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Stress and Success Among Teachers

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Stress and Success Among Teachers

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Editorial

It is my great joy to present the most recent issue of the *Multidisciplinary Journal of School Education*, which focuses on the topic of stress and success among teachers. The scientific texts gathered here discuss important scientific and research problems revolving around professional burnout and stress among teachers, as well as potential antidotes, namely job satisfaction, professional development, success and passion.

Recent diagnoses in the above-mentioned areas have enabled the identification of both determinants of teacher professional success and factors leading to stress, burnout and drop-out from the teaching profession. The studies presented in this issue show that the causes of stress and burnout among teachers still include excessive workload (too many responsibilities), workplace relationships, recognition and financial gratification, motivation, and the ability to see value in the teaching profession (meaningful work). However, increasingly, the antidote is an individual sense of purpose found in relations with students, in supporting their development or achievements. There is also a noticeable trend in experiencing satisfaction, joy and fulfillment, facilitated by personal development, discovering professional and life passions, and receiving individual words of acknowledgement from students/their parents, which reinforce teachers' self-esteem and sense of purpose.

To illustrate this trend, the articles in this issue are presented in reverse order of the categories mentioned in the title. Sources of teacher satisfaction are discussed first, followed by texts on the determinants of stress and burnout. In addition to

their scientific value, the articles also identify clues and show some valuable directions for action for both professional and prospective teachers. Conclusions from the research presented in the articles may also inspire new directions for scientific exploration.

Our hope is that the content published in this issue will become a reliable and valuable source of knowledge and encourage future research projects. We also hope that texts in the Miscellaneous Articles section will raise awareness of new phenomena and problem areas in modern education and highlight some new directions critical to teacher education.

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Thematic Articles



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Future-proofing teaching: Balancing technology, relationships, and professional growth in Polish teachers' post-pandemic practices

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Abstract

Research objectives (aims) and problem(s): This article investigates how Polish teachers experienced and responded to COVID-19 disruptions, focusing on transformations in pedagogical practice, professional stress, and evolving understandings of professionalism and success.

Research methods: The study is a qualitative narrative inquiry conducted within the Global Teachers Voice 2 initiative. It forms part of an international project led by the International Council on Education for Teaching and the Mapping Educational Specialist knowHow charities, including the Teacher Voice Project and the Future-Proofing Education Systems initiative. The study involved 11 purposively selected teachers. Data were collected through online semi-structured interviews and analyzed thematically, using narrative approaches to preserve participants' perspectives and meanings.

Process of argumentation: The analysis traces how teachers responded to emotional and organizational challenges while maintaining professional commitment. It examines the interrelations between technology use, relational pedagogy, and professional collaboration as foundations of adaptive practice.

Research findings and their impact on the development of educational: The findings show that participants reconstructed their professional identities by emphasizing agency, relationality, adaptive capacity, and a redefinition of professional success beyond performance-based metrics. By foregrounding teachers' voices within the Polish context

and situating the analysis within an international research framework, the study contributes an in-depth, relational perspective to post-pandemic debates on teacher professionalism. It advances theoretical discussions by integrating teacher agency and relational pedagogy, demonstrating how professionalism and success are reshaped through the dynamic interplay of technology, relationships, and autonomy in post-pandemic contexts. These insights inform broader debates on sustainable, human-centered educational development.

Conclusions and/or recommendations: Future-oriented education systems should strengthen teachers' professional autonomy, relational competencies, and access to technological and institutional support. Enhancing teacher agency and supporting a multidimensional understanding of professional success are essential for developing resilient, innovative, and inclusive schools. Policy frameworks should move beyond technocentric and performance-driven models toward approaches that recognize the relational, adaptive, and reflective dimensions of teaching.

Introduction

This article presents findings from the Polish component of the international research project Future-Proofing Education Systems: Learning from the Legacy of the COVID-19 Pandemic (2023–2025). The initiative is grounded in the belief that teachers' lived experiences and professional insights should be central to rethinking education in the wake of COVID-19. It is carried out under the auspices of the International Council on Education for Teaching (ICET) and the Mapping Educational Specialist knowHow (MESH) charities.

This project, also known as the Teacher Voice Project 2023/2025, forms part of the broader Teacher Voice Series, which was launched in 2020. The series aims to provide virtual forums where teachers across the globe can express their views on issues affecting the teaching profession. It also facilitates collaborative, cross-national research on topics related to teacher practice and preparation. Findings from the first Teacher Voice Series project report, *Teacher experiences and practices during COVID-19*, revealed that the COVID-19 pandemic significantly impacted teachers both psychologically and professionally. Like others globally (International Teachers Task Force, 2020), teachers experienced heightened anxiety

regarding the health of their families and students. Rapid transitions from in-person to remote teaching required substantial adaptation, particularly in contexts with limited digital infrastructure. Teachers employed alternative and often unconventional strategies to maintain contact with students, especially those from vulnerable or marginalized backgrounds. This shift necessitated the reconfiguration of pedagogical approaches, the acquisition of new competencies in digital technologies (ICT), and engagement with altered dynamics of authority in virtual learning environments (Hordatt Gentles & Leask, 2021).

The current phase of the Teacher Voice Project, grounded in qualitative inquiry, examines how teachers continue to navigate complex professional challenges, redefine their identities, and envision education that is both resilient and relational. The project seeks to ensure that insights gained during the pandemic – particularly regarding teacher learning, pedagogy, practice, autonomy, and agency – are not erased by a hasty return to pre-pandemic norms. Rather than viewing the COVID-19 disruption as a temporary interruption, the broader Future-Proofing Education initiative considers it a critical moment of rupture – one that calls for a reimagining of education systems.

In this context, the primary aim of this study is to interpret how Polish teachers reconstruct and negotiate their understanding of professionalism and professional success in the post-pandemic educational landscape. Rather than offering a broad evaluation of educational reform, the study adopts an interpretive perspective focused on teachers' lived experiences and meaning-making processes.

To address this aim, the study explores three interrelated dimensions of post-pandemic professional practice: (1) the integration of digital technologies and its implications for pedagogy; (2) the relational and ethical foundations of teaching, including wellbeing and student engagement; and (3) the conditions that enable or constrain teacher agency, collaboration, and ongoing professional growth.

Accordingly, the central research question guiding the Polish component of the project is: "How have Polish teachers experienced and interpreted post-pandemic transformations in their professional practice,

and how do they conceptualize sustainable forms of professional success in conditions of ongoing uncertainty?” Subsidiary questions examine how teachers perceive the role of digital technologies, what forms of support and professional learning they consider necessary, and what systemic conditions facilitate or hinder adaptive, relational, and innovative practice.

Building on this international framework, the present analysis focuses specifically on the Polish context to provide an in-depth, situated account of teachers’ professional reflections following COVID-19.

Teachers and teaching in post-pandemic contexts: Rethinking professionalism and practice

Teachers’ work is becoming increasingly complex in a global landscape shaped by migration, multiculturalism, digitalization, and artificial intelligence. These forces generate not only societal and technological challenges but also policy shifts that intensify accountability, standardization, and performative cultures (Day, 2017; Sachs, 2016), often eroding autonomy and professional trust. At the same time, teachers must reconcile competing expectations from policymakers, parents, students, media, and society, balancing exam-driven outcomes with the broader task of preparing learners for diverse, rapidly changing contexts (Madalińska-Michalak, 2023).

The COVID-19 pandemic amplified these pressures, disrupting education for over 1.5 billion students and 63 million teachers worldwide (International Teachers Task Force, 2020). Teachers became frontline crisis responders, navigating digital divides, inadequate infrastructure, and limited training (OECD, 2020; UNESCO, 2021). Challenges included a lack of equipment and internet access (Zhang et al., 2020), reduced student engagement (Niemi & Kousa, 2020), blurred work-life boundaries (Ünal & Dulay, 2022), and deteriorating wellbeing across school communities (Folkman et al., 2022). These conditions revealed the inadequacy of outcome-based performance metrics and underscored the need to rethink

professionalism in terms of adaptability, resilience, and relational pedagogy (Tan et al., 2025).

Central to post-pandemic professionalism is a critical re-evaluation of the role of technology. While digital tools ensured continuity during lockdowns, the crisis reinforced that technology must serve as a medium to support – not replace – human connection. Unequal access to digital resources raised pressing ethical questions about equity (Di Pietro et al., 2020; Van Dijk, 2020), while the challenges of remote learning highlighted the centrality of care and relational pedagogy (Noddings, 2013).

Future-proofing teaching also depends on robust professional development and collaborative learning communities that foster agency, innovation, and mutual support. However, systemic barriers such as limited time, resources, and institutional backing continue to constrain professional growth (OECD, 2019). The pandemic nevertheless prompted many teachers to reframe their professional identities, leveraging crisis conditions to deepen creativity, resilience, and student-centered practice.

In the post-pandemic landscape, the very notions of teacher and school success require rethinking. Beyond standardized test scores, success is increasingly understood in terms of adaptability, collective capacity, and relational trust. Successful teachers and schools are those able to sustain student engagement, foster wellbeing, and innovate under conditions of uncertainty (Day & Gurr, 2024; Madalińska-Michalak & Flores, 2025). In disruptive times, as Harris and Jones (2020) argue, success is less about compliance with external standards and more about collaboration, distributed leadership, and resilience across school communities. Such perspectives reinforce the need to view teachers as co-constructors of educational futures rather than as implementers of externally imposed reforms.

Methodology and methods

The methodological framework for this study was developed within the context of the Global Teachers Voice 2 initiative. The study sought to understand how teachers made sense of changes in teaching practices,

professional identity, technology use, and emotional wellbeing during this period. Key research questions focused on identifying the most significant changes in teaching after the pandemic, teachers' responses to these changes, perceived challenges and barriers in professional development, and the role of technology in education.

A qualitative approach (Denzin & Lincoln, 2018) with narrative elements was adopted to provide an in-depth understanding of participants' lived experiences (Clandinin, 2006; Clandinin & Connelly, 2000). This approach allowed the researchers to capture the richness of individual stories, reflecting how teachers navigated professional challenges and opportunities in a rapidly changing educational landscape.

The primary data collection method consisted of semi-structured interviews conducted online via Microsoft Teams, each lasting between 30 and 40 minutes. The interview protocol, developed collaboratively by the international research team, addressed nine thematic areas, including changes in teaching practice, classroom management, the use of technology, professional support, and reflections on professional growth. Follow-up prompts enabled the interviewers to explore emergent topics in depth while maintaining comparability across participants.

The Polish sample consisted of 11 participants, selected using purposive and reputational sampling (Etikan et al., 2016) to ensure the inclusion of teachers and teacher educators recognized for professional excellence, leadership, and innovation. Participants represented a range of educational contexts, including primary and secondary schools, urban and rural settings, and public and private institutions. The group included active teachers with varying years of experience, as well as one recently retired teacher educator. The recruitment process involved professional networks, associations, and snowball sampling, and participation was voluntary, without financial incentives.

Data collection occurred between February and May 2025. All interviews were recorded with participants' informed consent, transcribed verbatim, and securely stored. Thematic analysis, following Braun and Clarke's model (2021), was applied to identify patterns within and across participant narratives. NVivo software was used to facilitate systematic

coding, while collaborative coding sessions ensured consistency and reliability. Elements of narrative inquiry were integrated to preserve participants' personal reflections and to provide nuanced insight into their professional adaptation and resilience.

Ethical approval was granted by the University of Worcester Research Ethics Committee, and all procedures adhered to internationally recognized standards, including GDPR and the Declaration of Helsinki. Participants' identities were protected through pseudonymization, and measures were taken to ensure confidentiality, voluntary participation, and participant validation of preliminary findings.

Findings

This study captured the perspectives of highly experienced teachers from diverse contexts. This diversity enriched the dataset, providing a multifaceted view of teaching during and after the COVID-19 pandemic. Despite differences in roles and contexts, participants shared common concerns, strategies, and reflections, which coalesced around six interrelated themes: changes in teaching practice, the role of technology in education, barriers to technology integration, professional development and support needs, the irreplaceable role of the teacher, and the importance of collaboration and teacher support networks.

