughters apply these goals in raising their own children, and the evolution of these goals across generations. The findings offer comprehensive insights into the transmission and adaptation of parenting values

Procedure and Sample

The research was conducted via the USBO platform, where a survey on parenting goals was published. Two preschools from the Education Office list in each province were randomly selected, and parents

were informed about the study through the preschools' management via emails or announcements. Participants received online instructions detailing the procedures, survey duration, and methodology. Mothers were instructed to focus on one preschool-aged child to avoid mixing data from multiple children. The average time to complete the survey was 70 minutes, with response times to individual questions closely monitored.

The study included 402 mothers of children aged 3–6 years who fully completed the survey. The participants ranged in age from 21 to 50 years, with the majority falling within the 28–39 age range (the average age was 34 years). Most participants (84.8%), had higher education, which is significantly higher than the national average of 46.5% for women in this age group. Respondents mainly resided in large cities (43.8%), smaller towns (37.1%), and rural areas (19.1%). The research group was balanced in terms of the gender of the children, with a nearly equal number of mothers raising sons and daughters.

Most children (82.6%) attended preschool, while the remaining were homeschooled. Regarding family structure, 36% of the children were only children, 48% had one sibling, and 16% were part of larger families. Additionally, most mothers (82%) spoke about their eldest child, 12.2% about their second child, and 5.8% about their third or younger child.

Research Instruments

The study utilized a modified version of the Discrepancy Scale (Szymańska) to analyze parental goals from the perspectives of parents and their adult daughters. This scale collected retrospective data, where women specified which personality traits were prioritized by their parents during upbringing. An open-ended section of the scale allowed participants to list three key traits that their parents emphasized. These traits were later rated on a scale from -7 to 7 in terms of their perceived importance to the parent and the extent to which the respondent possessed them.

Additionally, the original Discrepancy Scale was employed to assess parental goals from the women's own perspectives. Respondents listed three traits they focus on in raising their children and rated these traits on the same scale from -7 to 7. This scale enabled an understanding of which traits are valued by mothers and the extent to which they believe their child possesses these traits. Both scales provided insights into parental expectations and self-assessments of children's traits, enabling an analysis of the transgenerational transmission of parenting goals.

The Discrepancy Scale demonstrated satisfactory psychometric properties, including robust reliability metrics such as the intraclass correlation coefficient (ICC), construct reliability (CR) of 0.730, and the γ coefficient as assessed by Aranowska. These measures confirm the scale's reliability for research applications, particularly in analyzing discrepancies between parental goals and children's perceived development. Confirmatory factor analysis further supported the scale's validity, with fit indices such as CFI = 0.986 and RMSEA = 0.036, reflecting an excellent model fit (Szymańska, 2019).

Data Analysis Method

The study employed semantic analysis, singular value decomposition (SVD), and text mining techniques to analyze data on traits valued by parents in the upbringing of daughters and the perception of these values by adult daughters (Szymańska & Aranowska, 2019).

Semantic Analysis was used to identify and categorize important character traits based on respondents' descriptions, revealing subtle differences in the perception of parental goals.

Singular Value Decomposition (SVD) facilitated the reduction of data dimensionality and the extraction of dominant patterns, enabling the visualization and interpretation of relationships between character traits and their perception by parents.

Text Mining processed textual data from respondents, extracting keywords and phrases for further analysis using semantic analysis and SVD. It enabled the identification of patterns, trends and allowed for a deeper analysis of valued character traits.

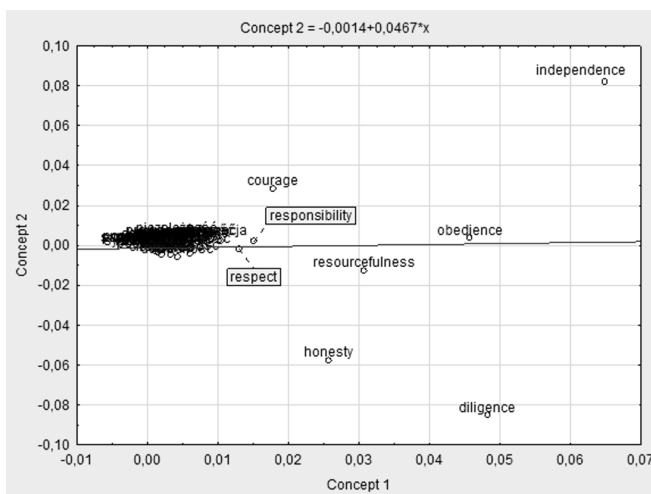
The integration of these methods, along with data visualization tools such as scatter plots, enabled a comprehensive approach to analysis and interpretation showing key traits valued by parents and intergenerational differences in the perception of these values.

Results

Semantic Analysis and Principal Components of Upbringing Goals Valued by Baby Boomers and Generation X Fathers in Raising Millennial Daughters

The study utilized semantic analysis and SVD, supported by text mining techniques, to identify the character traits valued by fathers in raising daughters and how these traits are perceived by adult daughters. Semantic analysis aided in understanding which traits are important to fathers, while SVD facilitated the visualization and evaluation of relationships between these traits. The scatter plot (Figure 1) illustrates how various character traits are perceived by fathers, with independence standing out as a particularly significant value.

Figure 1. Distribution of Parental Goals of Fathers from Baby Boomers and Generation X Toward Millennial Daughters



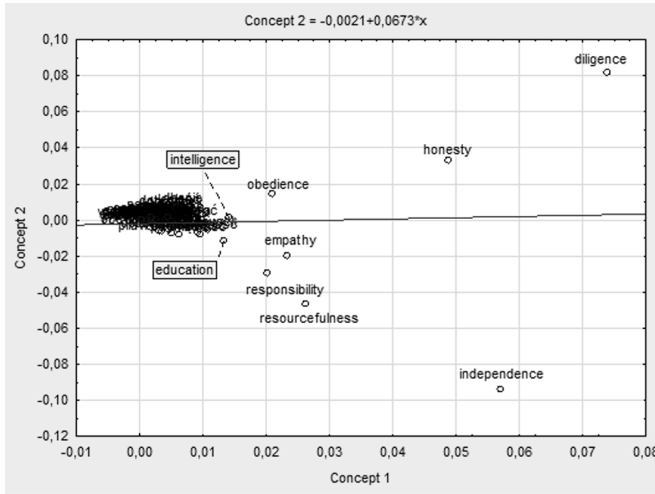
The analysis indicates that fathers primarily value traits such as independence, obedience, and diligence, along with courage and responsibility, although the latter traits are less emphasized. The findings suggest that fathers aim to raise well-rounded daughters who are capable of dealing with life's challenges. Concept 1 and Concept 2 represent gradients of trait importance, ranging from less to more dominant. Most traits are concentrated around the lower values of Concept 1, suggesting limited diversity in fathers' perceptions. The trend line indicates a weak correlation between the concepts, with independence and obedience standing out as traits of unique significance.

The scatter plot also shows a large number of traits clustered closely together, reflecting their equal significance in the eyes of fathers. Despite this diversity, these traits did not stand out individually and thus assumed similar values in the analysis, resulting in a dense grouping on the chart. While this clustering reduces readability, the traits were retained in the figure to illustrate that fathers also identified other values, even though only a few stood out clearly as distinct from the main cluster.

Semantic Analysis and Principal Components of Upbringing Goals Valued by Baby Boomers and Generation X Mothers in Raising Millennial Daughters

Semantic analysis and SVD, supported by text mining techniques, were also applied to identify the character traits that mothers consider key in the upbringing of daughters. Text mining data represented on the scatter plot indicated traits within the framework of two main concepts of upbringing.

Figure 2. Distribution of Parental Goals of Mothers from Baby Boomers and Generation X Toward Daughters of the Millennials Generation



In the chart (Figure 2), Concept 1 and Concept 2 represent a range of traits from minimal to maximal values. Most traits are grouped at the lower end of Concept 1, suggesting their similar importance in upbringing. Concept 2, however, shows greater perceptual diversity among traits such as diligence and independence. The increased slope of the trend line (equation: $\text{Concept 2} = -0.0024 + 0.0827 * \text{Concept 1}$) indicates a stronger correlation between the two concepts.

Analysis and Comparison of Upbringing Goals Promoted by Baby Boomers and Generation X Fathers and Mothers in Raising Millennial Daughters

A comparison of the scatter plots, which represent the upbringing goals promoted by fathers and mothers, reveals both commonalities and differences in the values emphasized by each parent in raising daughters.

Common Traits

Independence: Both fathers and mothers show a strong belief in the importance of independence, represented by the distinct positioning of this value away from the central cluster on both charts.

- **Diligence:** This trait is also distinguished on both charts, suggesting that both parents value it as an important aspect of raising daughters.

Traits Distinguishing Fathers

Courage and Resourcefulness: These traits are more prominent on the fathers' chart, suggesting that fathers may place greater emphasis on these qualities in raising daughters.

- **Obedience:** Positioned further from the center on the fathers' chart, this trait indicates that fathers may assign more importance to conformity and adherence to rules in upbringing.

Traits Distinguishing Mothers

Empathy and Intelligence: These traits are more isolated on the mothers' chart, which indicates that mothers may prioritize emotional and intellectual development more highly than fathers.

- **Education:** Clearly separated from the center of the chart, this trait may suggest that mothers particularly value education as a key factor in their daughters' success.

Semantic analysis reveals that both sets of values reflect beliefs in the importance of preparing young women for independent living. Universal values such as independence and diligence may reflect societal and economic expectations placed on women. Differences in values may stem from traditional gender roles, where fathers tend to promote traits such as courage and resourcefulness, while mothers might be more focused on raising empathetic and intelligent women to prepare daughters for the challenges of the modern world.

This analysis indicates that while there are some common parental goals, parents often differ in their emphasis on specific traits in the upbringing of daughters. Fathers may focus more on preparing daughters to face challenges, while mothers may strive to nurture well-balanced, empathetic, and well-educated women. These differences in parental goals could influence how daughters develop their personal traits and life skills.

The analysis also indicates that mothers particularly value traits such as diligence and independence, independence; however, most traits are clustered near the center of the chart, suggesting a balanced approach to upbringing. The prominence of empathy, intelligence, and responsibility, positioned close to the center, highlights their role in raising daughters. The findings suggest that mothers aim to raise daughters as well-rounded individuals prepared for life's challenges, with an emphasis on independence and diligence as key traits.

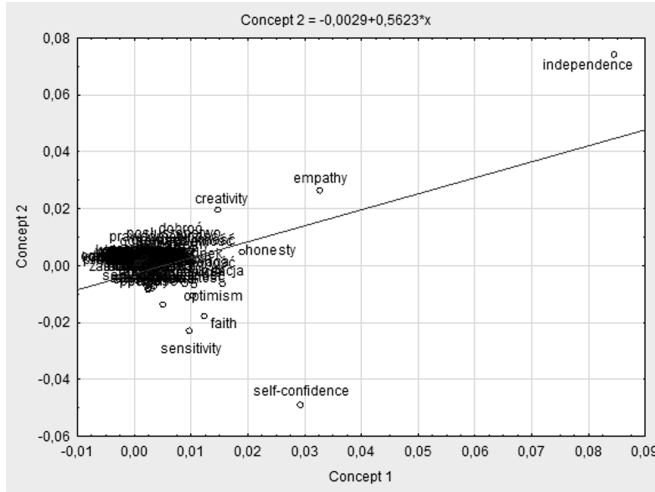
Semantic Analysis and Principal Components of Upbringing Goals Valued by Millennial Mothers in Raising Their Generation

Alpha Sons

Semantic analysis revealed that independence, especially the ability to make autonomous decisions, is perceived as the foundation for the development of sons. Creativity promotes innovation, obedience underscores the importance of following commands, honesty is regarded as the basis of morality, optimism encourages a positive outlook, sensitivity emphasizes empathy and understanding, and self-confidence strengthens autonomy.

The chart suggests that mothers prioritize independence as a key trait for adulthood, while also nurturing their sons' emotional and social development by cultivating a wide range of values. This approach indicates a desire to raise young men who are not only independent but also moral, empathetic, and adaptable, reflecting contemporary expectations for men.

In the study, a scatter plot (Figure 3) was used to analyze the upbringing goals deemed crucial by adult daughters raised by Baby Boomer and Generation X parents. These daughters, now Millennial mothers, are currently raising Generation Alpha sons. The X-axis (labeled 'focus 1') and Y-axis ('focus 2') represent different dimensions of parenting values, with individual points on the chart symbolizing specific character traits.

Figure 3. Distribution of Parental Goals of Millennial Generation Mothers toward their Alpha Generation Sons.

Principal Component Analysis showed that independence is distinctly separated from other traits on the X-axis, indicating its significant importance to mothers. Traits such as creativity, obedience, honesty, optimism, sensitivity, and self-confidence are positioned closer to the center of the chart, suggesting that while they are valued, they are not as dominant as independence.

Semantic Analysis revealed that the trait of independence is perceived as the cornerstone of sons' development, emphasizing the ability to make autonomous decisions. Creativity promotes innovation, honesty is regarded as the foundation of morality, optimism encourages a positive outlook, sensitivity underscores empathy and understanding, and self-confidence strengthens independence.

The chart suggests that mothers prioritize independence as a fundamental trait for adulthood while simultaneously nurturing their sons' emotional and social development by cultivating a wide range of values. This approach indicates a desire to raise young men who are not only independent but also moral, empathetic, and adaptable, reflecting contemporary expectations of men.

Patterns and Expectations: A Comparative Analysis of Millennial Women's Upbringing Goals for Their Generation Alpha Sons in the Context of Their Baby Boomer and Generation X Parents' Upbringing Goals

This analysis compares the upbringing goals of contemporary mothers for their sons with the values instilled by their Baby Boomer and Generation X parents. By examining the charts (Figures 1–3), we can observe how parental goals have evolved or remained consistent across generations. Fathers from the Baby Boomer and Generation X cohorts emphasized traits such as courage and responsibility, which are less prominent in the parental goals of contemporary mothers, where traits like diligence and independence prevail. This shift suggests that Millennial mothers may place a greater emphasis on practical skills and autonomy over traits like courage and responsibility. Mothers from the Baby Boomer generation and Generation X emphasized intelligence and education, which indicates a focus on intellectual development. In contrast, the upbringing goals of Millennial mothers, such as honesty and empathy, while still important, appear less dominant. This may reflect a greater emphasis on the balanced emotional and social development of their Generation Alpha sons, rather than focusing solely on intellectual growth.

General Conclusions

Independence emerges as a key value across all charts, which underscores its universal significance.

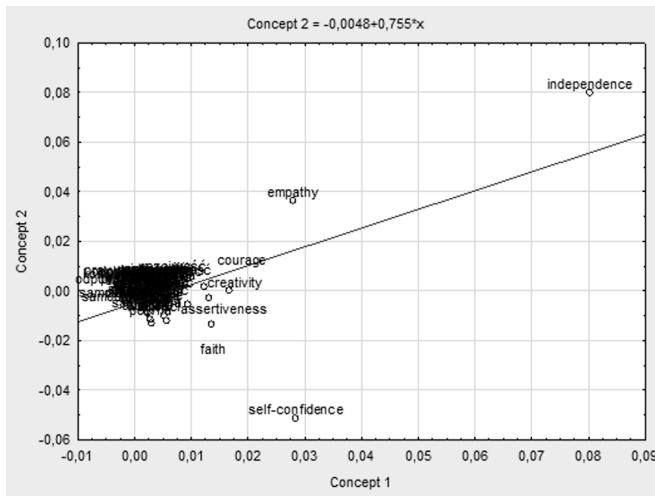
The differences in the upbringing goals of fathers and mothers of sons reflect an evolution of values: from traits such as courage and intellectual development to more balanced goals such as diligence and honesty.

The charts suggest that Millennial mothers draw upon the values instilled by their parents, adapting them to contemporary realities. In raising Alpha sons, they place greater emphasis on diligence and independence as key skills for today's society, while also nurturing personal development. The educational philosophy of Millennial mothers reflects a desire to balance practical and personal development in their Alpha sons.

Patterns and Expectations: A Comparative Analysis of Millennial Women's Upbringing Goals for Their Generation Alpha Daughters in the Context of Their Baby Boomers and Generation X Parents' Upbringing Goals

The analysis of scatter plots reveals the evolution of parenting goals among Millennial women for their Generation Alpha daughters, compared to the goals of their Baby Boomer and Generation X parents. The plots depicting fathers from the Baby Boomer and Generation X generations (Figure 1), as well as mothers from the same cohorts (Figure 2), when contrasted with the goals of Millennial mothers (Figure 4), illustrate changing priorities over time.

Figure 4. Distribution of Parental Goals of Millennial Generation Mothers toward their Alpha Generation Daughters.



Fathers from the Baby Boomer generation and Generation X emphasized traits such as courage and responsibility. However, on the chart of mothers from these generations raising Millennial daughters, these traits are less prominent, which suggests a shift in priorities toward independence and empathy. Mothers from the Baby Boomer and Generation X eras stressed intelligence and education, pointing to a focus on

intellectual development. Among Millennial mothers, however, empathy is more pronounced, with less emphasis on education, which may indicate a greater focus on emotional development.

General Conclusions

Independence is a consistent value across all analyses, demonstrating its unchanging role in upbringing. Millennial mothers tend to focus on empathy and independence, reflecting a shift towards developing independence and emotional intelligence, rather than traditional values such as courage, intelligence, and education. This shift may represent an adaptation to contemporary social challenges. These conclusions suggest an adaptation and evolution of parental goals among the new generation of mothers, who emphasize traits considered key to achieving success and building healthy relationships in today's world: independence and empathy.

The Universality of Independence in Contrast with Gender Differences: A Comparative Analysis of Upbringing Goals Set by Millennial Mothers for Sons and Daughters

The analysis of scatter plots illustrating the parental goals set by Millennial mothers for their sons and daughters reveals both universal and gender-specific approaches to upbringing.

Similarities

- Independence is the dominant trait on both charts as a priority for both genders, highlighting mothers' emphasis on preparing children for independent living.

Differences

- **Sons:** Although independence remains central, empathy and creativity are also valued, though not as strongly emphasized. This suggests that these traits play complementary roles in raising sons.

- **Daughters:** Courage and assertiveness are distinctly emphasized, suggesting that the upbringing of daughters places greater emphasis on traits associated with strength of character.

Semantic Analysis

For sons, empathy and creativity, while important, may not overshadow the central focus on independence. For daughters, courage and assertiveness take precedence, reflecting evolving social expectations and efforts to balance opportunities between genders.

The emphasis on independence demonstrates its universality as a core upbringing goal. However, the prominence of traits such as courage for daughters and empathy and creativity for sons may indicate the evolution of gender expectations and the pursuit of breaking traditional stereotypes. This comparison sheds light on how contemporary mothers shape parental goals in response to changing social realities and try to equip their children with the tools needed for life in today's world while promoting equality and strength of character.

Summary of Results

The study reveals how parental upbringing goals evolve across generations and differ by gender, spanning Baby Boomers, Generation X, Millennials, and the youngest Generation Alpha.

Mothers vs. Fathers

The findings highlight differences in parental focus: fathers are more likely to emphasize courage and responsibility, while mothers prioritize empathy, intellectual development, and education, with independence and diligence as common values.

Sons vs. Daughters

In raising sons, Millennial mothers promote independence and practical skills, whereas in raising daughters, they emphasize character strength, particularly encouraging assertiveness.

Intergenerational Transmission

The research illustrates how upbringing values are transmitted and adapted by Millennial mothers raising Generation Alpha children. Some values, such as independence, remain consistent, while others, such as empathy, evolve.

Conclusions

The findings underscore a diversified approach to upbringing, aimed at preparing children for various life situations by promoting adaptability and emotional intelligence. This opens new perspectives on the long-term effects of shifting upbringing values, which may be key to understanding future generations.

Interpretation of Results in the Context of Knowledge about Generations

The evolution of parental goals among Baby Boomer and Generation X parents, compared to their Millennial children raising Generation Alpha, highlights significant changes in approaches to upbringing. The analysis of the study results reveals key areas where these generations differ in terms of upbringing priorities. Independence is highlighted as a key value by all generations, demonstrating its enduring importance in preparing children for a rapidly changing world. This mirrors a global trend toward enhancing life skills through more supportive, emotionally focused, and socially oriented upbringing strategies, particularly among Millennials.

Differences in upbringing goals between Baby Boomer and Generation X parents suggest an evolution from traditional gender roles, with fathers often emphasizing courage and mothers focusing more on empathy

and intelligence, reflecting changing expectations for emotional and intellectual skills. Millennial mothers raising Generation Alpha children are adapting and updating their parents' upbringing goals, aiming to dismantle gender stereotypes for more balanced development. Their increased focus on education and intellectual growth underscores the significance of these traits for career and life success. This analysis shows how societal shifts influence parental goals, underscoring the adaptability of parenting strategies while noting that some values, such as independence, retain their universal relevance as critical skills in a globalized world.

Discussion of Results

This study delineates the evolution of upbringing values across generations, underscoring the impact of mothers in molding children's characteristics. Through the use of semantic analysis and Singular Value Decomposition (SVD), a shift from conventional values such as courage and obedience toward independence, empathy, and creativity was observed mirroring socio-cultural shifts. The research underscores how evolving social contexts modulate upbringing priorities while maintaining core objectives, such as fostering independence. This shift is particularly evident in gender-specific approaches to parenting, in which mothers aim to dismantle gender stereotypes by fostering adaptive skills and emotional intelligence.

The study echoes Twenge's (2017) findings on shifting generational attitudes towards individualism and Eagly & Wood's (2013) observations on gender-specific upbringing differences, showcasing a transition from traditional to modern values that emphasize personal growth across Baby Boomers, Generation X, and Millennials. Independence emerges as a universal trend, consistent with Howe and Strauss's (2000) assertion of its enduring significance across generations. Millennials, in particular, advocate independence as a pivotal value for raising Generation Alpha. This shift towards emphasizing education and intellectual growth among Millennials

reflects Twenge's (2013) analysis, suggesting generational adaptations in educational priorities due to changing global perceptions.

The generational progression from Baby Boomers to Generation Alpha unveils the dynamic evolution of social expectations and parenting goals. Each generation recalibrates its upbringing strategies to respond to unique societal and technological shifts, striving to balance traditional values with new challenges, as detailed by Howe and Strauss (2000), Inglehart and Baker (2000), and Twenge (2006). Furthermore, the study reveals varying upbringing approaches between fathers and mothers. Contemporary parenting strategies increasingly transcend traditional gender roles, supporting Eagly and Wood's (2012) findings on the convergence of educational values across genders. This generational scrutiny sheds light on the evolving landscape of social expectations and parental objectives, driven by a blend of value continuity and adaptations to novel societal and technological contexts.

This study introduces an innovative approach to analyzing the intergenerational transmission of parenting values, emphasizing the importance of individualization and equality in shaping modern parental attitudes. The analysis demonstrates that values such as independence and empathy are becoming universal foundations of upbringing. Thus, by expanding the perspective of social sciences, this work offers new tools and methodologies that may inspire future research and educational practices in a rapidly changing social reality.

Conclusions and Implications

The study highlights generational shifts in education, emphasizing the importance of societal changes and parental decisions. It confirms that generational experiences shape attitudes toward upbringing, a crucial factor for educational policies and support initiatives.

The findings provide a unique insight into the evolution of parental values in an intergenerational context, illustrating how contemporary social and technological transformations are reshaping traditional approaches

to upbringing. Recent research on this topic demonstrates that these changes are particularly evident in mothers' parenting goals, especially for their daughters. Values such as self-confidence, self-reliance, and assertiveness have emerged as dominant goals, reflecting a drive toward empowering independence in girls and underscoring the changing role of women in society (Szymańska & Aranowska, 2023).

This emphasis on women's independence is poised to influence the character of future generations and the broader societal landscape. By utilizing advanced techniques such as semantic analysis and SVD, this study opens new avenues for interpreting the dynamics of parenting values in the context of shifting gender roles and societal expectations. It highlights the need for further research on how new generations of parents are adapting their approaches to upbringing—an area that may prove crucial for shaping future educational and social policies.

Practical Implications

The findings suggest the importance of blending traditional and modern approaches to upbringing to prepare individuals for contemporary challenges. They emphasize the need to update parenting methods for comprehensive development, highlighting the importance of adapting education to the demands of a rapidly changing world.

Limitations and Perspectives

The study's limitations include constraints in data interpretation and participant range. Future research should aim to include a broader range of participants and employ more diverse methodologies to gain a deeper understanding of the impact of parental values on child development and long-term well-being, potentially offering valuable insights

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Supporting a Child's Resilience in the Context of Collaborative Partnerships Between Parents and Teachers

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Abstract

Research Objectives and Problems: The aim of this article is to analyze the factors that support and strengthen a child's resilience from the perspective of the synergistic cooperation between supportive adults—parents and teachers. The central research question is: *How can family-school partnerships support and nurture a child's resilience?*

Research Methods: This paper employs a synthetic-analytical review of relevant literature. It also reviews selected findings from previous research.

Structure of the Article: The discussion begins with a definition of resilience and a characterization of a resilient child within the school environment. It emphasizes the importance of partnerships between parents and teacher, which is expressed, among other things, through their shared commitment to strengthening the child's resilience.

Research Findings and Their Impact on Educational Sciences: Resilience is a process that helps children to thrive in a rapidly changing world. Partnerships between the child's significant adults—mainly parents and teachers—enhance the effectiveness in fostering resilience. A child's resilience builds up when the adults who spend the most time with them work synergistically,

rather than acting independently. The analyses presented are founded on education and family sciences. They take into account research from various cultural contexts; hence, the conclusions and findings have international relevance.

Conclusions and Recommendations: Promoting and supporting resilience is one of the key challenges of today's educational process. Resilience enables children facing difficult situations or the pressures of disadvantage to achieve healthy development, well-being, success, and ambitious life goals. Caring, attentive and supportive adults—whether parents or teachers—must be sensitive and vigilant to prevent difficult experiences from becoming chronic, as this could undermine the process of building resilience and deplete the resources needed to maintain it. Adults in the child's life should be responsive, observant, and, most importantly, actively present to provide consistent support and guidance.

Keywords: resilience, resilient child, resilience at school, resilience wheel, teacher-parent collaboration

Introduction

The realities of the world in the third decade of the 21st century often expose children to stress, psychological and mental problems, anxiety, constant change, tension, and fear. The overwhelming daily stimulation from both other people and virtual reality often leads to internal chaos and increased confusion. The pace of change in today's world is so intense that people sometimes struggle to keep up with it. While changes in various areas of life present opportunities for development, they can also pose threats and force unplanned changes and unpredictable reactions.

To stay in step with life and remain part of its mainstream, individuals must constantly maneuver new contexts and unpredictable situations. This demands the ability to adapt to uncertainty and unpredictability. The new demands of modern reality require competences and resources that enable continuous adjustment to quickly shifting circumstances. This

is especially challenging for the adults who are responsible for guiding children's development and upbringing within educational settings.

One of the skills that supports adaptation to this variability is resilience. Resilience is the ability to recover quickly, adapt, respond flexibly, and persist in achieving goals despite adversity. It is also a key process that enables a child to function optimally and maintain their well-being amidst dynamic and volatile changes. Positive adaptation to the instability of daily life has become one of the paramount tasks that human beings must confront in what is often referred to as the VUCA world—characterized by volatility, uncertainty, complexity, and ambiguity (Dybowska, 2022; Michel, 2014).

Children's resilience is shaped and supported by the interplay of individual, family, and environmental (primarily school-based) factors. Individual characteristics that nurture resilience include high self-esteem, a sense of efficacy, positive intellectual functioning, a calm disposition, faith, and other personal resources. Family factors comprise family cohesion, close and healthy relationships between family members, and a sufficiently stable financial situation. External factors enfold a functional and safe neighborhood, participation in community organizations, and attending a well-functioning school (Borucka & Ostaszewski, 2008; Brooks, 2006; Kumpfer, 1999). Resilience helps to understand and explain why some children and young people, despite prolonged exposure to disadvantage, are able to develop and function appropriately with stability and mental balance (Borucka & Ostaszewski, 2008). Resilience, therefore, emerges as the interaction between a person's internal personal resources and their external support systems.

Developmental theorists argue that resilience in adverse childhood contexts results from a cumulative and interactive combination of genetic (e.g., disposition), personal (e.g., family interactions), and environmental (e.g., community support systems) risk and protective factors (Bonanno, 2004; Cove et al., 2005).

The aim of this article is to provide a scholarly overview of children's resilience through the lens of teacher-parent partnerships. Being surrounded by caring and supportive adults is a key element in helping

a child build individual resilience. Despite the changing circumstances of life, the adults that children encounter most often are their parents or caregivers at home and their teachers at school. Home and school are the environments where children spend the majority of their time; thus, receiving adequate support in these spaces supports the development of a competent, resilient adult.

Building on previous research, this article analyzes the factors that shape children's resilience, with special consideration for the school setting. At the same time, the analysis recognizes the central role of the family environment in raising and supporting a resilient child. This work draws on research and analysis from diverse social and cultural perspectives on child resilience and the adults who support it: teachers and parents.

The Phenomenon of Resilience

Resilience is analyzed, explained, and studied from various perspectives. It generally refers to the ability to endure and recover from destructive life challenges. It includes dynamic processes that promote positive adaptation in the face of substantial adversity (Brooks, 2006; Błasiak & Dybowska, 2021; Bonanno, 2004; Masten, 2001; Smulczyk, 2016; Walsh, 2012). In the social sciences, the term resilience is a metaphor for the processes that enable normal human functioning and development despite objectively disadvantageous living and developmental conditions. Poverty, stress, traumatic events, and other unfavorable external factors represent "external forces," while the adaptive processes through which individuals mobilize internal and external resources correspond to "resilience forces." Thus, resilience can be understood as the ever-changing processes of balancing or neutralizing adverse life conditions through the internal and external resources available to an individual (Ostaszewski, 2014, p. 74).

Resilience ceases to be considered a characteristic of exceptional individuals with specific biological and psychological characteristics and

is understood as a process of change, growth and improvement that can be carried out by any person. Along these lines, understands resilience as a “universal capacity” that every person can develop at any stage of his or her life cycle. (Moll, Riquelme et al., 2022)

An analysis of the definition of resilience identifies three key elements fundamental for understanding this phenomenon. The first is the occurrence of and exposure to risk factors, processes, and mechanisms, such as challenges, adversity, or excessive stress. These factors tend to interfere with or disrupt one's overall well-being and functioning. The second element involves the operation of protective factors, processes, or mechanisms that mitigate the impact of risk factors. The third element is the positive outcome resulting from the interaction of these two opposing forces—risk factors and protective factors—namely, positive adaptation. Positive adaptation is defined as a return to well-being after successfully bouncing back from a difficult situation. These components of resilience are referred to in various ways depending on the experiences and linguistic traditions of researchers and authors (Masten, 2018; Ostaszewski, 2014).

Jean E. Brooks argues that resilience cannot be developed by sheer willpower within the at-risk person; it is developed through interactions within the environment—families, schools, neighborhoods, and the larger community. Environments may contribute to a person's risk of various problems but can also provide protection, enhancing the likelihood of positive outcomes. (Brooks, 2006, p. 70)

Resilience is thus best understood as a process resulting from a triad of protective factors: personal/individual, social/family, and social beyond family/environmental (Błasiak & Dybowska, 2021).

The Resilient Child

The term *resilient child* refers to a child who is supported by kind and caring adults and provided with the appropriate tools necessary for growth and development (Coyle, 2011). The characteristics of a resilient child stem from both their individual attributes and the relationships that they experience in different aspects of their lives. Individual attributes vary depending on the child's age, but commonly include problem-solving skills, self-regulation abilities, hope or faith, motivation to succeed, and a sense of meaning in life. Relational attributes encompass secure attachment relationships—initially with a reliable caregiver, and later with extended family, friends, mentors, and romantic partners. Connections are often made to supportive schools and strong social networks for children and families (Masten, 2018).

Cove et al. (2005) define a resilient child as one who displays negligible or no behavioral problems, remains engaged in school learning, and avoids delinquency or risky behavior. A resilient child has not been suspended from school, does not have more than one behavioral issue, and demonstrates consistent positive engagement. Resilience factors commonly identified from the child's perspective include nurturing and sensitive caregiving; attachment relationships and emotional security; a sense of belonging; skilled parental management and discipline tailored to the child; agency and motivation to adapt; problem-solving, planning, and executive function skills; self-regulation and emotional regulation; hope, faith, and optimism; meaning-making and belief that life has purpose; positive self-views or identity; and routines and rituals (Masten, 2018).

Henderson and Milstein (2005) outline a six-element strategy to promote resilience in schools. This strategy can be implemented by learners, educators, and the school as a whole. It functions as both a diagnostic tool and a guide for program development with the aim of creating schools as resilience-promoting environments.

Figure 1: Resiliency Wheel from the Perspective of a Child in School

Source: Henderson and Milstein (2005), cited in Moll Riquelme et al. (2022).

Increase pro-social bonding

Increasing pro-social bonding involves fostering positive interactions among all participants in the school community. This includes relationships between students, between teachers and students, between teachers and parents, and between parents and their children. Regarding the classroom, teachers should allocate time and create opportunities to build relationships by implementing teaching methods that encourage multiple interactions and collaborative situations in which students can help one another, as well as engaging parents in the life of the school. Organizing a variety of extracurricular activities for students further promotes relationship-building, as it provides opportunities for children with diverse interests and motivation levels to engage meaningfully. Such activities not only strengthen relationships among students but also between students and adults. Research shows that children with a greater number of positive relationships are significantly less likely to engage in risky behaviors (Moll, Riquelme et al., 2022).

Set Clear, Consistent Boundaries

Setting clear, consistent boundaries involves establishing well-defined and mutually agreed-upon rules for harmonious coexistence. Children who lack clear rules and boundaries set by adults are more likely to follow the behavior of their peers, particularly those with leadership tendencies who may not always act in others' best interests. Whenever possible, students should be involved in the process of setting these rules, as this can increase their acceptance and adherence to them (Moll, Riquelme et al., 2022).

Teach Life Skills

In the concept of the Resilience Wheel, *teaching life skills* entails helping students learn how to learn, think, understand themselves, communicate effectively, resolve conflicts, cooperate, make consensual decisions, and set common goals. These competencies should be seamlessly embedded into the curriculum across different curricula and contexts. The goal is for students to recognize the practical value of what they are learning, as this realization will increase their engagement and interest in their studies (Moll, Riquelme et al., 2022).

Provide Caring and Support

According to the authors of the Resilience Wheel, *providing caring and support* is the most fundamental aspect of building resilience in a child. Offering a sense of support means recognizing each student as a unique individual. This can be demonstrated by exploring their interests, encouraging them to develop their talents and skills, identifying and helping them appreciate their strengths, and showing genuine care, understanding, and a willingness to assist when they encounter difficulties (Moll, Riquelme et al., 2022).

Set and Communicate High Expectations

Setting and communicating high expectations requires knowing students well and giving them individualized attention. It is essential that expectations be both high and realistic in order to serve as effective

motivators. This involves teachers reflecting on the language they use when conveying expectations and employing varied instructional methods that consider students' different learning styles and ways of processing information. The ultimate goal is for every student to experience educational success and develop the potential to build a positive self-image (Moll, Riquelme et al., 2022).

Provide Opportunities for Meaningful Participation

Providing opportunities for meaningful participation means giving students increasing opportunities to make decisions that affect the functioning of the school and classroom activities. It also involves engaging parents in decision-making and initiatives that shape the organization of the school. This approach works best when the school operates as a learning organization (Moll, Riquelme et al., 2022).

To foster a child's resilience, multiple aspects of school life—both formal and informal—must be considered. The factors that contribute to building resilience at school are often classified as *protective factors*. These factors may be expressed in different terms, but they ultimately emphasize concern for the child's well-being and their ability to cope with future challenges in life (Christle et al., 2005). A resilient child is someone who is aware of their resources—both internal (personal traits and strengths) and external (support available in their environment). These external resources include closer systems like family and school, as well as the local community. Supportive and caring adults are instrumental in helping children recognize and identify these resources, as well as pointing out opportunities to use them in specific situations. However, the objective goes beyond simply noticing these resources or demonstrating their potential applications. Equally important is teaching children how to *maintain, renew, and continuously build upon* these resources. This may include expanding their resources with new skills or opportunities as they grow and face new difficulties.