These themes illustrate how teachers navigated pandemic-era challenges while reshaping their understanding of professional growth and achievement. Together, these themes offer a comprehensive picture of how teachers reshaped their practice, developed adaptive expertise, and sustained meaningful human and professional connections.

The following sections describe the interrelated themes that capture how participants navigated pandemic-era challenges while reshaping their understanding of professional growth and achievement. Due to the limited length of this article, only three of the six identified themes are presented. Each theme is illustrated with direct quotes from participants, highlighting the depth and authenticity of their lived experiences.

Changes in teaching practice and pedagogy

The abrupt transition to remote and hybrid learning compelled teachers to revise their pedagogical approaches fundamentally. Participants described this transformation as both disruptive and developmental. Remote teaching required the rapid adoption of unfamiliar technologies and the design of new instructional strategies, often without prior preparation or guidance. This experience forced many educators to experiment with digital tools and rethink the structure, pacing, and interactivity of their lessons, as expressed in the following illustrative quotes:

- “The pandemic forced me to learn new technologies. I had to learn how to use Microsoft Teams, and considering the age of the students, remote learning was challenging.” (P01)
- “The pandemic accelerated the digital revolution in education, but for us teachers, it was a difficult challenge.” (P02)
- “Forced transition to distance learning opened new horizons but also revealed many problems. I studied actively to create new strategies, integrating the curriculum with new digital tools.” (P03)
- “We’re using audios, videos, and new platforms, facing problems, and attending seminars to make the classroom more interactive.” (P04)

While challenging, this transition also fostered pedagogical innovation and professional growth. For some, it catalyzed a deeper understanding of how to create engaging, flexible learning environments that respond to diverse student needs.

Professional development and support needs

The pandemic underscored the urgent need for sustained, expert-led professional development, particularly in digital pedagogy. Teachers reported limited access to high-quality, formal training, often relying on time-consuming self-directed learning that many found insufficient. There was a strong demand for short, hands-on workshops, regular peer exchanges, and support in emerging areas such as artificial intelligence and advanced educational technologies.

Beyond technical skills, participants highlighted the importance of broader professional learning opportunities encompassing communication, leadership, and personal development – vital for managing the complex demands of post-pandemic teaching. Teachers stressed that:

- “I need better educational resources and access to free training.” (P04)
- “I would like to expand my qualifications with knowledge in digital competencies and artificial intelligence.” (P06)
- “I need short in-person workshops with trainers. Searching for digital tools alone is exhausting.” (P08)
- “Personality development classes should be done regularly by professionals – not just school heads.” (P09)

These reflections underline that effective professional development should combine technical skills with personal and professional growth, supported by structured, accessible, and context-sensitive training initiatives. Teachers’ experiences point to the need for ongoing systemic support that equips them to navigate rapidly changing educational environments successfully.

The irreplaceable role of the teacher: Balancing human connection and technological innovation

Despite embracing technology, teachers unanimously affirmed that it cannot replace the relational and emotional dimensions of teaching. Personal interaction, empathy, and presence were foundational to student learning, especially for younger children and those with complex social-emotional needs. Participants emphasized the need to preserve human-centered pedagogies even as technological tools become more prevalent. This supports a balanced, blended approach in which technology enhances but never substitutes the empathetic, engaged teacher. Teachers mentioned that:

- “It’s important to maintain a balance between modern and traditional teaching methods, especially with young children.” (P01)

- “Besides technology, we need to use traditional methods like working with books.” (P02)
- “Technology should support – not replace – a kind, involved, passionate teacher.” (P04)
- “Online assessments are difficult to control. In-person presence makes a big difference.” (P08)

Overall, teachers highlighted that effective teaching during and after the pandemic depends on maintaining human connection while integrating technology. Teachers' reflections indicate that successful pedagogical innovation is not merely about digital adoption, but about using technology to support engagement, empathy, and meaningful interaction. Balancing technological tools with relational teaching practices emerges as a central principle for fostering student learning and wellbeing.

Redefining success

Across the themes identified in this study, teachers offered a deeply nuanced redefinition of success, moving beyond standardized metrics. Professional achievement is measured by adaptability, innovation, and sustaining meaningful human connections. Reflective practice, collaborative engagement, and thoughtful integration of technology emerged as key markers of success. Teachers highlighted that:

- “Even online, my priority was that students feel seen and supported. That defines real success.” (P04)
- “Technology can never replace empathy, encouragement, and the personal presence a student needs.” (P06)
- “Success isn't just what I do in my classroom – it's how we as teachers support each other and develop shared strategies.” (P08)

The post-pandemic period, despite its challenges, became a space for profound professional growth. Teachers described developing both

digital and relational competencies, experimenting with novel pedagogical strategies, and reclaiming agency over their professional practice. As one participant reflected, “The pandemic forced me to learn new technologies. I had to adapt quickly, and this process changed the way I structure my lessons” (P01). Another noted, “Remote teaching opened new horizons and pushed me to integrate digital tools creatively with the curriculum” (P03). These experiences show how adaptive expertise, rather than traditional performance indicators, became a central marker of success.

Equally important was the ability to maintain a human connection. Even in virtual classrooms, participants prioritized relational engagement. As one teacher observed, “Even online, my priority was that students feel seen and supported. That defines real success” (P04), while another emphasized, “Technology can never replace empathy, encouragement, and the personal presence a student needs” (P06). Such reflections illustrate that relational depth is inseparable from teaching excellence, reinforcing the idea that professional achievement is both human-centered and contextually grounded.

Collaboration and shared professional reflection further enriched this vision of success. As one educator explained, “Success isn’t just what I do in my classroom – it’s how we as teachers support each other and develop shared strategies” (P08). Another noted, “Sharing experiences with colleagues gave me practical solutions and emotional support that I couldn’t achieve alone” (P11). In this way, participants emphasized that success is both individual and collective, cultivated through networks of trust, mentorship, and peer learning.

Technology, initially a source of stress during the rapid shift to remote teaching, evolved into a vehicle for innovation. Teachers described leveraging digital tools to enhance pedagogy without sacrificing relational engagement. According to one participant, “Technology opened new possibilities, but it must support, not replace, the teacher’s role” (P02), while another reflected, “Blending online tools with traditional methods allowed me to reach students in ways I hadn’t before, yet kept the relational aspect intact” (P10). Here, success is defined not by the mere adoption

of technology, but by its thoughtful integration to support meaningful teaching and learning.

Central to this redefinition was the role of reflective practice and professional agency. Teachers shared that they experienced success when they could experiment, learn from mistakes, and implement strategies that genuinely benefited students. As one participant explained, “I feel successful when I can experiment, learn from mistakes, and implement strategies that truly help students” (P05). Another added, “Continuous reflection on my practice allows me to grow professionally, which I value more than any external evaluation” (P09).

These narratives collectively reveal that the broader conception of success emerging from this study can be understood through six inter-related dimensions:

1. adaptive professional growth and innovation,
2. the ability to sustain meaningful human connections,
3. collaborative engagement with peers,
4. thoughtful integration of technology,
5. reflective and autonomous professional practice, and
6. a holistic vision of post-pandemic achievement that embraces resilience, flexibility, and community.

Each dimension is grounded in teachers' lived experiences, showing how these elements intersect to shape a multidimensional understanding of success. For example, one participant summarized this holistic view by stating, “Teaching is about sustaining communities, caring for learners, and being flexible in the face of change. That is what being successful really means” (P07).

In sum, the redefined concept of success moves beyond conventional metrics to capture the relational, adaptive, and reflective qualities that teachers themselves value. By centering teachers' voices, this study highlights that professional achievement in the post-pandemic era is multidimensional, emergent from practice, and inseparable from the social and technological contexts in which teaching occurs. This perspective

offers a more authentic, sustainable, and human-centered understanding of what it truly means to succeed as a teacher today.

Discussion

This study explored how Polish teachers engaged with the unprecedented challenges of the COVID-19 pandemic, focusing on professional stress, adaptation to digital tools, relational pedagogy, and evolving understandings of success and professionalism. The findings indicate a complex process of professional identity reconstruction, contributing to debates on teacher agency and resilience in times of systemic disruption.

The transition to remote and hybrid learning initially destabilized pedagogical routines; however, it also created conditions for experimentation, innovation, and enhanced responsiveness to diverse learner needs. Technology functioned simultaneously as an enabler of pedagogical flexibility and as a structural constraint, underscoring the importance of context-sensitive integration and attention to digital inequalities. Professional growth emerged not solely as an individual endeavor but as a relational and systemic process supported by peer collaboration, institutional structures, and reflective practice. Importantly, the data reaffirm that relational and emotional dimensions of teaching remain foundational and cannot be substituted by digital solutions.

From a theoretical perspective, the findings support a multidimensional understanding of educational change in which technological innovation, relational ethics, and professional autonomy interact dynamically. Sustainable educational development therefore requires balancing digital transformation with human-centered pedagogies and collaborative professional cultures.

Redefining success: Teacher growth, resilience, and meaning-making

Participants reconceptualized professional success beyond standardized performance indicators, emphasizing resilience, adaptability, relational engagement, and collective responsibility. Their accounts align

with scholarship highlighting the moral and social foundations of professionalism (Biesta, 2015; Day, 2017; Noddings, 2012). Success was framed as adaptive expertise and reflective capacity rather than solely by measurable outcomes. This perspective challenges deficit-oriented narratives of burnout and instead positions teachers as active agents of renewal and innovation. At the school level, success was often described as collective, grounded in collegiality and shared leadership (Madalińska-Michalak, 2024).

The pandemic acted as a catalyst for reclaiming a more authentic, human-centered conception of professional achievement. Participants emphasized adaptive expertise and reflective practice rather than conventional performance indicators as central markers of success, as highlighted in such statements as the following:

- “The pandemic forced me to learn new technologies. I had to adapt quickly, and this process changed the way I structure my lessons” (P01).
- “Remote teaching opened new horizons and pushed me to integrate digital tools creatively with the curriculum” (P03).

Teachers emphasized sustaining meaningful connections with students, maintaining engagement despite disruptions, and providing mutual support through collaborative networks. This contrasts with narrow, performance-based definitions and underscores the centrality of care, adaptability, and professional agency in effective teaching. At the school level, success often manifested collectively through collaboration among teachers, mutual support networks, and leadership practices that encourage flexibility and shared responsibility (Madalińska-Michalak, 2024).

This redefinition also serves as a form of resistance against prevailing burnout narratives. Teachers positioned themselves as active agents of innovation and renewal, emphasizing growth, creativity, and meaning-making. These findings resonate with research demonstrating that professional identities can evolve constructively during crises when supported by collegial relationships, reflective practice, and school leadership (Day & Gurr, 2024).

Balancing technology and human connection

Teachers developed digital competencies while emphasizing that technology should complement, not replace, relational pedagogy. Concerns regarding digital fatigue, equity of access, and ethical considerations were evident. Maintaining empathy and personalized engagement was seen as indispensable, particularly for younger learners and those with complex socio-emotional needs.

Participants advocated for a balanced approach in which technology enhances pedagogical flexibility without undermining relational ethics. This aligns with research on digital pedagogy that promotes ethical, context-sensitive, and teacher-led technology integration in education (Selwyn, 2016; Williamson et al., 2020).

Collaboration and professional support networks

Peer networks and collective reflection were identified as key resources for enhancing resilience and innovation. Teachers emphasized the need for systemic support structures, including ongoing professional development, organizational conditions that encourage experimentation, and meaningful participation in policymaking.

These findings highlight the critical role of professional learning communities and collegial networks in sustaining innovation and teacher wellbeing, confirming previous research on teacher resilience and professional growth (Day & Gu, 2014; Hargreaves & O'Connor, 2018). Without such support, sustaining the adaptability and relational practices developed during the pandemic may be difficult.

Implications for policy and future educational practice

The findings suggest that post-pandemic educational policy should extend beyond technocentric or performance-driven models. Broader conceptions of educational success – encompassing wellbeing, relational competence, and professional agency – are essential. Investments in digital infrastructure must be integrated with sustained professional learning, collaborative structures, and institutional recognition of teacher expertise.

By foregrounding teachers' voices and autonomy, education systems can sustain adaptive practices, foster innovation, and better prepare for future disruptions. The pandemic demonstrates that lasting improvements in education depend not only on technology or policy, but on nurturing the human, relational, and reflective dimensions of teaching practice.

Study limitations

This study has several limitations that should be considered when interpreting the findings. First, the qualitative narrative design prioritizes depth of understanding over generalizability. The sample was small and purposively selected, focusing on 11 teachers recognized for professional excellence, which limits the results' transferability to broader populations. Second, the study is situated within the Polish educational context, and although they are embedded in an international research initiative, the findings primarily reflect local experiences and conditions. Comparative perspectives across countries were beyond the scope of this analysis. Third, due to space limitations, only selected themes could be presented in depth, preventing a full exploration of all identified dimensions. Future research could include larger and more diverse samples, cross-national comparisons, and longitudinal designs to examine post-pandemic transformations in teacher professionalism further.

Conclusions

Teachers' experiences during the COVID-19 pandemic point to a substantive transformation in professional roles and conceptions of success, foregrounding resilience, adaptability, relational depth, and professional agency as defining features of contemporary teaching. The crisis accelerated technological integration while simultaneously exposing structural inequalities and the limitations of narrowly technocentric approaches to reform.

The findings indicate that sustainable educational development requires more than investment in digital infrastructure. Rather, it depends on equitable resource distribution, sustained and research-informed professional development, and organizational cultures that cultivate collaboration, reflective practice, and teacher autonomy. Professional learning should encompass not only digital competence but also leadership, communication, and relational pedagogy as integral dimensions of future-oriented professionalism. Recognizing teachers as agents of innovation and meaning-making enables education systems to move toward human-centered models of schooling capable of responding flexibly to future disruptions.

Success in education can no longer be defined solely through traditional performance benchmarks but must also encompass the capacity to adapt, connect, and generate meaning in conditions of uncertainty. Institutionalizing this multidimensional understanding of professional success is essential for nurturing resilient learning communities and advancing education systems that are both innovative and deeply humane. By foregrounding relational, adaptive, and reflective capacities alongside technological competence, schools can sustain meaningful professional growth and ethically grounded practice, thereby strengthening the foundations of resilient education systems (Madalińska-Michalak & Flores, 2025).

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Transforming teachers' professional development: From the traditional model to contextual workplace learning

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Keywords:

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workplace,
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Abstract

Research objectives (aims) and problem(s): The article analyses the transformation of teachers' professional development from traditional training models to contextual workplace learning. The aim is to develop a theoretical model that conceptualises professional growth in the work environment, distinguishes between traditional and emerging paradigms, and identifies effective and sustainable learning conditions at individual, group, and institutional levels. The study addresses key problems: how these models differ, what conditions support sustainable development, and how contextual learning can be integrally understood.

Research methods: A narrative methodology is used to analyse scientific literature. Using the snowball sampling technique and systematic selection criteria, both theoretical and empirical sources from ERIC, Scopus, Web of Science, and Google Scholar databases are examined to trace the transformation trajectories in professional development practices.

Process of argumentation: The study applies a comparative lens to analyse traditional and contextual learning models. It highlights conceptual shifts in learning forms, content, methods, the participants' role, and organisational context. A theoretical model is proposed that integrates the individual, social, and organisational dimensions of learning. The model underlines the recursive nature of professional development as an ongoing cycle of reflection, activity, and outcomes.

Research findings and their impact on the development of educational sciences: The proposed model demonstrates that professional growth is dynamic, systemic, and context-dependent. It emphasises the interaction between learning, practice, and result-orientation across all organisational levels. This perspective contributes to educational sciences by supporting a shift towards more sustainable, practice-based professional development.

Conclusions and/or recommendations: Professional development should be continuous, contextual, reflective, and cooperative. A move away from episodic, standardised training towards integrated workplace learning is recommended. Strengthening schools as learning organisations and fostering cultures that support teacher growth through reflective practice, learning communities, and sustainable support systems should be prioritised.

Introduction

Rapid societal, technological, and cultural changes create an environment full of uncertainty and complex challenges. Information flows force not only individuals but also the education system to adapt. In this context, teachers have a dual responsibility: to be educators and constantly learning professionals, able to reflect on their activities, change them, and respond to changes in educational realities (Caena, 2011; Darling-Hammond et al., 2017; Desimone et al., 2002; Garet et al., 2001; Porter et al., 2000).

Teachers' professional development is a key factor in the quality of the entire education system. Research highlights the limitations of one-off, passive learning events (Evans, 2008; Guskey, 2000; Illeris, 2003; Joyce & Showers, 2002; Korthagen, 2004). Increasing attention is being paid to workplace learning that is based on reflection, analysis of practical activities, and collegial cooperation in real educational situations (Bruce et al., 2010; Eraut, 2007; Hindin et al., 2007; Leu, 2004).

The traditional model of professional development is based on the view that teachers need to be provided with certain knowledge and skills,

and the process itself is carried out in external seminars, where teachers act as passive recipients of knowledge (Korthagen, 2001). In recent decades, there has been a growing debate about the need to recognise teachers as active learners who construct knowledge based on their own experiences and interactions with colleagues (Clarke & Hollingsworth, 2002; Pylväs et al., 2022; Taylor, 2020).

Professional development is increasingly being replaced by personal professional growth, the formation of professional identity, and the concept of teacher effectiveness. Professionalism becomes inseparable from personal values, self-esteem, and character traits, forming the basis for pedagogical knowledge and skills (Evans, 2014; Korthagen & Vasalos, 2005). Despite apparent changes in the educational paradigm, many professional development activities remain formal, episodic, and insufficiently impactful.

Although the differences between traditional and contextual models of professional development have already been highlighted in the scientific literature (e.g., Darling-Hammond et al., 2017), most studies analyse these differences at the level of programme design or effectiveness. Less often, they are conceptualised as a fundamental shift in the concept of professional learning: from a transmissive, episodic model of knowledge transfer to contextual learning rooted in the workplace and supported at the organisational level.

Furthermore, although the conditions for effective professional growth have been widely discussed (e.g., Avalos, 2011; Kyndt et al., 2016), they are often examined in a fragmented manner, separately at the individual, collegial, or institutional levels. Therefore, there remains a need for a theoretical synthesis that allows these levels to be integrated into a coherent structure and reveals their interaction as a dynamic, recursive process. This article aims to contribute precisely through such a conceptual integration.

While the contribution of this study is primarily conceptual and incremental, it also significantly extends existing research in several key ways. First, it reconceptualises the divide between traditional and contextual professional development models not merely as differences in form

or effectiveness, but as fundamentally distinct paradigms rooted in unique epistemological and organisational assumptions. Second, it unifies previously fragmented perspectives on professional learning conditions by systematically connecting individual, collegial, and institutional levels into a cohesive and interdependent framework. Third, the proposed theoretical model advances prior approaches by explicitly highlighting the recursive and dynamic interplay between learning, practice, and outcomes within workplace contexts. Through this, the study offers a more comprehensive understanding of teachers' professional growth and provides a robust conceptual foundation for both future research and practical implementation.

Research questions:

1. What are the key differences between traditional and contextual models of teachers' professional development?
2. What conditions lead to effective and sustainable professional growth through workplace learning at the individual, group, and institutional levels?
3. Based on the scientific literature analysis, how can a theoretical model of contextual workplace learning that reveals the integrity of professional development processes be developed?

Aim: To develop a theoretical model conceptualising teachers' professional growth based on contextual workplace learning, comparing traditional and contextual models of professional development, and identifying effective and sustainable conditions for workplace learning at individual, group, and institutional levels.

Methodology

This study uses a narrative literature analysis methodology, which allows for a conceptual examination of the transformation of teachers' professional development from a traditional model to a contextual workplace

learning model. Narrative analysis is flexible and suitable for studying interdisciplinary phenomena when the literature is fragmented or presented in different contexts (Hammersley, 2001; Snyder, 2019).

The literature analysis began with theoretical sources, which formed the basis for further thematic expansion. The following international databases were used for data searches: ERIC, Scopus, Web of Science, and Google Scholar. To ensure consistency and transparency in the selection, the following criteria were applied: (1) publication period is from 2000 to 2024, (2) the language is English, (3) texts are theoretical or empirical, clearly related to teachers' professional development, and (4) publications are peer-reviewed. The exclusion criteria were as follows: articles limited to the technical implementation of tools without a learning dimension; studies that address topics unrelated to professional development; or studies that only describe the infrastructure of formal education without analysing teacher learning processes (Tranfield et al., 2003). Conceptual analysis was carried out to identify recurring motifs, theoretical tensions, contradictions, and connections between changes in professional development models and broader educational transformations.

Traditional model versus new paradigm of professional development

For a long time, the traditional model of professional development was based on the top-down principle: training courses were initiated by external institutions or experts in line with national education priorities. They were organised as episodic events where teachers acted as passive recipients of knowledge (Evans, 2008; Guskey, 2000; Illeris, 2003).

Previous studies have already described the differences between transmissive and cooperative professional development (Darling-Hammond et al., 2017); however, they are usually presented as comparisons of different practical forms or indicators of effectiveness. In this article, the contrast between the models is interpreted more broadly as different epistemological and organisational premises about what professional

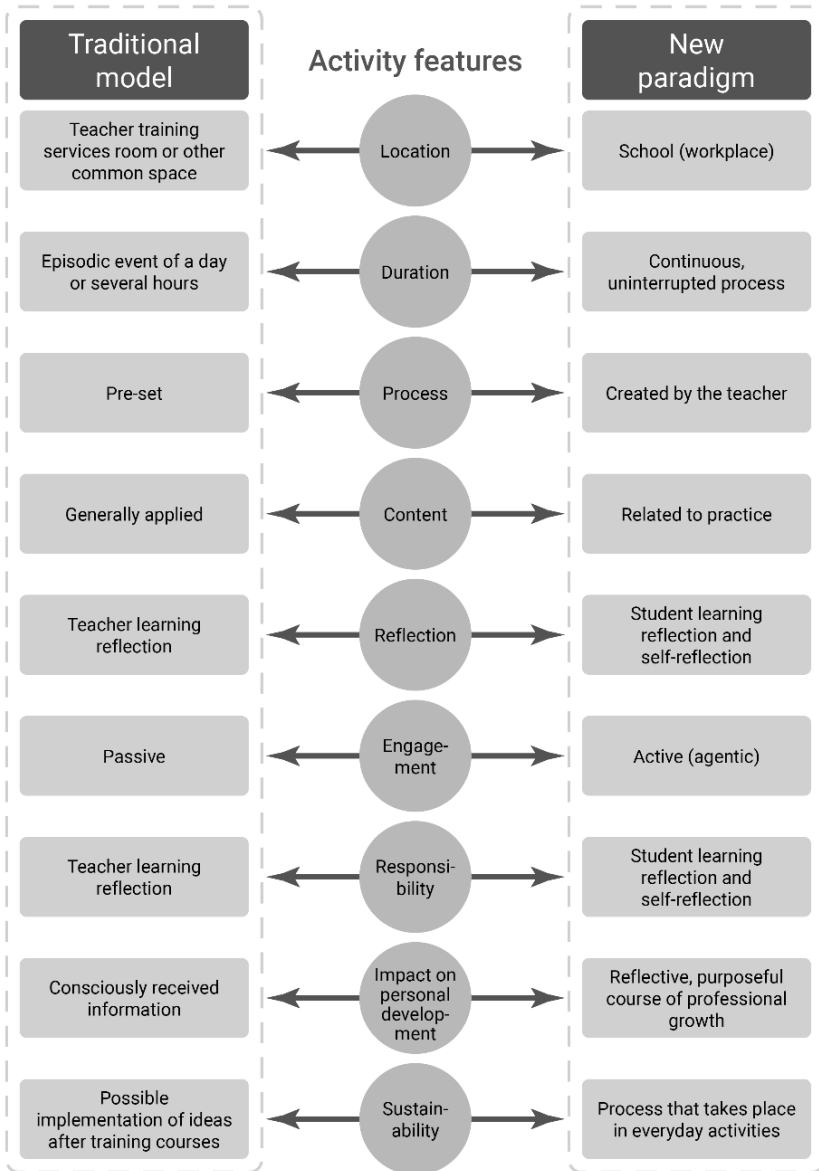
learning is, the role of teacher agency in it, and how professional growth is related to institutional culture. This perspective allows traditional and contextual models to be treated not only as alternative forms but also as different paradigms of professional development.