Parents and Teachers in the Care of the Resilient Child

In today's educational landscape, it is evident that parents are no longer passive recipients in their interactions with schools and teachers. Instead, they are active participants who play a significant role in shaping what happens within the school environment (Błasiak, 2017; Dybowska, 2024). When reflecting on a child's resilience, it is therefore impossible to overlook the shared interaction and mutual cooperation between parents and teachers. Parent-teacher involvement and collaboration are positively associated with the child's well-being, engagement in learning, academic achievement, emotional development, and adaptation to the surrounding reality (Błasiak, 2017; Dybowska, 2024; Pirchio, 2023).

Jean E. Brooks (2006), building on the ideas from the Resiliency Wheel, identifies several strategies that can be implemented in the school environment to strengthen a child's resilience. The first strategy is Developing Social Competence. Social competence is a protective factor, so its development is essential for building resilience. It is important to consider the environmental context by involving parents and reinforcing key skills during the regular activities of the school. The second strategy is Increasing Caring Relationships, which concentrates on relationships with teachers characterized by trust, empathy, attention, affirmation, and involvement. This includes spending quality time with students, understanding their needs, and engaging them in decision-making processes.

The third strategy, Communicating High Expectations, builds on this concept from the Resiliency Wheel by advocating for the establishment of high yet realistic goals for students, regardless of their current level of achievement. Such expectations inspire students to believe in their ability to succeed. The fourth strategy, Maximizing Opportunities for Meaningful Participation, seeks to ensure that students actively contribute to school life rather than remain passive observers, facilitated through the collaborative efforts of teachers and parents. The next strategy is Strengthening School Capacity for Building Resilience. Brooks points out that teachers who do not experience supportive relationships with other school staff struggle to create nurturing, caring relationships with their students.

The final strategy identified by Brooks is Creating Partnerships with Family and Community. It goes without saying that resilience-promoting schools actively strengthen collaborative and mutually supportive relationships with families and communities to enhance students' access to a wide range of resources.

An example of fostering resilience in the school environment is the UPRIGHT program—Universal Preventive Resilience Intervention Globally Implemented in Schools to Improve and Promote Mental Health for Teenagers (<https://uprightprogram.eu/>). The general aim of the UPRIGHT program is to promote mental well-being and prevent mental disorders by enhancing resilience capacities in youth through a holistic approach that caters to early adolescents, families, and education professionals, while advancing a culture of mental well-being in schools. The program is designed not only for teachers but also encourages parents to participate as key contributors.

The UPRIGHT program is built on four main elements: coping, self-efficacy, acquiring social-emotional competence, and mindfulness. These four elements include a total of 18 skills. The coping component incorporates skills such as cognitive behavior modification, conflict resolution, assertiveness, communication strategies, and mental health literacy. The self-efficacy component provides materials that deal with self-efficacy, growth mindset, emotional resilience, social resilience, and leadership skills. The Social Emotional Learning (SEL) construct includes attributes such as self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. Lastly, the mindfulness component emphasizes observation and description, acting consciously, and accepting experiences without judgment (Las, Hayas et al., 2019).

Conclusions

The analyses clearly emphasize that resilience enables children experiencing difficult situations or living under the pressure of adverse conditions to develop normally, maintain their mental and physical health,

achieve success, and pursue ambitious life goals. However, it is important to note that when adverse circumstances persist for too long, or when children lack access to resources that can counterbalance these adversities, resilience processes can break down, making individuals less capable of coping with destructive living conditions (Ostaszewski, 2014).

Facing adversity and difficult events is an inevitable part of everyday life. Resilience allows individuals to get through such situations, emerge stronger, and develop greater confidence in their own abilities, as well as greater awareness of one's own strengths, internal resources, and the external resources available in the environment (Moll Riquelme et al., 2022). As Brooks (2006) notes, resilience is fostered by providing children with access to supportive relationships with caring adults and expanding the range of opportunities for constructive activities, such as after-school and summer programs, which enable meaningful participation. Ultimately, resilience will lead to the child's optimal well-being and ability to function capably in a rapidly changing reality.

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Macrostructure and Microstructure of Janusz Korczak's Monographic Pedagogical Work "How to Love a Child: A Child in the Family"

(pp. 331–349)

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Abstract

Research Objectives: This study seeks to deepen the understanding of the monographic pedagogical work *How to Love a Child: A Child in the Family* published about 100 years ago by the outstanding Polish educator Janusz Korczak. The article also seeks to propose a method for analyzing other historical scientific texts of this type.

Research Methods: The methodology used in this study is a linguistic and textological analysis of an early pedagogical text.

Structure of the Article: The article describes the research objectives, subject matter, and applied methodology. The main section provides an analysis of the macrostructure, microstructure, metatext, delimitation, coherence (both cohesion and coherence), and the functions of *How to Love a Child: A Child in the Family*.

Research Findings and Their Impact on Educational Sciences: The analysis demonstrates the richness of meaning and the nuanced semantics within the pedagogical text. The textological examination has uncovered thematic areas that had not previously been explored by scholars studying this work.

Conclusions: Analyzing pedagogical texts from a textological perspective allows for a better understanding of both historical and contemporary works on upbringing, care, and education.

Keywords: text linguistics, family studies, family, text structure, Janusz Korczak

Introduction

This article examines the unique macrostructure and microstructure of Janusz Korczak's monographic pedagogical work, *Jak kochać dziecko. Dziecko w rodzinie* [How to Love a Child: A Child in the Family]. Published three times during the author's lifetime, this text is among the most renowned Polish pedagogical studies. It is a prose piece by the famed educator, presented in a 168-page book (14 x 20.4 cm).

The monograph *How to Love a Child: A Child in the Family* is part of a tetralogy—a series of four literary works connected by a common theme and title. The tetralogy includes the following parts: *Dziecko w rodzinie* [A Child in the Family] (1919, 1920a; cf. 2nd edition 1929a), *Internat, Kolonie letnie* [Boarding School, Summer Camps] (1920b), and *Dom Sierot* [Orphanage] (1920c; cf. 2nd edition *Jak kochać dziecko: Internat, Kolonie letnie, Dom Sierot* [How to Love a Child: Boarding School, Summer Camps, Orphanage] 1929b). The first part of the tetralogy, *How to Love a Child: A Child in the Family*, is the most well-known. Its second edition, the final one published during the author's lifetime in 1929, which included revisions by Korczak, acts as the research material for this article.

The issues discussed in the analyzed monograph concern the development of the child from the prenatal period through adolescence. The book places significant emphasis on the idea that family members, especially the mother, should give their child accepting and understanding love. The text represents the early stage of the development of pedagogy as a scientific discipline in Poland. The intended audience for this work comprises non-specialist parents—primarily mothers or guardians—while the author fulfills the role of both an educator and physician communicating his expertise.

The Polish language used in this monograph exemplifies the popular variety of the scientific style. It blends features typical of scientific, journalistic, artistic, colloquial, religious (references to God), and philosophical (reflections and meditations) styles. Researchers of Korczak's work have characterized *How to Love a Child: A Child in the Family* as a guide, treatise, essay, manifesto, and pedagogical deliberation (cf. Sieradzka-Baziur, 2019a, 2019b, 2019c). The multiplicity of these terms calls attention to the text's richness and complexity, as well as the necessity of analyzing it from multiple perspectives to fully grasp its depth and nuanced meanings.

Purpose and Subject of the Research and Methodology Used in the Study

This article expands on the form and semantics of *How to Love a Child: A Child in the Family*, an issue previously discussed in earlier works (cf. Sieradzka-Baziur, 2019a, 2019b, 2019c, 2022). The structural composition of Korczak's most outstanding work has not yet been the subject of broader analysis. The objective of this research is to deepen the understanding of this monographic pedagogical text, published approximately 100 years ago, and to propose a methodology for analyzing other historical scientific texts. The methodology applied in this study is linguistic textological analysis.

The study of texts can be traced back to antiquity, within the disciplines of poetics and rhetoric (Aristotle, Quintilian). Text theory, or text linguistics, began to develop as a distinct linguistic field in the 1930s and flourished in the 1960s and 1970s. Key contributions to the field in the 20th century and beyond include works by prominent international scholars such as Yuri Lotman, Boris Uspensky, Mikhail Bakhtin, Karl Bühler, Roman Jakobson, Teun A. van Dijk, Robert de Beaugrande, and Wolfgang Ulrich Dressler. In Poland, the studies of researchers such as Teresa Dobrzyńska, Anna Wierzbicka, Stanisław Gajda, and others have also advanced this field (cf. Zdunkiewicz-Jedynak, 2008).

Dorota Zdunkiewicz-Jedynak (2008, p. 59) defines a text as “a spoken or written, non-sentential sign structure constituting an informational whole.” A text is composed of sentences, defined as “a sequence of words arranged in a specific order, containing a certain content, in writing starting with a capital letter and ending with a full stop, an exclamation mark, or a question mark” (*Wielki słownik języka polskiego*, n.d.). The shortest text consists of two sentences, while the longest is theoretically unlimited. Linguists dealing with text analysis have developed a rich terminological apparatus, which includes the following key concepts:

1. Text structure
2. Metatext and text delimitation
3. Text coherence (including both coherence and cohesion);
4. Text functions (cf., e.g., Duszak, 1998; Dobrzyńska, 2001; Zdunkiewicz-Jedynak, 2008).

The terminological tools developed over the long history of linguistic textology must be adapted to the type and volume of the text being examined, and in some cases, the existing terminology may prove insufficient. Korczak’s pedagogical monograph *How to Love a Child: A Child in the Family* is a complex, multi-layered text; therefore, it was necessary to introduce two additional terms: macrostructure and microstructure of the text.

Macrostructure and Microstructure of *How to Love a Child: A Child in the Family*

How to Love a Child: A Child in the Family is characterized by a complex and nuanced macrostructure and microstructure, as summarized in Table 1. The macrostructure of the monograph encompasses its basic constitutive elements, while its microstructure includes the components within each element of the macrostructure.¹

¹ These terms were used by Piotr Żmigrodzki in reference to dictionaries. The macrostructure of a lexicographic work refers to the overall arrangement of its entry articles, which may be organized alphabetically, hierarchically, or conceptually.

Table 1. Macrostructure and Microstructure of *How to Love a Child: A Child in the Family* by Korczak

Elements of the macrostructure of <i>How to Love a Child: A Child in the Family</i>	Number of pages	Elements of the microstructure of <i>How to Love a Child: A Child in the Family</i>
Cover	1	Name and surname of the author, title of the text, information about the edition (2 nd), place of publication, year of publication, name of the publishing house, logo of the publishing house
Title page	1	Name and surname of the author, title of the text, information about the edition (2 nd), place of publication, year of publication, name of the publishing house, logo of the publishing house
Additional title page	1	Title of the work
Introduction to the 2 nd edition	1	I Title of the introduction II Metatext
Motto	upper part of the page	One sentence and the title of the work from which the motto is taken
115 sections of the text	160 (p. 7–167)	I The actual content of the text. 1) Initial parts of the sections; 2) The sender addressing the recipient; 3) Narrative parts (including scientific essays, descriptions, short stories); 4) Examples of fairy tale fragments; 5) Sentences, considerations; 6) Author's dialogues; 7) Descriptions of non-verbal language; 8) Dialogues taken from living speech; 9) Quotations taken from living speech; 10) Linguistic data and their analyses; 11) Lists of linguistic data in the onomasiological system, see sections: 87, 88, 89, 90, 91, 92, 93, 94, 95; 12) Supplements to the 2 nd edition added in small print, see sections: 6, 9, 18, 23, 27, 37, 38, 40, 58, 64, 69, 75, 98, 99; II Metatext, including quotation marks elements such as quotations, among others, from literary works
Conclusion (section 116)	2 incomplete pages	I Metatext II Addressing the recipient

A contemporary monographic pedagogical work in the form of a guide typically includes a cover, a title page, an introduction, chapters and sub-chapters with a hierarchical structure, references to relevant literature,

The microstructure of a dictionary pertains to the internal structure of an entry article, including the delineation of its mandatory components, their sequencing, and the method of implementation (cf. Żmigrodzki, 2009, p. 52).

conclusions, and a table of contents. Optional components may include a motto, charts, tables, photographs, figures, lists of charts, tables, and figures, a bibliography, and an annex.

Korczak's guidebook comprises such constitutive elements as the cover, title page, introduction, main content, conclusion, and one optional element: the motto. The key feature that distinguishes this guide by the renowned educator from contemporary texts of its kind is the absence of a hierarchical structure of chapters. Instead, the text is composed of 116 complementary sections of comparable length, each ranging from approximately one to two pages. Table 2 provides an overview of the sentence count within the sections of the text.

According to the standard definition, a text is a supra-sentential structure. In the case of *How to Love a Child: A Child in the Family*, the study covered approximately 2,500 sentences comprising the work.

Table 2. Sentence Content of *How to Love a Child: A Child in the Family*

Number of sentences	Number of sections
Up to 20 sentences	53
Up to 30 sentences	48
Over 30 sentences	15
TOTAL	116

The shortest section in the analyzed guide consists of seven long sentences (section 33), while the longest section (section 94) contains 65 short sentences. Sections ranging from 7 to 20 sentences are the most common, with some sentences being extremely long. For example, one sentence in section 73 contains 69 words, as does a sentence in section 75, while a sentence in section 78 includes an extraordinary 102 words.

How to Love a Child: A Child in the Family lacks a table of contents, as the sections are not individually titled, a point that will be discussed later in this article. The microstructure of the text consists of two heterogeneous elements: the actual content of the text and the metatext, defined as "statements about statements" (cf. Wierzbicka, 1971, p. 106). The actual content of the text is composed of 12 components, as listed in Table 1.

Metatext and Text Delimitation

Korczak's guide contains many metatextual elements, which are statements about the text itself. Metatext is a secondary text that provides information about the internal organization of the main text and performs a delimiting function. In the analyzed text, metatextual elements include the title, introduction, motto (a quote from Juliusz Słowacki's *Anhelli*), and conclusion.

The title of Korczak's text, *How to Love a Child: A Child in the Family*, consists of two components that inform the reader about its content, which suggests that it will focus on the functioning of a child in a family and the responsibilities of their guardians. As previously noted (Sieradzka-Baziur, 2019b, p. 205), the first part of the title appears to take the form of a question, but it lacks a question mark. This creates an elliptical construction, which could be expanded to read: *A Book on How to Love a Child*. Such a title carries a pragmatic dimension and frames the text as an action-oriented guide.

The introduction to the second edition, composed of four sentences, includes a metatextual statement that invites the reader to engage in an intellectual journey on the topic of raising a child within the family:

Fifteen years have passed, many questions, conjectures, and doubts have been raised, distrust toward the stated truths has grown. An instructor's truths are a subjective assessment of experiences, merely one, the last, movement of considerations and feelings. Its wealth is in the quantity and weight of its unsettling concerns. Instead of correcting and supplementing, better to note (in the fine print) what has changed around me and within. (Korczak, 2018, preface to the second edition)²

The text concludes with section 116, which consists of 14 sentences and includes an extended metatextual statement as well as an address to the primary recipient: the mother:

² All quotations from the analyzed text are cited from Korczak 2018, translated by Benjamin Paloff.

Fortunate is the author who, in finishing his work, is aware that he has said what he knows, what he has read, assessed according to stated models. Committing it to print, he has a serene sense of satisfaction that he has called forth a mature child capable of an independent life. It can be otherwise: he does not see the reader who demands mediocre science with a readymade recipe and an indication for its use. Here the creative process means becoming engrossed in one's own unestablished, unlearned, suddenly arising thoughts. Here is the work's conclusion—a cool balance sheet, the painful jolt from sleep. Every chapter looks with reproach at having been abandoned before it came to be. The book's final thought is not the conclusion of the whole, and isn't it strange that that's all there is, that there's nothing more. So should I add something? That would mean starting over again, casting aside what I know, encountering new problems that I will hardly think through, writing a new book, equally unfinished.

(...)

A child brings a wondrous song of silence into her mother's life. The song's content, its program, strength, creativity, consists of the number of hours the mother spends near her when the child requires nothing, but lives, of the thoughts she diligently enfolds the child in. Through the child the mother matures, in quiet contemplation, into the inspirations that the work of caregiving demands. Not from a book, but from herself. Then any book will have meagre value; and mine has fulfilled its task if it is convincing in that. In wise solitude, keep watch...
(section 116).

The introduction, serving as the opening statement, and section 116, functioning as the conclusion, create clearly defined boundaries within the text. Researchers refer to this type of compositional strategy as a meta-textual frame (cf. Dobrzyńska, 2001, p. 298).

Korczak establishes other boundary points for the macrostructure of his text. The framework of his narrative spans the development of a child

from the prenatal period through adolescence. Dobrzyńska (2001, p. 299) describes similar delimitation strategies employed by other authors, noting examples such as narratives framed by the lifespan of a protagonist, from birth to death, or temporal boundaries like sunrise to sunset or the progression of the seasons until their full cycle is complete.

As these findings suggest, delimiters—linguistic signals marking the beginning and end of the text—are prominent in the macrostructure of Korczak's work. However, when it comes to its microstructure, such signals are rare in individual sections of the guide. The beginning of each section is signaled by a numerical label, which often appears as part of a sentence rather than as a distinct graphic element. This opening sentence can be regarded as a title, as it identifies the section and introduces its content (Danek, 1972, p. 166), cf:

6. "Ungrateful."
7. "Is the baby healthy?"
8. "Beautiful?"

The vast majority of sections begin with sentences that do not meet the traditional definitional criteria for a title. While some initial parts of sections include phrases that could function as titles, the concluding parts rarely exhibit repetitive structures. Occasionally, the final sections contain direct addresses to the reader, as seen in section 16: "Call the doctor for ten minutes, but keep watch yourself for twenty hours."

Text consistency

Text consistency refers to the logical and clear connections between a text's components that are understandable and logical to the recipient. Researchers distinguish two types of text coherence: semantic consistency (coherence) and formal coherence (cohesion). A coherent text is composed of elements that form a logical and structured whole, both in meaning and formal structure.

Text consistency—coherence

Zdunkiewicz-Jedynak (2008, p. 65) describes text coherence as being based on three fundamental unities:

1. The text is created by one (though not necessarily individual) speaking entity;
2. The text is addressed to one recipient (not necessarily a single individual but rather a recipient who possesses the necessary type of knowledge about the world);
3. The text concerns one arbitrarily broad topic (it is “about something”) developed in a manner planned by the sender.

In the analyzed text, the speaking subject is identical to its author, Janusz Korczak, as evidenced by autobiographical references, such as mentions of his experiences at the front. For instance, he writes: “I wrote this book in a field hospital, under artillery fire, during the war; the very program of understanding was insufficient” (section 98). Additional references to his work at the Orphanage further support this identification (section 60).

The text's topic and recipient can be inferred through the concepts presented in the work. As demonstrated in my previous research (Sieradzka-Baziur, 2019a), the concepts found within the text form a hierarchical whole, which determines the semantic coherence of the text. The central subject is the child and its physical, mental, social, and spiritual development. These themes are illustrated by the concepts outlined in the table below.

Table 3. Concepts in *How to Love a Child: A Child in the Family* in Relation to the Child

Types of Concepts in Relation to the Child	Subordinate Concepts
CHILD'S PHYSICAL DEVELOPMENT	CHILD; DEVELOPMENT STAGES; CHILD'S HEALTH; CHILD'S APPEARANCE; DREAM; CHILD'S SEXUALITY; A GIRL AND A BOY.
CHILD'S MENTAL DEVELOPMENT	CHILD; DEVELOPMENT PERIODS; CHILD'S INTELLIGENCE; SELF-AWARENESS; SENSE OF SUCCESS; DREAMS; TEENAGE LOVE.
CHILD'S SOCIAL DEVELOPMENT	CHILD; DEVELOPMENT PERIODS; LANGUAGE; CHILDREN'S RIGHTS; FREEDOM; AUTHORITY; TRUTH; FUN; BOREDOM; PROPERTY; POVERTY; SEXUAL HARASSMENT.
CHILD'S SPIRITUAL DEVELOPMENT	CHILD; SPIRITUALITY; RELIGIOSITY.

The intended audience of *How to Love a Child: A Child in the Family* is adults, particularly mothers. The hierarchical structure of subordinate concepts organized around the primary themes of PROCREATION, UPBRINGING, EDUCATION, and CARE, as identified through semantic analysis, proves the coherence of the analyzed text.

**Table 4. Concepts In How to Love a Child: A Child in the Family
in Relation to an Adult**

Types of Concepts in Relation to the Adult (mother)	Subordinate Concepts
PROCREATION	ADULT; FERTILITY; INHERITANCE; MOTHERHOOD; INFANTICIDE.
UPBRINGING	ADULT; FAMILY; PARENTAL ATTITUDES; EDUCATION STYLE; ADULT SEXUALITY.
EDUCATION	ADULT; HOME EDUCATION; PARENTAL ATTITUDES; SCHOOL.
CARE	ADULT; PARENTAL ATTITUDES; BREASTFEEDING; CHILDREN'S NUTRITION; CHILDCARE; ENSURING ENOUGH SLEEP; ENSURING SUFFICIENT PHYSICAL ACTIVITY; PROVIDING ENTERTAINMENT; ENSURING SAFETY.

The term *semantic coherence* applies not only to the macrostructure of the text but also to its microstructure. Particularly noteworthy is the high level of coherence in sections containing scientific essays (e.g., an essay on breastfeeding, section 18), descriptive passages (e.g., a description of a little country boy's behavior, section 42), and narrative stories (e.g., a story about a boy's determination, section 44).

Some sections are organized around children's questions (e.g., section 85), while others contain a list of word structures assigned to specific concepts, following an onomasiological system. The concepts Korczak uses to group semantically complex statements can be categorized into topics such as animals (section 87), nations (section 88), humanity (section 89), authority (section 90), religion (sections 91, 94), poverty (section 92), social relations (section 93), and language (sections 94, 95).

Text consistency—cohesion

Formal consistency (*cohesion*) is achieved through the use of grammatical and lexical indicators of unity. In the case of the analyzed work, this is a significant topic, as it encompasses approximately 2,500 sentences and would warrant a separate, detailed study. In *How to Love a Child: A Child in the Family*, one notable feature is the frequent use of phrases following colons, which appear in various parts of the text. These elements contribute to its formal coherence. Examples include phrases such as "And thus"; "Or"; "Finally"; and "A caveat," as seen in section 24.

Text functions

Karl Bühler (1934) proposed the first model of language (speech) functions, in which he identified the **representational**, **expressive**, and **impressive** functions. Later, Roman Jakobson (1960) expanded this framework by distinguishing three additional language functions: **phatic**, **poetic**, and **metalinguistic**. In Poland, Renata Grzegorzczkova (2007) built upon these findings and created an alternative categorization of the functions of utterances, taking into account the direct purpose of the sender. In terms of the information transfer, Grzegorzczkova distinguished two main categories of functions:

1. Informational Functions

- Descriptive information function
- Evaluative-postulative information function

2. Non-Informational Functions

- Causative function (constitutive, performative)
- Expressive function
- Persuasive function (impressive)
- Mystery function
- Creative function
- Phatic function

This categorization corresponds to the functions performed by Korczak's text, which, in accordance with Zdunkiewicz-Jedynak's definition (2008, p. 59), represents "a spoken or written, supra-sentential sign structure, constituting an informational whole."

An analysis of *How to Love a Child: A Child in the Family* shows that its primary functions are the **informative descriptive function** and the **informative evaluative-postulative function**. Table 4 outlines the overarching pedagogical concepts, such as **UPBRINGING**, **EDUCATION**, and **CARE**, as well as their corresponding subordinate concepts, extracted through semantic analysis of Korczak's text.

Korczak's guide has a dual purpose: it "informs" by describing the existing models of upbringing, education, and care in Polish society at the time, while simultaneously "evaluating" these models and "formulating pedagogical postulates." Regarding educational issues, Korczak expressed his belief that the educational activities of parents should address not only the physical, social, and cognitive development of children but also their spiritual growth.

The text also advocates for the rights of children. Korczak writes:

I call for a Magna Carta of children's rights. I have found three basic ones, though there may be more: 1. A child's right to die. 2. A child's right to the present day. 3. A child's right to be what he is (section 37).

In the following section, Korczak elaborates on the first of these rights:

A mother's intense, understanding, even-tempered love for her child must give him the right to an early death, to conclude the cycle of life not in sixty revolutions of the Earth around the sun, but in only one spring or three. A cruel demand on those who do not want to bear the difficulties and costs of the postpartum period more than once, twice. (Section 38)

In section 10, Korczak warns against the harmful effects of raising a "convenient child," writing: "The good child. One must be careful not to confuse good with-convenient."

Such a child fulfills the wishes of its parents and adapts to their expectations, but in the future, will be "internally passive and practically ineffectual."

Korczak's text also introduces concepts related to education. In section 52, he contrasts the concerns of two mothers about the future of their children. One mother, who lacks financial resources, regrets that her child must be sent to an apprenticeship to learn a trade. The wealthier mother, meanwhile, laments that her child must work hard at school. Korczak does not idealize the educational process, recognizing the shortcomings and inefficiencies of the Polish school system of his time. Using his characteristic metaphorical style, he writes:

For free birds from country manors, how painful is their penance in school dormitories, after a couple years of relative freedom in the field, the stable, the servants' quarters. (Section 98)

The concept of child care in the family is articulated by Korczak in relation to nutrition, sleep, rest, play, exercise, safety, and overall well-being. He points out mistakes that parents make in child care. For example:

63. Forcing children to sleep when they don't feel like it is a crime. The chart that declares how many hours of sleep a child needs is absurd.

As can be seen from the above examples, the global function of *How to Love a Child: A Child in the Family* is mainly informational. The sections of the text (1 to 116) are rich in statements that perform a variety of linguistic functions identified by Grzegorzczkova (2007), depending on their intended purpose.

For instance, the text also performs an inciting (impressive) function: Korczak urges mothers to love their children more wisely and deeply, to nurture and care for them attentively. He employs rhetorical questions to achieve this, such as:

6. Ungrateful. Is the Earth grateful to the sun for shining? Is a tree grateful to the seed it grew from? Does the nightingale sing to the mother

who warmed it with her breast? Do you return to the child what you had taken from your parents, or do you only lend in order to take back, meticulously recording and calculating the interest? Is love a service for which you demand payment?

The persuasive function is closely connected to the phatic function, as the author maintains a bond with the recipient through the use of vocative forms, such as *"oh mother!"* For example:

Commanding someone to give out readymade thoughts is to order another woman to give birth to your own child. There are thoughts that, painfully, must give birth to themselves, and these are the most valuable. They decide, mother, whether you will feed from the breast or the udder, whether you'll raise him as a person does or as a female does. (Section 1).

They serve to establish linguistic contact and expose the communicative relationship between the sender and the recipient. The phatic function dominates in these utterances. In the initial parts of some sections, the author occasionally uses direct address to the recipient, as seen in:

"You'll say, 'My child'" (Section 2);

"You say, 'It should ... I want it to ...'" (Section 5).

These direct forms of address serve to establish linguistic contact and expose the communicative relationship between the sender and the recipient. The phatic function dominates in such utterances.

Korczak's text also demonstrates a strong metalinguistic function (Jakobson, 1960), which is manifested in his statements about language. He includes descriptions of non-verbal language, dialogues, quotes from live speech, linguistic data and their analyses, as well as comparisons of linguistic data in an onomasiological arrangement. These linguistic examples, as cited and characterized by Korczak, illustrate the three key pedagogical processes he discusses in the family context: care, upbringing, and education.

Summary

How to Love a Child: A Child in the Family is a remarkable subject for textological and semantic research due to its complex macro- and microstructure, coherence, cohesion, metatext, text delimiters, and the various functions it performs. The word *text* originates from the Latin term *textus*, which means “weaving” or “fabric.” Korczak has woven his text from many components, presenting the central theme of the work—dedicated to the development and upbringing of the child within the family. These constitutive elements include the cover, title page, introduction, main content, conclusion, and an optional element, the motto.

The uniqueness of Korczak's structural design lies in the 116 sections of comparable length, each rich with diverse components. This textual fabric is varied, syncretic, complex and semantically dense, constituting a serious challenge for the attentive reader. Each of the 12 distinguished components can constitute (cf. Table 1) an independent basis for analysis. The syncretism of Korczak's text is characteristic of the era in which it was created, as “the language of the older generation of humanists was very closely related to the language of literature, journalism, rhetoric, and narrative prose” (Wilkoń, 2000, p. 65).

Considering Korczak's text as a fabric, it could be likened to a patchwork—a composition of diverse elements that create a unique whole. The analyzed text is rich in meaning and complex in its semantics. Textological analysis deepened its understanding, revealing thematic areas previously unexplored by scholars. This article also proposes a methodological framework for analyzing other historical scientific texts.

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Teaching Tools for Enhancing Student Engagement in Higher Education

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Abstract

Objectives of the research: This project aims to identify the most effective tools for increasing student engagement.

Research methods: An ad hoc questionnaire to measure the engagement capacity of teaching tools, principal component analysis (PCA), and machine learning forward regression.

Structure of the article: Introduction, methodology and results (sampling, PCA, forward regression), discussion, and conclusions.

Research findings: Active interaction and modular organization promote student engagement. A student's inability to respond to questions about improving a subject often indicates a lack of interest. Engagement increases when previous teaching experiences have not incorporated interactive tools. Pre-class homework assignments enhance interest and make courses

more practical. Tools that facilitate teacher-student interaction improve engagement, regardless of whether the teaching style is based on the teacher's practical experience or a student-centered approach.

Conclusions and recommendations: This research identifies several factors that significantly influence student engagement, including a modular structure, active classroom participation, pre- and post-class assignments, content quality, teaching style, and interaction through discussion platforms.

Keywords: higher education; learning approaches; statistical methods; student engagement; teaching tools; educational success.

Introduction

Academic studies have indicated that carefully selected teaching tools, such as educational technologies, instructional approaches, course organization, and teaching techniques play a crucial role in improving the overall effectiveness of educational delivery (Khalil & Ebner, 2013). Educational technologies can improve the quality of learning and promote collaboration and teamwork (Alonso et al., 2013). Educational success depends on how teachers and students adapt to learning needs (Bandura, 1977; Bruner, 1960; Freire, 1970; Piaget, 1970; Vygotsky, 1930). Each of these components has a unique learning style, so understanding their interaction is essential for effective education. The didactic unit represents a harmonious union between the subject matter expertise of the teacher and the specific needs of the students (Howe et al., 2019; Mortimer & Scott, 2003). This convergence of pedagogical skills and individual student characteristics is fundamental to effective teaching. Teachers can refine their methods by recognizing that each learner brings cognitive, emotional, and motivational qualities to the educational environment (Skinner, 2023; Skinner & Belmont, 1993).

The COVID-19 pandemic brought significant changes to education, accelerating the adoption of online teaching methods and educational technologies (Chiu, 2022; Mishra & Attri, 2020; Rijst et al., 2023). Studies have noted an increased reliance on platforms and videoconferencing,

as universities provided tools to support online course delivery. However, research indicates that online teaching often results in reduced interaction and engagement (Bušljeta Kardum & Jurić Vukelić, 2021; Horta et al., 2022). The abrupt transition to online teaching prompted by the pandemic has raised questions about the effectiveness of traditional teaching tools compared to new technological ones. This shift has ushered in challenges for educators and students, such as the isolation inherent in online learning, where student participation has become even more crucial (Deng et al., 2020; Mustafa et al., 2022; Ramoshaba & Kgarose, 2022).

Course structure also affects student engagement. A well-designed course must be clear and coherent and communicate learning objectives effectively, while prioritizing active learning and student-centered methods that foster problem-solving skills. Such an approach enhances student participation and encourages the development of critical thinking (Barr & Tagg, 1995). Given these considerations, it is crucial to conduct a thorough analysis to determine the most effective tools for increasing student participation within the teaching unit. Moreover, it is vital for educators to continually evolve, and equip themselves with the skills necessary for professional competence in an increasingly cross-cultural and technologically integrated Western educational system. This study aims to identify strategies and tool that most effectively foster student engagement in teaching environments. The methodology, results, and analysis are presented in the following sections.

Methodology

This exploratory study seeks to identify relationships between variables that enhance students' commitment to a subject. It is a descriptive validity study that does not aim to infer outcomes based on binary variables and employs an orthogonal design for the analysis of closed-ended questions. We incorporate variables that can be considered linearly independent of the principal components to better understand the survey results, effectively reducing the dimensionality of the data.

Population and Sample

The study sample consists of 145 university students enrolled in Statistics and Management courses during the 2021–2022 academic year. Of these, 55 students were based in Spain (at URJC), 75 in the United States (at WashU and UST), and 15 in France (at UCO). Initially conducted as primarily online courses, the activities transitioned to a blended learning format (Caner, 2012; Lightner & Lightner-Laws, 2016).

These courses attracted a diverse group of students from around the globe: 35.2% were from Spain, 25.5% from the United States, 10.3% from France, 5.5% from China, 4.8% from India, and the remaining participants hailed from other countries. The majority of participants (73.8%) were pursuing bachelor's degrees, while the rest were enrolled in master's programs or other professional degrees. In addition, 86.9% of the participants were under the age of 29. Midway through the semester, an online survey was conducted. The questionnaire was administered in English as the international scope of the study. In this article, the variables are labeled in English in the tables and graphs, while the factors are presented in Spanish as they emerged from the data analysis.

The questionnaire aimed to identify factors influencing student participation, encompassing both variables recognized in previous literature and new variables. The survey was divided into two parts: the first consisted of closed-ended "yes" or "no" questions. A response of "0" indicated that the topic was irrelevant to improving student participation, while a response of "1" indicated relevance. The second part featured open-ended questions that allowed students to describe actions that had supported their learning or suggest ways to improve teaching. The responses to the open-ended questions were subsequently converted into binary data for analysis.

It is important to note that the categories derived from the open-ended responses cannot be directly applied to linear correlations or predictions due to the absence of predefined response options. However, statistically significant characteristics associated with the "1" category are expected to have an impact on the student population. If respondents

had been given more predefined response options, it is likely that there would have been more positive responses, potentially resulting in stronger correlations with the binary variables coded from the open-ended responses.

As such, the Principal Component Analysis (PCA) focuses on the first set of closed-ended questions. These questions are grouped into three categories related to teaching: “Teaching Method (MT);” “Teaching Style (ST);” and “Course Structure (CS).” Additionally, a separate category, “Most Engaging (MA)” is included to compare aspects of the course that were successful with other student experiences that did not contribute to educational engagement. The binary characteristics extracted from the open-ended questions are divided into two distinct categories: “Open-ended questions about the attractiveness of the learning experience (OLA)” and “Open-ended questions about opportunities to improve the learning experience (OOI).” These categories reflect both positive aspects of the learning process and areas for potential improvement to increase student engagement.