There is an increasing focus on professional development based on teacher engagement, motivation, and collegiality. Effective forms include reflection, cooperation, and continuity; however, standardised programmes often limit self-expression and do not help develop professional identity (Boyle et al., 2005; Leu, 2004). The problem is exacerbated when training is not conducted in the classroom but in seminar rooms, led by experts who lack a contextual understanding of the specific school (Clarke & Hollingsworth, 2002; Bruce et al., 2010). Many teachers still prefer these forms for their simplicity or out of habit (Darling-Hammond et al., 2009). Only models in which teachers become active participants, taking part in dialogue and making decisions about their own development, provide real benefits.

Critical professional development offers an alternative, emphasising co-creation, reflection, and teacher agency. This model is based on teacher autonomy and meaningful engagement with the organisational culture and requires changes in both the content and the organisation of learning (Kohli et al., 2015). The main differences between the paradigms are highlighted by comparing their performance indicators (see Figure 1), drawing not only on critical professional development but also on broader theoretical and empirical frameworks of teachers' professional learning that emphasise shifts from transmissive to contextual, collaborative, and practice-based models (Clarke & Hollingsworth, 2002; Darling-Hammond et al., 2017; Desimone, 2009; Opfer & Pedder, 2011).

Sustainable professional development must take place consistently and with a long-term perspective (Borko et al., 2010; Feiman-Nemser, 2001). It is based not only on new knowledge but also on the transformation of attitudes, beliefs, and emotional responses. Reflection, cooperation, and practice exploration are key elements through which teachers not only learn but also create knowledge (Borko et al., 2010; Darling-Hammond & Richardson, 2009). Modern learning models increasingly rely on constructivist

Figure 1. Comparison of traditional and new professional development paradigms



and situational approaches that emphasise the active, dynamic, and social nature of learning (Eraut, 2007).

Quality professional development is characterised by a clear focus on improving student learning, time for reflection, analysis of practice, support from colleagues, and cooperation with external experts (Darling-Hammond & Richardson, 2009; Guskey & Yoon, 2009). This is supported by organisations that enable non-formal learning and gradually build a culture that promotes professional growth (Malcolm et al., 2003; Tannenbaum et al., 2009). Conscious self-assessment and the ability to adapt one's behaviour based on insights into personal abilities and career goals become especially important (Van der Heijden et al., 2009).

To achieve sustainable professional growth, it is important to integrate various forms of learning (formal, non-formal, and informal) that reinforce each other and enable meaningful change. Smith and Gillespie (2007) emphasise that teachers' professional progress is most accelerated by combining formal training with workplace-integrated development, where knowledge is applied in real practice and reflected on in co-creation with colleagues. The contextual workplace learning conditions that lead to the successful implementation of such a model are explored in the next section.

Characteristics and conditions of contextual workplace learning

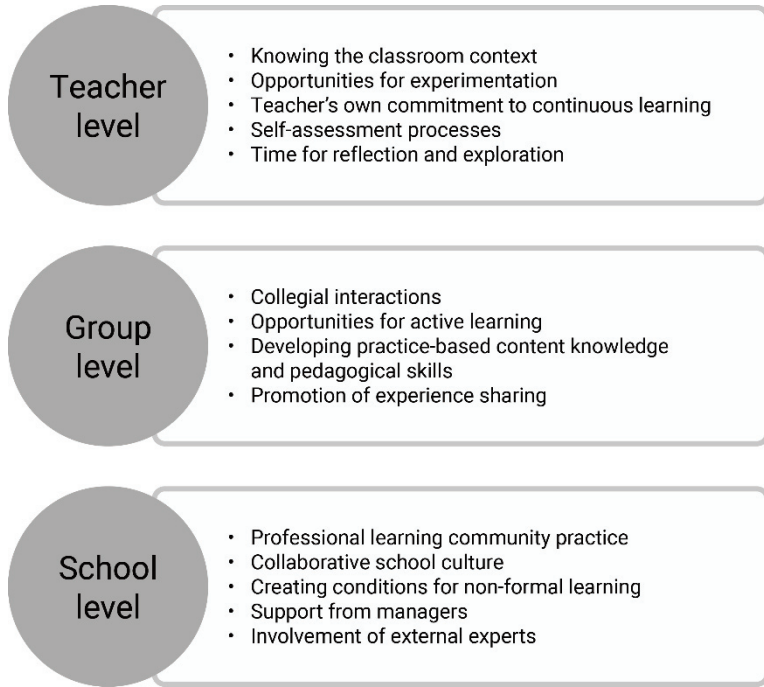
Professional development is continuous and embedded in daily activities that strongly depend on the social environment, cooperation, and reflection (Hindin et al., 2007). A school culture focused on learning can significantly enhance teachers' professional growth (Postholm, 2012). Development is not only an externally provided, formal activity, but also an internal practice integrated with the work process and focused on real educational challenges (Smith & Gillespie, 2007; Darling-Hammond et al., 2017).

Although the literature identifies the main factors of workplace learning as cooperation, reflection, and non-formal learning (Kyndt et al., 2016),

they are often analysed as separate variables. This analysis interprets them systematically, revealing how individual teacher activity, forms of collegial interaction, and organisational structure constitute an interdependent learning ecosystem. Thus, professional growth is understood not as the sum of individual factors, but as a contextually conditioned and constantly renewing system.

Teachers know best what content issues are relevant to their practice. Therefore, their active participation in professional learning processes is essential (Borko et al., 2010). Today, the quality of teachers is linked to the overall quality of education (Leu, 2004), and their learning should be focused on an active, problem-based, and research-based process. Non-formal workplace learning is considered an important tool for teachers' professional development. A learning culture in an organisation requires conditions that encourage exploration, openness, and feedback (Sessa & London, 2015). Managers should ensure not only formal training opportunities but also space for informal cooperation, daily knowledge exchange, and processes of learning from experience (Noe et al., 2010; Taris et al., 2003).

There is a special focus on cooperative professional learning communities that respond to the needs of schools and teachers more than external experts (Harris & Jones, 2017; Thompson et al., 2004). Effective communities have a positive impact on both teacher performance and student achievement (Stoll et al., 2006; Vescio et al., 2008). Learning activities are divided into individual (e.g., reflection, independent searches for information) and cooperative (e.g., sharing experiences, participation in collective research) (Kyndt et al., 2016). For effective contextual workplace learning, it is necessary to create conditions that promote professional growth at all levels: individual, group, and organisational. According to previous research, professional growth depends not only on personal traits but also on the social and institutional context (Pylväs et al., 2022).

Figure 2. Conditions for contextual workplace learning

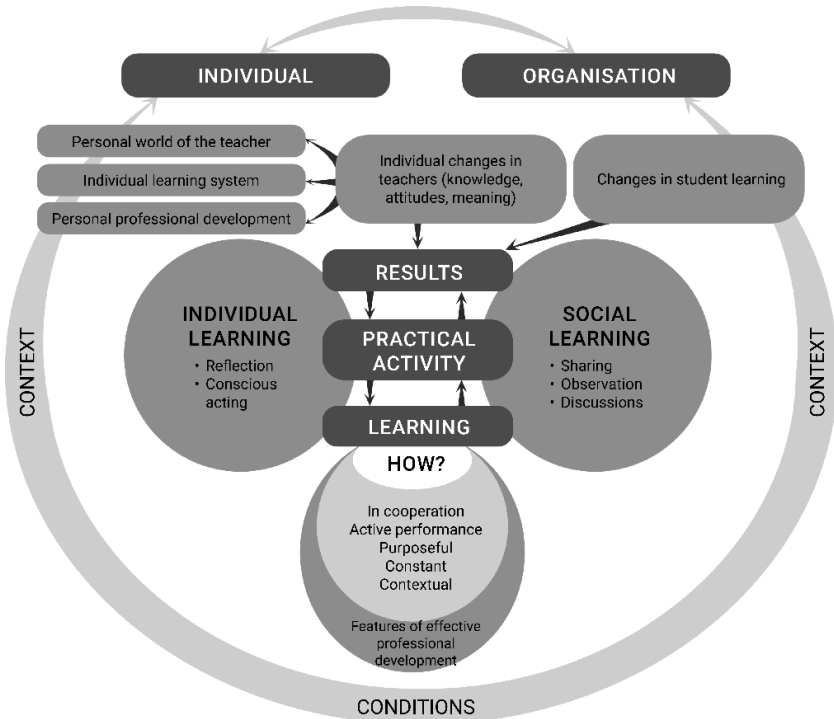
The analysis of scientific sources made it possible to distinguish the conditions for contextual workplace learning at the teacher, group, and school levels. The teacher level is associated with internal motivation and active involvement in the processes of reflection, research, and self-analysis. The group level highlights the importance of collegiality. Effective learning is promoted through cooperation, where mutual trust, openness, and shared responsibility for improvement are important. Sharing experiences, discussions, and deepening pedagogical knowledge help form common learning attitudes, promote the search for innovative solutions, and improve professional competence. The school level emphasises the importance of institutional and systemic support. Professional learning communities, a strong culture of cooperation, and the development of non-formal learning opportunities create the prerequisites for

continuous change and the improvement of the quality of education. Managers' leadership becomes a key factor in creating structures that support learning, promote autonomy, and ensure continuity. The involvement of external experts is also important when done purposefully, adapting content to the real needs of the school.

All these conditions make it possible to construct an environment where professional development is not episodic or formal but becomes an organic part of everyday school activities. The school community can independently develop practices that integrate individual and collective development, thus ensuring long-term benefits for both teachers and students.

Theoretical model of professional growth through workplace learning

Contextual learning is defined as continuous professional development that takes place in the work environment and is strongly linked to the development of the human resources of the organisation (Collin et al., 2012). It requires not only individual motivation but also a supportive system created by the organisation, because efforts on one side alone do not allow for significant results. Based on an analysis of professional development models (Clarke & Hollingsworth, 2002; Desimone, 2009; Evans, 2014; Opfer & Pedder, 2011), Figure 3 presents a model that summarises the insights from the previous subsections and reveals the structure of professional growth that occurs through workplace learning.

Figure 3. Theoretical model of professional development and growth through workplace learning

The model highlights two main directions of teachers' professional growth – individual learning and social learning – which are understood as the key dimensions of professional development that organise the entire learning process (Opfer & Pedder, 2011). Individual learning involves reflection and conscious acting, which are activators of change (Clarke & Hollingsworth, 2002). Social learning is based on sharing, observation, and discussions. Both of these aspects are strengthened through cooperation with colleagues in which teachers can test new methods, plan joint activities, observe each other's work, share experiences, and discuss effective pedagogy (Pylväs et al., 2022). The third level, the institutional (organisational) dimension, covers the whole system: both individual

factors (teachers' experiences, values, personal qualities) and organisational aspects (structure and culture of the educational institution). The model emphasises that professional growth is inseparable from learning in a real work environment (Pylväs et al., 2022).

At the centre is a constantly recurring and dynamic combination of three activities: learning, practical activity, and results. Teachers learn in various ways: they acquire and create new knowledge, which they apply in practice through theory, experimentation, reflection, and adjusting activities. At the social level, this interaction unfolds through collegial sharing, observation, and discussions, and at the individual level, it unfolds through personal reflection and conscious acting (Clarke & Hollingsworth, 2002).

The results can be understood in two ways: as changes in teachers, i.e., the transformation of knowledge, attitudes, and meanings, and as progress in student learning. Although many authors (e.g., Clarke & Hollingsworth, 2002; Desimone, 2009; Guskey, 2002) emphasise the link between teacher development and student achievement, Evans (2014) argues that student achievement should not be seen as an integral part of professional development. The model's structure is non-linear; it emphasises the dynamics and recursiveness of professional growth. According to Opfer and Pedder (2011), professional learning is shaped through the relationships between three interacting systems: teacher, school, and learning activity.