Principal Component Analysis (PCA)

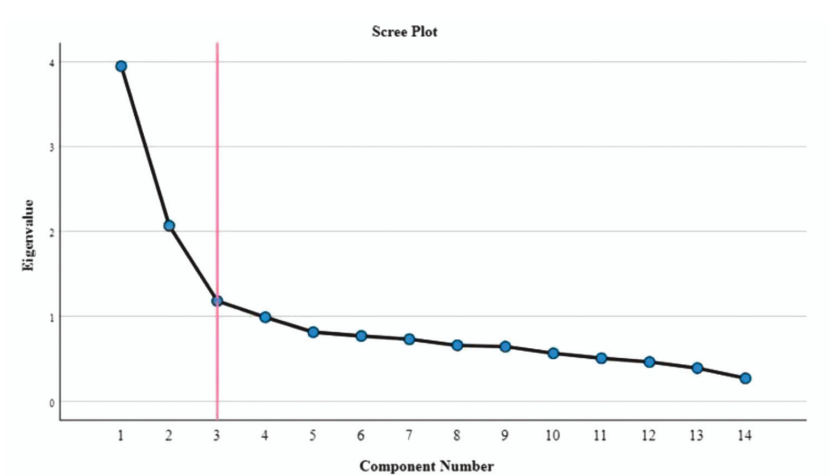
PCA is an essential statistical technique for uncovering hidden structures in complex datasets. It simplifies and reduces the dimensionality of correlated variables by transforming them into uncorrelated principal components. PCA identifies variables that capture the greatest variability in the data, under the assumption that the original variables can be linearly combined into new independent components. Principal component analysis for binary variables (PCAB) is commonly employed in machine learning and biology, particularly for analyzing genomic structures (Song et al., 2019). While logistic transformations for categorical variables are often used, we opted for linear PCAB due to the binary nature of our variables, following methodologies used in studies that link hard-to-measure ordinal variables with easier-to-measure binary ones (Bollen et al., 2002; McKenzie, 2005).

Kolenikov and Angeles (2009) examined the advantages and limitations of this methodology. Linear PCAB has been effectively used in World Bank studies on the socioeconomic status of citizens in emerging countries (Filmer & Pritchett, 2001; Vyas & Kumaranayake, 2006). Its effectiveness stems from the challenges of measuring ordinal variables while leveraging the simplicity and accessibility of binary indicators, such as household appliance ownership and access to basic services, which serve as benchmarks for well-being.

We will use the component scores to perform a machine learning model via stepwise forward linear regression. The PCA is then analyzed as a factor analysis by applying the principle of interpretability (Arabie, 1991). The decision on how many components to retain depends on the data and the objectives of the study (Costello & Osborne, 2005; Jolliffe, 1986). This decision is iterative and relies on multiple criteria as well as expertise (Tabachnick & Fidell, 2013; Watkins, 2018). Common criteria for assessing the feasibility of PCA include the determinant value of the correlation matrix, the Kaiser-Meyer-Olkin index (KMO) (Kaiser, 1970), and Bartlett's test of sphericity (Fabrigar et al., 1999; Kaiser, 1974; Stevens, 1996). The model is validated using three components, based on the following statistics and tests:

1. The determinant of the correlation matrix is close to zero (0.026).
2. Kaiser's criterion (Kaiser, 1970; Yeomans & Golder, 1982): the eigenvalues are greater than one.
3. Cattell's criterion (Cattell, 1965; Horn, 1965): the number of components is selected where the downward trend in the scree plot levels off (Figure 1).
4. The total variance explained by the three components is 51.4%, which does not meet the general rule of 60%. However, including a fourth component compromises interpretability.
5. Bartlett's test (Bartlett, 1950) confirms that the null hypothesis—that the correlation matrix is equal to the identity matrix in the population—is rejected.

Figure 1. Scree plot and Cattell’s rule



From the analysis of the rotated component loadings matrix, we present only the tables of factor saturations (maximum loadings) that serve to name the component and identify the factor.

In Table 1, we observe that the first component is associated with teaching style (TS) variables. These variables share a common characteristic: the teacher bases instruction on their professional experience and actively interacts with students to address concrete and practical situations. Accordingly, we identify the component as “F1: Teaching Style Based on the Teacher's Practical Experience.”

Table 1. Factor Saturations of the First Component (PC1)

Variable	Loading
ST7. The professor uses real-life examples to vividly illustrate the theoretical framework	0.685
ST4. The professor is passionate about the subject they are teaching	0.656
ST3. Clear expectations and detailed instructions are provided by the professor	0.653
ST5. The professor encourages debate among the students	0.644
ST1. The professor is accessible and available to students	0.636
ST6. The professor creates opportunities for competitions among students to generate ideas	0.624

In Table 2, we observe a mix of style variables (ST) and variables from the group “More Attractive than Other Teaching Experiences” (MA). The variable with the highest saturation is ST2, which refers to the teacher’s ability to clarify course objectives and instructions. Notably, the variables in the MA group provide reasons why the teacher’s classes are preferred over those of others. Therefore, the positive saturation in MA6 and MA1 should have their signs reversed since they favor the reference teacher. These variables relate to the teacher’s professionalism, including their organization of the subject, promptness in answering questions, and use of practical exercises with a more formal and traditional approach. We identify this component as “F2: Traditional Teacher-Centered Teaching Style.”

Table 2. Factor Saturations of PC2

Variable	Loading
ST2. The professor clearly states the instructions and objectives of the course	0.851
MA6. The professor takes a long time to respond to questions	0.716
ST8. Students frequently do different assignments to demonstrate they can apply what they have learned in class	0.695
MA1. The e-learning platform content is poorly organized	0.664

In Table 3, all the saturating variables belong to the “More Attractive (MA)” group, which makes them inherently comparative with other teaching experiences. The predominant characteristics highlight interaction and feedback between students and teachers. We can observe that the variable with the highest saturation is MA7 (feedback on post-class questionnaires). These variables correspond to the concept of the “Student-Centered Classroom” (Büchle, 2021; Jones, 2007), which emphasizes the teacher’s role as an active participant in communication with students. Accordingly, we designate this component as “F3. Student-Centered Teaching Style.”

Table 3. Factor Saturations of PC3

Variable	Loading
MA7. The professor does not use polls to ask questions in class	0.799
MA5. The professor is not always available	0.698
MA9. The professor's style is more lecturing than interactive; they focus less on asking questions to capture the students' interest	0.544
MA3. Students do not interact one-on-one with other students	0.498

Forward Regression on Dummy Variables

Stepwise forward regression is a machine learning variable selection technique used to determine which independent variables best explain the variability in a dependent variable. When the dependent variable is binary, this technique can also help identify the most significant predictors (Hosmer Jr et al., 2013). Our study sought to identify connections rather than predict the probability of the dependent variable. By conducting a thorough analysis of forward regression models for each characteristic, we found that the statistical relationships revealed by the model do not necessarily match theoretical expectations. Nevertheless, they offer valuable insights into the influences among variables.

As potential independent variables, we selected the principal components along with questions that were not included in those components. Standardized coefficients are useful in assessing the relative importance of the independent variables within the regression. These coefficients are derived by dividing the regression coefficient of each variable by its standard deviation, which enables direct comparisons (Hair et al., 2010). We conducted a machine learning analysis using this methodology across all variables. The most relevant models are presented below.

**Table 4. Influential Variables ($R^2 = 0.266$)
in “Reading and Viewing Prior to the Class” (MT1)**

Variable	Standardized Coefficients	Sig.
CS2. The modular organization of the course enhances engagement	0.302	0
MA10. The course expectations are unclear	0.21	0.01
OOI5. Increased practice opportunities	0.18	0.02
MT4. Use of discussion boards and feedback	0.177	0.03
CS5. The e-learning platform materials are appealing	0.156	0.04

Pre-class homework assignments (MT1) are strongly influenced by the effective organization of the course into modules (CS2). These assignments are perceived as more attractive than other courses where expectations were unclear (MA10). In addition, they enhance student interest by incorporating practical elements into the coursework (OOI5) and using discussion boards and feedback platforms (MT4).

Table 5. Influential Variables ($R^2 = 0.594$) in “Out-of-Class Video” (MT2)

Variable	Standardized Coefficients	Sig.
MA15. Teacher’s reluctance to embrace change	0.406	0
OLA6. Dedication /Commitment	0.227	0.001
OLA21. Proficiency in language skills	0.19	0.007
OLA9. Mastery of course content and subject area	0.197	0.006
OLA12. Quality of course materials (e.g., PowerPoint presentations, videos, etc.)	0.16	0.024

The use of recorded teaching videos as supplementary material to classes (MT2) is positively associated with the teacher’s professional dedication and commitment (OLA6), their ability to convey content in multiple languages (OLA21), and the quality of course materials such as PowerPoint presentations and videos (OLA12). These factors significantly enhance student engagement. Furthermore, such content gains

appreciation in comparison to previous experiences where these resources were unavailable (MA15).

Table 6. Influential Variables ($R^2 = 0.594$) in "Post-Class Diary Assignments" (MT3)

Variable	Standardized Coefficients	Sig.
OLA22. Lack of engagement ("Nothing")	-0.307	0
F1. Teaching style based on the practical experience of the teacher	0.142	0.073
MA2. The professor does not show passion for the subject they are teaching	0.211	0.006
OLA2. Dynamic class activities and interactions	-0.179	0.017
MT4. Use of discussion boards and feedback	0.158	0.042

Engagement stemming from daily post-class diary assignments (MT3) is inversely proportional to students perceiving the subject as uninteresting (OLA22). However, it positively correlates with the perception of the teacher’s motivation and enthusiasm for the subject (MA2). These assignments also heighten interest in dynamic and interactive activities (OLA2) and are enhanced when paired with discussion boards and feedback (MT4).

Table 7. Table 7. Influential Variables ($R^2 = 0.319$) in "Discussion Boards and Feedback" (MT4)

Variable	Standardized Coefficients	Sig.
CS2. Modular course organization enhances engagement	0.161	0.042
CS4. Constant student interaction makes this class highly engaging	0.201	0.008
F2. Traditional teacher-centered teaching style	-0.188	0.011
MT1. Pre-class reading and viewing assignments	0.211	0.007
OLA12. Course material (PowerPoint, videos, etc.)	-0.148	0.042
OO110. Increased student participation	0.16	0.028
MT3. Post-class diary assignments	0.153	0.038

Student engagement through discussion boards and feedback platforms (MT4) increases when the course is organized into clear modules (CS2) and when activities encourage continuous student interaction (CS4). Pre-class assignments (MT1) and post-class diary activities (MT3) further enhance engagement. Discussion platforms also highlight areas where course materials (OLA12) may lack appeal, and thus encourage greater student participation (OOI10).

Table 8. Influential Variables ($R^2 = 0.372$) in “The Modular Organization of the Course Helps You Engage” (CS2)

Variable	Standardized Coefficients	Sig.
F1. Teaching style based on the teacher's practical experience	0.317	0
MT1. Pre-class reading and viewing assignments	0.335	0
OOI5. Increased emphasis on practice	-0.174	0.012
OLA17. Appropriate time for assimilating knowledge	0.196	0.004
OLA16. Emphasis on practice over theory	0.163	0.019

Student engagement attributed to the modular organization of the course (CS2) is positively influenced by pre-class assignments (MT1), the provision of adequate time for knowledge assimilation (OLA17), and a focus on practical rather than theoretical learning (OLA16). However, the modular structure also highlights an alternative aspect, as student interest in making the course more practical (OOI5) shows a slight negative correlation.

Table 9. Influential Variables ($R^2 = 0.477$) in “Video Conference with Student Interaction” (CS3)

Variable	Standardized Coefficients	Sig.
(Intercept)		0
F1. Teaching style based on the practical experience of the teacher	0.501	0
F3. Student-centered teaching style	0.298	0
F2. Traditional teacher-centered style	-0.251	0
OOI9. Language proficiency	0.218	0.001
OLA18. Interest in the subject	-0.173	0.007
OOI5. Increased practice	-0.164	0.013

Video conferences with interaction (CS3) enhance student engagement by incorporating teaching styles based on the teacher’s practical experience (F1) and a student-centered approach (F3). They are also an alternative to the traditional, lecture-based teaching style (F2). This format boosts student interest by offering opportunities to learn languages (OOI9). However, if the subject matter is inherently engaging (OLA18) or there is a greater demand for practical activities (OOI5), the relative impact of videoconferencing on interaction and engagement may diminish.

Table 10. Influential Variables ($R^2 = 0.21$) in “Students’ Interaction Constantly Makes This Class Very Engaging” (CS4)

Variable	Standardized Coefficients	Sig.
F1. Teaching style based on the teacher’s practical experience	0.319	0
MT4. Use of discussion boards and feedback	0.227	0.004
CS5. Attractiveness of e-learning platform materials	-0.214	0.007

Student engagement attributed to constant interaction (CS4) improves when the teaching style emphasizes practical experience (F1) and

incorporates the use of discussion boards (MT4). Interestingly, this engagement is inversely related to the attractiveness of e-learning materials (CS5).

Table 11. Influential Variables ($R^2 = 0.234$) in “Nothing to Improve in the Course” (OLA22)

Variable	Standardized Coefficients	Sig.
MT3. Post-class diary assignments	-0.295	0
OOI5. Increased focus on practical exercises	-0.226	0.003
F2. Traditional teaching style	0.204	0.008
OOI0. Additional time allocation	-0.162	0.034
OOI2. Improving teaching materials/Syllabus preparation	-0.155	0.04

When students indicate that there is “nothing to improve” in a course (OLA22), this is often synonymous with a lack of engagement. Reduced post-class assignments (MT3), limited practice opportunities (OOI5), insufficient time allocation (OOI0), and poorly prepared teaching materials or syllabus (OOI2) are factors associated with this lack of commitment. However, the traditional teaching style (F2) emerges as the only positive influence on engagement when students perceive no room for improvement.

Table 12. Influential Variables ($R^2 = 0.306$) in “Fun Classes/Comfort” (OLA3)

Variable	Standardized Coefficients	Sig.
OLA5. Passion/Vocation	0.343	0
MT4. Use of discussion boards and feedback	0.2	0.007
OLA2. Dynamic / Interactions	0.198	0.008
F2. Traditional teaching style	-0.199	0.008
OLA7. Closeness/Accessibility/Availability	0.155	0.03

Student engagement increases significantly when classes are perceived as enjoyable and comfortable (OLA3). This is strongly associated with the passion and dedication exhibited by the teacher (OLA5), their approachability and availability to students (OLA7), the dynamic and interactive nature of the lessons (OLA2), and the inclusion of discussion boards and feedback platforms (MT4). However, this positive engagement appears inversely related to the traditional teaching style (F2), which suggests that a more traditional approach may detract from the perceived jovial and engaging atmosphere of the classes.

Discussion

The extraction of principal components from dummy variables is presented as a robust tool for reducing the dimensionality of binary variables that exhibit specific characteristics described in the methodology section. Including binary categories derived from open-ended questions, while not generalizable to the population, can help discover relationships that may not have been previously explored in the literature. Future research should propose theoretical models for confirmatory analysis to better understand the relationships uncovered in this study.

Machine learning models used in this study do not imply theoretical or causal relationships but instead reveal existing correlations among variable groups. In some cases, theoretical relationships may be inferred by reorganizing the terms; in others, simultaneous relationships emerge that encourage the proposal of partial models for further investigation. The coefficients of determination offer an indication of the variance explained by the linear machine learning model. A low value for this coefficient suggests either an absence of predictive variables or the existence of interdependence among the variables included in the model.

Conclusions

Principal component reduction reveals that fundamental teaching qualities are linked to different teaching styles, which are not mutually exclusive. A teacher may adopt several of these styles to varying degrees. The identification of these components as underlying characteristics highlights the importance of teaching styles in meeting the specific needs of each teaching unit, encompassing students, teachers, and subject matter.

Although the playful aspect of classes was not initially regarded as a tool to enhance student engagement, the automated analysis in Table 12 shows its significance. Recent studies have demonstrated that incorporating fun elements and playful activities into higher education can substantially boost student engagement (Anandarajan & Simmers, 2017; Heimbuch & Lubbe, 2020; Yang et al., 2020).

Conclusions Drawn from the Machine Learning Model

1. **Pre-class Homework Assignments and Modular Organization:**
Pre-class homework assignments (MT1) are strongly linked to the effective modular organization of courses (CS2). This structured format appeals to students and increases their interest in making the course more practical (OOI5). In addition, these assignments encourage greater interaction through discussion and feedback platforms (MT4).
2. **Parallel Recording of Teaching Videos:**
Recording teaching videos parallel to lectures (MT2) is associated with the teacher's ability to effectively deliver content, overcome language barriers, and provide high-quality presentations. Students report higher levels of engagement and participation compared to previous experiences without such content (MA15).
3. **Daily Post-Class Assignments and Student Engagement:**
While daily post-class assignments (MT3) are inversely related to student interest in the subject (OLA22), they enhance students' perceptions of teacher motivation (MA2). Additionally, these assignments foster an increased interest in dynamic and interactive activities (OLA2).

4. Feedback Discussion Platforms:

Feedback discussion platforms (MT4) increase student engagement when combined with modular course organization (CS2) and interactive activities (CS4). These platforms also complement pre- (MT1) and post-class assignments (MT2). Additionally, they serve as alternatives to the general attractiveness of course materials (OLA12) and incentivize more interaction (OOI10).

5. Module Organization and Student Engagement:

Well-organized course modules (MT2) are positively correlated with pre-class assignments (MT1), sufficient time for knowledge assimilation (OLA17), and a practical rather than theoretical approach (OLA16). This organization shows an alternative dimension of student interest in making the subject more hands-on and practical (OOI5).

6. Interactive Videoconferences and Teaching Styles:

Interactive videoconferences (CS3) enhance student engagement, particularly when employing teaching styles based on the teacher's practical experience (F1) and a student-centered approach (F3). These videoconferences serve as alternatives to traditional teaching styles centered on classical teacher performance (F2). Moreover, they boost student interest by integrating language-learning opportunities (OOI9).

7. Teaching Style and Student Engagement:

Student engagement is positively influenced by teaching styles that convey passion, accessibility, and dynamism in the classroom (OLA3, OLA5, OLA7, OLA2). The use of discussion platforms (MT4) further supports this engagement. Classes characterized by a jovial and comfortable atmosphere also serve as alternatives to traditional, performance-based teaching styles (F2).

8. Indicators of Lack of Student Engagement:

When students fail to identify areas for improvement in the subject (OLA22), this may indicate a lack of engagement. In such cases, engagement is positively related to traditional teacher-centered teaching styles (F2) but is inversely related to frequent post-class assignments (MT3), excessive practice (OOI5), insufficient time (OOI0), and inadequate development of teaching materials (OOI2).

In summary, student engagement is shaped primarily by teaching styles and specific factors such as course module organization, in-class interaction, pre- and post-class assignments, content quality, and discussion platforms. These elements may interact in alternative, complementary, or substitutive ways, depending on their interplay and individual student preferences.

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Soft Skills, Mentoring and Micro-Credentials: Strategies for the New Role of 21st Century Professors as a Bridge to the Professional Success of Their University Students

Habilidades blandas, mentorización y microcredenciales: estrategias del nuevo rol del profesorado del siglo XXI, como puente del éxito profesional de sus estudiantes universitarios¹

(pp. 373–398)

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Abstract

Research objectives (aims) and problem(s): The objective of this research is to evaluate the training programs aimed at developing soft skills in the context of university graduates' integration into the labor market and the digital certification tools that enable employers to identify the most suitable candidates. The study seeks to explore students' perceptions of these certified skills and their impact on their employability process.

Research methods: The research methodology was structured in stages, starting with an analysis of employers' demands regarding the soft skills required of future employees. Based on these demands, a technical conceptualization of "digital badges" was carried out, followed by an analysis of the outcomes of the training programs provided to students within the "Título de Futuro" initiative, designed to facilitate the acquisition of these skills. Data collection was conducted through surveys and interviews to assess students' perceptions of the training received, the utility of digital certifications, and their relevance to employment processes. A mixed-methods approach, combining qualitative and quantitative analysis, was used to gain a comprehensive understanding of the program's effectiveness and acceptance.

Structure of the article: The article is structured as follows: an introduction contextualizing the importance of soft skills in today's labor market; a description of the design and development process of digital certifications; an analysis of the implementation of training programs at the university; and an exploration of students' perceptions of the outcomes achieved.

Research findings and their impact on the development of educational sciences: Finally, the conclusions reflect on the program's impact and provide recommendations for future applications. The findings highlight the significance of soft skills and the tools used to certify these competencies, such as leadership, teamwork, and adaptability.

Conclusions and/or recommendations: This study contributes to the discourse on pedagogical innovation by integrating digital tools into higher education to strengthen the connection between academic training and labor market demands.

Keywords: microcredential, badget digital, digital certificate, digital insignia, soft skills, employability, mentoring, extracurricular training development

Resumen

Objetivos (fines) y problema(s) de la investigación: El objetivo de esta investigación es evaluar las formaciones que llevan a la adquisición de las denominadas habilidades blandas ("soft skills") en el contexto de la incorporación de los universitarios al mercado laboral y las herramientas de certificación digital que permiten a los empleadores identificar a los candidatos más idóneos. Se busca explorar la percepción de los estudiantes sobre estas habilidades certificadas y sobre su impacto en su proceso de inserción laboral.

Métodos de investigación: El método de investigación se ha organizado por etapas comenzando por el análisis de las demandas de los empleadores sobre las habilidades blandas de los futuros trabajadores. Una vez conocidas las demandas se realizó una conceptualización técnica de las "badges digitales" y se analizaron los resultados de los programas formativos impartidos a los estudiantes dentro del programa "Título de Futuro" para la adquisición de habilidades. La recopilación de datos se realizó mediante encuestas y entrevistas. Se evaluó la percepción de los estudiantes sobre la formación recibida y su utilidad para la inserción laboral y la utilidad de las certificaciones digitales. Se utilizó un enfoque cualitativo y cuantitativo para analizar los datos recolectados, con el fin de obtener una visión completa de la efectividad y aceptación del programa.

Estructura del artículo: La estructura del artículo se organiza en una introducción que muestra la contextualización de la importancia de las habilidades blandas en el mercado laboral actual, una descripción del proceso de diseño y elaboración de las certificaciones digitales; un análisis de la implementación de los programas formativos en la universidad y la percepción estudiantil de los resultados obtenidos.

Resultados de la investigación y su impacto en el desarrollo de las ciencias de la educación: Finalmente se han elaborado unas conclusiones reflexionando sobre el impacto del programa y recomendaciones para futuras aplicaciones. Los resultados evidencian la relevancia de las habilidades

blanda y de las herramientas que certifican estas habilidades como liderazgo, trabajo en equipo y adaptabilidad.

Conclusiones y/o recomendaciones: Este estudio aporta un análisis sobre la innovación pedagógica al integrar herramientas digitales en la educación superior para fortalecer la conexión entre la formación académica y las demandas del mercado laboral.

Palabras clave: microcredencial, badget digital, certificado digital, insignia digital, soft skills, empleabilidad, mentorización, desarrollo formativo extracurricular.

Introducción

El profesor del siglo XXI ya no será sólo aquel que imparta formación teórica y estrictamente académica a sus alumnos, también deberá facilitar la adquisición de competencias transversales que puedan ser certificadas por las universidades a través de microcreenciales. Las microcredenciales, conocidas como insignias digitales o “badget digitales”, son certificaciones que avalan y acreditan la adquisición de habilidades específicas que logran los estudiantes durante un periodo de formación determinado (Friedl et al, 2019; Rossiter y Taynan, 2019). Estos reconocimientos se gestionan a través de metadatos que contienen la información sobre el nombre de la institución emisora, su fecha de emisión, y los criterios para la obtención. La microcredenciales o “badget digitales” muestran un registro visual de los logros adquiridos, que se pueden compartir digitalmente en redes sociales o profesionales (como LinkedIn), se pueden agregar a un portafolio digital y muchas veces se pueden imprimir en un documento físico. Dado que contiene información sobre la formación recibida y superada, para alcanzar dicha insignia, la microcredenciales muestran información detallada de lo aprendido a un posible empleador (Oliver, 2019, 2021).

En la educación superior, estas microcredenciales evidencian la adquisición de un aprendizaje informal, a una escala micro, frente a la formación lograda en una escala macro con un título universitario (Selvaratnam

y Sankey, 2021). Una formación y unas habilidades que pasarían desapercibidas en un proceso normal de aprendizaje y acreditación como el de los estudios universitarios. Además, permiten y facilitan al alumno especializar su formación y diferenciarse de otros estudiantes, frente a un potencial empleador (Cucchiara et al., 2014). El tipo de formación abalada por una microcredencial se convierte en un programa de aprendizaje complementario a la formación reglada, técnica o académica dentro un grado universitario y es más flexible que los métodos tradicionales establecidos por las instituciones de educación superior. Su representación digital, a través de microcredenciales, muestra una imagen mucho más precisa del logro educativo realizado por el estudiante, como información crucial para los reclutadores de empleo, en comparación con los certificados o títulos tradicionales de reconocimiento universitario (Toronto Workforce Innovation Group., 2021, March 15th). Las microcredenciales se centran más en las competencias y habilidades adquiridas que en la formación teórica alcanzada. Difícilmente, un título universitario es capaz de mostrar todos los logros o habilidades que un estudiante adquiere durante sus años de estudio de grado, así como su nivel de competencias y habilidades, mientras que las microcredenciales tienen la capacidad y el potencial de poder mostrarlo. Debido a ello, las microcredenciales o “badget digitales” van a revolucionar la forma en que hasta ahora se ha reconocido el conocimiento adquirido y van a permitir unos currículos mucho más especializados, individualizados y únicos para cada estudiante. Currículos que les diferenciaran profesionalmente, frente a otros candidatos, en procesos de selección laboral. La formación que hay detrás de una microcredencial permite una mayor adaptación de los programas tradicionales de aprendizaje y se adapta mejor a las nuevas demandas y tendencias del mercado. Facilita al estudiante establecer cual quiere que sea su ámbito de especialización o qué quiere que le diferencie de los demás (Instituto para el Futuro de la Educación. Observatorio Tecnológico de Monterrey 2019).

Uno de los primeros centros en comenzar a señalar la importancia de incorporar, en los estudios de educación superior, este tipo de formación en habilidades y competencias transversales y la necesidad de su reconocimiento digital fue el Observatorio del Instituto para el Futuro

de la Educación del Tecnológico de Monterrey. Su publicación “Edu Trends. Credenciales alternativas” (2019) se ha convertido en un referente. Este centro desde 2017, e incluso antes, ya hacía hincapié en que era necesario encontrar mecanismos para mostrar a los empleadores, que intentaban detectar el talento entre los estudiantes egresados, cuáles eran los que tenían las cualidades que se adaptaban mejor a las necesidades de mercado. Debían ser los centros de educación superior los que certificaran estas competencias, más allá de la formación académica, técnica o, teórica tradicional y así lo señalaron en su publicación, de mayo de 2017, “Radar de Innovación Educativa”.

No se trataba de ofrecer formación sin una finalidad real. Estas habilidades y competencias debían diseñarse en función de las demandas reales del mercado (NY State Education Department, 2018). En este sentido, el origen de la creación de las “badget digitales” responde a la necesidad de proporcionar un certificado de aprendizaje complementario y paralelo al adquirido en los estudios universitarios reglados. Una formación más flexible y sobre todo más práctica (Lim et al., 2018).

Según el Instituto Técnico de Monterrey, dichas “badget digitales”, debían estar enfocadas a la adquisición de habilidades reales y medibles obtenidas en una formación en la que los objetivos y logros a conseguir deben ser claros desde un principio, estableciéndose el periodo de tiempo necesario para conseguir cada “badget” y el nivel mínimo exigido para superar la formación. No pueden nunca ser criterios aleatorios o imprecisos si se quiere que las microcredenciales sean reconocidas como referentes por los empleadores. Sólo la transparencia del proceso, la concreción y la objetividad en la obtención del reconocimiento digital dará la confianza necesaria para que las “badgets” sean respetadas y reconocidas tanto por estudiantes, como por empleadores. No sólo los estudiantes exigen seriedad en las formaciones, también los empleadores demandan dicha concreción para poder reconocer las certificaciones emitidas como validas (Orr et al., 2020).²

² En España las microcredenciales han sido recogidas en el Real Decreto 822/2021, de 28 de septiembre, por el que se establece la organización de las enseñanzas

Pero ¿por qué se ha hecho necesario el desarrollo de este tipo de formaciones complementarias? El motivo es debido a que, si durante años la educación superior garantizaba el acceso al mercado laboral y se convertía en el principal modo de ascenso social. A partir de los primeros años el siglo veintiuno y particularmente después del COVID-19, ya no ha sido nunca más así. Se ha hecho necesaria una formación paralela y complementaria a la establecida como oficial que permita una adaptación del estudiante en lo que el mercado demandaba. La insistencia de los estudiantes por realizar una formación más práctica, en contacto directo con las empresas, evidencia esta necesidad de adquirir habilidades cercanas a la realidad laboral. Los empleadores consideran que, muchas veces, los egresados no tienen las competencias precisas para desempeñar los puestos de trabajo para los que técnicamente se han formado en las universidades. La obtención de un título universitario ya no es garante de tener las competencias necesarias para desempeñar un determinado trabajo. En este escenario las universidades necesitan de una profunda reflexión para adaptar la formación que ofrecen a lo que realmente demandan los mercados. La pandemia del COVID-19 ha acelerado el proceso al impactar de forma directa en la economía y en la demanda laboral, así como en el tipo de formación que se pide. Han surgido nuevas formas de trabajo en las que el componente digital tiene un gran peso. La mayoría de las empresas han adaptado todo su entorno laboral a un contexto de transformación digital acelerado, particularmente en los procesos internos de las organizaciones (Ernest & Young Global Group-EY, 2020).

A la vez que se dan altos niveles de desempleo, las empresas no encuentran candidatos para cubrir determinados puestos y acuden a los reclutadores especializados de RRHH para que les ayuden a encontrar profesionales y retener el talento. Estos reclutadores necesitan no sólo conocer el grado de formación académica y teórico/técnica del alumno

universitarias y procedimientos para asegurar su calidad. En el artículo 37, habla de la formación permanente y en su párrafo 8 indica que las universidades pueden impartir enseñanzas de menos de 15 créditos ECTS que serán certificadas por microcredenciales que permitirán reconocer el aprendizaje ligado a modelos formativos de corta duración.

con título universitario, sino también su formación complementaria en competencias transversales que le permita una mayor adaptabilidad al modelo laboral del siglo XXI. Son claves habilidades como la capacidad para liderar, para trabajar en equipo y colaborar, para adaptarse al cambio y ser resiliente, para ser proactivo y buscar nuevas soluciones, para saber comunicar bien, para ser capaz de gestionar la incertidumbre, para adaptarse al trabajo en remoto, para ser leal a la empresa y tener compromiso con los proyectos, para tener habilidades digitales, etc, etc, etc. Las empresas necesitan trabajadores versátiles que entiendan que el futuro pasa necesariamente por el reskilling o el upskilling dentro de la propia cultura de la empresa, enlazando directamente con las recomendaciones de la UNESCO de 2020, que están siendo incorporadas por los estados miembros de la UE y que no se refieren únicamente a la formación permanente para adultos, sino, sobre todo, a la formación para los estudiantes de grado y posgrado.

Teniendo en consideración todo este contexto las universidades de la Fundación Universitaria CEU San Pablo (España) acometieron el reto de desarrollar un programa de formación complementario en competencias transversales (“soft skill”) que permitieran la adquisición de microcredenciales (“badget digitales”) a sus alumnos, con una formación que rellenaría los huecos que no podía cubrir la formación académica reglada. El programa comenzó en el curso 2016–2017 en la universidad CEU Cardinal Herrera en Valencia y cada año se ha ido mejorando y ampliando. Igualmente, cada curso académico ha permitido un mayor perfeccionamiento del sistema de reconocimiento con nuevas microcredenciales. A partir del curso 2017–2018 se amplió la oferta formativa y se consolidó su reconocimiento con microcredenciales, en las universidades CEU San Pablo de Madrid y CEU Abat Oliba de Barcelona. El presente estudio refleja sólo en las acciones y resultados desarrollados en la Universidad CEU San Pablo de Madrid.

Método

Participantes

En este trabajo los investigadores del grupo de investigación TALENTO³ han analizado los resultados del programa de formación en habilidades blandas y competencias transversales, denominado Título de Futuro (y anteriormente conocido como Título Propio en Formación en Valores y Liderazgo), que surgió durante el curso 2017–2018, abordando su evolución durante los últimos cuatro años hasta el curso 2021–2022 para establecer el grado de aceptación de este tipo de formaciones entre los estudiantes y su utilidad en la adquisición de competencias blandas para afrontar las demandas de los reclutadores laborales. Obtenidos los resultados, se han realizado propuestas de mejora y adaptación, tanto de la formación ofrecida, como de las denominaciones de las insignias digitales que acreditan dicha formación, y se han planteado nuevas cuestiones para reflexionar sobre los talleres que se ofrecen, la asignación de las microcredenciales y la búsqueda de soluciones a problemas comunes con otras universidades.

Procedimiento

Teniendo en cuenta que, según los informes anuales de grandes empresas reclutadoras, tales como Ranstad, Adecco, Michel page, Experis, Kelly Services, Reverse, Hays recruitmnet, etc, las principales habilidades y competencias que demandan las empresas son la comunicación, el trabajo en equipo y colaboración interpersonal e interdepartamental, la resolución de problemas, la creatividad y proactividad, el pensamiento crítico, creativo e innovador, la autoconfianza, la comprensión ética, la capacidad de aprendizaje permanente, la resiliencia y capacidad para hacer frente los cambios y a la incertidumbre, así como la voluntad de aceptar responsabilidades, todas ellas competencias altamente demandas en todos los sectores laborales (Clarke, 2017; Moore y Morton, 2017), era

³ Grupo de Investigación en Competencias, Empleo y Desarrollo del Talento, de la Universidad CEU San Pablo.

necesario hacer una propuesta de valor con un programa formativo que facilitarían la adquisición de estas habilidades y perfeccionar un programa de certificaciones digitales que reconociera dicha formación adquirida. Sobre todo, si tenemos en cuenta que es evidente que sólo los conocimientos académicos, técnicos y mecánicos (conocidos como *hard skills*), e impartidos en los estudios de grado de las universidades, ya no son suficientes para tener éxito laboral. Con tal motivo se diseñó un título de formación, denominado Título de Futuro, que englobaría todos esos elementos.

Es un hecho que los empleadores consideran que los egresados, aun teniendo suficiente preparación técnica e intelectual, no desarrollan adecuadamente su labor en los puestos de trabajo que ellos demandan. Si la formación en competencias transversales que se iba a ofrecer se quería que fuera acorde a las demandas del mercado, previamente a su programación, era necesario realizar una serie de entrevistas a CEOs de empresas de reclutamiento, nacionales e internacionales, para averiguar qué tipo de habilidades complementarias, a la formación más académica reglada y teórica, era necesaria incluir y cómo debía ser certificada para que los empleadores las reconocieran como válida. En tal sentido se establecieron una serie de etapas en el proceso.

Primera etapa, orientada a determinar las necesidades de habilidades blandas por parte de los empleadores. Se realizaron para ello entrevistas cualitativas semidirectas a CEOs de empresas internacionales de reclutamiento.⁴ Se eligió la entrevista como técnica de investigación social que permite recoger información muy valiosa para el propósito del estudio. Las entrevistas posibilitan interpretar los motivos profundos que tienen estos agentes sociales a la hora de actuar y reclutar trabajadores. La metodología elegida fue la de entrevista semidirecta, donde se consigue el control sobre los temas a tratar, en base a un guion preestablecido. Aunque este tipo de entrevista limita la libertad comunicativa, sin

⁴ Se llevaron a cabo entrevistas a reclutadores como Juan Luis Goujon, Director de Estrategia & Desarrollo de Negocios de Lee Hecht Harrison (LHH), Antonio Moya Ximenes, Talent Manager Spain de Dentons, Javier Martín de Learning & Development Manager de Randstad España y Ana Zayas de Page Personnel.

embargo, nos ayudaba a centrar la información que queríamos conseguir y relacionarla con el objetivo final de nuestra investigación. Estas entrevistas nos facilitaron poder llegar a ciertas conclusiones sobre el tipo de habilidades priorizadas por las empresas reclutadoras y establecer cuáles son imprescindibles para la inserción laboral de los estudiantes. A través de las referidas entrevistas se identificaron las competencias clave para la empleabilidad. Las entrevistas mostraron once habilidades y atributos claves para los empleadores/reclutadores que debían ser implementados en la formación impartida dentro del Título de Futuro y posteriormente certificada a través de microcredenciales o “badget digitales”, tal y como muestra la Figura 1.

Figura 1. Resultados de las entrevistas realizadas a reclutadores de empleo.