The model emphasises that learning must be cooperative, active, purposeful, contextual, and continuous (Desimone, 2009). Social learning is influenced by organisational and cultural factors: structure, communication, and responsibility sharing. Opfer and Pedder (2011) distinguish a supportive learning environment, self-assessment, value-based discussions, and knowledge management as conditions that support both individual and collective development.

Individual professional development is also emphasised in other models: Clarke and Hollingsworth (2002) refer to the 'personal world', Opfer and Pedder (2011) single out the individual teacher as one of the parts of a recursive system, and Evans (2014) emphasises micro-level experience in consciousness. Guskey (1986) argues that consistent changes in attitude are necessary for effective improvement, and Evans (2008)

elaborated on the domains of behavioural, attitudinal, and intellectual change that enhance professionalism.

The model treats workplace learning as a continuous process based on practice, reflection, and the pursuit of results. This process becomes effective when it is supported by school heads, creating an environment conducive to learning, promoting professional growth, and enhancing organisational progress. A reflective school culture, grounded in continuous reflection and mutual support, becomes a key condition for high professional quality within a community.

Conclusions

The traditional model of teachers' professional development is based on pre-set, episodic events organised by external institutions. Teachers act as passive recipients of knowledge, and learning is often disconnected from everyday school practice. The content is often generic, standardised, and rarely responds to real teaching challenges or teachers' professional needs. In contrast, the contextual model is engaging, continuous, and based on cooperation with colleagues, reflection, and analysis of real work situations. This paradigm sees teachers as active participants who learn in the workplace through practices that they can directly apply and improve.

At the individual level, professional growth depends on teachers' intrinsic motivation, reflective skills, willingness to learn, and experimentation with practice. At the group level, collegial cooperation, trust between teachers, sharing experiences, and finding common solutions are the most important. At the institutional level, leadership is necessary to ensure not only formal training opportunities but also a learning culture that encourages reflection, creativity, and continuous performance analysis. Schools that integrate formal and non-formal learning create a sustainable context for professional growth, where professional development becomes a natural part of everyday activities.

The model shows that professional development is a complex, recursive process consisting of individual and social learning directions and

organisational context. Three main activities can be distinguished: learning, practical activities, and the pursuit of results. These constantly interact to encourage reflection and application in practice, generate knowledge, and improve teaching quality. Professional growth only occurs when teachers reflect on their practice, collaborate with colleagues, and have a supportive organisational context.

The model conceptualises professional growth as a recursive process in which individual learning, social interaction, and organisational context function as interrelated parts of a system. This makes it possible to go beyond descriptive comparisons of models and justify a paradigm shift towards contextual workplace learning. The model can be applied in practice as an analytical and planning tool for school leaders, education policymakers, and teacher trainers seeking to develop sustainable, systematic, and context-sensitive professional development strategies. It will also help stakeholders evaluate professional growth initiatives in a structured way, identify interactions between different levels, and strengthen schools as learning organisations.

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Resilience and psychological flexibility levels and selected aspects of teachers' professional development

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Abstract

Research aims and problems: The study examines how such variables as length of service, level of professional advancement, the annual number of training courses, and the number of subjects taught relate to the psychological flexibility and resilience of the studied teachers. Both constructs are associated with coping strategies for dealing with hardship and for realizing professed values in the face of obstacles.

Research methods: The study uses the Polish adaptation of the AAQ-II questionnaire to measure the psychological flexibility index and the KOP-26 questionnaire to determine the residual index and its sub-components. Work-related variables and sociodemographic data were measured with a questionnaire of our own design. The group of subjects consisted of 87 male and female elementary school teachers from the city and municipality of Swarzedz.

Process of argumentation: The paper analyzes psychological flexibility, as defined by the acceptance and commitment therapy (ACT) theory, and resilience. A review of previous research reports on the relevance of these variables to the teaching profession is also presented. The adopted methodology and the obtained results are described and discussed, and finally, the conclusions are presented.

Research findings and their impact on the development of educational studies: Statistically significant correlations were observed between the number of subjects taught and respondents' scores on

the family relations and personal competence scales. In addition, there were no correlations between indicators of resilience and psychological flexibility and such variables as length of service, level of professional advancement, or the annual number of training courses.

Conclusions and recommendations: The results indicate that the existing educational offer for teachers may be weak in fostering stress management competencies and personal growth. There is a need to expand this offer to include items from the indicated area.

Introduction

The role of the education system in Western cultural societies is undoubtedly not to be underestimated, regardless of individual assessments relating to its functioning (Feinberg & Soltis, 2004). In a world of change and widespread globalization, discernible in almost all spheres of human life, the pace of transformation and accompanying processes in the interpersonal sphere is becoming increasingly challenging (Leppert, 2009). This reality, as it were, forces education workers to constantly improve their competence. Education is also a profession that requires continuous training (Day, 2002). At the same time, both in Poland and around the world, education is marked by numerous physical, organizational, social, and emotional burdens (Pyżalski, 2010), and those who perform it are at risk of occupational burnout (e.g., Kocór, 2019).

This article addresses two theoretical constructs related to an individual's health and development in the face of adversity: psychological flexibility and resilience. This area of teacher education seems to be very important in the context of multiple didactic and educational paradigms (Klus-Stańska, 2018). Furthermore, developing teachers' personal resources can become crucial in the world of change (Bauman, 2007). The former variable derives from the acceptance and commitment therapy (ACT) theory (Harris, 2019), which describes psychological flexibility within the hexaflex model. It consists of six elements: cognitive defusion, attentiveness, self-as-context, acceptance (also known as readiness), committed action, and values. The construct is monistic and describes both

the mechanism of health and pathology (Hayes et al., 2013). A person who maintains well-being and the potential for development is someone who has a structured value system that they actively pursue. Their actions are subject to modification based on their awareness of which adversities associated with the pursuit of set goals they are willing to accept. They perceive their own person as an observer of their own experience rather than as a set of descriptive qualities. For them, thoughts and emotions are creations of the mind rather than objective clues about reality and oneself. At the same time, one can consciously notice one's own experience in the "here and now" mode (Harris, 2019; Hayes et al., 2013). In light of this view, psychopathology grows out of a strong focus of one's actions being on avoiding unpleasant experiences (which are inevitable in human existence). Humans overlook the pursuit of their own values, and their lives are marked by an escape from their experiences.

As an area of research in a group of teachers, psychological flexibility is an unexplored topic in Polish literature. However, Guzy (2021) found a positive correlation between the magnitude of the cognitive fusion index in surveyed speech therapists and the presence of symptoms of professional burnout. This topic is also poorly researched in foreign literature, but there are isolated studies that address it. For instance, a study conducted in Ghana (Dramanu et al., 2020) found that psychological flexibility may be a predictor of greater teacher engagement. An American study (Biglan et al., 2013) revealed that participation in workshops on developing psychological flexibility was associated with reduced tension and correlated with an increase in feelings of efficacy. Another study of a group of educational consultants found that a higher score on a scale measuring the variable in question was associated with lower levels of professional burnout, lower emotional burnout, reduced depersonalization, and higher achievement rates (Pfeiffer, 2023). It is also worth noting at this point that the psychological flexibility component of mindfulness can have a positive impact on students, but this can only be imparted by teachers who practice it themselves (Klon & Waszynska, 2020). Staff development in the aforementioned area is, therefore, not without impact on the students.

Mental resilience is often understood as a mechanism that describes how risk and protective factors present in a person's life project onto their well-being and functioning (Junik, 2011). It is also sometimes referred to as a "vaccine" for difficult events (Reich et al. 2010). According to Gašior, Chodkiewicz, and Cechowski (2016), there are three key areas of life related to an individual's mental resilience: family relations, social competence, and personal competence. Resilience in the teaching profession is somewhat better described in both Polish and foreign literature, although it is still insufficiently recognized. Based on the results from Polish researchers, it can be concluded that there is a positive correlation between mental resilience and the subjects' creative attitude (Róż, 2013), level of satisfaction, and secure attachment style (Jabłońska, 2018). A negative correlation was found in the context of perceived stress levels (Glanowska, 2020) and the risk index for burnout (Załęska, 2020). Strutyńska (2022), on the other hand, noted only a partial effect of resilience on the level of fatigue experienced by the surveyed teachers. Foreign reports, however, observe positive correlations between the resilience index and such factors as good relationships in the workplace (Gu, 2014; Gu & Day, 2013), demonstrations of teachers' reflexivity and problem-solving skills (Leroux & Théorét, 2014), their ability to take advantage of opportunities that arise (Gu & Day, 2007), higher stress coping competencies and avoidance of aggravating situations (Richards et al., 2016), positive involvement in school activities (Polat & İskender, 2018), and a lower declared desire to leave the profession (Arnup & Bowles, 2016). However, inverse correlations were found with the subjects' level of professional burnout (Polat & İskender, 2018; de Vera Garcia & Gambarte, 2019).

To date, none of the variables specified in this study (level of professional advancement, length of service, annual number of training courses, and number of subjects taught) has been juxtaposed with an indicator of mental resilience or psychological flexibility either in Polish or in foreign research. In this respect, the results presented here are novel and fills a gap in the research literature.

Materials and methods

The Ethics Committee of the Faculty of Educational Studies at Adam Mickiewicz University in Poznan approved the research activities. The data collection procedure took place between June and September 2022 among subject teachers in grades 4–6 in elementary schools in the city and municipality of Swarzędz. Of the 10 elementary schools, six agreed to cooperate. A battery of questionnaires was posted on the Qualtrics platform, and audiovisual material was sent to the cooperating schools that included information about the research being conducted. Two head teachers decided to limit their activities to providing teachers with an instructional video and a link to the questionnaires. In the other four schools, the researcher had the opportunity to meet teachers in person during school board meetings and provide them with information about the research activities on site.

The KOP-26 questionnaire was used with the authors' permission to collect data on resilience (Gąsior et al., 2016). Psychological flexibility, on the other hand, was measured using the Polish version of the Acceptance and Action Questionnaire (AAQ-II) (Kleszcz et al. 2018). Data on the surveyed teachers' sociodemographic and work-related characteristics were collected using a questionnaire of our own design. It included questions on respondents' age and gender, length of service, level of career advancement, the average annual number of training courses they attend, and the number of subjects they teach.

Characteristics of the studied group

After removing incomplete responses (incomplete mean one or more than one unfilled questionnaire), the research sample totaled 87 participants. Table 1 provides detailed information about the study group's sociodemographic characteristics.

Tab. 1. Sociodemographic data of the studied group

Age	25–35	11,49%	10 respondents
	36–55	80,46%	70 respondents
	56–60	3,45%	3 respondents
	Above 60	2,30%	2 respondents
	No response	2,30%	2 respondents
Gender	Male	8,05%	7 respondents
	Female	88,51%	77 respondents
	I identify myself otherwise	0%	0 respondents
	I don't want to answer this question	1,14%	1 respondent
	No response	2,30%	2 respondents
Length of service	2–43 years	Mean: 18,6	
Number of training courses undertaken per year	1–40	Mean: 6,1	
Level of career advancement	Trainee teacher	3.45%	3 respondents
	Contract teacher	19.54%	17 respondents
	Nominated teacher	35.63%	31 respondents
	Certified teacher	37.93%	33 respondents
	No response	3.45%	3 respondents
Number of subjects taught	No response	13,79%	12 respondents
	1 subject	62,07%	54 respondents
	2 subjects	21,84%	19 respondents
	3 subjects	2,3%	2 respondents

As shown in Table 1, the vast majority of those surveyed were women (88.51%), with an average age of 36–55 (80.46%). This statistic is similar to national data (Budzińska et al., 2021). The average length of

service in the sample was 18.6 years, and the average number of training courses attended annually by those surveyed was 6.1. The smallest group (3.45%) were trainee teachers, whereas 19.54% declared their level of career advancement as contract teacher. Nominated teachers accounted for 35.63% of respondents, and certified teachers for 37.93%.