HABILIDADES CLAVES EN EL CANDIDATO A UN PUESTO DE TRABAJO PARA LOS RECLUTADORES DE EMPLEO
Poseer habilidades de comunicación.
Tener capacidad para aplicar conocimientos prácticos para la resolución de problemas.
Tener capacidad de trabajar en equipo.
Ser proactivo y realizar nuevas propuestas.
Tener iniciativa y tomar decisiones.
Capacidad de aprender nuevas habilidades.
Adaptarse a los cambios y nuevas situaciones.
Tener compromiso con el proyecto, la empresa, el equipo.
Capacidad de liderazgo.
Ser empático y tener una actitud positiva, ser asertivo.
Tener capacidad de organización y planificación en el trabajo.

Fuente: Elaboración propia.

Segunda etapa del proceso. Detectadas las habilidades blandas o competencias transversales que demandaba el mercado laboral se perfiló la formación que era necesaria impartir a los estudiantes dentro de tres líneas de acción:

➤ Por una parte, se afianzó y especializó lo que se denominó, en la Universidad CEU San Pablo, como Título de Futuro (conocido anteriormente como Título propio en formación en valores y liderazgo). Formación diseñada en equilibrio entre lo que demandan los reclutadores y las exigencias de los alumnos de una preparación más práctica y aplicada. Las sesiones se conformaban por bloques.

- Un bloque formativo a partir de masterclass impartidas por profesionales especialistas en terminadas habilidades como por ejemplo la comunicación, el liderazgo, la influencia, etc., (basadas en técnicas de “Design Thinkin”).
- Un segundo bloque centrado en la resolución de retos de forma colaborativa, utilizando la metodología de “Design Sprint” y siendo los estudiantes mentorizados por profesores de la Universidad. El sistema se organiza en función de la edad de los alumnos y el curso/año que realizan en la universidad. Para los alumnos de los cursos iniciales (primero y segundo) los retos se vincularon al desarrollo de la competencia de la comunicación, y se anclaban en actuaciones tan diversas como la comunicación con clientes en la era digital, la comunicación con empresas, la comunicación responsable y el “Big Data”, la comunicación con grupos de edad avanzada, la mejora de las redes sociales desde la responsabilidad, la comunicación efectiva de los valores empresariales, la comunicación a través de las técnicas del “story-telling”, etc. Los retos para los alumnos de segundo curso se relacionaron a partir de los Objetivos de Desarrollo Sostenible de la ONU, por lo que los alumnos trabajaron sobre temas relativos a la erradicación de la pobreza, cómo acabar con el hambre, conseguir una educación de calidad, la igualdad de género y la discriminación, el crecimiento económico y empleo, entre otros. Para los alumnos de tercer curso se enfocó su formación y los retos a realizar en temas de innovación y emprendimiento y para los estudiantes de cuarto y último curso se centró en el proceso de inserción laboral. Los alumnos iban desarrollando toda una serie de cursos, talleres, asistencia

a conferencias, trabajos en retos, etc., que les permitía la obtención de una “badget digital” específica por cada una, en función de los cursos y la formación recibida, pudiendo ser por ejemplo una “badget” en autoconocimiento, o en comunicación, o en liderazgo, o en trabajo en equipo, o en innovación, etc., tal y como se muestra en la Figura 2.

- La segunda línea de acción era completar la formación incluida dentro del denominado como “Título de Futuro” con un programa de mentorización denominado GPS (Grow Path for Students) en el que profesionales, con una larga y reconocida trayectoria laboral mentorizan a los estudiantes para ayudarles, no sólo a descubrir su vocación, sino también en su proceso de incorporación al mercado laboral. GPS se convirtió rápidamente en uno de los proyectos más ambiciosos de la Universidad CEU San Pablo que tiene como objetivo guiar al estudiante hacia su futuro laboral. Es un programa de mentorización dirigido a todos los alumnos de la universidad, así como a los alumnos egresados menores de 35 años y ya considerados Alumni. El programa se organiza en tres niveles o etapas, según el curso en que se encuentra el alumno o situación del Alumni (alumno egresado).
 - Nivel I: Programa GPS para alumnos de 1º y 2º. Un programa de acompañamiento con mentores que son profesores del CEU en activo con formación en mentorización y en muchos casos con actividad en el mercado profesional. Mentores que ayudan al alumno a descubrir su vocación.
 - Nivel II: programa GPS para alumnos de 3º a 6º curso (alumnos de últimos años según el grado que cursen). Los mentores, en este caso, son profesionales en activo que desde el mundo laboral, les orientan, ayudan y guían en su última etapa en la universidad, antes de salir al mundo laboral, para que su incorporación profesional sea más fácil y exitosa. Muchos de los mentores (más de un 50% son antiguos alumnos de la universidad).

- Nivel PRO: dirigido a alumnos egresados (considerados Alumni) menores de 35 años, incorporados ya al mercado laboral, pero que necesitan orientación profesional sobre su situación y proyección profesional o sobre un cambio o transición laboral.

En todos los niveles los mentores, que forman parte de GPS, aportan al alumno/Alumni conocimientos y aprendizajes para su salida al mercado laboral en distintas áreas. Todos los mentores reciben formación especializada y obligatoria en mentorización a través de talleres impartidos por formadores externos. Dentro del programa GPS el alumno/Alumni realiza un mínimo de 5 reuniones de mentorización con su mentor asignado, durante un periodo de 6 meses. Además, el alumno (mentee) recibe 4 masterclass impartidas por ponentes especializados, de carácter motivacional e inspirador, sobre la importancia del trabajo en equipo, el esfuerzo, el respeto, los valores, etc., y se completa con talleres de formación sobre temas tales como: "Crea tu propia marca y diferénciate de los demás para ser el candidato elegido", "Reflexiones para concretar tu objetivo profesional", "Elevator Pitch: impacta para generar oportunidades profesionales", "Construye una estrategia exitosa de mercado oculto", "Escucha: la llave maestra de la comunicación", "Amabilidad: estrategia win win en cualquier contexto".

Entre los ponentes de los que han podido disfrutar estos alumnos están figuras destacadas del deporte (Edurne Pasaban, Albert Llovera, Teresa Perales), la comunicación (Manuel Campo Vidal, Quico Taronj, Jota Abril, Victor Küppers, Pedro García Aguado, Mario Alonso Puig, José Manuel Zapata, Carlos Hipólito), la empresa (Emilio Duro, Pablo Fernández, Antonio Moya, Gipsy Chef, Elia Cortes), la motivación (Mago More, Chipri Quintas, Jorge Blas y Fernando Botello), etc.

Tras la participación en todas las actividades descritas y realizadas las reuniones de mentorización con sus mentores (y tras un informe positivo del mentor) el alumno recibe su "badget digital" de autoconocimiento y mentorización.

- Una tercera línea de actuación completaba la oferta educativa y las microcredenciales, eran los talleres y actividades ofrecidos por Servicio de Carreras Profesionales de la Universidad y que pretenden potenciar la adquisición de competencias en el entorno del emprendimiento y generar un refuerzo para la salida de los alumnos al mercado laboral. Este Servicio de Carreras Profesionales ofrece talleres de preparación para la adquisición de competencias, que también se certifican, como por ejemplo formaciones en “Técnicas para superar con éxito una entrevista de trabajo”, “Cómo diseñar un buen currículum”, “Cómo destacar en un proceso de selección”, etc.

La combinación de los tres pilares o líneas de intervención anteriormente descritos (Título de Futuro, GPS y Formación del Servicio de Carreras Profesionales) permite al alumno adquirir competencias transversales en distintas áreas o campos que se certifican en siete grandes áreas de microcredenciales. Áreas de formación en competencias que los alumnos van completando según su participación en diferentes actividades o talleres incluidos en cada una de ellas, tal y como se muestra en la Figura 2.

Figura 2. Microcredenciales (Badget Digitales) a conseguir por la realización de determinadas actividades y talleres de formación.

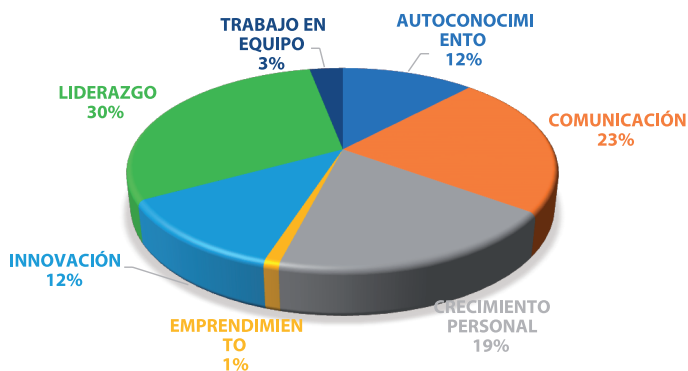


Fuente: Elaboración propia.

En la tercera etapa se procedió a analizar los resultados. Analizando los resultados de la participación de los alumnos en todas estas actividades y la obtención de microcredenciales podemos indicar que en las diversas actividades conducentes a la obtención de una “badget digital”, un 30% de los alumnos han preferido elegir un taller o masterclass relacionado con el liderazgo. En este caso sobre todo han sido alumnos que cursaban estudios en la Facultad de Ciencias Económicas y Empresariales, seguidos de los alumnos de la Facultad de Medicina. En un estudio posterior deberemos analizar la motivación de dichos alumnos por esta competencia, según el grado universitario que realizan frente a otras competencias. Otro 23% de alumnos han elegido actividades conducentes al desarrollo de las competencias de comunicación. También en este caso han destacado en la elección de esta habilidad los alumnos procedentes de la Facultad de Ciencias Económicas y Empresariales seguidos de los alumnos de la Facultad de Humanidades y CC. De la Comunicación. Un 19% se han elegido formaciones que los llevaran al desarrollo de la competencia del crecimiento personal. En este caso nuevamente ha sido sobre todo alumnos de la Facultad de CC. Económicas, seguidos de alumnos de la Facultad de Farmacia, como muestra la Figura 3. La mayor participación en todas estas actividades de alumnos de la Facultad de CC. Económicas en los talleres creemos que está directamente relacionado con el contacto directo de los alumnos con las empresas y el mercado laboral. Las empresas que están continuamente participando en las aulas con conferencias y talleres les hablan a los alumnos de las demandas reales del mercado y hacen especial hincapié en la importancia de las competencias transversales. Este hecho genera en los estudiantes una especial sensibilidad a este tipo de formaciones y se refleja en la mayor demanda de plazas dentro del Título de Futuro.

Figura 3. Porcentaje de “Badget digitales” obtenidas por los estudiantes en su participación en actividades y talleres de los programas “Título de futuro”, GPS y Carreras profesionales.

BADGET OBTENIDAS



Fuente: Elaboración propia.

Para un mejor entendimiento de las demandas reales de los alumnos en el área de la formación en competencias transversales, así como para entender su apreciación y valoración de estas formaciones, a lo largo del curso 2020–2021, se realizó también una encuesta a la que respondieron 829 estudiantes. Los datos de dicha encuesta han mostrado una serie de resultados que facilitan claves de mejora del proceso y de los programas ofertados. **La cuarta etapa** ha consistido en el análisis de los resultados.

Resultados

Lo importante y lo interesante del desarrollo de estos programas de formación en competencias transversales es poder evaluar hasta qué punto sirven para la finalidad diseñada, que es el desarrollo de habilidades blandas entre los alumnos para su mejor incorporación laboral, y por otra parte comprobar si los estudiantes aprecian y valoraban la utilidad de dichas actividades y aprendizajes y si realmente se realiza un buen aprovechamiento de los talleres, masterclass, retos, etc., ofertados.

Para obtener esta información se realizó una encuesta entre los estudiantes en la que participaron un total de 829 alumnos. Esta muestra incluía alumnos matriculados en una amplia gama de titulaciones universitarias que abarcaban desde las ciencias sociales, pasando por titulaciones de ciencias económicas y jurídicas, de comunicación, periodismo y publicidad, ciencias biosanitarias y de investigación farmacéutica y médica y estudios tecnológicos del área de las ingenierías y la arquitectura. A todos ellos se les realizaron preguntas destinadas a conocer su grado de satisfacción con la formación recibida y como percibían si esa formación les ayudaría en su salida al mercado laboral.

La muestra encuestada estaba compuesta en un 71% por mujeres y en un 29% por hombres, con edades entre los 18 a los 25 años, incluyendo un 94% de estudiantes nacionales y un 6% de estudiantes internacionales.

Los estudiantes encuestados respondieron a preguntas clave sobre la formación recibida tales como:

Una vez finalizada tu formación en competencias transversales:

1. *¿Eres capaz de comunicar con claridad?*
2. *¿Eres capaz de aprender nuevas habilidades?*
3. *¿Tienes capacidad de iniciativa?*
4. *¿Tienes seguridad para resolver problemas difíciles?*
5. *¿Tienes capacidad para hacer propuestas?*
6. *¿Te adaptas bien a los cambios?*
7. *¿Tienes capacidad para trabajar en equipo?*
8. *¿Tienes capacidad de liderazgo?*
9. *¿Eres empático y tienes actitud positiva?*
10. *¿Cuál es tú grado de satisfacción con la formación recibida?*
11. *¿Consideras útil la formación recibida para tu futura empleabilidad?*

Los datos de la encuesta mostraron que los estudiantes percibían muy positivamente la formación recibida en los talleres, masterclass, etc. Su grado de satisfacción general con los programas formativos que se les habían ofrecido, para la adquisición de competencias “soft skills”, era muy

alto. El 90,92% de los encuestados consideran positiva o muy positiva esta preparación recibida (un 33,60% la consideraba positiva y un 57,32% muy positiva). Al respecto de la pregunta sobre “cómo relacionaban dichas habilidades con su futura empleabilidad al finalizar sus estudios universitarios”, el 75,86% las consideraban útiles o muy útiles (De hecho, el 28,79% las consideraba útiles y el 47,07% muy útiles). Por tanto, **el primer aprendizaje** es que este tipo de talleres y formaciones tienen una alta valoración por parte de los receptores de estas lo cual es clave para el éxito de estos programas.

Si bien, y aunque los anteriores datos evidenciaban una alta valoración sobre la utilidad de las formaciones recibidas, también indicaban que la formación no era suficiente. Los alumnos percibían una importante falta de preparación en competencias tales como su capacidad para trabajar en equipo, o la disposición para relacionarse con otras personas o compañeros de trabajo, o su habilidad para tener iniciativa. Los estudiantes reconocían tener una importante falta de cualidades o competencias relativas a esas habilidades. Los estudiantes indicaban haber desarrollado sólo algunas de esas habilidades. Sólo las más necesarias o básicas, para su salida al mercado laboral y estaban preocupados con respecto a las que indicaban que creían que debería mejorar o incluso se sentían francamente deficientes. Concretamente se referían a las habilidades de trabajo en equipo y liderazgo de equipos. **El segundo aprendizaje** es que aún no son suficientes estas formaciones y que tienen importantes carencias en la adquisición de determinadas habilidades claves para su empleabilidad, como por ejemplo el liderazgo o el trabajo en equipo.

Los datos recogidos ponen de manifiesto que es imprescindible un mayor impulso de estas competencias de aprendizaje en las universidades. Todo ello nos lleva a reflexionar sobre la imperiosa necesidad de acometer definitivamente la adaptación de las enseñanzas a lo que marca Bolonia, al respecto de este tema. No solamente es necesario formarse en contenidos teóricos y técnicos, también es fundamental desarrollar capacidades claves para el mercado laboral y para gestionar las relaciones sociales, si queremos una sociedad más justa y sostenible.

Los alumnos deberían aprender a convertirse en los agentes del cambio social para propiciar un futuro mejor. No olvidemos que muchas de estas competencias blandas reseñadas cambian la forma de pensar y de ser de los alumnos y les hacen más reflexivos, más resilientes, más tolerantes ante la discrepancia y ante la diferencia, más flexibles frente a la variedad, más dialogantes y capaces de ceder para unificar propuesta por el bien común, etc.

Esta reflexión no es moderna, de hecho, ya lo decía Herbert Alexander Simon (1977) cuando hablaba sobre la racionalidad limitada del hombre para tomar decisiones debido a sus limitaciones cognitivas de información y tiempo: «Diseñar es concebir estrategias destinada a cambiar cada decisión existente por una preferible» y eso precisamente es lo que fomentan las competencias o habilidades blandas en los alumnos, que sean capaces de ver y valorar el mundo de otra forma. Si bien, y aunque han pasado más de 40 años, aún hay mucho por hacer en la universidad española a este respecto. Aunque, España no es el único entorno universitario a nivel internacional en el que se reconocen o ponen de manifiesto carencias a este respecto (Cabero Almenara, J., et al., 2020).

Por otra parte, si nos fijamos en algunas de las habilidades blandas más demandadas por los empleadores, sobre las que anteriormente hemos hablado en este artículo cuando aludíamos a las entrevistas realizadas a los reclutadores, los datos de las encuestas de los estudiantes reflejaron que un 72% de ellos, después de la formación recibida, se sentían seguros en competencias como la comunicación. El 79% creía que gracias a su formación tenían una mayor facilidad para aprender nuevas habilidades con rapidez y el 74% creía poseer capacidad de iniciativa (competencia muy valorada por los reclutadores). Las encuestas mostraron que estas habilidades eran sus principales fortalezas. **El tercer aprendizaje** es que los estudiantes consiguen con estas formaciones mejorar habilidades muy necesarias en el mercado laboral, como la capacidad de iniciativa, pero no adquieren otras. Esto debe hacernos reflexionar sobre el motivo por el que solo adquieren algunas concretas si los individuos objeto de estudios son siempre los mismos. ¿A qué se debe que las formaciones y talleres tengan éxito con la adquisición de unas habilidades y no de otras? ¿No será un problema cómo son impartidos determinados talleres o de cómo se da determinada formación?

¿En qué fallamos en la formación de los estudiantes? **El cuarto aprendizaje**, por tanto, es que debemos de hacer una seria reflexión, totalmente objetiva, sobre la forma en que se imparten los talleres y/o la formación de los preparadores para encontrar los fallos del sistema y solucionarlos.

Los estudiantes muestran que son claramente débiles en su seguridad para resolver problemas difíciles. Habilidad en la que solo un 54% de los encuestados se sentían cómodos o seguros. En cuanto a su capacidad para hacer propuestas únicamente el 49% afirmaban que tenía solvencia en este tema. El peor dato era el relacionado con su flexibilidad para adaptarse a los cambios. Pregunta en el que únicamente un 39% afirmaban tener confianza en sí mismos. Los peores resultados se mostraban con relación a su capacidad de adaptación para el trabajo en equipo, ya que sólo un 14% de los mismos manifestaba que les gustaba trabajar con otros compañeros. La gran mayoría preferían trabajar o desarrollar proyectos en solitario y sólo el 26% creía tener capacidad de liderazgo. Únicamente un 34% creía ser empáticos o tener una actitud positiva ante los retos que se les pudieran plantear en su entorno personal o laboral, por eso era para todos ellos tan importante realizar los talleres de competencias transversales que se les ofrecían a través del Título de Futuro y obtener microcredenciales que abarcaran haber superado sus debilidades y alcanzado sus logros frente a los empleadores en procesos de selección laboral.

En definitiva, es necesario no ser complacientes con nuestros logros, sino exigentes con nuestras metas para lograr que en un futuro la formación que se le de a los estudiantes sea acorde con las exigencias del mercado laboral para que desarrollen todas las habilidades necesarias en el futuro desarrollo de sus carreras profesionales y no sólo algunas de las mismas.

Discusión

Si bien, y cómo ocurre en la mayoría de las innovaciones educativas, existen algunos aspectos mejorables y otros que pueden ser considerados desventajas. Esto es lo que sucede en el uso de las microcredenciales y el desarrollo de formación en habilidades blandas o transversales.

Un problema asociado al uso de las “badget digitales” es determinar cómo hacerlas más auténticas y fiables, ya que para algunos empleadores potenciales es un sistema tan novedoso y desconocido hasta el momento que no tienen claro su grado de fiabilidad (Guijosa, 2018; Fuente, K. 2017, Murillo, A., 2017).

Por otra parte, pueden tener un efecto negativo sobre los alumnos si éstos no las entienden como una herramienta y formación complementaria a sus estudios de grado, que les va a permitir desarrollar habilidades, pero que no nunca puede sustituir su formación académica propia del grado (Domingo Coscollola, M., et al., 2020; Amhag, et al., 2019).

Algunos autores como Finkelstein, Knight y Manning (2013), ya señalaron en 2013 que las bondades de las microcredenciales iban más allá de la formación técnica reglada ya que, si el estudiante sabe, al realizar una determinada actividad dentro de una asignatura de un grado, que competencia va a adquirir en ella y que microcredencial va a conseguir, esto aumentará su motivación convirtiéndose en un sistema de estímulo, motivación y recompensa para el alumno, pero si los empleadores no las conocen o valoran adecuadamente todo este esfuerzo se perderá.

Hace una década Hart (2015) indicaba que pocas universidades ofrecían un sistema de reconocimiento digital del aprendizaje práctico y profesionalizante, no está claro si dichas microcredenciales digitales son realmente efectivas para facilitar la salida de los estudiantes al mercado laboral, ya que no muchos empleadores las conocen o reconocen. La situación no ha cambiado mucho desde hace diez años. Y en el supuesto de que, si fueran efectivas, tampoco se tiene una experiencia consolidada, de años del funcionamiento, de este tipo de formaciones y reconocimientos digitales.

Sin duda las “badget digitales” representan un cambio en el enfoque sobre cómo se evalúa la adquisición de competencias profesiones por parte de las universidades hacia sus estudiantes. Tradicionalmente, sólo se ha medido la cantidad de tiempo que un estudiante dedicaba a su formación académica y no tanto que tiempo empleaba en su capacitación práctica y profesional adquiriendo competencias. Sólo se media el número de horas que se dedicaba a participar en un programa, no que

competencias adquiría en el mismo. Frete a ellos las “badget digitales” suponen otra forma de entender el reconocimiento de la formación lograda y de la competencia adquirida. Implican un cambio completo de paradigma. En lugar de recibir automáticamente un certificado por asistir a un programa, los estudiantes deben cumplir con un resultado de aprendizaje y demostrar que realmente han adquirido esa competencia o habilidad. Es decir, deben cumplir con ciertos criterios mínimos de capacitación para recibir la “badget digital” asignada a esa formación tal y como se indican en todos los estudios del Tecnológico de Monterrey (2019).

Una revisión de la literatura desarrollada hasta el momento apunta que es necesaria una mayor comprensión del uso adecuado de las “badget digitales” en la universidad. En este sentido es necesario también explorar cómo perciben los estudiantes el papel que juegan las microcredenciales en el desarrollo en su desarrollo profesional, o cómo creen que van a poder utilizarlas en un futuro y sobre todo es imprescindible que las valoren y aprecien para lo que realmente sirven. Las “badget digitales”, microcredenciales, certificaciones digitales, insignias digitales o como consideremos llamarlas o denominarlas se van a convertir en un elemento clave y fundamental de la formación complementaria de las instituciones de educación superior (EDUCAUSE, 2021) en el siglo XXI.

Por último, sólo indicar, que un último riesgo sobre el que debemos reflexionar es evitar que las microcredenciales no expresen adecuada y realmente los resultados del aprendizaje y que se queden sólo en un cambio “estético”, que se conviertan sólo en otra forma de renombrar la formación permanente, que no reflejen realmente lo que debe ser la adquisición de competencias prácticas o transversales.

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The Role of a University Teacher in Activating the Socially Marginalized Group of Retired Prison Service Officers

(pp. 399–412)

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Abstract

Research objectives (aims) and problem(s): The purpose of the study is to examine the role of university teachers in the education and activation of individuals in middle and late adulthood who belong to a socially marginalized group.

Research methods: Data were collected during the educational project “Academy RetroC@fe,” implemented from 2020 to 2024 at Ignatianum University in Krakow. Qualitative research was conducted with a group of 38 retired Prison Service officers affiliated with the National Union of Prison Service Retirees (KZEIRSW). The participants, aged 46 to 82, were engaged in educational activities. Empirical data were gathered using narrative interviews, group interviews, and e-documents produced as part of the workshops.

Structure of the article: This study focuses on issues related to the role of university teachers in the educational activation of retired prison officers belonging to a socially marginalized group. The research considers the backdrop of the COVID-19 pandemic, treated as a category of a “difficult situation.” The competencies of university teachers, which are key in working with adults, are described. Additionally, the study brings attention to innovative

educational activities designed to support the development of adult learners in socially marginalized groups.

Research findings and their impact on the development of educational sciences: Learning in middle and late adulthood occurs without coercion. Activating and encouraging individuals to pursue educational efforts in later phases of life helps them adapt to a changing social world. It promotes positive aging patterns in which education enriches life experiences. The university teacher is instrumental in this process. Their competencies, along with their understanding and definition of their social role, greatly impact the educational path of individuals in middle and late adulthood.

Conclusions and/or recommendations: Educational activities for retired Prison Service officers broaden their horizons and equip them with key knowledge and skills that help them adapt to a dynamically evolving reality. By creating virtual learning spaces, university teachers, in effect, contribute to the individual development of retired prison officers and build their social capital—both by bridging and bonding social networks.

Keywords: role of the academic teacher, teacher competencies, adult educational activity, activation of people in middle and late adulthood, social marginalization.

Introduction

The COVID-19 pandemic was a difficult time for universities, but it also became a period of reflection on the conditions, opportunities, and methods that create space for learning and action for educational subjects. Questions about the goals, directions, forms, tools, and limitations of the educational process during such a tumultuous era resurfaced. Educators and scholars began searching for educational solutions that are effective and appropriate to the conditions. A key responsibility fell to university teachers, especially those working with individuals in middle and late adulthood. The pandemic clearly showed that mature learners needed educators capable of supporting them during these demanding times.

More than two decades ago, Zbigniew Kwieciński (2000) pointed out the important truth: “The situation of crisis and cultural shifts, axiological confusion and anomie, and the loss of meaning in existing values and the means of their realization presents serious challenges for the teacher.” The COVID-19 pandemic created precisely such a challenge for academics, especially those engaged in ongoing educational projects with retired prison officers. It was undoubtedly a difficult and crisis-ridden period, which prompted people to ask existential questions about the meaning of life, their identity, the direction of social change, and the possibility of self-realization.

The pandemic significantly altered the lives of retired prison officers, bringing about qualitative changes. The activities of the National Union of Pensioners of the Prison Service faced substantial challenges. Respondents reported feeling the profound effects of restrictions, including anxiety, fear for their health and safety, and limited access to penitentiary premises. These factors hindered the individual functioning of retirees and paralyzed the operations of local union structures. The most acute restriction, however, was the inability to spend time together—organizing meetings, gatherings, planned events, excursions, outings, or occasional parties—which, before the pandemic, had been vital elements of community integration for retired prison officers.

The deficit of interpersonal contact led to the disintegration of the actively cooperating community within many of the union’s field structures. Mounting isolation, feelings of loneliness, apathy, and depressive states further weakened interpersonal ties. For some retirees, who had little time to adjust and adapt to the new situation, the pandemic became a source of tension and anxiety, which they often could not manage on their own. The excess of unstructured spare time and the inability to be active were associated with a decline in their quality of life, which directly impacted their mental well-being.

In response, retired officers, in collaboration with the academic community, began seeking strategies to cope with the current problems posed by the pandemic. One key strategy was the adoption of modern technology. Through this collaboration between academics and both retired and

active prison officers,¹ it was possible to create a friendly and supportive virtual space conducive to accessible education for this group. This virtual environment became a hub for learning, skill acquisition, the development of social competencies, and the enhancement of intellectual capital among participants.

Recognizing the educational needs of the prison officer community, consultations led to the development of the “Academy RetroC@fe” educational project. The foundation of this initiative was a community-based approach centered on social networks and relationships. This educational framework (Jakubowski, 2022) was carefully planned, well-organized, and tailored to meet the expectations of the learners. Ensuring participants felt safe and that their education was meaningful and personal formed the cornerstone of the program. As a result, the education of individuals in middle and late adulthood became more effective and offered a sense of satisfaction and fulfillment.

Educational Activity of People Belonging to a Marginalized Social Group

Several years of qualitative research conducted among prison officers indicate that they constitute a marginalized social group and are at risk of becoming another socially excluded group.² The findings reveal

¹ Since November 7, 2016, within the framework of a signed multilateral agreement, scientific and research cooperation has been implemented between the academic community (Ignatianum University in Kraków, Nicolaus Copernicus University in Toruń, University of Rzeszów), active and retired officers (associated with the National Association of Retired and Pensioned Prison Service Officers and the Association of Prison Officers), and the private sector (Mentor S.A. and IL-PROJEKT company).

² The exclusionary factors identified include: health-related factors (e.g., health status, susceptibility to addiction); socio-local factors (e.g., family crises); competence and educational factors (e.g., educational deficiencies); economic factors (e.g., low pay, loss of privileges, lack of opportunities for additional work); physical factors (e.g., retirement at 45+); normative factors (e.g., nepotism, discrimination, social stigmatization of the profession); and institutional factors (e.g., inadequate system solutions

that prison officers, both individually and collectively, are significantly affected by the process of marginalization, which often lies beyond their control, even while they are still on duty. This marginalization is linked to factors such as professional stigmatization, unequal privileges, and a lack of institutional or social support. The low prestige of the profession, social resentment, entrenched stereotypes, mutual misunderstandings of social roles, and the absence of adequate programs to assist them in adapting to new roles and situations, especially after retirement, compound their difficulties. These issues often translate into daily adversities and further isolate this social group. One potential solution that could counteract this marginalization is to empower prison officers through educational activities.

The rapid pace of social and technological change requires that people continuously learn to adapt to the surrounding world. The primary goal of adult education is to enable adults to participate actively in social life. Education motivates individuals to develop adaptability in response to changing life circumstances and enhances their quality of life. For individuals in middle and late adulthood, education provides not only pleasure but also a pathway to personal development and independence. Adult educational activity is broadly understood as “not only the acquisition of various forms of knowledge, but also the development of attitudes and skills that can improve the quality of life and bolster satisfaction and contentment” (Mandrzejewska-Smól, 2014, p. 204). In this context, the education of retired prison officers is both a means of cognitive support and an avenue for enhancing their quality of life.

Adult educational activity is most valuable when it responds to the specific needs of the learners. For many retirees, one motivation for pursuing education is the desire to satisfy needs for self-development, security, and belonging, which become more pronounced after retirement. Successful aging requires maintaining and developing social relationships, and education plays a crucial social role in this regard. Networking through

in policies and the methods and forms of functioning). For more details, see publications by Urlińska and Urlińska (2015) and Urlińska-Berens and Urlińska (2021).

educational activities strengthens acceptance and contributes to the psychological well-being of adult learners. The goal of activities implemented during virtual meetings was to facilitate developmental change in the knowledge and skills of participants. For many adult learners, participation in these activities became a catalyst for building and developing individual and social competencies, and, in the long run, for building social capital (both bridging and bonding capital). This activity also has an emancipatory potential for participants, as acquiring knowledge empowers them with the ability to make informed choices, which in turn provides a sense of personal freedom.

The basic principle of adult education is to recognize and accommodate the individual and group needs, learning styles, and varying rates at which learners absorb information. Education is a tool of transgression (Kozielecki, 2000), which enables adult learners to transcend developmental boundaries and overcome their personal limitations. For retired officers, this transgression is manifested in the development of psychological, intellectual, and emotional competencies. The design of the educational initiative took into account both the specific needs of the target group and the conditions under which the proposed learning activities would occur. Activity in middle and late adulthood is often associated with the diverse interests of the learners themselves.

Research Methods

Empirical data was collected through qualitative interviews and the implementation of tasks as part of the educational project “Academy RetroC@fe,” conducted from 2020 to 2024 at Ignatianum University in Krakow. The research findings are derived from content analyses of narrative interviews, group discussions, and e-documents produced during workshops titled “Me and My Remote Education During the COVID-19 Pandemic.” The research focused on issues such as the significance of education in middle and late adulthood, the dynamics of teacher-adult learner relationships, teacher competencies and their role in remote

education during the pandemic, and participants' experiences with on-line learning.

The "Academy RetroC@fe" project was implemented between 2020 and 2024, during which 38 retired officers transitioned their educational activities into the virtual space within a short timeframe. Participants learned to use communication platforms such as Google Meet, Zoom, and MS Teams. The classes were conducted exclusively through e-learning and were structured around thematic modules, which included ten topics, namely health, social pedagogy, childhood pedagogy, andragogy, intercultural education, social communication, anthropology, philosophy of life, personality psychology, and modern technologies. Virtual meetings were held on Google Meet and Microsoft Teams in sessions consisting of one or two 90-minute classes per month. In addition, participants attended workshops once a month.

For this group of retired prison officers, online education represented an innovative approach. The class program exemplified the concept of life-long education. Participants gained knowledge about themselves and the world and acquired key competencies that they began to use on a daily basis, both in their personal, social, and professional lives. The project was part of an educational intervention aimed at supporting and integrating the retired officers. Lectures and workshops were conducted by academic staff from universities across Poland.³

Teacher as *Spiritus Movens* of Educational Situations

In the educational activation of retired officers, the academic teacher occupies a key role. In pedagogical literature, numerous categories have been proposed to describe the role of the teacher. Fulfilling the professional responsibilities of an educator requires certain knowledge and

³ The lectures were delivered by academics from Ignatianum University in Kraków, Nicolaus Copernicus University in Toruń, the School of Banking in Toruń, Kazimierz Wielki University in Bydgoszcz, the University of Rzeszów, and the University of Białystok.

competence to meet the expectations inherent in social roles. This includes knowledge about the world, relationships, and oneself. Understanding is the cornerstone of pedagogical practice, as it enables teachers to interpret the realities and relationships within which they function, as well as those experienced by other participants in the educational process. Understanding oneself and estimating one's capabilities and limitations is crucial. It provides the teacher with the tools to interpret surrounding realities, relationships, and personal experiences, to ask questions about the meaning and essence of their own and others' actions, and to evaluate the legitimacy of these actions (Dziemianowicz, 2001).

For years, scholarly discourse on the teacher's social role has revolved around defining who a teacher should be in order to resonate with difficult times. Various descriptions of the teacher's profession refer to roles such as guide, interpreter, researcher, reflective practitioner, emancipated teacher, transformative intellectual, or post-positivist practitioner (Kowalski, 1986; Nowak-Dziemianowicz, 2001; Kwieciński, 2000; Rubacha, 2000; Szempruch, 2012). Analysis of the empirical data revealed that these well-recognized descriptions fit into a mosaic of roles performed by teachers of adult students. Furthermore, a new and particularly complex role emerged: that of the trainer, who serves functions such as advisor, analyst, designer, coach, facilitator, moderator, validator, instructor, expert, organizer, and manager (Jakubowski, 2022).

In the context of educational activities involving retired officers, it was the role of the **teacher-educator** that was paramount and key. This role is embodied by someone "who leads another person to the fullness of their development, who guides them through the complexities of life paths and the constant decisions they must make, who knows how to wisely advise or safeguard against poor decisions, who cares about others, and ensures that no person becomes a passive object of history or the machinations of political forces, but instead becomes an independent agent, a maker of their own destiny, and a co-creator of the community's well-being" (Kwieciński, 2000, p. 265).

The **teacher-guide** knows the purpose of the journey, understands the answers to key questions about the direction of an individual's

development, and is aware of the ways to reach the destination. They make the right choices while taking into account the specifics of the educational situation. An educational leader builds bridges of understanding—across differences and between role partners—that enable learners to freely explore new “lands of knowledge.” They are mentors who share their expertise, offer advice, support development, and help (adult) students find their way in rapidly changing times. The **teacher-guide** possesses the knowledge of how, on what principles, and at what pace education should proceed. They do not impose the destination of the path but offer solutions, provide protection, and open doors to new meanings. This role requires a different kind of leadership from the teacher, one based on intensified communication and on building bridges across differences between participants in educational processes, institutions, or environments. It involves empowering others to learn to transcend habitual patterns and “open the libraries of the world” (Kwieciński, 2000).