Results

Table 2 presents the overall results for the research sample relating to mental resilience and psychological flexibility.

Table 2. Mean values and standard deviations for the total sample

	Mental resilience – general indicator	Mental resilience – personal competence	Mental resilience – family relations	Mental resilience – social competence	Experience avoidance (psychological flexibility) sten
Mean value	108,06	38,03	49,57	20,45	5,5
Standard deviation	11,54	4,39	6,25	4,62	

The analyses were carried out using the “Psychometric helper” (provided by the creators of the Polish adaptation of the AAQ-II for converting raw scores into standard ten [sten] scores), Microsoft Excel, and PS IMAGO PRO. Comparing the results with the norms provided by the authors of the KOP-26 and AAQ-II questionnaires, the data indicate that the results in Table 2 fall within the average range. For the “Psychometric helper” tool, the average results are in the following ranges: 98–109 for the general indicator, 33–39 for personal competence, 44–51 for family relations, and 18–22 for social competence. The average results for the AAQ-II questionnaire are at the 5th and 6th sten. It should be noted that the results obtained with the AAQ-II questionnaire are interpreted as the amount of experience avoidance. Therefore, the higher the total score obtained with this tool, the lower the predicted psychological flexibility of the person tested.

The next step was to verify the descriptive statistics for subsequent datasets. For the annual number of training courses, the mental resilience general indicator, and family relations, the kurtosis and skewness coefficients were obtained at levels that precluded correlation calculations using parametric tests. Therefore, Pearson's r was replaced by Spearman's rho rank formula.

The next step was to verify how mental resilience and its subscales, as well as experience avoidance, correlate with the subjects' length of service, level of career advancement, estimated number of training courses attended annually, and number of subjects they teach. The results are shown in Table 3. Statistically significant correlations are marked in gray.

**Table 3. Correlations between work-related variables
and resilience indicators**

	Resilience indicator	General indicator	Family relations	Personal competence	Social competence	Experience avoidance
Length of service	Correlation coefficient (indicated in boxes)	Spearman's rho ,159	Spearman's rho ,183	Pearson's r ,060	Pearson's r ,099	Pearson's r -,065
	Significance (double-sided)	,156	,102	,594	,379	,567
	N	81	81	81	81	81
Level of career advancement	Spearman's rho correlation coefficient	,015	-,047	,107	-,041	-,043
	Significance (two-sided)	,892	,671	,334	,715	,700
	N	83	83	83	83	83
Number of training courses per year	Spearman's rho correlation coefficient	-,020	-,047	-,012	-,064	,031
	Significance (double-sided)	,862	,683	,915	,575	,787
	N	79	79	79	79	79
Number of subjects taught	Correlation coefficient (indicated in boxes)	Spearman's rho ,210	Spearman's rho ,237	Pearson's r ,245	Pearson's r -,059	Pearson's r -,093
	Significance (double-sided)	,071	,040	,034	,617	,425
	N	75	75	75	75	75

Statistically significant correlations were observed between the number of subjects taught by a respondent and the family relations and personal competence indicators. However, this variable did not show correlations with regard to the general resilience, social competence, or experience avoidance indicators. Length of service also did not form statistically significant correlations with resilience indicators or psychological flexibility. This was also the case regarding teachers' level of career advancement and the average annual number of training courses they attended.

Discussion and conclusions

As indicated, there is a relationship between teachers' level of personal competence, family relations, and the number of subjects taught. However, it should be noted that the methodology used in this study does not allow us to determine the direction of the observed relationship. Therefore, it is only possible to talk about a correlation without a specific vector of influence. However, the higher scores on the scales of family relations and personal competence, along with a higher number of subjects taught, encourage reflection. This is because we are not faced with the question of whether people with a wider range of resources in the aforementioned areas are more likely to further their education in new areas, or whether the mere act of undertaking more postgraduate studies promotes the development of their resilience. There is no doubt that expanding one's education poses new challenges, consumes an individual's resources, and requires the activation of coping mechanisms.

If we accept that resilience can be described as a mechanism for the interaction between risk and protective factors (see, e.g., Junik, 2011; Reich et al., 2010), another dilemma arises from the nature of the observed correlation. This dilemma concerns whether an unambiguous determination of what constitutes cause and what constitutes effect is even possible. When analyzing the nature of resilience, a picture emerges according to which an individual's path should be underpinned by successive

challenges that burden the person experiencing them in a way that encourages development without being so overwhelming as to contribute to psychopathology. If this is accompanied by motivation for further development, the increase in competence resulting from the hardships experienced would have the effect of increasing the individual's potential. This state of affairs could, in turn, enable further professional and personal steps while developing particular aspects of residual mechanisms in the area of family relations and personal competence. Perhaps, then, there is no simple relationship between having resilience-related resources and taking on more challenges relating to increasing one's professional competence. The two areas may grow in mutual interaction, their dynamics allowing a mechanism to emerge. Admittedly, these are only speculations, though such a picture inclines towards the neoliberal vision of resilience as a constant disposition towards positivity and the pursuit of self-optimization (Han, 2022).

The second group of results does not involve the observed correlations but their absence. As the statistical analysis showed, neither the participants' length of service nor their level of career advancement, nor the average annual number of training courses they attend, showed any statistically significant correlations with the overall mental resilience index, its subcomponents, or the psychological flexibility index. On the one hand, these results may seem disturbing or at least surprising. This is because it seems that neither resilience nor psychological flexibility increased among the surveyed teachers over the years spent working with students, nor did they increase in relation to the forms of career development offered to this professional group. On the other hand, the results seem to be in line with the conclusions of other studies on the issues discussed. Admittedly, none of these variables has been juxtaposed with levels of mental resilience or psychological flexibility in Polish or foreign studies, but we can refer here to studies of a slightly different kind. A teacher's length of service can be linked to the number of training courses they have attended. It is also indirectly related to the degree of career advancement.

The first of these variables, although poorly represented in the research, seems to be extremely important, given the need for continuous

professional development inherent in the teaching profession (Krupa, 2016). On the other hand, as Fazlagić (2012) notes, although elementary school students' education is highly coordinated and controlled, these characteristics are neglected in the teacher training system. Consequently, this can significantly reduce the quality of training items available in this area. In addition, such a state of affairs potentially increases the risk of wasting funds allocated for the professional development of education employees. This is because specifically targeted training is not included in any program that could be based on an analysis of current needs. At the same time, there are no standards to which entities responsible for organizing various forms of professional development can refer.

The level of career advancement and its relationship with the various dimensions of teachers' work has been considered in the literature somewhat more extensively. As Szostak-Joško (2023) points out, this variable was not significantly associated with the level of satisfaction of those surveyed. Szpatowicz (2018), on the other hand, notes the negative perception of professional advancement among teachers. Szpatowicz also reports a decrease in teachers' intrinsic motivation due to the requirements of the teacher professional advancement procedure. Other researchers (e.g., Skawinski, 2021) point to a strong need for thorough changes in this area.

These findings seem to confirm that the current system of teacher training (or, in fact, the lack thereof) and the low-rated procedure of professional advancement influence the fact that such factors related to teachers' well-being as resilience and psychological flexibility are not subject to development in this group as its members increase their length of service. As indicated in the Australian context (Stewart et al., 2004), building resilience at the level of the school organization and individual actions on the part of teachers facilitated the development of a sense of connection between students, teachers, and other adults, supporting good peer relationships and increasing the sense of autonomy and independence. On the other hand, educational staff's knowledge and competence in the field of psychological flexibility, grounded in functional contextualism and relational frame theory, can be useful not only for

understanding learning processes but also for understanding what occurs within the classroom team (Fox, 2006).

As shown in the earlier sections of this paper, the construct in question is also associated with teachers' positive functioning. Thus, the observed lack of correlation between length of service, the level of career advancement, the annual number of training courses attended, and mental resilience and flexibility indicators may not provide a basis for optimistic conclusions. At the same time, this situation can be improved if appropriate actions are implemented, not just by vocational training centers and school principals but also, and above all, by decision-makers managing the education system in Poland. Observing the Welsh Mindfulness in School Project, one can see that coordinated action to develop the well-being of teachers, students, and the school community is possible. Furthermore, teacher training and courses focused on personal resources and values can become a strong basis for their personal growth. Such training may also give teachers an opportunity to become more aware and flexible in everyday choices in their personal and professional lives. Courses in social skills, psychological flexibility, or even basic educational psychology may become even more important in the uncertain future (Bauman, 2007).

Limitations

When analyzing the composition of the research sample participating in the study described here, some limitations become apparent. Due to the size of the group and the limited geographical scope of the data collection, the conclusions of this study cannot be generalized. This is because the sample collected was not representative, and its low numbers may have negatively affected the quality of the results obtained in the statistical analysis. In addition, many of the observations described here cannot be related to the conclusions of other researchers due to the lack of such studies in Poland and the limited number of such works in foreign literature.

Further work on the issues discussed here should therefore extend the research area both geographically and in terms of sample size. It could also be interesting to extend the research by using additional tools, such as questionnaires measuring the intensity of individual components of psychological flexibility or other tools to measure subjects' resilience. Given the poor recognition of the issues at hand, qualitative studies could help fill in the observed research gaps. Despite these limitations, it is worth noting that this study lays the foundations for further research in an underexplored area of both Polish and global educational research.

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Managing the diverse potential of university staff by motivating their development

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Abstract:

Research objectives (aims) and problem(s): The study focuses on factors that motivate and support the personal potential of university employees. The aim of the research is to identify these factors in the generations represented by the respondents. Another objective is to determine university managers' courses of action for developing strategies to motivate and support the growth of academic teachers from different generations. The main research problem was formulated as follows: What factors motivate and support employees from different generations (Baby Boomers and Generations X, Y, and Z) in the workplace?

Research methods: The research was conducted as a quantitative study. The method used was a survey conducted by means of a questionnaire using convenience sampling. A pilot study involving 198 teachers was conducted at universities in Poland in March 2025. As the study focused on generational differences, the respondents were grouped into four generational groups.

Process of argumentation: Polish literature lacks publications on the subject in question. This allows us to assume that the results presented herein are innovative and fill a gap in the research regarding motivating and supporting different generations of university teachers.

Research findings and their impact on the development of educational sciences: The study reveals generational differences among academic teachers in expected motivations and support in the workplace. For Baby Boomers and Generation Y, personal development opportunities and employment stability were the most important; for Generation Z, it was flexible working hours and promotion/recognition

Keywords:

university teacher,
academic teacher,
management,
motivation,
development

opportunities; and for Generation X, it was flexible working hours and employment stability.

Conclusions and/or recommendations: Further in-depth investigations are required to diagnose the situation of academic staff members and introduce adequate motivating and support solutions.

Introduction

The effectiveness of human work depends on one's well-being in the workplace, social climate, and interpersonal relations. These factors facilitate the creation of a workplace that motivates employees to develop themselves, fulfill their individual and collective goals, and act for change. According to Day (2008, pp. 169–170), when taken as natural, interpersonal relations (based on high social, interpersonal, and communication competence) and principles (respect, kindness, integration, trust, speaking up, showing emotions, and engagement) create, deepen, and increase positive attitudes toward and motivation to work. Thus, the quality and intensity of relations between people become particularly important when creating a growth-oriented workplace. It is relationships that are the main component of a workplace atmosphere. When speaking about a university as the workplace for academic teachers, their quality influences not only the achievement of research, scientific, educational, and development goals but also, and above all, teachers' well-being, motivation, and willingness to participate actively in the fulfillment of the university's mission. This, in turn, translates into their professional development as scientists, including the attainment of degrees and titles, greater individual and professional prestige, and greater opportunities and accomplishments for students (Łukasik, 2018, pp. 92–93).

It has been assumed that creating a climate that favors university teachers' growth depends mainly on leaders who manage the human potential within the university's organizational structure. Thus, effective employee motivation depends on the managing staff, their interpersonal competencies and predispositions (such as being goal-oriented, design abilities, decisiveness, openness to alternative solutions, high inner

motivation, commitment to constant self-development, etc.), and their dominating traits (empathy, decisiveness, consistency, responsibility, reflectiveness, etc.). These features allow them to respond to any situation in the workplace. They can act as:

- catalysts – recognize a need for change and try to motivate the team to introduce it;
- solution providers – have clear ideas about what needs to be done and offer applicable solutions (consultants, experts);
- process experts – help others adapt to change and deal with it (typical change agents); or
- resource collectors – gather people with diverse skills and help them use their resources in the best way possible (Makin et al., 2000, p. 280).