The **teacher-translator** mediates between the individual and the social world, as well as the world of culture. They maintain a certain distance from both the content of culture and the co-participants. They explain the possibilities of choice and clarify the meaning of opportunities “that emerge along the individual, personal, unique path to the full development of subjective identity, and the proximate preservation of oneself in the struggle with the world and the trials of life” (Nowak-Dziemianowicz, 2001; Kwieciński, 2000). Acting as an interpreter requires the teacher to possess communicative knowledge and linguistic competence to construct a faithful and adequate message. A sense of responsibility for interpreting and explaining reality to others is vital. Additionally, the interpreter serves as an inspirer and director who encourages self-discovery and self-interpretation among participants in the educational process (Kwieciński, 2000).

The **teacher-reflective practitioner** draws upon their own experience as a source of knowledge necessary for performing their tasks and fulfilling their role. This role requires an awareness of established goals, pathways, and the motives for undertaking educational activities. Such

awareness and knowledge ensure the ability to reflect on and interpret educational situations in which the subjects are active participants in educational events (Kwieciński, 2000; Nowak-Dziemianowicz, 2001). The **teacher-researcher** discovers, inquires, facilitates, and enhances the cognitive activity of participants in educational events. Simultaneously, they are both creative participants and competent observers (Nowak-Dziemianowicz, 2001). The **emancipated teacher** understands the essence and role of resistance in an individual's life, adopts a critical perspective, and becomes the author of their own practice. They acquire tools to modify their practice, prioritize continuous improvement, and develop their knowledge and skills. As an agent of change and empowerment in education, they play a transformative role (Czerepaniak-Walczak, 2006).

The **teacher-transformative intellectual** is attuned to the problems of others and sensitive to differences and inequalities that perpetuate marginalization and social exclusion (Szempruch, 2012). The **teacher-post-positivist practitioner** reflexively examines their own practice, enables students to actively participate in creating their own image of the world, and teaches critical thinking, dialogue building, improvisation in thinking during action, and responding to unexpected situations. They promote a culture of activity, remain open to students' experiences and different ways of thinking. They are oriented toward actions that break passivity and passive thinking and prioritize emotional security in relationships (Szempruch, 2012).

In the context of engaging a group of retired officers experiencing a difficult situation such as the COVID-19 pandemic, the role of the teacher has been enriched with new components. The **teacher-trainer** acts as the student's advisor, guiding them toward broad development and the recognition of their own potential. The teacher, together with the student, seeks solutions and new directions for growth. They identify and design educational activities in accordance with the needs and expectations of the participants, direct the overall educational process, set the course for change, and meticulously plan the learning experience. As a facilitator, the teacher ensures a friendly atmosphere conducive to learning and provides a sense of emotional security. Acting as a facilitator of activities, they engage in

dialogue with participants, establish the scope of activities, and collaboratively develop learning outcomes.

The **teacher-trainer** also takes on the role of a coach who asks thought-provoking questions and supports students on their path to self-development, offering guidance, and clarifying individual components of tasks. In addition, the teacher acts as an expert who shares substantive knowledge and experience on specific topics; as a validator who checks the learning outcomes at each stage; and as an evaluator who assesses the effectiveness of the activities. They are a stimulating collaborator and a partner who creates conditions for growth, advances student competence, asks questions, and initiates tasks. In certain educational contexts, the teacher may also adopt the role of a master—serving as a source of knowledge, organizing the student’s understanding, and leading the learning process while inspiring educational effort (Jakubowski, 2022).

Research findings

Learning in middle and late adulthood thrives without coercion, as activating and encouraging individuals to engage in educational efforts at this stage of life helps them adapt to a changing social world. It also establishes patterns of positive aging, in which education becomes a valuable asset that enriches life experiences. A key role in this educational process is played by the academic teacher, whose understanding and definition of their social role significantly influence the course and effectiveness of education for individuals in middle and late adulthood.

An analysis of empirical data—gathered from 38 individual and group interviews and e-documents created during workshop sessions—revealed that education contributed to increased self-awareness among retired officers. Participants reported enhanced self-esteem, better recognition of their potential, and an understanding of areas requiring further development. The “Academy RetroC@fe” educational project created an environment conducive to active learning. Its tailored curriculum provided

a catalyst for learners to pursue additional growth opportunities and bridge gaps in their competencies.

The research demonstrated the multifaceted role of the academic teacher in adult education. Learners expressed the need for their teacher to act primarily as a coach—someone who organizes the learning process, coordinates activities, advances their knowledge, and shares their experience. This role involves advising learners, helping them uncover their potential, and guiding them toward comprehensive personal and professional development. The teacher collaborates with adult learners to identify solutions and encourages the pursuit of new pathways for growth. Another important responsibility of the teacher is to plan and structure educational activities in accordance with participants' needs and expectations.

Learners also emphasized the importance of the teacher creating a supportive and welcoming environment that nurtures emotional security. Acting as a trainer for the students, the teacher not only shares knowledge and expertise on the topic but also enriches participants' understanding through structured and engaging activities.

Applications

Educational projects prepared and implemented through cooperation between academia and retired prison service officers serve as a form of social support and guidance that develops individual potential. These dedicated educational activities engage a marginalized social group: They enable retired prison officers to enhance their competitiveness in the labor market, adapt flexibly to a rapidly changing environment, reduce uncertainty, and increase their adaptability.

The educational activities of retired officers effectively counteract marginalization and social inequality within the professional group. They contribute to the growth of individual competencies and equip officers with soft skills that are applicable in their private lives and social activities. Collaboration with the academic community and the presence of the teacher, as a "Significant Other" in the process of adult education also

help build social capital—both bonding capital within the prison officer community and bridging capital with the scientific sector, businesses, and local communities.

The teacher plays a crucial role as a creator of social and technological progress, and bears the responsibility of building the social capital of role partners. This involves a number of tasks: imparting knowledge and experience, fostering motivation to develop interests, cultivating creativity and innovation, shaping value systems, and influencing attitudes and behaviors. Additionally, the teacher is tasked with developing interests, creating conditions for practical activity, and preparing participants for educational, social, and professional engagement. Much depends on the teacher's state of consciousness and personal qualities. The functions and tasks of today's teacher are evolving toward bolstering intellectual independence, inspiring development, and introducing participants in educational settings to the world of knowledge, thoughts, and feelings—all within a spirit of dialogical interchange.

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Miscellaneous Articles



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Debate as a Tool for Fostering Critical Thinking in History Teaching

El debate como herramienta para fomentar el pensamiento crítico en la didáctica de la Historia

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Abstract

Research objectives (aims) and problem(s): This article analyses how critical thinking can be developed in History teaching using the didactic tool of classroom debate. The article has three objectives: to explain why classroom debate is an ideal tool to use in any area of knowledge in Higher Education; to provide university lecturers with useful and practical pedagogical guidelines when designing and carrying out this methodology; and to analyse the impact of this methodology on the promotion of critical thinking in university students by means of a practice carried out in the classroom.

Research methods: The methodology consisted of carrying out a debate within the subject of Keys to Contemporary History, in the second year of the University Degrees in Education, in which students could develop their

critical thinking skills. To measure the results, a quantitative methodology was followed using a self-perception questionnaire based on Likert scales (with values between 1 and 5). The quantitative data collected (n = 18 students) were analyzed with a simple statistical exploration. In order to validate the instrument, the questionnaire was submitted to an inter-judge panel selected on the basis of expertise in the field of knowledge. These experts gave their opinion on its intelligibility, appropriateness and relevance, and provided qualitative suggestions for improvement. The tool was adjusted following their observations and comments.

Structure of the article: The article has eight parts. In the first, an introduction to the article is given. The second part explains the objectives of the article. The third part is a theoretical framework in which the scientific evidence on the development of critical thinking in university degrees and the effectiveness of debate as a didactic tool to promote critical thinking are analyzed. The fourth part summarizes practical guidelines for designing a debate whose main objective is the development of critical thinking. The fifth part details the structure and content of the debate practiced by students in the Keys to Contemporary History course. The sixth and seventh parts explain respectively the methodology used and the results of the debate. The article ends with an eighth and final part devoted to conclusions.

Research findings and their impact on the development of educational sciences: The main conclusion is that critical thinking plays a fundamental role in the training of future graduates.

Conclusions and/or recommendations: In the light of the results obtained in this contribution, the model of work in university classrooms based on the methodology of debate seems to be suitable for its development, especially in the following areas: in the review, evaluation and improvement of the quality of one's own ideas and arguments; in the reflection on one's own thoughts to guide action; in the analysis and identification of relevant information and its use for decision-making; and in the confrontation of the problems posed with a more reflective and open perspective. Moreover, as reflected in the questionnaire, overall satisfaction with the teaching innovation was very high among students.

Keywords: higher education; debate; active methodologies, competences, didactics of history

Resumen

Objetivos (fines) y problema(s) de la investigación: El presente artículo analiza cómo puede trabajarse el pensamiento crítico en el área de la didáctica de la Historia utilizando la herramienta didáctica del debate en el aula. El artículo tiene tres objetivos: explicar por qué el debate en el aula es una herramienta idónea para utilizar en cualquier área de conocimiento en la Educación Superior; proporcionar a los profesores universitarios orientaciones pedagógicas útiles y prácticas a la hora de diseñar y llevar a cabo esta metodología; y analizar el impacto de esta metodología en el fomento del pensamiento crítico en el alumnado universitario por medio de una práctica realizada en el aula.

Métodos de investigación: La metodología ha consistido en realizar un debate dentro de la asignatura de Claves de Historia Contemporánea, en el 2º curso de los Grados de Educación, en el que los alumnos pudieran desarrollar su pensamiento crítico. Para medir los resultados, se ha seguido una metodología cuantitativa mediante un cuestionario diseñado de autopercepción basado en escalas Likert (con valores comprendidos entre 1 y 5). Los datos cuantitativos recogidos (n = 18 estudiantes) se han analizado con una exploración estadística sencilla. Para proceder a la validación del instrumento, el cuestionario se sometió a un panel interjueces seleccionado en base al criterio de especialización en el campo de conocimiento. Estos expertos se pronunciaron acerca de su inteligibilidad, adecuación y relevancia, y aportaron sugerencias cualitativas para su mejora. La herramienta fue ajustada siguiendo sus observaciones y comentarios.

Estructura del artículo: El artículo tiene ocho epígrafes. En el primero, se realiza una introducción al artículo. En el segundo se explican los objetivos del artículo. El tercer epígrafe es un marco teórico en el que se analiza la evidencia científica en torno al desarrollo del pensamiento crítico en los grados universitarios y a la eficacia del debate como herramienta didáctica para fomentar dicho pensamiento crítico. En el cuarto epígrafe se resumen unas orientaciones prácticas a la hora de diseñar un debate cuyo objetivo

fundamental sea el desarrollo del pensamiento crítico. En el quinto apartado se detalla la estructura y el contenido del debate practicado por los alumnos en la asignatura de Claves de Historia Contemporánea. El sexto y el séptimo apartados detallan respectivamente la metodología empleada y los resultados del debate. El artículo se cierra con un octavo y último apartado dedicado a las conclusiones.

Resultados de la investigación y su impacto en el desarrollo de las ciencias de la educación: El pensamiento crítico desempeña un papel fundamental en la formación de los futuros egresados.

Conclusiones y/o recomendaciones: A la luz de los resultados obtenidos en esta contribución, el modelo de trabajo en las aulas universitarias basado en la metodología del debate parece ser adecuado para su desarrollo, especialmente en las siguientes áreas: en la revisión, evaluación y mejora de la calidad de las propias ideas y argumentos; en la reflexión sobre los propios pensamientos para orientar la acción; en el análisis e identificación de información relevante y su utilización para la toma de decisiones; y en la confrontación de los problemas planteados con una perspectiva más reflexiva y abierta. Además, según se refleja en el cuestionario, la satisfacción global de la innovación didáctica fue muy elevada entre el alumnado.

Palabras clave: educación superior, debate, pensamiento crítico, metodologías activas, competencias, didáctica de la historia

1. Introducción

El mundo laboral demanda cada vez más significativamente habilidades relacionadas con la capacidad de reflexión, el autoconocimiento, la resolución de problemas y otras competencias transversales que permiten a los alumnos egresados adaptarse a problemáticas complejas de modo satisfactorio. El pensamiento crítico es una de esas competencias que se manifiestan eficaces a la hora de afrontar este tipo de desafíos, ya que implica una combinación de diversas habilidades cognitivas, como la capacidad de análisis y de síntesis, la codificación selectiva,

la creatividad en la toma de decisiones, la capacidad de discernir la credibilidad de las fuentes y la autenticidad de las opiniones, entre otras.

El pensamiento crítico resulta imprescindible para alcanzar una madurez personal y profesional. Potenciarlo y favorecerlo con acciones concretas en las aulas de la Educación Superior es un reto considerable y evaluarlo de un modo eficaz resulta aún más complejo. Quizá ese sea uno de los motivos por los que en la Universidad actual sigue apreciándose una escasez de acciones formativas dirigidas a desarrollar esta competencia de un modo específico, tanto en los planes de estudio como por parte de profesores y del mismo alumnado (Zelaieta & Camino, 2018).

Para paliar ese déficit, en el marco del proyecto de mejora del modelo docente de las diferentes Universidades CEU se están poniendo en práctica diferentes innovaciones pedagógicas que permitan mejorar el aprendizaje de este tipo de competencias por parte de los alumnos. En este artículo, en el contexto de un proyecto en los Grados de Educación de la Universidad de San Pablo CEU (Madrid, España), se explica en concreto el debate en el aula, que se revela como una de las herramientas más adecuadas tanto para favorecer el desarrollo del pensamiento crítico del alumnado como para promover un aprendizaje más profundo y significativo de los contenidos curriculares.

2. Objetivos

El presente estudio tiene tres objetivos: en primer lugar, explicar por qué el debate en el aula es una herramienta idónea para utilizar en cualquier área de conocimiento en la Educación Superior; en segundo lugar, proporcionar a los profesores universitarios orientaciones pedagógicas útiles y prácticas a la hora de diseñar y llevar a cabo esta metodología; el tercer objetivo consiste en analizar el impacto de esta metodología en el fomento del pensamiento crítico en el alumnado universitario por medio de una práctica realizada en el aula.

Para lograr estos objetivos, se aporta un marco teórico en el que se define el pensamiento crítico y se examina teóricamente, a partir del

análisis de la literatura previa, su relevancia en el futuro profesional de los egresados. En segundo lugar, se desarrollan las principales aportaciones educativas que tiene el debate en el aula, tanto para el alumno como para el profesor. Posteriormente, se ofrecen algunas orientaciones prácticas para diseñar un debate en el aula, independientemente del área de conocimiento en el que se pretenda realizar.

A continuación, con el objetivo de facilitar la labor de los profesores, se aporta un ejemplo de debate que se ha llevado a cabo en la asignatura de *Claves de Historia Contemporánea* en los Grados de Educación de la Universidad San Pablo CEU durante los cursos 2022–2023 y 2023–24. Concretamente, se proporciona la secuencia de aprendizaje del debate,¹ así como el guion con las diferentes fases² y algunas orientaciones para solucionar posibles dificultades que el profesor pueda encontrarse al realizar el debate en su asignatura. Por último, a modo de anexo, se adjunta la rúbrica de autoevaluación utilizada para que los alumnos reflexionen sobre las habilidades desarrolladas durante el debate y sobre su desempeño personal en la actividad.³

Finalmente, para tratar de medir el impacto de esta metodología en el desarrollo del pensamiento crítico, los alumnos participantes en una prueba piloto cumplieron un cuestionario de autoevaluación y autopercepción del aprendizaje sobre esta competencia, que facilitó la reflexión, metacognición y evaluación de todo el proceso.

3. Marco teórico

3.1. El desarrollo del pensamiento crítico en la Educación Superior

El pensamiento crítico es una de las principales habilidades que definen el perfil de la mayoría de las profesiones del futuro. Se entiende como un tipo de pensamiento enfocado a la revisión y evaluación

¹ Anexo 1.

² Anexo 2.

³ Anexo 3.

de ideas y argumentos (Zelaieta & Camino, 2018). Paul y Elder, por su parte, lo definen como “aquella forma de pensamiento acerca de cualquier tema, contenido o problema en el cual el individuo mejora la calidad de sus ideas al apoderarse cuidadosamente de las estructuras inherentes al pensamiento e imponiendo sobre ellos patrones intelectuales” (2003, p. 4).

El pensamiento crítico hace referencia siempre a la reflexión de los propios pensamientos, está orientado a la acción y surge en un contexto de resolución de problemas (Mota, 2010). Tanto la competencia metacognitiva (aprender a aprender) como la evaluación epistemológica (pensar sobre lo que se piensa) resultan fundamentales para favorecer el pensamiento crítico (Saiz & Fernández, 2012).

El desarrollo del pensamiento crítico contribuye a formar egresados con criterio propio, capaces de afrontar los desafíos sociales de su futuro profesional. Se caracteriza por favorecer la propia capacidad de análisis, valorar la coherencia de los criterios que sustentan las decisiones, discernir la credibilidad de las fuentes y la autenticidad de las opiniones, promover la codificación selectiva y la flexibilidad cognitiva (Castellano, 2007).

3.2. El debate como herramienta pedagógica

El debate está incluido dentro del conjunto de «metodologías activas» que se han mostrado muy efectivas para el desarrollo de competencias transversales en el alumnado universitario, favoreciendo al mismo tiempo un aprendizaje de los contenidos curriculares más profundo y significativo. Los alumnos se enfrentan a retos globales relacionados con la realidad actual y se forman en la resolución creativa de problemas complejos (Anderson & Krathwohl, 2001; Nantha et al., 2022; Peña-Acuña, 2022).

A pesar de que a veces se enmarca el debate dentro de lo que se conoce como «nuevas metodologías», en realidad el uso de la argumentación y la discusión como herramienta educativa se remonta a muchos siglos atrás. Si tuviéramos que destacar un período histórico en el que el debate adquirió un protagonismo mayor en la educación, este sería el de la Grecia clásica: los diálogos de Platón son un ejemplo de la valoración de la retórica como modo óptimo para llegar al conocimiento. En ese sentido, el debate forma parte del conocido como «aprendizaje deliberativo»,

que consiste precisamente en que el estudiante tome las riendas de su educación y, con la guía del profesor, desarrolle su propia capacidad de reflexión, lo que le llevará a obtener un aprendizaje especialmente significativo.

3.2.1. Habilidades y competencias trabajadas por los alumnos

En un mundo en el que cada vez se demandan más habilidades como el trabajo en equipo, la expresión oral y el pensamiento crítico, el debate se muestra como una de las herramientas didácticas que mejor puede ayudar a los alumnos a mejorar en esas y otras habilidades fundamentales para su formación académica y humana. Son numerosos los testimonios de diferentes responsables de contratación y de recursos humanos que reconocen valorar positivamente en un candidato su participación en clubes de debates universitarios (Gil, 2015; Torres, 2017).⁴

Las principales competencias y habilidades que trabajan los alumnos durante el debate en el aula son:

- Poner en práctica los conocimientos adquiridos en la asignatura, y relacionarlos con el tema del debate.
- Investigar y documentarse de cara a realizar una mejor argumentación.
- Desarrollar la capacidad de juicio propio y de pensamiento crítico.
- Ejercitar la capacidad de toma de decisiones.
- Poner en común sus ideas y argumentos con otros compañeros, mejorando con ello su capacidad de cooperación y adaptación.
- Tomar la iniciativa y desarrollar la originalidad y la creatividad.
- Practicar el respeto y la escucha activa hacia los compañeros.
- Desarrollar la expresión oral.
- Ejercitar su capacidad retórica gracias a la elaboración de argumentos y contrargumentos.

Por todo ello, un experto en la implantación del debate en la Universidad como Sánchez Prieto no duda en afirmar que esta metodología

⁴ Cfr., entre otros: https://www.expansion.com/2015/02/18/entorno/aula_abierta/1424261563.html, https://elpais.com/economia/2017/05/12/actualidad/1494603828_482125.html y <https://www.fundacionactivate.org/6706-2/>

es mucho más completa en cuanto al desarrollo de habilidades y competencias por parte del alumno que otras metodologías como el estudio del caso o el ABP, hasta el punto de que en el debate se trabaja el mismo número de competencias y habilidades que en esas dos metodologías juntas (Sánchez Prieto, 2017).

Además, según las investigaciones de Neil Mercer, profesor de Educación de la Universidad de Cambridge y director de su centro de oratoria, los alumnos a los que se enseña el “arte de las discusiones razonadas” mejoran sus notas en matemáticas y ciencias (Gil, 2015). Este hecho se ha visto comprobado en diversas etapas educativas, especialmente en la universitaria, donde en algunas ocasiones, al año de ingresar en el club de debate, los estudiantes han mejorado la nota media de su expediente académico en un punto y medio (Millard & Menzies, 2016).

3.2.2. Beneficios del debate para los profesores

No obstante, el alumno no es el único que sale ganando con el debate: esta actividad también es muy útil para el profesor. Entre los numerosos beneficios de esta actividad para el profesor universitario, podemos destacar los siguientes:

- Al aumentar la motivación de los estudiantes, mejora el clima en el aula, y con ello se revitaliza el discurrir de la asignatura.
- El debate da pie a que los alumnos participen más, lo que permite al profesor conocer mejor a los estudiantes, especialmente a aquellos que no suelen intervenir tanto en las clases del día a día y que demuestran así algunas habilidades que en la clase de tipo magistral no suelen relucir tanto.
- El profesor se enriquece con las aportaciones de los alumnos, introduciendo ideas novedosas y enfoques diferentes en el desarrollo de la asignatura.

Todos estos resultados han sido replicados en numerosos estudios donde se ha analizado la implantación del debate en diferentes Grados universitarios, desde Enfermería (Arrue & Zarandona, 2019), hasta Psicología

(Esteban & Ortega, 2017), pasando por Comunicación (Galiano et al., 2019), Derecho (Sánchez Prieto, 2011) y Economía (Sánchez Prieto, 2017). En todas estas investigaciones se ha demostrado un significativo aumento en la adquisición de conocimientos y competencias por parte de los alumnos universitarios gracias a su participación en debates universitarios en el contexto de sus respectivas asignaturas.

4. Orientaciones prácticas para diseñar un debate

Para que el debate en el aula resulte una herramienta de aprendizaje eficaz, es imprescindible un trabajo previo de reflexión y diseño de la actividad. Se presentan cuatro ideas-guía que pretenden orientar el diseño de un debate en el aula:

- Objetivos: ¿Para qué se realiza el debate? ¿Qué objetivos se quieren conseguir?
- Resultados: ¿Qué resultados se desea obtener?
- Competencias: ¿Qué competencias y habilidades se pretenden desarrollar en los alumnos?
- Evaluación: ¿Cómo se puede evaluar si se han logrado los objetivos deseados y si los alumnos han desarrollado las competencias y habilidades marcadas previamente?

Una vez definidos estos puntos, se diseña la actividad en sí. Lo primero que se debe tener en cuenta es que no existe un único modo válido de hacer un debate: dependiendo de la naturaleza de la asignatura y del tema en cuestión, del momento del curso en que se quiera hacer y de las características de los alumnos, cada profesor confeccionará el debate que considere más oportuno para su grupo. No obstante, a continuación, se ofrecen algunas orientaciones prácticas generales que pueden servir a la hora de diseñar el debate:

- Ambiente de clase y momento adecuados. Para que los alumnos decidan participar y que el diálogo sea fluido y fructífero, conviene que los estudiantes se conozcan previamente y que haya un buen clima de aula. Por eso es aconsejable realizar el debate con el curso ya establecido y rodado, y que desde el principio de la asignatura se haya ido fomentando la participación de los alumnos.
- Estructurar bien las partes del debate y dotarles de un tiempo determinado. Sin ser inflexibles ni excesivamente rígidos, en los debates conviene atenerse a los tiempos establecidos, pues de otra manera no se logrará cerrar bien el diálogo y no se conseguirán del todo los objetivos marcados. Por ello, es una buena práctica comenzar el debate explicando a los alumnos cuáles serán las partes del debate y qué tiempo se dedicará a cada una de ellas, dejando visible en el aula la temporalización acordada para que los estudiantes gestionen adecuadamente los tiempos.
- Repensar el espacio del aula para favorecer el diálogo. Para que el diálogo sea lo más fluido posible y se fomente la interacción entre los alumnos, conviene preparar el aula con una distribución espacial que les permita verse las caras, sin darse la espalda. También es recomendable separar a los subgrupos y posteriormente a los grupos con una distancia suficiente, de manera que puedan trabajar bien y permitiendo a su vez que el profesor pueda ir acercándose a cada grupo para resolver dudas o ayudar a los diferentes grupos en lo que sea necesario.

5. Ejemplo de debate: El lanzamiento de las bombas de Hiroshima y Nagasaki

A continuación, se presenta un ejemplo de diseño de un debate. Se trata de un caso real que realizado en los cursos 2022–2023 y 2023–2024 en la asignatura de *Claves de Historia Contemporánea*, concretamente en los Grados de Educación de la Universidad CEU San Pablo de Madrid (España).

Los alumnos deben situarse en el contexto del final de la Segunda Guerra Mundial y, a partir de la lectura de un texto de la época, decidir si ellos hubieran lanzado las bombas atómicas de Hiroshima y Nagasaki y discutirlo con sus compañeros. Se trata de un debate muy enriquecedor, ya que permite a los alumnos adentrarse en ese contexto histórico crucial con mayor profundidad de lo que harían en una clase normal y además les permite plantearse cuestiones éticas de gran calado y actualidad.

La temporalización en este caso es de una sola clase de 2 horas y, para simplificar el proceso, la fase de búsqueda de información se ha incluido dentro del propio debate en el aula. La secuencia de aprendizaje, aportada en el anexo 1, distingue seis fases: contextualización, documentación, decisión, argumentación, debate y evaluación.

A continuación, se proporciona el guion con las diferentes fases en las que se divide la experiencia didáctica. Cada uno de estos hitos contiene una breve explicación con orientaciones y soluciones a los posibles problemas que se puedan encontrar a la hora de realizar un debate en el aula. En el siguiente guion se concreta cómo se desarrolla de manera específica cada una de las fases de la secuencia del aprendizaje en las diferentes partes en que se estructura el debate histórico sobre las bombas de Hiroshima y Nagasaki, así como la temporalización aproximada que se utiliza para cada una de las fases.⁵

1. Explicación: 10 minutos.

- Exponer a los alumnos los motivos de la realización de ese debate, y los objetivos que se persiguen, así como la rúbrica de autoevaluación que rellenarán al final de la actividad.
- Aclarar en qué consiste un debate en el contexto universitario. Es muy habitual que los alumnos tengan una idea del debate que dista mucho de lo que se considera una discusión en el ámbito académico, por lo que es conveniente explicarles previamente en qué consiste este tipo de debate, así como la importancia de la reflexión previa a la toma de decisión, dialogar mediante el respeto y la escucha activa, etc.

⁵ En el Anexo 2 se adjunta una infografía de este guion.

- Dejar a la vista de los alumnos, del modo que se estime más oportuno, las partes y los tiempos dedicados a cada una de ellas.

2. Contextualización: 15 minutos.

- Introducir a los alumnos en el tema en el que se centra el debate. Conviene enmarcarlo dentro de la asignatura, lo cual dará un contexto a la actividad, además de permitir que los estudiantes integren mejor esta metodología dentro de los aprendizajes ya logrados durante el resto de la asignatura.
 - En este caso, al ser un debate de carácter histórico, es muy importante explicar bien el contexto en el que se enmarca, concretamente el final de la Segunda Guerra Mundial, con Alemania ya derrotada, pero con un Japón que se resiste a rendirse incondicionalmente.

3. Lectura y decisión: 10 minutos.

- Trabajo individual de una fuente (lectura, noticia, vídeo...).
 - En este caso, cada alumno lee individualmente un texto de Winston Churchill en el que el primer ministro británico justifica el lanzamiento de las bombas atómicas.
- Toma de postura: Teniendo en cuenta el contexto y la lectura previa, así como sus propias ideas, el alumno decide qué postura toma acerca de la cuestión planteada.
 - La tendencia natural, sobre todo hoy día y más aún en los jóvenes, es lanzarse a opinar sin haberse parado a pensar bien sobre el tema discutido, considerando los diferentes enfoques y consideraciones al respecto. Por eso conviene asegurarse de que los alumnos aprovechen bien el tiempo que se les da, de modo que puedan tomar una postura coherente y fundamentada con respecto al asunto debatido.
 - En el ejemplo propuesto, el alumno debe ponerse en el lugar del presidente de Estados Unidos en ese momento, Harry Truman, y decidir si hubiera tomado la decisión de lanzar las bombas atómicas o no.

4. Argumentación: 25 minutos.

- Establecimiento de grupos (5 minutos):
 - Tras preguntar a los alumnos por su decisión, se divide a la clase en dos grupos: partidarios de una opción y partidarios de la otra.
 - Para que todos los alumnos puedan participar y aportar, y para que el debate sea más fructífero, cada grupo se divide en 2 o más subgrupos, dependiendo del número de alumnos que haya en la asignatura. Conviene que estos subgrupos no sean muy extensos (no más de 5 alumnos en cada uno), de manera que todos ellos tengan posibilidad de intervenir en la discusión y en la elaboración de los argumentos.
- Trabajo en subgrupos (10 minutos):
 - Se ponen en común las ideas y un miembro de cada subgrupo las escribe (secretario).
- Trabajo en grupos (10 minutos):
 - Se unen los subgrupos, intercambian ideas y desarrollan un argumentario conjunto, además de designar a un portavoz que realice la primera intervención.

5. Debate: 20 minutos.

- Alegatos iniciales: 5 minutos.
 - Portavoz del primer grupo: 2–3 minutos.
 - Portavoz del segundo grupo: 2–3 minutos.
- Debate libre: 10 minutos. El profesor lo modera y da el turno de palabra si es necesario.
- Alegatos finales: 10 minutos.
 - Reunión de grupos para concertar alegato final (5 minutos).
 - Portavoz del primer grupo: 2–3 minutos.
 - Portavoz del segundo grupo: 2–3 minutos.

6. Evaluación: 10 minutos.

- Una vez terminada la discusión final, es muy conveniente llevar a cabo algún tipo de evaluación que permita conocer si se han logrado

los objetivos deseados y si los alumnos han desarrollado las competencias que se pretendían trabajar.

- En el debate de Hiroshima y Nagasaki se destinan los diez minutos finales a que tanto el profesor como los alumnos reflexionen sobre los resultados del debate, así como el desempeño de los estudiantes durante la actividad. Para ello, se utilizan dos tipos de evaluación:
 - *Feedback* del profesor: 5 minutos. En ella, el docente ofrece *feedback* a sus alumnos, es decir, explica a los alumnos algunos puntos positivos y aspectos de mejora del desarrollo de cada una de las fases del debate: trabajo inicial, discusión en subgrupos, puesta en común de los argumentarios de cada grupo, exposición inicial de argumentos y debate final.
 - Autoevaluación de los alumnos: 5 minutos. Mediante una rúbrica,⁶ los estudiantes valoran qué les ha aportado el debate, tanto en cuanto a conocimientos adquiridos como, sobre todo, a competencias desarrolladas, y valoran su desempeño personal durante la actividad. De esta manera, los alumnos se hacen más conscientes de los beneficios de este debate y además el profesor tiene una información muy valiosa de cara a mejorar el diseño de la actividad y lograr así que los siguientes debates sean más fructíferos.

7. Puesta en común: 10 minutos.

- Profesor y alumnos hacen una puesta en común sobre la actividad realizada: conclusiones que extraen, reflexiones que surgen a raíz del debate, etc.
- A su vez, en este caso, el profesor aprovecha para explicar qué sucedió realmente (cómo fue el lanzamiento de las bombas, qué supuso...) y para hacer ver a los alumnos hasta qué punto es fácil ser persuadidos cuando se acude a una sola fuente histórica.

⁶ Ver Anexo.

6. Metodología

Este trabajo adopta un diseño descriptivo no experimental, frecuentemente utilizado en educación. Se llevó a cabo una prueba piloto con una metodología cuantitativa con el objetivo de explorar el impacto de la herramienta didáctica del debate en el desarrollo del pensamiento crítico del alumnado universitario.

Se diseñó, a la luz de la literatura previa, un cuestionario *ad hoc* de autopercepción basado en escalas Likert (con valores comprendidos entre 1 y 5) y se aplicó en línea a los estudiantes de primer curso de los Grados de Educación Infantil, Educación Primaria, Doble Grado de Educación Infantil y Primaria y Doble Grado de Educación Primaria y Humanidades durante el curso académico 2023–2024. En concreto, la aplicación tuvo lugar en mayo de 2024, al finalizar el correspondiente periodo de docencia semestral.

Los datos cuantitativos recogidos ($n = 18$ estudiantes) se han analizado con una exploración estadística sencilla. Para proceder a la validación del instrumento, el cuestionario se sometió a un panel interjueces seleccionado en base al criterio de especialización en el campo de conocimiento. Estos expertos se pronunciaron acerca de su inteligibilidad, adecuación y relevancia, y aportaron sugerencias cualitativas para su mejora. La herramienta fue ajustada siguiendo sus observaciones y comentarios.

7. Resultados

Se presentan a continuación los resultados obtenidos relativos a los datos cuantitativos que se recogieron en el cuestionario de autopercepción del alumnado participante.

Respecto a los resultados obtenidos al preguntarles su grado de acuerdo o desacuerdo (en la escala Likert 1–5, donde 1 – Totalmente en desacuerdo y 5 – Totalmente de acuerdo) en relación con la pregunta “*Revisar y evaluar mis ideas y argumentos sobre el tema que se ha debatido en clase*”:

Tabla 1. Resultados sobre la revisión y evaluación de ideas.

	Revisar y evaluar mis ideas y argumentos sobre el tema debatido
	Media (M)
Resultados globales	4,61

Fuente: Elaboración propia.

Respecto a los resultados obtenidos al preguntarles su grado de acuerdo o desacuerdo (en la escala Likert 1–5, donde 1 – Totalmente en desacuerdo y 5 – Totalmente de acuerdo) en relación con *“Mejorar la calidad de mis ideas que han surgido sobre el dilema planteado en el debate”*:

Tabla 2 Resultados sobre la mejora de la calidad de las ideas.

	Mejorar la calidad de las ideas
	Media (M)
Resultados globales	4,61

Fuente: Elaboración propia.

Respecto a los resultados obtenidos al preguntarles su grado de acuerdo o desacuerdo (en la escala Likert 1–5, donde 1 – Totalmente en desacuerdo y 5 – Totalmente de acuerdo) en relación con *“Reflexionar sobre los propios pensamientos para orientar la acción en el desarrollo del debate”*:

Tabla 3. Resultado sobre la reflexión sobre los propios pensamientos para orientar la acción.

	Reflexionar sobre los propios pensamientos para orientar la acción
	Media (M)
Resultados globales	4,67

Fuente: Elaboración propia

Respecto a los resultados obtenidos al preguntarles su grado de acuerdo o desacuerdo (en la escala Likert 1–5, donde 1 – Totalmente en

desacuerdo y 5 –Totalmente de acuerdo) en relación con “*Enfrentarme al problema planteado con una perspectiva más reflexiva y abierta*”:

Tabla 4. Resultado sobre la perspectiva más reflexiva y abierta.

	Enfrentarme al problema con una perspectiva más reflexiva y abierta
	Media (M)
Resultados globales	4,61

Fuente: Elaboración propia

Respecto a los resultados obtenidos al preguntarles su grado de acuerdo o desacuerdo (en la escala Likert 1–5, donde 1 –Totalmente en desacuerdo y 5 – Totalmente de acuerdo) en relación con “*Analizar e identificar información relevante y utilizarla para la toma de decisiones en el desarrollo del debate*”:

Tabla 5. Resultado sobre el análisis e identificación de información relevante.

	Analizar e identificar información relevante y utilizarla para la toma de decisiones
	Media (M)
Resultados globales	4,72

Fuente: Elaboración propia

Con lo que respecta a la satisfacción global de la experiencia:

Tabla 6. Resultados de satisfacción.

	Satisfacción global de la experiencia
	Media (M)
Resultados globales	4,61

Fuente: Elaboración propia.

Finalmente, a la pregunta *“Después de esta experiencia, ¿implementarías la metodología del debate como herramienta didáctica para desarrollar el pensamiento crítico de tus futuros alumnos?”*, la totalidad de los estudiantes contestó *“Probablemente sí”* o *“Claramente sí”* (la mitad exacta cada uno). Este dato corrobora lo positivo de la experiencia.

8. Conclusiones

El pensamiento crítico desempeña un papel fundamental en la formación de los futuros egresados. A la luz de los resultados obtenidos en esta contribución, el modelo de trabajo en las aulas universitarias basado en la metodología del debate parece ser adecuado para su desarrollo, especialmente en las siguientes áreas: en la revisión, evaluación y mejora de la calidad de las propias ideas y argumentos; en la reflexión sobre los propios pensamientos para orientar la acción; en el análisis e identificación de información relevante y su utilización para la toma de decisiones; y en la confrontación de los problemas planteados con una perspectiva más reflexiva y abierta. Además, según se refleja en el cuestionario, la satisfacción global de la innovación didáctica fue muy elevada entre el alumnado.

Sin embargo, estas percepciones subjetivas pueden ser provocadas por diferentes variables, como, por ejemplo, la propia formación del docente que ha implementado la metodología o la propia dimensión temporal en la que transcurre la experiencia. Por ese motivo, sería importante mostrar la competencia del pensamiento crítico como un resultado de aprendizaje a obtener con diferentes niveles de logro objetivos asociados a cada curso, ya que podría no ser suficiente desarrollarla con actividades de aprendizaje puntuales como el que se muestra en esta investigación. El trabajo competencial debe favorecerse desde todos los ámbitos y no solo en el marco de una sola asignatura.

Respecto a la instrumentación utilizada, aportará luz revisarla a partir de esta primera experiencia y de otras investigaciones similares, con el objetivo de recopilar datos de manera objetiva y no exclusivamente en base a percepciones y satisfacciones del alumnado. Van der Kleij y Lipnevich

(2021) recogen ya esta limitación, pues este estudio, como tantos otros, se centra en aspectos vinculados a la autopercepción de aprendizaje y satisfacción con el proceso. En esta ocasión también se encuentra esta limitación, ya que los datos obtenidos son relato indirecto de los participantes y experiencias de los docentes, mientras se desconoce el grado de alfabetización objetivo que presenta el alumnado respecto a la competencia estudiada.

Por último, este proyecto de innovación forma parte de un conjunto de numerosas experiencias e investigaciones en la Universidad San Pablo CEU que pretenden contribuir al desarrollo significativo de las competencias transversales de los futuros egresados, especialmente del pensamiento crítico. Es necesario un cambio en la metodología didáctica de la enseñanza superior, en primer lugar focalizando al estudiante al desarrollo de esta competencia; y, al mismo tiempo, integrando en la práctica docente un conjunto de estrategias pedagógicas que han demostrado su eficacia para favorecerlo y potenciarlo (Franco, Almeida y Saiz, 2014).

Las experiencias universitarias fundamentadas en el debate, a la luz de los resultados obtenidos en esta contribución, permiten concluir que esta es una de las herramientas didácticas más adecuadas para el desarrollo del pensamiento crítico como competencia transversal. La sistematización del modelo que se propone en este trabajo facilita su aplicación en cualquier Grado Universitario.

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ANEXO 1: SECUENCIA DEL APRENDIZAJE



ANEXO 2: GUIÓN DEL DEBATE

1. Explicación (10 minutos)

- Objetivos: empatía histórica, pensamiento crítico, profundizar en acontecimiento clave, argumentación, habilidades interpersonales
- Explicación de partes, tiempos y normas

2. Contextualización (10 minutos)

- Final de SGM, Japón, posición de Truman
- Pregunta del debate: ¿Si fueras Truman hubieras lanzado la bomba?

3. Lectura y decisión (10 minutos)

- Lectura de un fragmento de *La Segunda Guerra Mundial* (Churchill)
- Reflexión y toma de postura individual

4. Argumentación (25 minutos)

- Subgrupos (4–5 alumnos)
- Desarrollo de argumentos (subgrupos)
- Argumentario (grupos) – Secretario, portavoz

5. Debate (25 minutos)

- Alegatos iniciales: “sí” y “no” (5 mins)
- Debate libre, moderado por el profesor (10 mins)
- Reunión grupos y alegatos finales (5 mins)

6. Evaluación (10 minutos)

- Feedback oral del profesor
- Autoevaluación del alumno: rúbrica
- (Extra: puesta el común)

ANEXO 3: RÚBRICA DE AUTOEVALUACIÓN

	Muy logrado ⁴	Logrado ³	Poco logrado ²	Nada logrado ¹
Conocimientos <small>16.67%</small>	He profundizado en el tema y entiendo mucho mejor el contexto histórico	Entiendo mejor el tema y en general el contexto	Entiendo el tema y el contexto igual que antes	Entiendo peor el tema, tengo confusión o exceso de información
Pensamiento crítico <small>16.67%</small>	El debate me ha servido para reflexionar sobre cuestiones morales y he desarrollado mucho mi capacidad crítica	He pensado en la cuestión moral y sacado mi conclusión, pero sin desarrollar mucho mi capacidad crítica	He pensado algo la cuestión pero no me ha llevado a ganar en juicio crítico	El debate no me ha hecho reflexionar ni ganar en capacidad crítica en absoluto
Argumentación <small>16.67%</small>	Me ha servido para mejorar notablemente mi capacidad de elaborar argumentos y en la capacidad de persuasión	He pensado y redactado argumentos y he ejercitado mi capacidad de persuasión	He elaborado argumentos pero no he ejercitado mucho mi capacidad de persuasión	No he mejorado en absoluto en mi capacidad de argumentar y persuadir
Escucha y empatía <small>16.67%</small>	La actividad me ha permitido practicar y mejorar mucho la escucha activa y la empatía con mis compañeros	He practicado la escucha activa y la empatía con los compañeros	He practicado poco la escucha activa y la empatía con los compañeros	La actividad no me ha llevado a practicar la escucha activa y la empatía con mis compañeros
Expresión oral <small>16.67%</small>	He intervenido frecuentemente en la discusión, lo que me ha permitido desarrollar mucho mi expresión oral	He intervenido en la discusión, lo que me ha permitido desarrollar mi expresión oral	He intervenido poco en la discusión, lo que no me ha permitido desarrollar mucho mi expresión oral	Apenas he intervenido en la discusión, por lo que no he desarrollado mi expresión oral
Participación personal <small>16.67%</small>	He participado activamente en todas las fases del debate, y creo que mi aportación ha sido muy positiva	He participado en muchas fases del debate, y creo que mi aportación ha sido positiva	He participado en varias las fases del debate, y creo que mi aportación ha sido discreta	No he participado activamente en el debate, y creo que mi aportación ha sido bastante mejorable.



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Student Engagement, Life Satisfaction, and Academic Burnout Among Polish Tertiary Students: A Mixed-Methods Analysis (pp. 441–462)

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Abstract

Objective of the study: Given the scarcity of research in this area, the present study was carried out to examine the relationship between student engagement, life satisfaction, and academic burnout in the Polish academic setting. Additionally, a qualitative analysis was conducted to explore the factors that sustain student engagement.

Research method: This study uses both quantitative and qualitative methodologies. In Phase 1, Spearman's rank correlation coefficient was used to analyze the relationship between the primary variables. In Phase 2, inductive thematic analysis was applied to qualitative data collected from seven respondents.

A short description of the context of the issue: Over the past two decades, educational researchers have become increasingly interested in the impact of positive factors on various aspects of human functioning (Dewaele et al., 2019). Despite extensive research in the area, it transpires that the nature of the relationship between some variables remains somewhat underexplored, including the interplay between student engagement, life satisfaction, and academic burnout. This study addresses this gap in the literature and delves into the factors that enhance student engagement within the Polish academic environment.

Research findings: The study identified a strong, negative correlation between levels of life satisfaction and several dimensions of academic burnout, including lack of engagement (-0.355) and fatigue (-0.454). The findings indicate that students who are content with their lives are significantly more likely to report higher academic engagement and are less susceptible to experiencing burnout. The qualitative analysis revealed three main sources of sustained engagement: a growing sense of personal agency, teacher approachability, and peer support.

Conclusions and recommendations: Given that the majority of participants reported difficulty in balancing their academic and personal responsibilities, it is recommended that academic curricula should be structured to facilitate a healthy balance between these domains. As this study shows that higher life satisfaction promotes student engagement, well-balanced curricula could not only contribute to higher life satisfaction among the active student population but also positively impact their academic involvement.

Keywords: life satisfaction, student engagement, academic burnout, thematic analysis

1. Introduction

It was only in the 1980s that happiness became a focal point of psychological research. Since then, various academic disciplines with psychological components have increasingly concentrated on the psychology

of happiness. Over the last two decades, this trend has also been observable in educational research, with growing attention being devoted to positive factors (Dewaele et al., 2019). Despite numerous studies on the topic, the interplay between some variables remains relatively understudied. One such potential research avenue is the relationship between student engagement, life satisfaction, and academic burnout. To the best of the authors' knowledge, these variables have not been jointly analyzed, except for a single research project carried out in the Indian context (Rastogi et al., 2018). This investigation was therefore designed to fill this gap in the existing literature.

2. Theoretical framework

2.1. Student engagement

Student engagement (SE) has garnered increasing attention in recent years. Fredricks et al. (2004) conceptualized SE as a three-dimensional construct, consisting of three components: behavioral (participation in academic and non-academic activities), affective (type of emotionality experienced towards school community), and cognitive (thoughtfulness and willingness to grow). A similar model was proposed by Schaufeli et al. (2002), who viewed SE as an amalgam of three elements: (i) *vigor*, defined as the ability to commit to one's studies, maintain a positive attitude, and demonstrate mental flexibility; (ii) *dedication*, understood as overall enthusiasm, a sense of importance, well-anchored self-esteem, and inspiration; and (iii) *absorption*, which refers to being fully immersed and voluntarily engaged in one's study.

A plethora of studies have examined the impact of student engagement (SE) on academic success; however, there is currently no definitive consensus on this topic. To begin with, studies that support the mediating role of SE, Reyes et al. (2012) found that learning effectiveness is highly dependent on the degree to which students are engaged in classroom activities. Similarly, Delfino (2019) identified SE as a critical predictor of a positive attitude toward the teaching-learning process. Other

research also suggests that certain facets of SE may indeed contribute to more favorable outcomes in education. For example, a strong correlation has been found between academic success and behavioral engagement (Furrer & Skinner, 2003; King, 2015), emotional engagement (King, 2015), and cognitive engagement (Pietarinen et al., 2014). On the other hand, some studies have found no significant correlation between SE and academic outcomes (Appleton et al., 2006; Shernoff & Schmidt, 2008). While further research is clearly needed to fully understand the importance of SE for academic success, Lei et al. (2018) suggested that these inconsistencies may stem from a variety of moderating factors, such as self-assessment of progress, cultural values, gender, and learners' predispositions.

2.2. Life satisfaction

Life satisfaction (LS) is a key component of the broader tripartite model of subjective well-being, which includes life satisfaction, and positive and negative affect (Andrews & Withey, 1976). Wang et al. (2019, p. 2) defined LS as "an individual's conscious evaluation of life quality based on a self-imposed set of standards." However, as individuals differ substantially in their internal characteristics and needs, assessing one's LS may entail the risk of certain biases, making the concept somewhat challenging to investigate. Nonetheless, Schmitter et al. (2003) linked high LS with factors such as finding pleasure in life, a sense of life's meaning, achievement, positive self-evaluation of identity, physical well-being, quality of social relationships, and financial security. Conversely, LS is believed to lead to several positive outcomes, including more meaningful social relationships, increased commitment (Barger et al., 2009), and career satisfaction (Erdogan et al., 2012).

Although research on student LS is still in its infancy, several studies have begun to examine its impact. For instance, in a study of 373 Turkish undergraduates, Gündoğar et al. (2007) found that students who were satisfied with their academic experiences and perceived educational opportunities as adequate were more likely to report higher overall LS. Other studies that sought to validate the relationship between LS and academic outcomes yielded similar findings (Duffy et al., 2012; Ojeda et al.,

2011). In a large-scale study of U.S. undergraduates, Renshaw and Cohen (2014) concluded that LS, combined with the absence of negative affect, is a strong predictor of engagement and academic achievement. Similarly, Heffner and Antaramian (2016, p. 1683) argued that LS provides “incremental validity over affective states in predicting student engagement and some aspects of academic achievement.” LS has also been found to contribute to more positive academic expectations, stronger academic self-efficacy, unbiased self-assessment, and fewer negative emotions in academic settings (Antaramian, 2017).

2.3. Burnout

The concept of burnout has been a subject of considerable research interest in psychology and was first used to describe a syndrome of severe mental exhaustion and cynicism observed in healthcare workers (Hu & Schaufeli, 2009). Maslach and Jackson (1981) characterized burnout as comprising three elements: emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment. Emotional exhaustion is typically associated with feelings of tiredness and mental overload, often leading to long-term emotional fatigue (Maslach & Jackson, 1981). Regarding depersonalization, Duru et al. (2014, p. 13) explained that it refers to “negative, rigid, and/or unemotional attitudes and behaviors of a person against others.” Lastly, those experiencing burnout may struggle to adequately assess their ability to succeed, resulting in a reduced sense of efficacy (Hu & Schaufeli, 2009).

It soon became evident that the detrimental impact of burnout extends beyond the medical profession, leading to studies in various contexts, including education. In their study of academic burnout (AB), Zhang et al. (2007) defined AB as a combination of emotional exhaustion, cynicism, and a reduced sense of academic efficacy. Although some symptoms of AB may resemble those found in other domains of life, certain manifestations are unique to the educational setting, including poor attendance, disengagement from in-class activities, and an overwhelming sense of meaninglessness (Yang & Farn, 2005). Over the past two decades, the impact of AB on student performance has been extensively

researched. Hu and Schaufeli (2009) suggested that AB should be viewed as a key indicator of inadequate academic achievement, a finding echoed in other independent studies (Caballero et al., 2007; Galbraith & Merrill, 2014; Salmela-Aro et al., 2009; Zhang et al., 2007). AB has also been linked to negative aspects of the learning experience, including ineffective study strategies and increased outcome-related anxiety (Boudreau et al., 2004), poor management of study workload (Yang & Farn, 2005), and dissatisfaction with the quality of the learning experience (Charkabi et al., 2013). Notably, AB has been studied alongside other psychological factors, with several studies highlighting the potential moderating effects of high emotional intelligence (Durán et al., 2006; Kant & Shanker, 2021; Przybylska, 2016) and strong efficacy beliefs (Capri et al., 2012; Charkabi et al., 2013; Rahmati, 2015; Özhan, 2021) in mitigating the development of burnout symptoms amongst members of academia.

3. Research rationale

The impact of academic burnout (AB), life satisfaction (LS), and student engagement (SE) on academic outcomes has been extensively studied over the past two decades. Several studies have linked higher SE with a significantly lower likelihood of experiencing AB (Charkabi et al., 2013; Kiema-Junes et al., 2020; Palos et al., 2019; Salmela-Aro et al., 2022). Likewise, some independent studies have found a strong negative correlation between LS and AB (Cazan & Năstasă, 2015; Ye et al., 2021). However, to the best of the authors' knowledge, the interplay between these variables has not been analyzed together, except in a single study conducted in the Indian context by Rastogi et al. (2018). That analysis pointed to a strong positive correlation between SE and LS, while SE was found to be negatively associated with AB. Given that all of these factors have been shown to influence academic performance to some extent, it is reasonable to hypothesize that higher levels of LS and SE may reduce the likelihood of experiencing AB. Thus, this study seeks to fill a gap in the existing literature by addressing the following research questions:

- 1) Is there a correlation between academic burnout and life satisfaction in the Polish academic setting?
- 2) Is there a relationship between student engagement and life satisfaction in the Polish academic setting?
- 3) What are the factors that contribute to the sustainability of student engagement in the Polish academic setting?

4. Methods

4.1. Participants and Sampling

Convenience sampling was used to select participants for this study. In Phase 1, quantitative data were collected through two psychometric instruments (described below), which were adapted to an online format. The request to participate was distributed among active students at the University of Rzeszow. In the first part of the online questionnaire, participants were asked to provide consent for their responses to be used in the study. Respondents' demographic information, including age, gender, and level of study, was also collected. A total of 159 valid responses were received (Female: 121, 76.1%; Male: 38, 23.9%). The age of the participants ranged from 18 to 52 (Mean: 22.8, SD: 4.3). The sample included students from five years of study: 59 (37.1%) were freshmen, 22 (13.8%) sophomores, 11 (6.9%) juniors, 58 (36.5%) in their fourth year, and 9 (5.7%) in their final year.

For the qualitative phase, data were drawn from respondents who expressed willingness to participate in follow-up interviews during Phase 1. Since the primary aim of including qualitative data was to elicit insights into the sustainability of student engagement, the responses were screened to ensure that the final sample included students who demonstrated consistent commitment to their studies. Consequently, the accounts of seven participants (Female: 4, 57.1%; Male: 3, 42.9%) were selected for further analysis.

4.2. Tools

The levels of student burnout and engagement were measured using the Oldenburg Burnout Inventory (OLBI) questionnaire, developed by Demerouti et al. (2010). This instrument focuses on two dimensions of burnout: fatigue and disengagement. The questionnaire consists of 16 statements, both positively and negatively worded, with responses arranged on a 4-point Likert scale. Since the OLBI was not originally designed to assess burnout in academic settings, the items were rephrased to better reflect the context of this study. Additionally, the scale was translated into Polish, following a translation-back translation procedure to ensure equivalence on both linguistic and conceptual levels. Considering the novel context of this research, the internal consistency of the instrument was evaluated (Cronbach's alpha = 0.87).

The **Satisfaction with Life Scale (SWLS)**, created by Diener et al. (1985), was used to measure participants' overall life satisfaction. This 5-item scale is specifically designed to assess cognitive judgments of a person's life satisfaction. Responses are arranged on a 7-point Likert scale (7 = strongly agree; 1 = strongly disagree). The SWLS statements were translated into Polish using the same translation procedure applied to the OLBI. The demonstrates strong internal consistency (Cronbach's alpha = 0.88). In this study, the internal consistency of the SWLS was also assessed, yielded a score of 0.89.

In the qualitative phase, data were collected using a semi-structured interview protocol designed specifically for this research. Before the interviews, respondents were briefed on the methodology of the study and asked to sign a written consent form. The interviews were carried out in English with no set time limit. Participants were asked to elaborate on topics such as the intensity of their engagement, study-life balance, and factors contributing to the sustainability of their commitment. To elicit in-depth insights, typical interviews also incorporate several follow-up questions.

4.3. Data Analysis

As this study employs both quantitative and qualitative data, the analysis proceeded in two phases. In the first phase, Spearman's rank correlation coefficient was used to examine the relationships between the variables under investigation, reflecting the non-normal distribution of the data. The purpose of the qualitative analysis was to expand on the quantitative findings by identifying factors that contribute to increased engagement among Polish tertiary students. Given the previously discussed scarcity of studies investigating these variables in combination, and the corresponding need for more elaborate interpretations, inductive thematic analysis was chosen as the most suitable method for this study (Braun & Clarke, 2007).

First, the interview data were transcribed and repeatedly reviewed to gain a thorough understanding of individual responses. In the next phase, the essential sections of the data were highlighted using different colors, and a set of labels (codes) was developed. The codes were then reviewed to identify recurring patterns, and vague or irrelevant codes were discarded. As an additional validity measure, both authors conducted the coding process, achieving an inter-rater agreement of 95%. Minor discrepancies were discussed and resolved.

5. Findings

5.1. The Relationship Between Student Engagement, Life Satisfaction, and Academic Burnout

In this study, Spearman's rank correlation coefficient was used to examine the strength and direction of the relationships between LS, AB, and SE. Table 1 provides a concise summary of the results.

Table 1. Correlation between SWLS and OLBI

			OLBI Lack of engagement scale (8–32)	OLBI Exhaustion scale (8–32)	OLBI General level of burnout (16–64)
Spearman's rho	SWLS levels of life satisfaction (5–35)	Correlation coefficient	-0.355**	-0.454**	-0.450**
		Significance (two-tailed)	0.000	0.000	0.000
		N	159	159	159

The analysis confirmed a strong, negative relationship between OLBI scores for burnout, fatigue, lack of engagement, and SWLS scores. Specifically, the strongest correlation was found between SWLS and the fatigue element of OLBI (-0.454). While the other correlations are slightly less strong, the overall results suggest that students who are more satisfied with the quality of their lives are significantly more likely to exhibit higher engagement and are less likely to experience academic burnout.

5.2. Factors Contributing to Sustained Engagement Among Polish Tertiary Students

Inductive thematic analysis identified three main themes. Sustained student engagement was linked to three distinct factors: (i) an increasing sense of agency; (ii) teacher approachability; and (iii) peer support. For clarity, these factors will be discussed individually.

5.2.1. An Increasing Sense of Agency

When asked about the reasons for their engagement, all participants revealed that academic involvement helps them fulfill certain personal needs. For example, P1 admitted that although juggling the demands of academic and personal life can sometimes be cumbersome, it undoubtedly enhances her personal and professional sense of agency:

It is challenging in the sense that I often have to step outside my comfort zone, but because of that, I have grown as a person. Each and every project makes me more open-minded to different aspects of my profession, which will definitely help when I am looking for a job.

A similar perspective was shared by P3, who acknowledged that although she occasionally experiences both physical and mental fatigue due to a high volume of academic workload, staying involved in various academic pursuits is essential for maintaining her engagement and addressing doubts about her career choice:

Sometimes I feel exhausted because of different responsibilities and demanding in-class activities. But the truth is that the harder I work, the more motivated and engaged I become. It feels great when I manage to overcome a challenge of some sort. It makes me feel like I have what it takes to do the job and that my engagement really matters.

Likewise, despite occasional challenges, P6 feels that his engagement contributes to both personal and professional growth and makes his life more meaningful:

It makes me feel like I'm constantly growing and developing as a person. It gives me a sense of purpose, and I'm sure it will help me become the exact type of teacher I want to be in the future.

5.2.2. Teacher approachability

While the most recurring theme in the dataset was the growing sense of agency stemming from increased engagement, several participants also mentioned that their commitment was continuously fueled by the support of the academic staff at their university. Specifically, the analysis revealed that the approachability of academic teachers may inspire greater student engagement:

P2: I think what motivates me the most is that my lecturers are always there to help. Some of them are truly inspirational, really. I am amazed at how open and kind they are. I want to be like them, both professionally and personally.

A similar sentiment was expressed by P5, who emphasized the impact of teacher approachability on his engagement:

P5: I would have given up on all those extra projects had it not been for some of the lecturers. You can really tell that they love working with us. Even though they're incredibly busy, they always find the time to talk with us about our personal lives. They truly care, you know? I think that's amazing.

5.2.3. Peer Support

Several respondents shared that discussing their personal and academic difficulties with fellow students helped them maintain their commitment to academic life. P4's account illustrates this well. Despite having to make personal sacrifices to meet her academic responsibilities, she found difficult periods far easier to deal with thanks to peer support:

P4: I spend most of my time studying and participating in other university activities, which leaves very little time for my personal life. I often get nervous and stressed because of that. But thanks to my involvement, I've met a lot of valuable people, and they've been a great help. Whenever I'm feeling down, they always encourage me to see the positive side of things and treat each day as a new challenge.

The account shared by P7 was similar in the sense that the respondent also highlighted the importance of peer support for sustaining his engagement. Unlike P4, however, P7 never struggled with balancing his personal and academic life. Instead, he found that connecting with like-minded individuals made his academic experience much more fulfilling:

P7: Why did I get involved? Well, at first, I was not sure if this would be my cup of tea, but then I met all these amazing people. Back in high school, I did not have a lot of friends. I was a good student, and I guess people thought I was competing with them or something. But here, it's

completely different! People like my ideas and are really supportive!
It is great to know that there are people who think the same way—it really keeps me going.

6. Discussion

Regarding the first research question, the quantitative analysis revealed a negative relationship between life satisfaction and academic burnout (-0.450). These results coincide with findings from previous studies (Cazan & Năstasă, 2015; Ye et al., 2021). Additionally, it was found that life satisfaction is negatively correlated with other dimensions of burnout, including lack of engagement (-0.355) and fatigue (-0.454). These findings lead to a tentative conclusion that students who are more engaged in their academic pursuits report higher life satisfaction and are less likely to experience symptoms of academic burnout. However, given the preliminary nature of this investigation, further research is needed to explore the relationship between AB, SE, and LS, and to determine whether these findings from the Polish context can be extrapolated to other settings.

In this study, inductive thematic analysis was used to identify common factors that contribute to sustained student engagement in the Polish academic context. Three prominent themes emerged: a growing sense of agency, teacher approachability, and peer support. Starting with the most recurring theme, many participants noted that their increased commitment to academic pursuits, although involving certain sacrifices, positively impacted their sense of personal agency. As respondents often had to step outside their comfort zones to meet academic demands, they were provided with numerous opportunities to develop strong efficacy beliefs. Interestingly, while participants were acutely aware of the personal sacrifices required, the sense of personal growth associated with their increased commitment appeared to foster their long-term engagement. This finding is in line with several previous studies that have highlighted the predictive role of agency beliefs in sustaining student engagement over time (Azila-Gbettor et al., 2021; Chang & Chien, 2015).

Notably, while higher levels of engagement contributed to the development of students' overall sense of agency, changes were also observed in more specific agency beliefs, such as those related to their future professions. Although balancing academic and personal responsibilities gave participants many opportunities to build their agency, one practical recommendation to be put forward here is that academic curricula should be structured in a way that allows students to maintain a healthy balance between academic and personal commitments, and, thus, contribute to their higher life satisfaction.

Turning to the second theme, increased student engagement was also linked to teacher approachability, as some respondents noted that the openness of academic staff consistently fueled their commitment. This coincides with the findings of Korthagen et al. (2014), who identified positive teacher-student relationships as a key determinant of student engagement. Similar conclusions have been drawn in other independent studies (Estep & Roberts, 2015; Zhou, 2021). Additionally, it should also be highlighted that the effects of this positive relationship extend beyond the academic sphere, as several participants explicitly stated they viewed their teachers as role models. While most research on the motivational impact of social contagion tends to focus on peer-to-peer dynamics (Burgess et al., 2018; Mendoza & King, 2020), the analysis of this dataset suggests that certain emotions and behaviors may also transfer between teachers and students. However, further research is needed to validate this observation.

Lastly, based on the insights gathered, peer support emerged as a factor in sustaining student engagement. The role of peer support is multifaceted; while P4 made it quite clear that she found difficult periods far easier to deal with by sharing those challenges with peers, P7 focused more on the social side of peer support, noting that being part of a group of driven and engaged individuals fulfilled his need for belonging. This suggests that a strong sense of community on campus is almost certainly essential for maintaining high levels of engagement among active students. Although the present study has a limited sample size, and further research is warranted, it can be concluded that when students are given the opportunity—and are encouraged—to participate actively in a broader

academic community, their satisfaction with life (SWLS) is likely to increase significantly. This, in turn, could positively influence the negative aspects identified in the OLBI.

7. Concluding remarks and limitations

This research provides preliminary data on the interplay between life satisfaction, academic burnout, and student engagement among active university students. Specifically, the quantitative analysis indicated a strong negative relationship between life satisfaction and various dimensions of burnout, including lack of engagement. Based on these findings, it can be concluded that students who are more satisfied with their quality of life are significantly more likely to exhibit higher levels of engagement and are less prone to academic burnout. However, given the limited number of similar studies to date, further research is necessary to gain a more extensive understanding of the relationships among these variables.

Additionally, the qualitative analysis revealed that in the Polish academic context, sustained student engagement can be attributed to several factors, including a growing sense of agency, teacher approachability, and peer support. Nonetheless, many respondents, to varying degrees, reported issues with successfully balancing their personal and academic obligations. Therefore, the most imperative conclusion from this study is that academic curricula should be designed to promote a healthy balance between academic and personal responsibilities. As the findings suggest that higher life satisfaction fosters student engagement, well-balanced curricula may not only improve students' overall life satisfaction but also positively influence their level of academic engagement.

The present study does have limitations. Firstly, convenience sampling was used, and the data were collected from students at a single university. As this may limit the generalizability of the results, it would be recommendable for future research to include students from a broader range of academic institutions across Poland. Additionally, comparing student experiences in Poland with those in other countries would offer a more

comprehensive understanding of the interplay between life satisfaction, burnout, and engagement, and help determine how Polish universities conform to international standards. Secondly, the qualitative analysis involved a relatively small sample due to the limited availability of participants. Further research is needed to confirm whether the findings can be generalized to a larger population.

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Exploring the Prevalence and Awareness of Dyscalculia Among Grade 10 Learners: A Case Study

(pp. 463–487)

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Abstract

Research Objectives and Problem(s): This study explores the prevalence and awareness of dyscalculia—a learning disability that impairs individuals' ability to comprehend and engage with mathematical concepts—among Grade 10 learners in two secondary schools in Soshanguve, South Africa. The research aims to determine the prevalence of dyscalculia in this population and assess the level of awareness among Grade 10 mathematics teachers regarding the identification and support of dyscalculic learners.

Research Methods: Research design incorporates both quantitative and qualitative methodologies, including standardized tests, focus group interviews, and questionnaires.

Structure of the Article: The study is framed by the Integrated Cognitive-Socio-Inclusive Model, which combines elements from cognitive neuropsychology, socio-cultural theory, and inclusive education to provide a comprehensive understanding of dyscalculia.

Research findings and their Impact on the Development of Educational Sciences: The findings reveal a concerning prevalence of below-average mathematical skills among Grade 10 learners and highlight the need for targeted interventions. They also underscore the importance of raising teacher awareness to better identify and support learners with dyscalculia.

Conclusions and/or Recommendations: This study contributes valuable insights into dyscalculia in the South African educational context. It advocates for data-informed policy decisions and enhanced teacher training to create a more inclusive learning environment.

Keywords: dyscalculia; intervention; prevalence; awareness; Grade 10 learners, teachers, mathematics

Introduction

Dyscalculia, commonly referred to as “number blindness,” is a learning disability that significantly hinders individuals’ ability to comprehend and engage with mathematical concepts and operations (Onyishi & Sefotho, 2021). It is estimated to affect between 2% and 10% of the global population, with a prevalence comparable to that of dyslexia (Butterworth et al., 2011; Bastos et al., 2016; Wangdi, 2021). Learners with dyscalculia face specific challenges in acquiring fundamental arithmetic skills, such as recalling multiplication tables and performing calculation procedures (Kunwar, 2021). Their difficulties also extend to tasks involving number comparison, counting, and mastering processes like carrying over during calculations. Notably, dyscalculia is considered a specific learning difficulty confined to mathematics (Butterworth et al., 2011; Espina et al., 2023).

The implications of dyscalculia on academic performance and future opportunities are profound, as mathematical proficiency is essential for

educational attainment and employment prospects, which directly impact socio-economic status (Pule, 2020). Recognizing the prevalence and impact of dyscalculia is crucial for designing effective support and intervention strategies. Teachers play a vital role in identifying and supporting learners with learning disabilities. However, dyscalculia often goes unnoticed by educators, which can lead to academic struggles, diminished self-esteem, and long-term negative consequences for affected students (McCarroll, 2021). The lack of awareness among teachers further complicates the implementation of effective teaching strategies tailored to the needs of dyscalculic learners.

Additionally, the prevalence and awareness of dyscalculia among Grade 10 mathematics learners in South Africa remain poorly documented. The Department of Basic Education reports that 28.9% of Grade 6 learners fail to achieve a passing mark in mathematics (DBE, 2014), highlighting the urgent need to investigate dyscalculia's prevalence and teacher awareness to enhance learners' mathematical performance. International research suggests that dyscalculia affects 3% to 7% of school-age children (Price & Ansari, 2013; Ashraf & Najam, 2020; Monei & Pedro, 2017). However, limited empirical evidence focuses specifically on the South African context, particularly among Grade 10 learners. Therefore, understanding the prevalence of dyscalculia and teacher awareness is essential for developing targeted interventions. This study seeks to explore the prevalence and awareness of dyscalculia in this specific educational context. The primary objective of this study is to:

- a) Determine the prevalence of dyscalculia among Grade 10 learners in two Soshanguve secondary schools.
- b) Assess the level of awareness among Grade 10 mathematics teachers in identifying and supporting dyscalculic learners.

This study aimed to address the following key research questions:

- c) To what extent is dyscalculia prevalent among Grade 10 learners in the selected schools?

d) What is the level of awareness among Grade 10 mathematics teachers regarding dyscalculia?

To achieve these objectives, the study employed a participatory action research (PAR) design, examining dyscalculia in two distinct school settings through standardized dyscalculia tests, focus group interviews, and questionnaires. This approach allowed for an in-depth analysis of the condition within each case context and facilitated comparisons of findings across different educational environments. The methodology involved the collection of both quantitative and qualitative data to assess the prevalence of dyscalculia and the level of awareness among learners and teachers alike.

Theoretical Framework

This study utilized the Integrated Cognitive-Socio-Inclusive Model, which merges elements of the Cognitive Neuropsychological Model, Vygotsky's Socio-Cultural Theory, and the Inclusive Education Framework to provide a comprehensive understanding of dyscalculia. The cognitive component addresses specific deficits such as numerical processing, working memory, and visual-spatial skills, all of which are essential for arithmetic and mathematical comprehension (Butterworth et al., 2011; Middleton et al., 2019). By identifying these cognitive difficulties, educators can create targeted diagnostic tools and interventions for learners with dyscalculia.

The socio-cultural aspect emphasizes the significance of social interactions and cultural contexts in learning, particularly the need for teacher awareness and preparedness (Middleton et al., 2019; Daneshfar & Moharami, 2018). Research demonstrates that informed teachers who use scaffolding techniques can enhance the mathematical skills and performance of dyscalculic students (Akinade, 2022). The inclusive education component advocates for integrating learners with disabilities into mainstream classrooms to promote equity and access (Regmi, 2019).

The Department of Basic Education's 2010 Guidelines for Inclusive Teaching and Learning reinforce this by emphasizing the importance of identifying and supporting learners who face barriers, such as dyscalculia (Dube, 2020; Hayes & Bulat, 2017). Strategies like differentiated instruction and assistive technologies can further enhance the educational experiences of these students (Onyishi & Sefotho, 2021).

The Integrated Cognitive-Socio-Inclusive Model was selected as the most suitable theoretical framework for this study, offering a holistic approach to understanding and addressing dyscalculia from multiple perspectives. This integrated framework aligns with the study's objectives to examine the prevalence and awareness of dyscalculia among Grade 10 learners and teachers, thereby laying a robust foundation for developing effective teaching strategies and educational policies.

Literature Review on Dyscalculia

This study highlights the significant cognitive deficits experienced by individuals with dyscalculia, particularly in numerical processing. Research by Butterworth et al. (2011), Aunio & Fritz (2019), Allen (2020), and Maricle & Vidovic (2022) reveals that dyscalculic learners often struggle with working memory, which hinders their ability to manipulate numerical data, and is essential for multi-step arithmetic and problem-solving tasks. Additionally, deficits in visuo-spatial skills impede their capacity to organize and comprehend numerical data, limiting their ability to recognize number patterns and perform mental calculations.

Research by Van Hoof et al. (2017) emphasizes that children with dyscalculia typically exhibit poor intuitive understanding of numbers and their relationships, linked to deficits in the intra-parietal sulcus, a brain region crucial for numerical cognition (De Smedt et al., 2019). Prabavathy & Sivaranjani (2020) note that dyscalculia significantly hampers learners' ability to perform basic arithmetic operations, such as addition, subtraction, multiplication, and division. Studies by Molise & Luneta (2024) and Kunwar (2021) indicate that individuals with dyscalculia face difficulties

in both conceptual understanding and procedural execution, particularly in operations that demand a strong grasp of numerical relationships. Chinn & Ashcroft (2017) and subsequent research underscore that subtraction and division pose unique challenges due to the cognitive load required for sequential and methodical operations, often resulting in slower task completion and increased procedural errors.