The focus of this article is on a specific method for managing the resources and potential of academic staff through motivation that meets their needs and expectations regarding personal development, depending on the generation they represent. Four generations were taken into account: Baby Boomers and Generations X, Y, and Z. Representatives of these generations in this study are professionally active in universities, where they work as teachers, and their needs and expectations are often completely different. This requires leaders or managers to apply appropriate management methods and use their knowledge, predispositions, and traits to facilitate the development of multi-generational R&D teams. The article proceeds by presenting the theoretical assumptions of the above-mentioned research project, including the development and motivation categories based on which the research methodology was designed, followed by a description of the research procedure, the results, and a discussion with final conclusions.

Motivating and development – definitions

In his two-factor motivation theory, Herzberg (1966) identifies two sets of determinants: external (hygiene factors) and internal (motivators). His theoretical assumptions (mainly those regarding motivators) served as the basis for reflections on their possible theoretical and practical applications in managing personnel resources in universities. According to the concept, motivators are the factors that “contribute to employees’ increased effort and performance” (Paliga, 2021, p. 23). For Herzberg, motivators include “achievement, recognition, the work itself, responsibility and advancement” (Herzberg 1966, p. 46).

Employees’ effectiveness, development, motivation, and engagement depend, in particular, on factors related to social relations, recognition, and development opportunities provided by the hiring organization. This has been confirmed by Myjak (2011), who indicates that greater motivation to work and develop, followed by increased satisfaction, depend on whether the workplace is an environment that ensures:

- personal fulfillment, understood as personal development opportunities, using one’s individual talents and qualifications, and the sense that one’s work is useful,
- good relations with supervisors,
- good relations with coworkers,
- good organization, that is, a system of rules, methods, and actions to connect people and resources with the means and objects/subjects of work and workers, and
- professional achievements resulting from the need for development, leading one to become an even better professional with even greater accomplishments (Myjak, 2011, pp. 33–36).

Personal fulfillment is a particularly important motivator. This factor allows academic teachers to meet their needs, especially the very important need for (personal) growth, acceptance, recognition, meaning, etc. (Clarke & Hollingsworth, 2002; Darling-Hammond et al., 2017). To fully

grow, realize their potential, use their abilities, feel accomplished, and, thus, feel recognized and useful, university teachers need workplace conditions that support the completion of professional goals as well as individual accomplishments (Łukasik, 2018, pp. 69–70)

Self-fulfillment opportunities, including motivating by stimulating development and creating the proper conditions for it, are directly linked to Maslow's theory of needs. In this context, it can be assumed that favorable working conditions and a good team leader can satisfy the need for safety in the workplace. According to Maslow, the need for safety is one of the most important. Safety can be viewed in different areas of human life, for example, physical, emotional, or economic. Satisfaction thereof reduces anxiety, facilitates order and self-esteem, is the basis of a positive attitude toward building friendly relationships with others, and enables the development of both the self and others (in the case of university teachers, fellow academics and students). Other important factors based on the need for safety that facilitate development in the workplace include acceptance and recognition, prestige, and development opportunities (Maslow, 1990).

Some of the other work motivators most commonly mentioned in the literature on the subject include remuneration and other material benefits, fair treatment, safe work conditions, job security, connection (relationships with others), prestige (respect), power/influence (over others), access to information, interesting work (absence of boredom), challenges (adrenaline), tasks consistent with one's interests, work consistent with one's calling (sense of mission, noble cause), changes, style of work in accordance with preferred lifestyle (e.g. pace of work), independence, and satisfaction (Sak-Skowron & Skowron, 2017, p. 246). Acceptance and recognition are basic needs that, when met, enable proper functioning at work and in private life. Their absence translates into distrust, disengagement, conflicts, negative competition, and strained relations, which, in turn, hinder one's development and distort the experience of success and professional fulfillment (Łukasik, 2018, pp. 109–115). This was confirmed by Springer, who identified determinants of motivation to work and satisfaction and grouped them into four categories of needs: safety, affiliation, power and recognition, and development (Springer 2011, p. 167).

Most studies of motivation and job satisfaction focus on meeting individuals' needs, which determines one's internal motivation, performance, and the completion of developmental goals. Among the individually satisfied needs that determine employees' growth, satisfaction, and contentment, Spector lists the following: appreciation, effective communication, relations with coworkers, the nature of the work itself, the organization's policies and procedures, pay, personal growth, promotion opportunities, recognition, security, and supervision (Spector, 1997, p. 64). To these, Lewicka adds motivation procedures and opportunities for knowledge sharing (Lewicka, 2010, p. 65). Sak-Skowron and Skowron indicate that meeting one's needs and increased motivation to work depend on three groups of factors: work-related, non-work-related, and individual (Sak-Skowron & Skowron, 2017, pp. 247–250). In the context of meeting individuals' needs and fostering their engagement to work, factors from the first group are critical. These include:

- Promotion opportunities (growth) – “if employees see no opportunities for development and future promotion, they are less satisfied with their job conditions. On the other hand, the higher their position in the organization's hierarchy, the greater their satisfaction with work, which generally results from the fact that people in higher roles have access to more motivators, greater autonomy and responsibility, and their tasks are more difficult” (Robbins, 2003, p. 71).
- Personal growth opportunities – “with time, if employees do not grow, they can feel stuck and less satisfied. Lack of change can also lead to greater discouragement and a passive attitude. This factor is usually associated with age and years of experience” (Sak-Skowron & Skowron, 2017, p. 247; see also Piłkuła, 2016, 2022; Jagielska, 2022a).
- Achievements – “some employees have a great need for success. If their employer does not create conditions that will help them meet this need, it can decrease their level of job satisfaction” (Sak-Skowron & Skowron, 2017, pp. 247–248).
- Appreciation – “lack of feedback from supervisors, in the form of credit or financial gratification, stimulates dissatisfaction among

employees” (Sak-Skowron & Skowron, 2017, p. 248; see also Piłkuła, 2016).

- Independence (level of autonomy) – “independent completion of tasks is important for individuals with a deep need for accomplishments. Such persons like to act independently and often make risky decisions that can lead to the organization’s success. If their actions are somehow blocked, their frustration will grow” (Sak-Skowron & Skowron, 2017, p. 248).
- Supervision (level of control during completion of tasks and level of autonomy) – “the level of control expected by employees depends on many factors (e.g., personality, experience); some workers need greater supervision during work, others will expect more independence. Inappropriate supervision can cause frustration and translate into less satisfaction from work” (Sak-Skowron & Skowron, 2017, p. 248).
- Nature of the work – “so-called working conditions, including the workplace equipment, working hours, as well as benefits like health-care, parking place, etc.” (Skowron & Gaşior, 2017, p. 343; see also Sak-Skowron & Skowron, 2017, p. 248).
- Coworkers (nature of relations with other people, level of competition, and/or pro-social attitudes) – “the promotion of pro-social attitudes and cooperation between employees can, in some cases, increase job satisfaction, whereas in other cases, it can generate discouragement and dissatisfaction, especially among determined, success-driven individuals” (Sak-Skowron & Skowron, 2017, p. 248; see also Piłkuła, 2016).
- Stress – most often connected with “one’s role within the organization or role conflict; it significantly affects job satisfaction and potential readiness to change the workplace. However, job satisfaction is influenced not only by work-related stress but also by stress in private life” (Sak-Skowron & Skowron, 2017, p. 249).

In order to successfully motivate and support university teachers’ growth, managers should take the above factors into account. In addition, managers should apply the following qualities in their daily practice:

a passion to achieve and maintain excellence by using new insights and practical solutions; a pro-active attitude and anticipatory thinking and acting; recognizing the importance of innovation; the ability to recognize and develop talent in the organization; and the ability to coordinate work using the strengths of both the team and the organization as a whole (Madalińska-Michalak, 2012, p. 38). In order to support teachers in change and stimulate their development, they should also:

- introduce solutions that would not be in place without their intervention
- act toward creating working conditions that facilitate a friendly and engaging environment that allows employees to give their best
- encourage others to take risks
- require an innovative approach from others
- teach others to learn from both successes and failures
- shape individual career paths
- set goals and show what is important and meaningful
- inspire individuals to accomplish goals that previously seemed unreachable
- acknowledge that satisfaction from work guarantees the success of the organization
- ask “Why?”, not “Why not?” (Madalińska-Michalak, 2012, pp. 38–39)

This article’s research focuses on the needs and expectations of university teachers toward their unit managers. The above approaches to needs, motivation for growth and change, and managers’ activities are applied in the context of the expectations of employees from different generations.

Methodological assumptions

The object of the study is the factors that motivate and support the personal potential of university employees. The aim of the research is to identify these factors in the generations represented by the respondents.

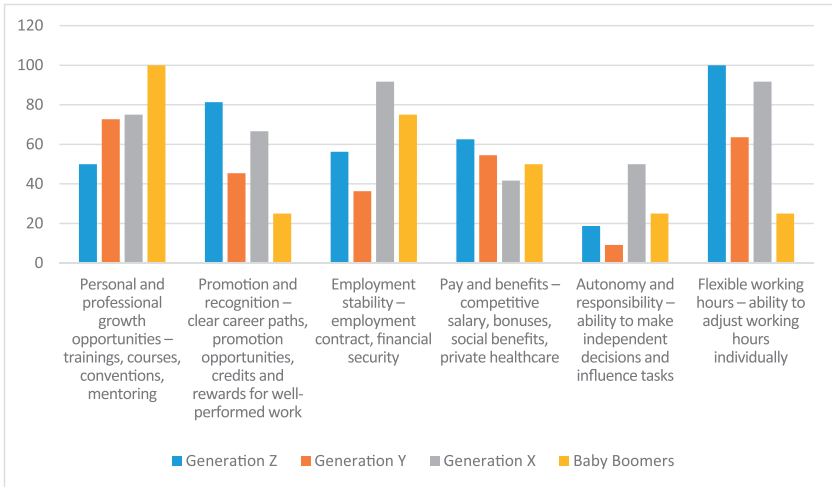
Another objective is to determine the courses of action of university leaders, managers, and directors for developing individual and institutional strategies to motivate and support the growth of academic teachers from different generations. Even though the problem is so important for individual development and for the promotion of science, no studies have been conducted in this area in the Polish literature. This allows us to assume that the results presented herein are innovative and fill a gap in the existing research. The research was conducted as a quantitative study. The main research problem was formulated as follows: What factors motivate and support employees from different generations (Baby Boomers and Generations X, Y, and Z) in the workplace?

The method used was a survey conducted by means of a questionnaire using convenience sampling. The questionnaire included demographic questions and 10 semi-open-ended items about the scope of individuals' motivation, needs, and expectations regarding professional development in the workplace. A pilot study was conducted at universities in the Małopolskie region of Poland in March 2025. The sample consisted of 198 teachers working in different roles (assistant, assistant professor, professor) in different universities. As the study focused on generational differences, the respondents were grouped into generations: 47 respondents were Baby Boomers (born in 1946–1964); 56 persons were from Generation X (born in 1965–1980); 51 persons were from Generation Y (Millennials, born in 1981–1994), and 44 persons were from Generation Z (iGen, born in 1995–2010).

Factors motivating and supporting growth in the workplace

With regard to the project's conceptual and methodological assumptions, the results of the study and analyses thereof will be presented in relation to workplace motivators and supporting factors as indicators of growth and increased motivation to work. These insights will be particularly meaningful to those who manage multi-generational teams of academic teachers within university organizational units. The data regarding the motivating factors are presented in Figure 1.