The educational implications of dyscalculia are profound, affecting academic performance and self-esteem. Onyishi & Sefotho (2021) argue that traditional teaching methods fail to meet the needs of dyscalculic students, who require tailored educational strategies and early diagnosis. Effective interventions, as suggested by Delgado et al. (2019), include enhancing number sense and foundational arithmetic skills through manipulatives, visual aids, and engaging computer-based tools. Increasing societal awareness is also crucial. As Chinn (2020) points out, limited public understanding of dyscalculia can lead to delayed diagnosis and inadequate support. Advocacy groups and educational institutions, highlighted by Hussain & Soares (2022), play a vital role in raising awareness and integrating dyscalculia-focused support into educational policies. This study emphasizes the importance of early identification, targeted interventions, and increased societal awareness to better support individuals affected by dyscalculia.

Methodology

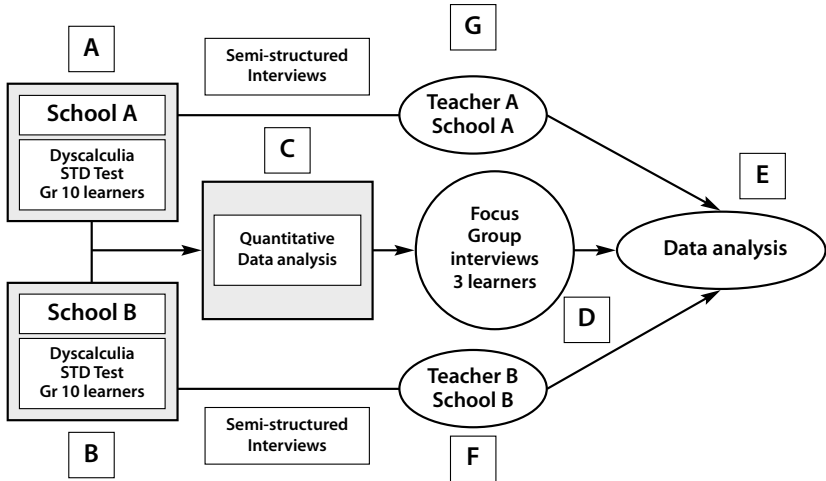
Research Design

This study adopted PAR (Participatory Action Research) as its research design, a collaborative and iterative approach that actively involves participants in the research process. PAR is defined by its focus on action and reflection, with the aim of both understanding and addressing issues within a specific context through the active engagement of those directly affected by the problem being studied (Shamrova & Cummings, 2017). In this case, PAR was chosen for its suitability in tackling the challenges of dyscalculia among Grade 10 learners in two distinct educational settings, referred to as School A and School B.

The participatory nature of PAR allows for the involvement of learners and teachers in the research process, ensuring that the insights and solutions developed are grounded in the lived experiences and practical realities of those involved (Chevalier, 2019). This approach not only enhances the relevance and applicability of the findings but also empowers participants by providing them with a voice in the research, fostering a sense of ownership and commitment to implementing the outcomes. The study began with the administration of standardized tests to students in both schools as shown in **Figure 1**, which serve as a quantitative assessment tool to measure the extent and nature of dyscalculia among the participants (see **Figure 1, Step A** and **Step B**).

This initial step was crucial for establishing a baseline understanding of the learners' difficulties and provided empirical data that informed the overall analysis. The quantitative data gathered during this phase laid the groundwork for subsequent research phases, ensuring that the findings were based on objective, measurable outcomes. Building on the quantitative analysis, the research design incorporated a qualitative dimension through focus group interviews (see **Figure 1, Step D**). A representative sample of three learners identified as dyscalculic through the quantitative analysis participated in in-depth discussions to explore their experiences with dyscalculia, revealing the emotional, psychological, and educational impacts of their condition (Nyumba et al., 2018). This qualitative approach enriched the study, offering a nuanced understanding of how dyscalculia affects learners daily.

Figure 1: Research Design of the Study



Additionally, semi-structured interviews with teachers from both schools (see **Figure 1, Steps F and G**) captured educators' perspectives on dyscalculia, including their observations, challenges, and strategies for supporting affected students. Incorporating teachers' insights was a critical component of the Participatory Action Research (PAR) approach, recognizing the importance of teacher agency in the research process (Kushniruk & Nøhr, 2016). The study's design, incorporating both quantitative and qualitative methods, aimed to provide a comprehensive analysis of dyscalculia while generating actionable insights to inform teaching practices. The cyclical nature of PAR was evident in the structure: beginning with data collection and analysis, moving to reflection and interpretation through focus groups and interviews, and ultimately influencing future classroom actions (Morales, 2016). This dynamic feedback loop emphasized a commitment to continuous improvement and adaptation. Qualitative data were collected through semi-structured interviews with teachers and focus group discussions with learners. These interviews explored learners' difficulties with arithmetic operations—specifically division, multiplication, addition, and subtraction—and the resulting impact on their academic performance and self-esteem (Adeoye-Olatunde

& Olenik, 2021). Focus group discussions gathered collective perspectives, discussing common challenges, successful strategies, and potential improvements for supporting students with dyscalculia.

Thematic analysis, following the procedures outlined by Castleberry & Nolen (2018), identified and categorized emergent themes related to cognitive deficits and educational interventions. Content analysis further extracted key points and recurrent topics, providing depth to the findings.

Participants and Sampling

The study employed purposive sampling to recruit seventy (70) Grade 10 mathematics learners and two (2) mathematics teachers from the two selected schools, ensuring a diverse range of participant backgrounds and experiences. Purposive sampling, a method in which participants are selected based on specific criteria relevant to the research, was used in this study to focus on individuals directly impacted by dyscalculia. The primary criteria for selection included participants' willingness to participate and their informed consent.

The sample size of seventy learners was determined with a dual focus on achieving qualitative data saturation and ensuring sufficient statistical power for quantitative analysis. From a quantitative perspective, a sample of this size allowed for meaningful statistical analysis, enabling the detection of significant patterns, trends, and relationships within the data. The quantitative data collected through standardized tests were subjected to descriptive statistics to summarize learners' performance and inferential statistics to explore correlations between dyscalculia and other variables, such as academic achievement.

This robust quantitative approach, combined with the strategic selection of a school known for its lower performance in Grade 10 mathematics, enabled the research to produce findings that are both statistically valid and highly relevant to similar educational contexts where learners struggle with mathematics due to learning difficulties.

Data Collection

Dyscalculia Standardized Test: Administered to all Grade 10 mathematics learners, this test featured both multiple-choice and open-ended questions. It was conducted under controlled exam conditions to ensure data accuracy. Quantitative analysis involved recording learners' scores within a 60-minute timeframe (Shalev et al., 1998).

Focus Group Interviews: Teachers and learners participated in interviews to explore their knowledge of and perceptions about dyscalculia. The interview questions encompassed both closed and open-ended formats, with sessions lasting approximately 30 minutes. Audio recordings were transcribed verbatim for subsequent thematic analysis.

Data Analysis

Statistical analysis of dyscalculia standardized test scores employed descriptive statistics, focusing on the percentage of learners scoring below 30% to determine the prevalence of dyscalculia. Content analysis was applied to the focus group interviews, while thematic analysis of interview transcripts facilitated the identification and categorization of emergent themes (Miles et al., 2014).

Ethical Considerations

Participants were assured of the confidentiality of their information, with an emphasis on voluntary participation and the right to withdraw from the study at any time. The research adhered strictly to ethical guidelines for studies involving human subjects (American Psychological Association, 2017).

Results

The Dyscalculia Standardized Test revealed a significant prevalence of below-average mathematical abilities among Grade 10 learners in two Soshanguve schools. Key areas of difficulty included language ability, where many students struggled with mathematical word problems,

as shown in **Table 1**, which illustrates the distribution of scores in this domain. Visual-spatial ability was another area of concern, with learners facing challenges in understanding geometric shapes and spatial relationships. Additionally, deficits in cognitive abilities, such as working memory and processing speed affected problem-solving skills, while weak numeracy skills and confusion over mathematical operational signs (e.g., addition, subtraction) were widespread. Students scoring below the 30th percentile were identified as potentially dyscalculic.

The distribution of scores in the domain of language ability revealed that 10.8% of learners demonstrated high proficiency (90–100), indicating strong skills in retrieving number facts and using mathematical signs in word problems. Additionally, 31.1% exhibited proficiency (76–89), reflecting a solid grasp of mathematical language. A further 21.6% showed moderate proficiency (60–75), while 8.1% fell below proficiency (46–59), suggesting a need for additional support. Approximately 13.5% exhibited limited proficiency (30–45), likely struggling with complex problems, and 9.4% displayed low proficiency (20–29), highlighting the need for targeted interventions. Finally, 5.4% showed minimal proficiency (0–19), requiring intensive support.

Table 1: Prevalence of Dyscalculia in Language Ability.

s/m	Percentage score	No. of learners	Scored %	Learner %
1	90–100	8	100	10.8
2	76–89	23	85.7	31.1
3	60–75	16	71.4	21.6
4	46–59	6	57.1	8.1
5	30–45	10	42.9	13.5
6	20–29	7	28.6	9.4
7	0–19	4	14.3	5.4
Total		74	400	100

Table 2 outlines learners' scores in visual-spatial ability, where students were tested on their understanding of geometric shapes, such as squares, parallelograms, and triangles.

Table 2: Prevalence of Dyscalculia in Visual-Spatial Ability

s/m	Percentage score	No. of learners	Scored %	Learner %
1	90–100	53	100	71.6
2	80–89	2	83.3	2.7
3	60–79	0	66.7	0
4	40–59	3	50	4.1
5	30–39	6	33.3	8.1
6	0–29	10	16.7	13.5
Total		74		100

The assessment of visual-spatial ability revealed that a substantial majority of learners (71.6%) demonstrated high proficiency, scoring between 90–100, which reflects a strong understanding of geometric shapes and spatial relationships. A smaller subset (2.7%) scored between 80–89, indicating good but slightly lower competence in visual-spatial concepts. Notably, no learners scored between 60 and 79, indicating a gap in moderate proficiency.

A modest 4.1% of learners scored between 40 and 59, signifying moderate competence, while 8.1% fell within the limited proficiency range of 30 to 39. These students may struggle with accurately identifying and differentiating between geometric shapes. Lastly, 13.5% scored between 0 and 29, indicating low proficiency and significant challenges with visual-spatial concepts.

Table 3: Prevalence of Dyscalculia In Cognition Ability

s/m	Percentage score	No. of learners	Scored %	Learner %
1	90–100	8	100	10.8
2	80–89	12	83.3	16.2
3	60–79	18	66.7	24.3
4	40–59	15	50	20.3
5	30–39	8	33.3	10.8
6	0–29	13	16.7	17.6
Total		74		100

The analysis of cognitive ability related to numerosity, as illustrated in Table 3, reveals that 10.8% of Grade 10 learners achieved the highest proficiency (90–100), indicating a strong understanding of numerical principles. A further 16.2% scored between 80 and 89, reflecting a solid grasp of cognitive concepts associated with numerosity. A significant portion of learners (24.3%) fell within the moderate proficiency range (60–79), while 20.3% scored between 40 and 59, indicating lower moderate proficiency and challenges with more complex numerical tasks. Additionally, 10.8% of learners exhibited limited proficiency (30–39), and 17.6% scored between 0 and 29, highlighting substantial difficulties with basic numerical concepts.

Table 4: Prevalence of Dyscalculia in Numeracy

s/m	Percentage score	No. of learners	Scored %	Learner %
1	81–100	15	100	20.1
2	61–80	9	80	12.7
3	41–60	19	60	25.6
4	31–40	16	40	21.5
5	21–30	0	0	0
6	0–20	15	20	20.1
Total		74		100

The test results, as depicted in Table 4, reveal that learners struggled with accurately identifying numerical sequences. For instance, many incorrectly answered “20000” instead of “19998” when asked what comes before “19999.” Similarly, responses to the question “What comes after 39999?” indicated significant challenges, particularly among learners with dyscalculia.

The distribution of scores in **Table 4** shows that 20.1% of learners achieved high proficiency (81–100), demonstrating a solid understanding of numeracy concepts. A smaller group (12.7%) scored between 61 and 80, indicating proficiency but with room for improvement. A larger proportion (25.6%) fell within the moderate range (41–60), reflecting a basic understanding but challenges with complex sequences. Notably, no learners scored between 21 and 30, while 20.1% scored between 0 and 20, highlighting difficulties in identifying numerical sequences associated with dyscalculia. Further insights are provided in **Table 5**, which illustrates the challenges faced by dyscalculic learners in performing mathematical operations. Only 2.7% of dyscalculic learners achieved high proficiency (90–100), while a substantial portion (22.9%) scored between 40 and 59, reflecting significant difficulties in performing mathematical operations.

Table 5: Prevalence of Dyscalculia in Division, Multiplication, Addition And Subtraction

s/m	Percentage score	No. of learners	Scored %	Learner %
1	90–100	2	100	2.7
2	80–89	11	81.3	14.8
3	70–79	16	75.0	21.6
4	60–69	16	63.0	21.6
5	40–59	17	50.0	22.9
6	30–39	8	37.5	10.8
7	10–29	3	18.25	4.2
8	0–9	1	6.3	1.4
Total		74		100

The impact of dyscalculia on learners' overall academic performance and behavior in the classroom has been previously explored by Butterworth et al. (2011) and Roulstone et al. (2024). According to their findings, dyscalculic learners exhibit typical reading abilities, engage actively in various subjects, and display appropriate classroom behavior, provided there is no comorbidity with dyslexia or Attention Deficit Hyperactivity Disorder (ADHD). However, challenges emerge specifically during mathematics lessons, leading to heightened anxiety and discomfort. Rulyansah (2023) noted a tendency among dyscalculic learners to rely on their fingers for calculations rather than retrieving basic mathematical facts.

To shed light on these difficulties, the focus group interviews yielded qualitative insights into the attitudes and experiences of learners with mathematics. A consistent theme across participants was the perceived difficulty of the subject. Learners expressed frustration with the continuous introduction of new concepts, emphasizing the need for practice and assistance. While this qualitative aspect adds depth to the understanding of learners' experiences, the small sample size limits the generalizability of these findings.

Teachers' insights into dyscalculia, obtained through interviews, revealed a concerning lack of awareness and specific knowledge about the condition. Both teachers displayed limited familiarity with the term and struggled to pinpoint the causes and appropriate interventions. This highlights a critical gap in teacher training, signaling the need for targeted professional development programs to enhance teachers' awareness and competence in addressing dyscalculia.

Table 6: Learner Interview Question and Response

INTERVIEW QUESTIONS	LEARNER A RESPONSE	LEARNER B RESPONSE	LEARNER C RESPONSE
What is your personal experience in mathematics since the previous grade?	I find mathematics to be a difficult subject, but I think with practice and some help at home, I can do better, especially if I get extra assistance. Mathematics is a tough subject because we don't understand some things and most of us failed the subject last term; however, some topics are simple. Sometimes mathematics is a tricky subject; sometimes you miss steps, and sometimes you just remember, and it gives you a headache and stress.	Math feels difficult because each and every day we learn a new thing and when we learn, we learn it in different ways. One day, they explain something and tomorrow they continue without fully explaining the steps. Things feel disjointed, but I think math can be simpler when we practice regularly, when we practice at home and at school, helping each other and communicating.	Math is difficult because it has so many sections like trigonometry, geometry. Some of them are confusing when they are taught and when you try to learn it from the book, it's not explained the same way the teacher does. The teacher explains it the way he understands it but not in a way that makes sense to us all.
What do you like or dislike about mathematics?	I don't like mathematics because it's too challenging and overwhelming. Some of the sums are too long, and when you think you are done you realize that there's still more to do, so that is what makes it boring for me.	I don't like math at all because it's too challenging, and every time there's something new, it's like—how are we supposed to focus on this? It's just too much.	What makes me hate math it is one thing: I used to like it because when you're solving something, you feel like you're doing it right, but then you see you got zero. Have you noticed that? It's like the mind is a sponge—it soaks up information, but with math, it's different. Math is just a hard subject. When they teach us, they must think about us and how we learn. By the time you've had math class, after school, and you get home, your brain is so tired, you can't do anything else.
How does mathematics affect other Grade 10 subjects?	Math affects other learning areas because it needs more focus and time. By the end of the lesson, you don't understand it, and you end up thinking that every subject is difficult.	Math affects other subjects because it needs your full focus and concentration, so you end up not understanding other subjects.	Math affects other learning areas because it needs so much time and focus that you end up spending all your time at home trying to figure it out. You need to stay at home doing math problems. Then, when you try to study another subject, you realize it might actually be easier.

The findings from learners reveal a widespread perception of mathematics as a challenging subject, significantly impacting their attitudes and academic experiences. Many learners reported difficulties in understanding mathematical concepts, highlighting the need for targeted support and

effective teaching strategies. Key challenges included frequent introductions of complex topics, inconsistencies between teaching methods and textbooks, and distracting behaviors from teachers, such as excessive joking. Learners' dislike for mathematics is rooted in its perceived difficulty, lengthy problem-solving processes, and a disconnect between effort and outcomes.

This negative view extended to other subjects, leading some learners to believe that all subjects were equally challenging. Concentration issues during mathematics lessons were also apparent, with learners citing distractions and uneven teacher attention as contributing factors. These findings underscore the urgent need for improved teaching strategies and enhanced teacher awareness to better support learners with dyscalculia (Butterworth et al., 2011; Roulstone et al., 2024).

Table 7: Teachers Interview Question and Response.

INTERVIEW QUESTIONS	LEARNER A RESPONSE	LEARNER B RESPONSE
What are your experiences with learning-disabled learners?	I've never worked with disabled learners; however, I understand that being disabled physically does not always mean that a learner has a learning disability.	They need more attention since they require different teaching methods. They do not adapt easily and tend to forget everything that they've been taught.
What is your perception of the concept of mathematical disability/dyscalculia?	Struggling to work with numbers is an exceptional case because in most situations you'll find learners who excel in all other subjects but struggle a lot with mathematics and making sense of how numbers operate. Most learners who have difficulties in mathematics cannot even understand a simple operation like addition.	I've never heard the term dyscalculia before; this is the first time I'm encountering it. I refer to learners that are struggling in mathematics as mathematically disabled learners. This difficulty in understanding math might be linked to their mental state, which could result from abuse or challenging experiences at home.
What assessments can be used for dyscalculic learners?	The assessments provided to learners are generally standard; there is no special activity tailored to a certain group of learners that we think might be having difficulties in math. However, we do offer intervention assessments after the diagnostic evaluation has been conducted.	You must apply Bloom's Taxonomy with more questions on the basics. Group Dyscalculic: to assess dyscalculic learners you must determine if the problem is with math or something else. Grouping dyscalculic learners with faster learners and assessing them through group discussions can also be helpful.
What teaching techniques can be implemented to assist learners with dyscalculia?	Techniques could only be implemented if teachers were aware of dyscalculia and understood the measures to take should they find themselves having a learner with that condition in a classroom.	Providing extra lessons, creating more opportunities for individualized attention for those learners, displaying more visual aids like charts around the classroom, and offering more examples and class activities.

The responses from the teachers highlighted a significant lack of awareness and understanding of dyscalculia, which affected their ability to recognize and support learners facing mathematical difficulties. Teacher A viewed learning disabilities as challenges in comprehension, particularly in reading and writing, while Teacher B perceived them as an inability to learn, influenced by teaching methods and students' mental states. Teacher A had no direct experience with learning-disabled students diagnosed with learning disabilities, whereas Teacher B acknowledged the need for more tailored teaching methods (Butterworth et al., 2011; Roulstone et al., 2024).

Both teachers reported gaps in their training regarding dyscalculia, with Teacher A noting it was not addressed in their academic preparation and Teacher B emphasizing a focus on inclusive education without specific training on dyscalculia. Discussions revealed differing views on causes, with Teacher A attributing difficulties to early number introduction and Teacher B citing stress and domestic violence as contributing factors (Rulyansah, 2023). The lack of specific diagnostic tools for assessing dyscalculic learners was evident, as both teachers relied on general assessments. Teacher A highlighted the importance of raising awareness before implementing targeted strategies, while Teacher B suggested interventions such as extra lessons and visual aids. Both admitted to using general teaching methods, which limited their ability to support learners with specific mathematical challenges.

Discussion

The findings of this study align with existing literature on dyscalculia, particularly concerning language processing, visual-spatial skills, and working memory. The challenges identified in language abilities underscore the necessity for enhanced language support within mathematics instruction, as difficulties in interpreting mathematical terminology can significantly hinder problem-solving (Butterworth, Varma, & Laurillard, 2011). Similarly, struggles with visual-spatial skills point to the need for teaching strategies

that incorporate visual aids and models, given that such difficulties are commonly associated with dyscalculia (Kaufmann et al., 2020). Cognitive challenges, especially those related to working memory, highlight the importance of early intervention, as deficits in this area can impede the retention and manipulation of numerical information (Butterworth et al., 2011). The widespread numeracy difficulties observed suggest a need to reinforce foundational arithmetic skills, as learners often exhibit poor number sense, a core characteristic of dyscalculia (Kaufmann et al., 2020). Furthermore, confusion with mathematical operational signs emphasizes the necessity for explicit instruction and regular practice in using these symbols, which is a common struggle for students with dyscalculia (Butterworth et al., 2011).

The distribution of proficiency levels revealed that 10.8% of learners possess high proficiency in numerical concepts, affirming an innate understanding of numerosity (Butterworth, 2008; Babu & Sasikumar, 2019). However, the moderate proficiency group (21.6%) and the below-proficiency group (8.1%) indicate the urgent need for interventions focused on enhancing language comprehension in mathematics. Dyscalculia often impairs the understanding of number facts and mathematical symbols (Kaufmann et al., 2020). Learners with limited (13.5%) or minimal proficiency (5.4%) are particularly at risk, necessitating focused support to address their struggles with mathematical language and problem-solving (Rosenberg-Lee et al., 2015; McGowan et al., 2023).

The observed challenges in numerical sequencing underscore the difficulties dyscalculic learners face in accurately processing sequences. High levels of anxiety during assessments may further impede performance; learners suspected of dyscalculia required significantly longer to complete tests compared to their peers, often taking 45 minutes versus the standard 30 minutes, reflecting issues with memory recall and lower self-esteem. Specific difficulties, such as number recognition, digit confusion, and mental arithmetic, correlate with variations in completion times and overall test performance (Hudson & English, 2016). Table 5 reinforces these observations, indicating that only 2.7% of dyscalculic learners achieved high proficiency, while 22.9% scored between 40–59, highlighting their challenges with mathematical operations.

The impact of dyscalculia on learners' overall academic performance and behavior in the classroom has been previously explored by Butterworth et al. (2011) and Roulstone et al. (2024). These studies suggest that dyscalculic learners typically demonstrate standard reading abilities, engage actively in various subjects, and display appropriate classroom behavior, provided there is no comorbidity with dyslexia or ADHD. However, challenges manifest particularly during mathematics lessons, resulting in heightened anxiety and discomfort. Rulyansah (2023) noted that dyscalculic learners often rely on finger counting for calculations instead of retrieving basic mathematical facts. Qualitative insights from focus group interviews revealed consistent themes of frustration and the perceived difficulty of mathematics. Learners expressed a need for additional practice and assistance, particularly as new concepts were continuously introduced. While these qualitative aspects enrich our understanding of learners' experiences, the small sample size limits the generalizability of the results.

Teacher insights into dyscalculia revealed a concerning lack of awareness and specific knowledge about the condition, emphasizing the critical gap in teacher training and the need for professional development programs aimed at enhancing teachers' awareness and competence in addressing dyscalculia. In the context of the study, the findings highlight a significant gap in teachers' understanding of dyscalculia, which impedes the effective identification and support of learners with mathematical difficulties (Butterworth et al., 2011; Roulstone et al., 2024). The differing perceptions of learning disabilities among teachers reveal the need for comprehensive training that clearly defines dyscalculia. Additionally, the absence of specific diagnostic tools and tailored teaching strategies restricts the educational opportunities available to dyscalculic learners. Therefore, addressing these gaps through targeted professional development and awareness programs is essential for fostering an inclusive learning environment that meets the diverse needs of all students, particularly those with dyscalculia.

Conclusion

This study sheds light on the significant prevalence of dyscalculia among Grade 10 learners in Soshanguve schools. The findings highlight that difficulties in language processing, visual-spatial skills, cognitive function, and numeracy significantly impede learners' mathematical abilities, underscoring the pressing need for targeted interventions and tailored instructional strategies. A key takeaway is the limited proficiency observed among a considerable portion of learners, particularly in language comprehension and numerical sequencing, which points to an urgent requirement for enhanced language support in mathematics instruction. The alarming rates of below-average performance across various domains reflect the necessity for educators to prioritize foundational skills and adopt explicit teaching methods that cater to the unique learning needs of students with dyscalculia.

Moreover, the qualitative insights from learner interviews indicate a pervasive perception of mathematics as a challenging subject, compounded by inconsistent teaching methodologies and insufficient teacher awareness of dyscalculia. This lack of understanding among educators not only hampers their ability to identify dyscalculic learners but also obstructs the implementation of effective instructional strategies tailored to these students' needs. The study further emphasizes the importance of comprehensive teacher training programs that focus on dyscalculia, alongside the development of specific diagnostic tools to identify and support learners facing mathematical difficulties. Implementing targeted professional development initiatives will empower teachers to recognize and address the signs of dyscalculia effectively, thereby fostering a more inclusive learning environment.

Thus, addressing the educational gaps identified in this study is crucial for improving the academic experiences of learners with dyscalculia. By enhancing teacher awareness, developing tailored instructional strategies, and providing adequate support, educators can empower all learners, ensuring they have the skills necessary to achieve their full potential in mathematics and beyond. The journey toward inclusive education for

students with dyscalculia is imperative, and the findings of this study serve as a foundational step toward fostering a more equitable and supportive educational landscape.

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Sex education and adolescent sexual behavior. Analysis of historical and contemporary data

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Abstract

Research objectives and problems: The article focuses on the issue of students' sexual activity. The aim is to describe the initiation of sexual intercourse by adolescents (people aged 19 and under). Two main research problems are posed: What changes in the issue of adolescent sexual initiation can be observed by comparing the results of survey data from the early 20th century with the results of surveys from the early 21st century? Do survey data on adolescent sexual initiation correlate with statistics from the Central Statistical Office on the number of teenage pregnancies?

Research methods: The study is based on a comparative analysis of a wide range of scientific publications, reports and statistical data on adolescent sexual behavior over the years. Survey data from the late 19th century to the present are analyzed, which makes it possible to track long-term trends and identify significant changes in youth behavior.

Structure of the article:

1. Introduction
2. Evolving Perceptions of Youth Sexuality

3. Review of the Results of Survey Research on Adolescent Sexual Initiation (1898–2019)
4. Age of sexual initiation
5. From initiation to parenthood—teenage pregnancy statistics in light of CSO statistics
6. Test results

Research findings and their impact on the development of educational sciences: The results of the study show that since the beginning of the 20th century, there have been significant changes in the sexual initiation of adolescents. The age of sexual initiation for boys at the beginning of the 20th century was higher than at its end, and since the 1970s there has been a steady increase in the number of girls engaging in sexual intercourse before the age of majority. Despite the increase in sexual activity, the number of teenage pregnancies has been steadily decreasing since 2004, suggesting the positive impact of sexual education, greater awareness and responsibility regarding the consequences of sexual intercourse. The findings also indicate that socio-behavioral changes have a substantial impact on adolescent behavior, which should be taken into account when creating educational and health policies.

Conclusions and/or recommendations: Further research is needed to more fully understand the impact of these changes and to develop effective strategies to protect young people from early motherhood and its health and social consequences.

Keywords: adolescent sexual behavior, sexual initiation, sex education, adolescent parenting

Introduction

The topic of sexual education first appeared in Polish pedagogical literature at the turn of the 19th and 20th centuries (Babik, 2010). Adolescents' awakening sexuality often manifested in behaviors that perplexed teachers, raising questions about how they should respond and how best to educate young people on issues related to sexuality. A compelling

account of this issue is presented by L. J. Bukowski in his book *Figle i psoty młodzieży szkolnej* [Pranks and Mischief of School Youth] (Bukowski, 1933), in which he examines various mischievous behaviors among students, including those related to their budding sexuality.

Bukowski's work, though a product of its time, brings to light several noteworthy aspects of sexual activity among youth in schools. Firstly, he identifies diverse expressions of adolescent sexuality, ranging from discussions about sexuality to bringing pornographic materials to school and even writing erotic poetry. Secondly, Bukowski critiques the often inadequate responses of teachers, especially when they were called upon to intervene or address these topics openly (Bukowski, 1933). Lastly, he notes what he termed a "pedagogical misunderstanding," where students faced disciplinary action for their sexual behaviors without being informed about the expectations or rules governing such matters.

Over the 90 years since Bukowski's observations, dramatic changes have reshaped the landscape of sexual education in Poland. One notable shift occurred in the 1980s, with the introduction of sexuality-related content into school curricula as part of the *Preparation for Family Life* course (Izdebski, 2012). Building on this progress, the *Act on Family Planning and Protection of the Human Fetus* in the early 1990s mandated the inclusion of education about human sexuality in school curricula (Izdebski, 2012). This marked a significant departure from the interwar period, during which Polish students lacked any formal sexual education within schools.

This evolution underscores the growing need for equipping educators with the knowledge and skills to navigate the complexities of sexual education, ensuring that schools provide an environment conducive to informed and healthy discussions about sexuality. These developments stress the urgent need for teachers who are well-prepared to navigate the complexities of sexual education. By equipping educators with the tools to engage students in meaningful discussions about sexuality, schools can foster an environment where adolescents feel supported in understanding their own development while making informed and responsible choices. This evolution reflects the broader societal shift toward a more open and comprehensive approach to sexual education.

Adolescent sexual initiation and its associated consequences have long been topics of keen interest in both academic research and public discourse. Understanding the age at which adolescents first engage in sexual activity, as well as the factors influencing these decisions, is key for designing effective educational and health programs. A comprehensive analysis of survey findings and statistical data can contribute worthwhile knowledge on historical trends and provide a clearer picture of the obstacles that parents and educators face today when designing and conducting sexual education for children and teenagers.

This article explores the patterns of sexual initiation among teenagers (individuals aged 19 and under), addressing two central questions. First, what changes in adolescent sexual behaviors can be observed when comparing survey data from the early 20th century with findings from the early 21st century? Second, do survey data on teenage sexual initiation correlate with statistical trends from Poland's Central Statistical Office regarding pregnancies and births among adolescents? Specifically, does an increase or decrease in teenage sexual activity correspond to a rise or fall in pregnancies and births within this demographic?

The material for this article comes from a diverse range of sources, including academic studies, reports, and statistical datasets that shed light on sexual behaviors among adolescents across different historical periods. These sources provide a foundation for a comparative analysis, allowing for drawing conclusions about long-term trends and changes in this field. Particular attention is given to studies spanning from the late 19th century to the present day, which enables a comprehensive overview of long-term trends and shifts in adolescent sexual behaviors. By juxtaposing data from different periods, this article describes the changing age of sexual initiation and its implications, particularly concerning teenage pregnancies and births, as reflected in statistical data from Poland's Central Statistical Office. This comparative analysis is contextualized by a brief discussion of the social, cultural, and educational factors that have shaped adolescent sexual expression over time.

It is important to note that the sources used in this study, as listed in the bibliography, do not encompass all available research on teenage

sexual behavior (for a more exhaustive review, see Izdebski, 2010, pp. 114–146). Instead, the analysis focuses on selected studies that include large, representative groups of respondents. Methodological differences between studies have been intentionally excluded from this discussion, with the emphasis placed solely on the data presented in the reports.

Evolving Perceptions of Youth Sexuality

The advancement of sexological sciences, beginning in the 19th century and progressing through the 20th century, catalyzed a significant shift in how human sexuality was understood. Society moved away from a simplistic model grounded in cultural and religious norms, which stigmatized all expressions of sexuality in children and adolescents as deviant. Instead, a developmental perspective emerged, which acknowledged sexual activity in children and adolescents within specific, defined boundaries (Beisert, 2006, pp. 1–15).

This developmental approach established biological factors—along with their progression throughout a person’s life—and interpersonal relationships as critical benchmarks for determining norms of sexual expression. From this standpoint, both inappropriate sexual behaviors and an absence of sexual expression in adolescents could signify developmental disorders. In the context of schooling, this perspective suggests that instead of expecting complete abstinence from sexual behaviors, the focus should be on guiding such behaviors within normative boundaries. This necessitates a nuanced approach from educators, who must adopt an informed approach to accurately identify and interpret student behaviors. Only actions that fall outside normative limits should prompt corrective interventions by teachers. Furthermore, educators must acknowledge that students acquire knowledge about sexuality incrementally, learning associated norms over time—a process during which they may occasionally test boundaries. The competence and knowledge of teachers play a pivotal role in handling and redirecting such behaviors.

The 20th century also brought advancements in understanding the legal aspects of human sexuality, which are reflected in changes to criminal legislation on sexual offenses. An analysis of Polish criminal codes from the 1930s to the present illustrates this evolving perspective. The Criminal Code of 1932 contextualized sexuality within the framework of social customs, using the term *nierzqd* (fornication). Legal commentaries defined *nierzqd* as actions aimed at satisfying sexual desires in ways inconsistent with societal norms of moral purity, specifically outside marital relationships (*matrimonium est remedium concupiscentiae*) (Makarewicz, 1932, p. 298). This definition signals the law's primary concern with reserving sexual activity for marriage, a standard deeply rooted in religious conceptions of sexuality. The reference to the Latin maxim, *matrimonium est remedium concupiscentiae*, or "marriage is the remedy for concupiscence," reflects a view of sexuality as something requiring regulation, or a "cure," with marriage serving as the prescribed remedy. This perspective traces back to medieval theological principles originating in the works of Peter Lombard (1100–1164) (Ozorowski, 2002, p. 88).

The 1932 Criminal Code remained in effect until 1970, when it was replaced by the 1969 Code. Although the latter retained the term *nierzqd*, it expanded the legal framework by distinguishing between "crimes against morality" (Chapter XXIII) and "crimes against liberty" (Chapter XXII). Chapter XXIII addressed offenses such as the dissemination of pornography, pimping, incest, and corrupting minors, while Chapter XXII covered crimes against sexual freedom, including rape and acts of fornication. This distinction demonstrated a more nuanced understanding of morality and sexual freedom as separate but equally protected values under the law.

The current Criminal Code, introduced in 1997, merges the protection of sexual freedom and morality into a single chapter—Chapter XXV, titled "Crimes Against Sexual Freedom and Morality." The rationale for this consolidation, as explained in the code's accompanying memorandum, is that these two spheres are often simultaneously violated. Notably, the term *nierzqd* was replaced with "sexual intercourse," signaling a move toward modernized and more neutral terminology and reflecting contemporary societal attitudes.

Today, the term *nierzqd* is confined to the Misdemeanor Code, appearing in Chapter XVI, titled “Offenses Against Public Morals,” Article 142. It is noteworthy that while the current Criminal Code continues to uphold morality as a legally protected value, it also places pronounced emphasis on safeguarding sexual freedom, defined as an individual’s inherent right to make autonomous decisions regarding their sexual activity. The coexistence of moral and sexual liberty within the Code reflects an acknowledgment of the fluid nature of morality, which adapts and evolves in response to cultural and societal shifts, as well as broader changes in perspectives on human sexuality.

In summary, the shift from viewing sexuality solely in the context of marriage to recognizing sexual freedom as a right of every person has had an impact on changing social norms, which should consequently be reflected in the sexual behavior of young people. The abandonment of terms such as *nierzqd* (fornication) and the introduction of neutral terms such as “sexual intercourse” have helped reduce the stigma associated with sexual activity, which is no longer treated as some kind of “crime” or “offense.” Today, the law emphasizes the protection of sexual freedom and the prevention of violence in this sphere. It should be noted that the law evolves with cultural and social changes, so changes in the law regarding sexuality are both a result of and a catalyst for changes in mores, which largely shape the values and norms of adolescent sexual behavior.

Review of the Results of Survey Research on Adolescent Sexual Initiation (1898–2019)

The subject of adolescent sexual initiation is a prominent topic in scientific literature and is frequently covered in the media. This issue is analyzed from various perspectives, including statistical analysis as well as psychological and biological frameworks. Numerous publications, especially those in mass media outlets, suggest that the age of first sexual contact among adolescents is steadily decreasing. However, such claims require scientific corroboration, which can be achieved by comparing

research findings across different historical periods. In Polish literature, such an analysis spans more than a century, beginning with studies conducted in 1898 and continuing to the present day.

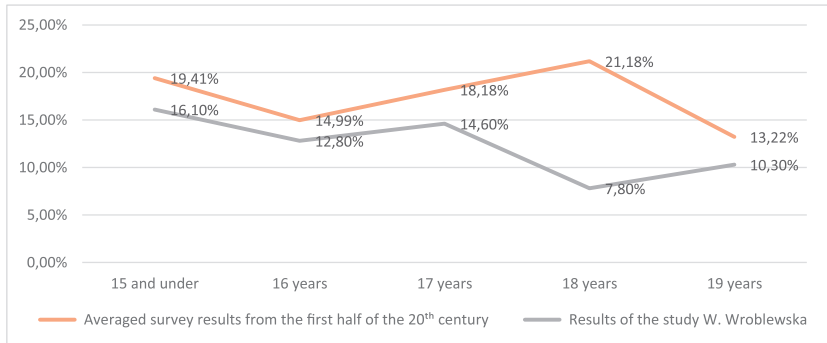
The earliest research on the sexual behavior of student adolescents at Warsaw University was conducted by Zdzisław J. Kowalski during the academic year 1897/98 (1898). Around the turn of the 20th century, growing interest in sexual education spurred further investigations into sexual activity, with studies carried out in 1903–1904 (Łazowski & Siwicki, 1906; Moszczeńska, 1904). These early datasets provide a valuable benchmark for contemporary research and facilitate a more in-depth understanding of the evolution of adolescent sexual behavior over time.

Age of Sexual Initiation

Survey studies conducted during the early 20th century included only male students. Consequently, these findings present an incomplete picture, as they do not account for sexual initiation among girls or among non-student male youth. Therefore, the results from this period can only be compared with contemporary data relating to men. These findings allow for the determination of the percentage of boys who experienced sexual initiation within specific age groups, starting from 15 years old and younger.

To obtain more representative data, survey results from the early 20th century along with subsequent studies conducted in the 1930s were averaged and then compared with findings from the late 20th century. This comparison yields surprising results: in all age groups, a higher percentage of boys reported undergoing sexual initiation at the beginning of the 20th century than at its end (Figure 1).

Figure 1. Summary of Survey Results on the Age of Sexual Initiation for Boys
Percentage of boys reporting first sexual intercourse in different age groups,
based on averaged data from 1898–1938 and the 1996 survey results.



Note: The averaged data was calculated based on Kowalski, Z. J. (1898). *Stan zdrowia i warunki higieniczne studentów Uniwersytetu Warszawskiego w świetle cyfr* [The Health Status and Hygienic Conditions of Students at the University of Warsaw in the Light of Statistics] (p. 27); Łazowski, T. J., & Siwicki, K. (1905–1906). *Życie płciowe warszawskiej młodzieży akademickiej według ankiety z roku 1903* [The Sexual Life of Warsaw Academic Youth According to the 1903 Survey]. *Czystość* [Purity], 1905, 139–143; 1906, 172–175; 181–187; 205–207; 214–218; 234–236; 258–268; 282–288; 294–303; Moszczerńska, I. (1904). *Czego nie wiemy o naszych synach. Fakta i cyfry dla użytku rodziców* [What We Do Not Know About Our Sons: Facts and Figures for Parents]. Księgarnia Naukowa; Welfle, T. (1938). *Życie płciowe młodzieży akademickiej* [The Sexual Life of Academic Youth]. *Zagadnienia Rasy*, (2), 101–125; Wroblewska, W. (1998). *Nastoletni Polacy wobec seksualności* [Teenage Poles and Sexuality]. Instytut Spraw Publicznych.

Figure 1 illustrates the percentage of boys who underwent sexual initiation at specific ages, comparing two sets of data: the averaged results from studies conducted during the first half of the 20th century and the findings of a 1996 study by Wroblewska (1998). Similar trends for ages 15 and 17 were also observed in the study by Woynarowska, Szymańska, and Mazur (1999, pp. 41–42).

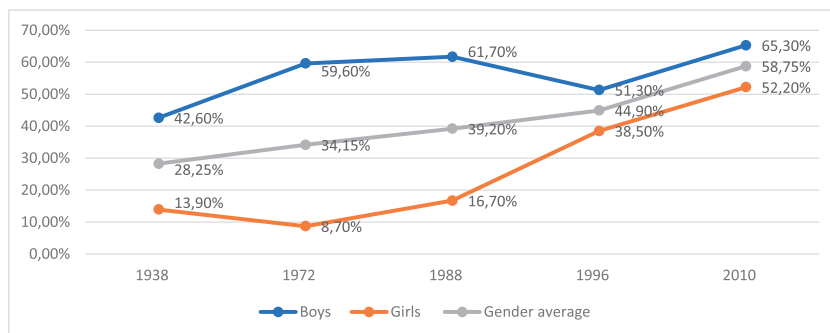
For boys aged 15 and younger, the averaged results show 19.41%, whereas Wroblewska's study reports 16.10%. Among 16-year-olds, the averaged results indicate 14.99%, compared to 12.80% in Wroblewska's findings. For 17-year-olds, the averaged data show 18.18%, while Wroblewska's research reports 14.60%. The largest disparity appears in the age group of 18, where the averaged results report 21.18%, but Wroblewska's findings shows only 7.80%. At age 19, the averaged results are reported at 13.22%, compared to 10.30% in Wroblewska's research.

When comparing trends, Wroblewska's 1996 study consistently reports lower percentages across all age groups compared to the averaged results from the early 20th century. The most significant difference is observed among 18-year-olds, where Wroblewska's findings are markedly lower. Both data sets reveal a general decrease in the percentage of boys undergoing sexual initiation as age increases, with one exception: the averaged results show a notable increase at age 18 compared to age 17. These findings suggest that, by 1996, boys were initiating sexual activity at slightly older ages than in the first half of the 20th century. Interestingly, this trend runs counter to what might be expected given the substantial social and cultural transformations of the 20th century, which could suggest earlier initiation.

As previously noted, studies conducted at the turn of the 20th century did not include girls. The first survey questionnaires targeting female students were carried out in a study published in 1938 (Wefele, 1938). However, with only 72 responses from girls compared to 2,153 from boys, the sample size for females was insufficient for drawing broad conclusions. Extensive research on girls' sexual initiation only began in the 1970s. These studies reveal a gradual increase in the percentage of girls initiating sexual intercourse before reaching the age of majority (18). In 1972, this figure was 8.7%; by 1988, it had risen to 16.7%. By 1996, the percentage had increased significantly to 38.5%, and by 2010, it reached 52.2% (Figure 2).

Figure 2 illustrates the percentage of boys and girls who had their first sexual intercourse at age 18 or younger, broken down by the year of study. These trends highlight a noticeable shift in the timing of sexual initiation, especially among girls, reflecting broader social and cultural changes over recent decades.

Figure 2. Percentage of boys and girls who had their first sexual intercourse at age 18 or younger by year of study



Note: Data for calculations in individual years come from: For the year 1934: Welfle, T. (1938). *Życie płciowe młodzieży akademickiej* [The Sexual Life of Academic Youth]. *Zagadnienia Rasy*, 2, 101–125; For the year 1972: Jaczewski, A., & Radomski, J. (1980). *Raport z badań nad seksualizmem dzieci i młodzieży w Polsce* [Report on Research into the Sexuality of Children and Adolescents in Poland]. In: M. Kozakiewicz (Ed.), *Młodzież wobec seksu, małżeństwa i rodziny* [Youth and Attitudes Toward Sex, Marriage, and Family] (pp. 34–40). Instytut Wydawniczy Związków Zawodowych; For the year 1988: Izdebski, Z. (1992). *Seksualizm dzieci i młodzieży w Polsce. Raport z badań* [The Sexuality of Children and Adolescents in Poland: Research Report]. Wydawnictwo WSP; For the year 1996: Wróblewska, W. (1998). *Nastoletni Polacy wobec seksualności* [Teenage Poles and Sexuality]. Instytut Spraw Publicznych. Similar results up to 1996: Woynarowska, B., Szymańska, M., & Mazur, J. (1999). *Zdrowie młodzieży w Polsce. Wiedza i przekonania o HIV/AIDS. Zachowania seksualne. Raport z badań wykonanych w 1998 roku* [The Health of Youth in Poland: Knowledge and Beliefs About HIV/AIDS, Sexual Behaviors. Research Report Conducted in 1998]. Instytut Matki i Dziecka; For the year 2010: Mazur, J., & Małkowska-Szcutnik, A. (Eds.). (2011). *Wyniki badań HBSC 2010. Raport techniczny* [Results of the HBSC 2010 Study: Technical Report] (p. 149). Instytut Matki i Dziecka.

The rise in the number of girls engaging in sexual initiation before the age of eighteen, observed during the second half of the twentieth century, allows for a more detailed understanding of the growing percentage of adolescents participating in sexual activity. This trend is illustrated in Figure 2 as an arithmetic average for both sexes. When recalculating the data for boys and girls, the following results emerge: in 1934, 28.25% of all youth initiated sexual activity before reaching the age of majority; in 1972, 34.15%; in 1988, 39.20%; in 1996, 44.90%; and in 2010, 58.75%.

The data clearly indicate that, starting in 1938, there has been a steady increase in the proportion of young people in Poland initiating sexual contact before the age of eighteen. However, this rise appears to be driven less by changes in boys' sexual behavior and more by an increase in the frequency of sexual initiation among girls. This trend may suggest that

the socio-behavioral transformations of recent decades have had a greater impact on the sexual behavior of women than men.

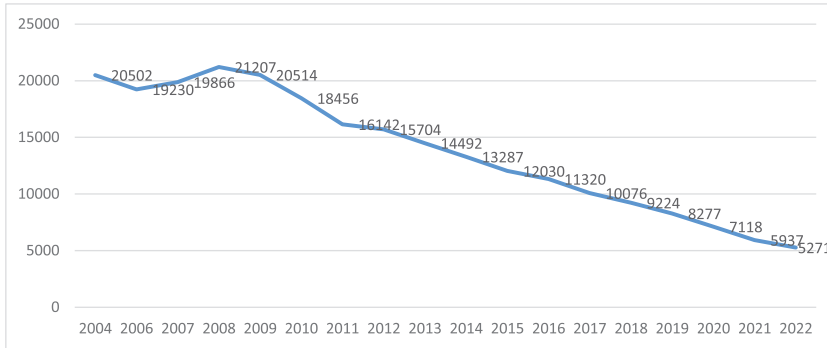
From Initiation to Parenthood: Teenage Pregnancy Statistics in Light of CSO Data

The survey results on the onset of sexual activity among teenagers discussed earlier provide valuable insights. To gain a more comprehensive understanding of this phenomenon, these findings were compared with statistical data from the Central Statistical Office (CSO) on teenage births. Research conducted throughout the 20th century indicates that since the 1970s, the number of girls initiating sexual activity during adolescence has steadily increased. Consequently, CSO birth statistics for this age group were analyzed starting from 2004. It seemed logical to hypothesize that the rise in teenage sexual activity would correlate with an increase in teenage parenthood.

The annual *Demographic Yearbooks* published by the CSO provide data on the number of births among teenage girls. For the period under review (2004 to 2022, encompassing the time from birth to adulthood for the youngest adolescent cohort), a trend contrary to the survey results emerges. While the percentage of teenagers engaging in sexual activity has risen, the number of teenage girls giving birth has progressively declined.

From 2004 to 2008, the number of births remained relatively stable, ranging from 19,230 (in 2006) to 21,207 (in 2008). A significant decline in teenage births began in 2010 and continued through 2014. Comparing 2008, the year with the highest number of teenage births, to 2014 reveals a decrease of 7,920 births, equivalent to a 37.35% reduction. Detailed figures illustrating this trend are presented in Figure 3.

Figure 3. Number of Births Among Women Aged 19 and Under from 2004 to 2022

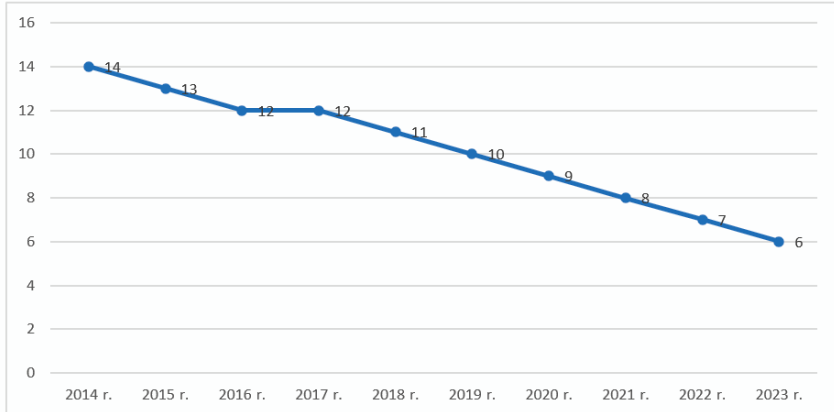


Source: Demographic Yearbooks 2004–2023

This trend continued through 2022. In 2014, the CSO recorded 13,287 births among women aged 19 and under, while in 2022, this number dropped to 5,271. This represents a significant decrease of 60.33% compared to 2014 and an even steeper 71.14% decline compared to 2008.

Analyzing the data on the number of births per 1,000 women aged 19 and under also demonstrates a consistent downward trend over the 2014–2023 period. In 2014, the rate stood at 14 births per 1,000 women, but by 2023, it had fallen to 6 births per 1,000 women. Between 2015 and 2016, the figure declined from 13 to 12 births per 1,000 women, and since 2017, a further gradual decrease has been observed. In 2018, the count dropped to 11 births per 1,000 women, followed by 10 in 2019, 9 in 2020, 8 in 2021, and 7 in 2022 (Figure 4).

Figure 4. Number of Births Among Women Aged 19 and Under Per 1,000 Women in This Age Group



Source: Demographic Yearbooks of Poland

The *Demographic Yearbooks* offer a detailed analysis of teenage births, providing not only the total number of births, but also data categorized by the age of teenage mothers. The age groups include mothers aged 15 and younger, as well as those aged 16, 17, 18, and 19. An analysis of these data indicates that the majority of births occur among girls aged 18 and 19, while the lowest numbers are recorded for mothers aged 15 and under.

A comprehensive review of the Central Statistical Office's *Demographic Yearbooks* shows that in 2004, teenage girls in these age groups gave birth to a total of 16,528 children. This figure remained relatively stable until 2009, when 15,667 births were recorded. However, since 2009, the number of births among 18- and 19-year-old mothers has dropped markedly, falling to 10,045 in 2014 and further declining to just 3,944 in 2022 (see Tables 1 and 2).

**Table 1. Number of Births Among Teenage Girls from 2004 to 2014
(excluding 2005)**

Mother's age	Year									
	2004	2006	2007	2008	2009	2010	2011	2012	2013	2014
15 years and under	287	302	316	407	401	350	311	342	286	305
16 years	1003	955	1121	1224	1307	1245	967	945	886	838
17 years	2 684	2824	3096	3365	3139	2883	2568	2469	2271	2099
18 years	6 147	5784	5882	6334	6268	5572	4875	4692	4278	3968
19 years	10381	9365	9451	9877	9399	8406	7421	7256	6771	6077
total	20 502	19 230	19 866	21 207	20 514	18 456	16 142	15 704	14 492	13 287

Source: Demographic Yearbooks of the Central Statistical Office.

Table 2. Number of Births by Age of the Mother from 2014 to 2022

Mother's age	Year							
	2014	2015	2016	2017	2019	2020	2021	2022
15 years and under	305	280	253	212	181	168	153	171
16 years	838	747	769	614	497	482	407	399
17 years	2099	1813	1696	1492	1204	1054	875	757
18 years	3968	3612	3265	2941	2380	1961	1649	1464
19 years	6077	5578	5337	4817	4015	3453	2853	2480
total	13 287	12 030	11 320	10 076	8277	7118	5937	5271

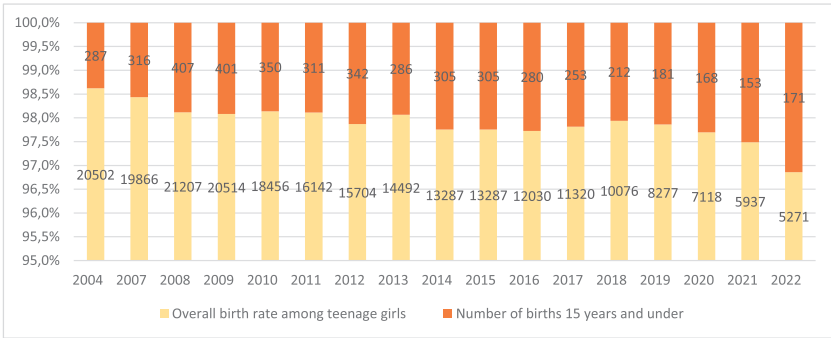
Source: Demographic Yearbooks of the Central Statistical Office.

Under Polish law, engaging in sexual intercourse with individuals under the age of 15 is strictly prohibited, which underscores the special legal protections afforded to this age group. Despite these legal safeguards, data from the Central Statistical Office (CSO) consistently report births among girls aged 15 and younger, signaling potential violations of these laws. For this reason, this article focuses particular attention on this vulnerable demographic.

This analysis is essential for assessing the effectiveness of current legislation and devising strategies to safeguard young people from premature

parenthood and its associated health and social consequences. Examining births within the 15-and-under age group demonstrates a persistent decline in the absolute number of girls giving birth in this category. However, the percentage share of this group within the total number of teenage births (up to 19 years old) shows statistically significant changes. Specifically, the percentage of births among the youngest mothers rose from 1.40% in 2004 to 3.24% in 2022 (Figure 5). This indicates that girls aged 15 and under account for a growing proportion of all teenage births.

Figure 5. Percentage of Births to Girls Aged 15 and Under in the Total Number of Teenage Births (2004–2022)



To gain deeper insight into this phenomenon, the study examined the relationship between the proportion of births among girls aged 15 and younger and the total number of births among teenage girls aged 16–19. This analysis utilized a ratio index and Pearson’s correlation coefficient, which measures both the strength and direction of a linear relationship between two variables. The ratio of births among mothers aged 15 and under compared to mothers aged 16–19 reveals an upward trend. Pearson’s correlation coefficient for this period is approximately 0.87, which indicates a very strong positive correlation between the year and the birth ratio among girls aged 15 and younger. This suggests that over time the proportion of births among the youngest mothers has consistently increased. Furthermore, a p-value of approximately 6.82×10^{-6} confirms the statistical significance of this correlation, indicating that the changes in the proportion rate are not random, but rather exhibit a strong and consistent

relationship between the year and the proportion of births among girls aged 15 and younger compared to those aged 16–19.

Building on these findings, further analysis explored the number of fathers involved in teenage births in Poland from 2007 to 2022. This examination included the number of fathers aged 19 and younger, the subset of these fathers whose partners were also aged 19 or younger, and the total number of births to women aged 19 and younger. Additionally, the percentage of fathers aged 19 and younger relative to all births, as well as the percentage of fathers older than 19, was calculated (Table 3).

Table 3. Summary of the Age of Fathers and Teenage Births in Poland (2007–2022)

Year	Number of Fathers aged 19 and under	Number of fathers aged 19 and under with mothers aged 19 and under	Total number of births among women aged 19 and under	% of fathers (19 years and under) to births to women aged 19 and under	% of fathers 20 years and older in relation to births to women 19 years and younger
2007	2701	1689	19866	13.60%	91.50%
2008	3039	1952	21207	14.33%	90.79%
2009	2873	1889	20514	14.00%	90.79%
2010	2553	1710	18456	13.83%	90.73%
2011	2103	1407	16142	13.02%	91.28%
2012	2231	1529	15704	14.21%	90.27%
2013	1989	1365	14492	13.73%	90.58%
2014	1913	1288	13287	14.40%	90.30%
2015	1668	1130	12030	13.86%	90.61%
2016	1575	1061	11320	13.91%	90.63%
2017	1493	1000	10076	14.82%	90.07%
2018	1359	909	8277	16.42%	89.02%
2019	1248	846	7118	17.54%	88.11%
2020	1106	741	5937	18.63%	87.52%
2021	855	557	5271	16.22%	89.43%
2022	728	490	5271	13.81%	90.70%

Source: own calculations based on the CSO's Demographic Yearbooks. The percentages do not add up to 100%, since men aged 19 and under also became fathers of children born to women aged 20 and over.

The data in Table 3 highlights key trends and relationships regarding the ages of fathers and the number of teenage births in Poland between 2007 and 2022. The table provides information on the total number of fathers aged 19 and under, the subset of whose partners were in the same age group, and the total number of births to women in this age group. It also includes the percentage of fathers aged 19 and under in relation to all births in this group, as well as the percentage of fathers aged 20 and older.

The data unmistakably indicate a steady decline in the number of fathers aged 19 and under throughout the analyzed period. In 2007, this group accounted for 2,701 individuals, but by 2022, the number had dropped dramatically to 728. A similar downward trajectory is evident among fathers aged 19 and under whose partners were also teenagers, with numbers falling from 1,689 in 2007 to just 490 in 2022. The overall number of births to teenage mothers exhibits a parallel decline, as it decreased from 19,866 in 2007 to 5,271 in 2022. This consistent downward trend is observed year after year, spanning the period from 2008 to 2021, which reflects a broader reduction in births among teenage mothers.

This declining pattern is evident across the years analyzed (2008–2021). Despite the absolute numbers declining, the percentage share of fathers aged 19 and under relative to all births among teenage mothers has remained relatively stable, albeit with slight fluctuations from 13.02% in 2011 to a peak of 18.63% in 2020. Conversely, the percentage of fathers aged 20 and older in relation to births among women aged 19 and under was consistently high, ranging from 91.50% in 2007 to 87.52% in 2020, and then increasing again to 90.70% in 2022. These figures underscore that the majority of fathers of children born to teenage mothers are aged 20 or older.

The declining trend in the number of fathers aged 19 and under is further corroborated by an analysis of births to women aged 20 and older. Table 3 delineates the number of men who became fathers at 19 or younger, categorized by the age of the mother, for the years 2014 and 2022. During this period, the number of fathers younger than 19 with partners aged 20–24 plummeted from 564 in 2014 to 220 in 2022. Similarly,

the number of young fathers with partners aged 25–29 fell sharply from 45 to 13, while those with partners in the 30–34 age group declined from 11 to just 4. In the 35–39 age group, the number of young fathers decreased from 4 to 1, and in the 40–44 age group, it dropped from 1 to 0.

Table . Number of Men Aged 19 and Under Who Became Fathers by Mother's Age in 2014 and 2022

Mother's age	Year	
	2014	2022
19 years and under	1288	490
20–24	564	220
25–29	45	13
30–34	11	4
35–39	4	1
40–44	1	0

Source: 2015 and 2023 demographic yearbooks of the Central Statistical Office.

A comparison of data from 2014 and 2022 reveals a significant decline in the number of juvenile parents, both among men and women. The number of fathers aged 19 and under decreased across all age categories of female partners, demonstrating an overall downward trend. Particularly notable is the sharp decline in the number of fathers aged 19 and under with female partners in the same age group, as well as with those aged 20–24. This decline aligns with the general pattern of decreasing births among teenage girls and reductions in the number of young fathers aged 19 and under.

Conclusion

This article examines the issue of adolescent sexual initiation (individuals aged 19 and under), focusing on two questions: first, what changes in patterns of adolescent sexual behaviors can be observed

when comparing survey data from the early 20th century to the early 21st century; and second, whether survey findings on adolescent sexual initiation correspond with statistics from Poland's Central Statistical Office regarding pregnancies and births among teenagers.

Regarding the first question, a comparison of survey results from the early 20th century and the early 21st century uncovers significant shifts in the patterns of adolescent sexual initiation. Averaged data spanning 1898–1938 suggest that, at the start of the 20th century, a relatively higher proportion of boys engaged in sexual activity at a young age compared to the later years of that century. For girls, however, a consistent upward trend in early sexual initiation has been evident since the 1970s, with a growing number of young women engaging in sexual activity before reaching legal adulthood. This upward trend in early sexual activity among girls has contributed to an overall rise in the number of teenagers engaging in sexual activity during adolescence. These findings show that broader socio-behavioral changes over the decades have had a considerable impact on adolescent behavior, particularly among young women.

Turning to the second question, an analysis of statistical data from the CSO regarding births among teenage girls reveals a noteworthy paradox. Despite the rising percentage of adolescents reporting early sexual initiation, the number of births in this demographic has been steadily declining since 2004. Between 2010 and 2022, teenage birth rates dropped to historically low levels, which stands in stark contrast with the observed increase in sexual activity. A similar downward trend has also been noted among teenage fathers. This phenomenon may be attributed to improved sexual education, better access to contraceptives, and shifting societal norms.

Particularly striking are the figures concerning the youngest cohort of girls, aged 15 and under. Although the absolute number of births within this demographic has continued to decrease, the percentage of these births as a share of all teenage births has risen from 1.40% in 2004 to 3.24% in 2022. Additional research is needed to provide a comprehensive understanding of these trends and to assess their long-term social, educational, and health implications.

The findings indicate the salient importance of comprehensive sexual education in shaping adolescent sexual behaviors. Broader access to such education, along with content tailored to the needs of young people today, has undoubtedly contributed to the decline in teenage pregnancies. However, there is room for further improvement. Strengthening teachers' skills in conducting sex education classes and equipping teachers to support the healthy sexual development of children and adolescents could amplify the positive impact. With such measures in place, sex education can become a key tool in promoting health and preventing risky sexual behavior and its consequences.

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Conference Reports and Book Reviews



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Report on the “Congress on Rhetoric: Rhetoric—Education—Innovation,” Warsaw, April 17–19, 2024

For over twenty years, the Polish Rhetoric Society (Polskie Towarzystwo Retoryczne, PTR) has worked to promote the development and integration of individuals and institutions engaged in rhetorical research, education, and practice. Researchers and practitioners associated with the PTR disseminate rhetorical knowledge, shape practical skills, and seek institutional solutions to advance this interdisciplinary field. Thanks to the efforts of the Polish Rhetoric Society, *Res Rhetorica* has emerged as a respected scientific forum and open-access journal, recognized in academic databases and included on the ministerial list. Therefore, the *Congress on Rhetoric: Rhetoric—Education—Innovation* was an excellent opportunity to celebrate over two decades of continuous work in popularizing rhetoric, gaining experience, and sharing knowledge.

The Congress sessions were held at the NYX Hotel in downtown Warsaw and at the University of Warsaw. Each day featured plenary sessions with keynote lectures, thematic section proceedings, and events promoting rhetoric and bringing together the community of rhetoric enthusiasts. The event began with an opening ceremony, followed by the first plenary lecture by Petra Aczél (Moholy-Nagy University of Arts

and Design, MOME—Budapest, Hungary) titled *Humanizing the Future—Rhetoric as a Key Skill for the Future*. In her talk, Aczél addressed the uncertainty and rapid changes in contemporary society. She introduced the concept of "future shock," describing the challenges that the future holds. Aczél pointed out that the right skills, particularly rhetorical ones, are key for enabling individuals not only to survive but also to thrive in these new conditions. Her insights underscored the fundamental role of communication in confronting future challenges and the importance of developing rhetorical skills as a key factor in preparing for an unpredictable world.

The thematic sections were organized around key rhetorical concepts: *inventio*, *dispositio*, and *elocutio*. Importantly, the Congress facilitated the exchange of international experiences, as it featured participants from Poland and abroad (Denmark, Hungary, USA). The first day's discussions were centered around a range of topics, including *Teaching Rhetoric: International Perspectives*, *Rhetoric and Visuality*, *Rhetoric: From Antiquity to the Present*, *Rhetoric across Dimensions*, *Rhetorical Case Studies*. On the same day, young researchers were offered two workshops: one on writing scientific papers with elements of rhetoric, led by the President of the Polish Rhetoric Society, Maria Załęska, and another on self-presentation in academic work, conducted by Anna M. Kielbiewska (University of Warsaw). Participants navigated the event through a meticulously prepared program and book of abstracts. It is worth noting that this form of academic communication not only served as an excellent guide during the event but also facilitated networking after the Congress.

The first day concluded with a plenary lecture by Prof. Dietmar Till (University of Tübingen, Germany) titled *Digital Rhetoric Training in the 21st Century: Presentation of Two Projects Implemented in Tübingen*. His talk centered on two key rhetorical initiatives in which the professor has been involved over the past few years: the *Virtual Rhetoric* project at the University of Tübingen and the Tübingen GmbH Rhetoric Academy, which he co-founded. The lecture discussed the role of technology in teaching rhetoric and illustrated the evolving technological context of rhetorical *actio*.

The second day began with a presentation of findings from the report *Rhetoric in Poland: An Overview of Didactics and Rhetorical Research*,

led by Prof. Agnieszka Budzyńska-Daca (University of Warsaw). This report provided an in-depth examination of rhetoric research and education across 20 universities, offering valuable insights into the state of rhetorical studies in Polish academia. The conclusions highlighted the diversity and scope of rhetorical research, serving as a key reference for further discussions on the development and future of the discipline in Poland. The plenary session featured a lecture by Prof. Lisa S. Villadsen titled *Citizenship as Rhetorical Practice*. In her talk, Prof. Villadsen argued for the centrality of the concept of citizenship in rhetorical education, and presented the concept of rhetorical citizenship as key to understanding public engagement. She described rhetorical citizenship as a discursive way of "creating" society and emphasized that placing rhetoric at the heart of civic dynamics allows us to analyze how public discourse shapes civic norms and how members of society both realize and challenge ideas of democratic citizenship. The professor also stressed the importance of critical thinking—sharpened through rhetorical studies—particularly in the current age of disinformation.

The following topics were addressed in the thematic sections: *Rhetoric and Concepts of Language*, *PANEL Ret-Net: Rhetoric and Didactics—Between Mother Tongue and Foreign Languages*, *Didactic Dimensions of Rhetoric*, *Interdisciplinary Dimensions of Rhetoric*, and *Teaching Rhetoric Through Debate*. In the *elocutio* section, titled *Rhetoric as Equipment for Life in Society*, an Oxford-style debate was showcased. The debate's thesis was: "The proliferation of tools based on generative artificial intelligence, such as ChatGPT, is doing more harm than good to students." This event demonstrated the potential of using the Oxford debate format in educational settings, and emphasized the importance of building an educational future that promotes an informed and critical approach not only to new technologies. The Oxford debate, as a teaching tool, helps students develop rhetorical, critical thinking, and argumentation skills.

In organizing the debate, members of the Polish Rhetoric Society (PTR) collaborated with the Educational Projects Foundation and the Krakow Speakers Association. The session was conducted in a hybrid format, and teachers were invited to participate in the discussion. The judges—Paweł

Gondek (KUL), Jakub Pstrąg (UJ), Marcin Będkowski (UW), Jan Piosik (FPE), Anna Kulma (KSM), Anna Stelmach (KSM), Karolina Kolbuszewska (FPE), and Kinga J. Rogowska (FPE/UW)—faced the formidable task of selecting the winning side, as both teams excelled in their roles and presented compelling arguments. Ultimately, the opposition team emerged victorious, though the real success lay with the audience, which gained valuable knowledge from the debaters. The afternoon panel session, held at the University of Warsaw, featured a presentation of the results of the *RHEFINE* project, which was conducted under the Erasmus+ program from 2020 to 2022. The project aimed to integrate rhetoric with modern teaching methods to meet contemporary educational needs. It was a joint venture between the Applied Rhetoric Laboratory at the University of Warsaw, the Department of Theoretical and Applied Phonetics at the University of Zagreb, and the Institute of Rhetoric and Communication in Sofia.

The project has developed digital teaching materials and curricula that integrate the theoretical foundations of rhetoric with practical application. Academic textbooks have also been produced, covering topics such as rhetorical criticism and the didactics of rhetoric, providing valuable resources for students, researchers, and educators alike. The outcomes of the *RHEFINE* project push the boundaries of rhetorical studies and open new avenues for future research and educational initiatives in the field. As part of the panel, two researchers affiliated with the project delivered presentations: Elenmari Pletikos Olof (University of Zagreb) spoke on *Overview of Rhetorical Research in Croatia*, and Diana Tomić (University of Zagreb) presented *Rhetorical Education in the 21st Century: Bridging the Gap*. The presentation of the book *Debate: Rhetoric for Democracy* (PWN 2024) summarized the practical aspects of the congress, pointing out specific applications of rhetorical research in the context of debates and democratic dialogue. This monograph is a valuable contribution to the practical application of rhetorical studies.

The ceremonial highlight of the second day was the announcement of the results from the Fifth Contest of the Polish Rhetoric Society for the Best Thesis Incorporating Rhetoric. The winner was Julia Drużkowska from the Faculty of Neophilology at the University of Warsaw, recognized for

her master's thesis, *Persuadere All'uguaglianza Di Genere. Un Paragone Delle Campagne Promozionali Delle Università Italiane E Francesi* [Persuading Gender Equality. A Comparative Study of Promotional Campaigns in Italian and French Universities], supervised by Maria Załęska. In the undergraduate thesis category, Anita Londzin from the Faculty of Humanities at the University of Silesia received an honorable mention for her work titled *Complaint of a Wronged Husband: A Critical Edition of a 17th-Century Sejmik Speech*, written under the supervision of Maria Barłowska.

The final day began with deliberations in sessions titled *Concepts of Teaching Rhetoric in an Academic Context*, *Rhetoric*, *Critical Thinking*, *Argumentation*, *Rhetoric and Didactics: Teaching the Mother Tongue*. The plenary lecture, *Rhetoric. Education. Innovation. Discussion Remarks*, was delivered by Professor Jakub Z. Lichański, co-organizer and first president of the Polish Rhetoric Society. In his talk, the esteemed scholar of rhetoric in Poland discussed literature on rhetoric, rhetorical criticism, and education, noting their application within academic institutions. Concluding his remarks, Professor Lichański asserted that introducing rhetoric as a theory of text and argumentation into education is both inevitable and necessary—a conclusion that emerged clearly from the three-day discussions at the Congress. The final event of the Congress was a roundtable discussion, moderated by Agnieszka Budzyńska-Daca (University of Warsaw), which focused on innovations in rhetoric education, rhetorical competence in various academic contexts, the development of rhetoric as a discipline, and its societal perception. Experts Paweł Gondek (Catholic University of Lublin), Jakub Pstrąg (Jagiellonian University), Magdalena Ryszka-Kurczab (KEN University), and Bartosz Hordecki (Adam Mickiewicz University) shared their insights and reflections, with Hordecki's poetic conclusion providing a fitting rhetorical close to this excellent scientific event.

The three-day Congress on Rhetoric was replete with significant academic and public outreach activities. The formation of citizenship is inseparable from effective and ethical communication. While the methods and channels of communication have changed over the centuries, the principles of building understanding and community have remained constant.

Rhetoric equips us with the tools for developing critical thinking, distinguishing fact from opinion, assessing the quality of argumentation, and recognizing the boundaries between persuasion and manipulation. The opportunity to engage in scholarly discussions on rhetoric, exchange academic and teaching experiences, and inspire rhetorical action were invaluable outcomes of this first comprehensive gathering of rhetoric scholars and enthusiasts. Designed to catalyze significant change in everyday communication, media development, and civic engagement in Poland and beyond, the inaugural Congress on Rhetoric appears to have successfully fulfilled these objectives.

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