**Figure 1. Factors motivating university teachers to grow
in their workplace**



Source: Author's own research

The following motivators were identified: personal and professional opportunities for growth – training, courses, conventions, mentoring; promotion and recognition – clear career paths, promotion opportunities, credits and rewards for well-performed work; employment stability – employment contract, financial security; pay and benefits – competitive salary, bonuses, social benefits, private healthcare; autonomy and responsibility – ability to make independent decisions and influence on tasks; and flexible working hours – ability to adjust working hours individually.

The respondents' preferred choices reveal some generational differences. Most Baby Boomer respondents (almost 75%) declared that personal growth and employment stability were the strongest motivators for them. Similar results (nearly 75%) were obtained for Generations X and Y. For Generation Z, however, this was the least important factor. For them, the strongest motivators were flexible working hours (100%), followed by promotion opportunities and recognition (80%). Flexible working hours and employment stability were important motivators for Generation X teachers (more than 90%). These results for Generations X, Y, and Z are

consistent with other studies conducted by Kwiatkowski (2018), Cybal-Michalska (2013), Piorunek (2004, 2009), Jagielska (2022a, 2022b, 2024), and the results for Baby Boomers are consistent with the studies of Piłkuła (2016, 2017a, 2017b, 2022) and others.

Factors ranked as less important by respondents across all generations included autonomy (though there was a difference of about 20% between Generation X and other generations) and pay and benefits (Generation Z recorded a significantly higher score). Promotion opportunities and recognition were valued very low among the oldest generation (Baby Boomers); only one-quarter of them declared that this factor motivated them to work. Most likely, this is because people in this generation already hold the highest scientific degrees/titles and have been promoted accordingly, expecting to retire in the near future. Similar results for this age group were reported by Piłkuła (2016, 2017a, 2017b, 2022). The preferences connected with motivation and needs in the workplace identified in this study are also consistent with previous findings on generational preferences among workers (Cybal-Michalska, 2013; Jagielska, 2022a, 2022b, 2023; Kwiatkowski, 2018; Piłkuła, 2016, 2017a, 2017b, 2022).

**Table 1. Factors supporting university teachers
in their growth at work**

	Generation Z	Generation Y	Generation X	Baby Boomers
Support from superiors – availability of leaders, openness to discussion, constructive feedback	56,25	72,72	66,66	75,00
Clear communication – transparent flow of information between all levels of the organization	75,00	54,54	58,33	75
Good team spirit – cooperation, trust, respect, team integration	87,50	100	75	100
Infrastructure and work tools – ergonomic offices, well-equipped workstations, and appropriate software and hardware	18,75	9,00	25,00	25,00
Work-life balance – initiatives supporting work-life balance (e.g., hybrid work, additional days off)	87,50	100	50,00	25,00
Employee support programs – access to psychological assistance, mediation, and well-being programs	31,35	18,18	8,33	0

Source: Author's own research

Among the higher-rated factors that support teachers in the workplace were a good team atmosphere and support from superiors through availability, openness, and constructive feedback. The latter factor was not scored as highly by Generation Z, who preferred employee support programs such as access to psychological assistance, mediation, and well-being programs (over 30%).

The importance attributed to the support factors varied depending on the respondents' generational group. For Baby Boomers (75% of respondents), clear communication – the transparent flow of information between all levels of the organization – is a supportive factor, as it is for Generation Z. For representatives of other generations, it is less important. It is also worth noting that Generations Z and Y valued work-life balance, i.e., initiatives supporting work-life balance, such as hybrid work and additional days off (nearly 90% of Generation Z and 100% of Generation Y). The data obtained show that the demand for forms of support is also consistent with the dominant expectations characteristic of the represented generation. Hence, the youngest respondents valued support outside the institution (work-life balance or employee support programs), while the oldest valued support within the institution (atmosphere, cooperation, communication, integration) (Cybal-Michalska, 2013; Jagielska, 2023; Kwiatkowski, 2018; Piłkuła, 2016).

Summary and conclusions

This study has shown that there are generational differences among academic teachers in their motivations and expectations regarding support in the workplace. For Baby Boomers and Generation Y, personal development opportunities and employment stability were the most important; for Generation Z, it was flexible working hours and promotion/recognition opportunities; and for Generation X, it was flexible working hours and employment stability. For Generations X, Y, and Z, the results are consistent with other studies (Cybal-Michalska, 2013; Jagielska, 2022, 2023; Kwiatkowski, 2018). The same applies to Baby Boomers (Piłkuła, 2016, 2017a, 2017b, 2022).

The study has also shown that motivating and supporting university staff in their growth requires actions adapted to the expectations of specific age groups (generations). Thus, effective motivation will only be possible when their needs, expectations, objectives, and attitudes are properly identified. Actions oriented to the needs and expectations of certain generations will guarantee openness to change and development of staff members, scientific disciplines, and universities. Managers are responsible for creating working conditions that ensure a favorable work climate characterized by positive emotions and good relations among employees from different age groups (Clarke & Hollingsworth, 2002; Darling-Hammond et al., 2017). Madalińska-Michalak (2012, pp. 126–127) claims that this is possible when the potential of the staff and the characteristics of these generations are diagnosed. This potential is mainly determined by:

- knowledge, experience, skills, motivation for growth and change, openness to change, flexibility in action and thinking, pace of learning;
- a learning community within which teachers cooperate and learn from each other; and
- coherent actions and means used to complete them.
- The role of unit managers is to recognize the human potential of academic teachers and motivate them to put in effort, change, grow, and outdo themselves.

Method limitations and further research

Like any method, the one used in this study has its limitations. The research tool needs to be standardized, and a proper study must be conducted with a purposefully sampled university teacher population with considerations made for generational differences. Given the absence of literature on supporting and motivating the development of university teachers, further in-depth investigations are required. Such research

would help diagnose the situation of academic staff members, their needs and expectations, and introduce appropriate motivating and supportive solutions by the management.

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Contentment with work and risk of professional burnout among university staff¹

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Abstract

Research objectives (aims) and problem(s): The article evaluates contentment with work in relation to professional burnout among university staff. The study was conducted between May and December 2024 among academic staff members of a university in Poland. The sample consisted of 163 university teachers with various scientific degrees and titles. The sampling was convenience. The study's objectives were to identify and evaluate correlations between contentment with work and areas of burnout, as well as selected socio-demographic and work-related factors.

¹ This article presents a part of a study using an original tool: the Educational and Developmental Needs Questionnaire (PER, Polish: *Kwestionariusz Potrzeb Edukacyjno-Rozwojowych*), developed by Joanna M. Łukasik. The research was conducted as part of the project *Job satisfaction and risk of professional burnout among university staff*, under action 2.1, *Funding for research mini-projects: Supporting scientific studies and development works in management influencing the socio-economic environment in the region*. This project forms part of the initiative *Greater potential of management and quality sciences through better use of the capital of Polish rural areas*, implemented under the Regional Initiative of Excellence program for 2024–2027 (Project No. 011/2.1/2024, RID/SP/0039/2024/01). The project manager and executor is Joanna M. Łukasik, and its co-executor is Dr. Chrystian Firlej. The project is co-financed by the Ministry of Science within the Regional Initiative of Excellence program. The total subsidised amount amounts to PLN 6,187,000. The project is being carried out over the period 2024–2027.

Research methods: The study was conducted using the survey method. The following questionnaires were used: MSQ-SF and OLBI. The data obtained were described using adequate statistical methods.

Process of argumentation: During a literature review, it was noted that studies of job satisfaction and burnout among academic teachers had hardly ever been conducted. Therefore, it was concluded that a research project focusing on this group (academic staff members) and conducted using tools applied in pedagogy only occasionally (MSQ-SF) or never (OLBI), as well as with complementary concepts and methodologies, would be valuable.

Research findings and their impact on the development of educational sciences: Analyses of the results indicate that academic teachers are content with their job. The majority of them do not experience burnout. Slight burnout was evident among respondents with experience in other workplaces. This means that managers of human potential in universities should focus in particular on empowering the youngest staff members with experience in other working environments.

Conclusions and/or recommendations: There is a need to explore contentment and burnout among academic teachers further. Such research will help diagnose the situation of these staff members and take supportive, empowering measures that will prevent, for example, outflow of academic teachers or a decrease in the quality of their work.

Introduction

For decades, there has been ongoing interest in the issue of professional burnout. Of the numerous reasons for this interest, the main one is that, once diagnosed, burnout and its consequences for employees and organizations can be minimized by implementing appropriate preventive or therapeutic/medical measures. As noted by Baka and Basińska, “more and more managers are aware that human resources are one of the main sources of a lasting competitive advantage. For this reason, they pay much attention not only to employees’ achievements but also their health and well-being at work” (Baka & Basińska, 2016, p. 31). Moreover, the lack of diagnosis and adequate preventive measures has a negative impact on the functioning of burned-out persons in many areas of their lives. Existing studies, particularly those that have investigated teachers, show the negative influence of burnout on people’s physical and mental

health (Schaufeli et al., 2009) and on their functioning in the workplace (Baka & Cieślak, 2010; Świętochowski, 2011; Synal & Szempruch, 2017).

Since there are few studies on job satisfaction and burnout among academic teachers, though Świętochowski conducted one study on university and secondary school teacher burnout (2011, pp. 133–143), this article is a step toward filling this gap. The objective of the text is to explore and describe the relations between contentment with work and professional burnout among university teachers. The study is valuable for protecting the teachers' psychological health and, in the event of a positive diagnosis, taking measures to reinforce their sense of self-worth, personal dignity, and will (Maslach & Leiter, 2011, p. 17) to prevent consequences such as psychological, social, and somatic disorders (Fengler, 2000; Maslach et al., 2001).

Theoretical grounds of the project

Despite the category differences, the term 'contentment with work' is often identified or used interchangeably with 'job satisfaction' in the psychological and pedagogical literature (Łaguna, 2012; Pikuła et al., 2024; Wołowska, 2013). However, according to Zalewska (2001, p. 199), they should be distinguished as two independent concepts. Therefore, it was decided that this project would focus on contentment with work as an indicator of satisfaction (Łaguna, 2012).

Zalewska argues that "being content with one's work is an attitude through which one's inner condition, evaluations, and judgments connected with the work environment are manifested. It is expressed through cognitive and affective mechanisms. The cognitive aspect of contentment is job satisfaction, whereas the affective aspect is identical with one's mood or well-being in the workplace. Thus, contentment is superior to satisfaction which, together with well-being, constitute contentment" (Zalewska, 2001, p. 201). Based on this approach, Kaczkowska-Serafińska emphasizes that contentment with work is a "positive attitude of employees to tasks, work conditions, supervisors and coworkers; it is a result

of influence of external factors: remuneration, material workplace conditions, relations with others, management style” (Kaczkowska-Serafińska, 2013, p. 146). Conversely, job satisfaction is a “higher level of contentment with work and is connected with the impact of both external and internal factors: learning opportunities, assigned responsibility, recognition” (Lisowska, 2017, p. 228).

Therefore, it can be concluded that the condition necessary to be satisfied with one’s work is to be content with it. One can say that job satisfaction is a broader category that includes the aspect of contentment with work, while the element that distinguishes contentment and satisfaction from work is the time at which they occur. This results from the fact that contentment with work is a situational and changeable response, whereas job satisfaction, as a “strong sense of contentment,” is a sum of the long-term effects of contentment (Lisowska, 2017; Wudarzewski, 2013) and “most often includes relatively lasting and repeatable tasks, with greater degree of complexity and difficulty” (Wudarzewski, 2013, p. 337).

Contentment can be viewed from both a general and a particularist perspective (Wołowska, 2013, p. 121). From a general perspective, contentment is identified with a general emotional attitude toward work and does not assume relationships between certain work factors. In the particularist perspective, it is described as a specific type that refers exclusively to some specific work factor (single factors can be independent of each other, and each can be the source of a different aspect of job satisfaction) (Wołowska, 2013, p. 121).

In light of the differences between contentment with work and job satisfaction, the present project focuses on academic teachers’ sense of contentment with their work and its relationship to professional burnout. Thus, the phenomenon of burnout also needs to be theoretically explored.

The literature on the subject presents several concepts. The most well-known is the one formulated by Maslach and Jackson, who define burnout as “a syndrome of emotional exhaustion... dehumanized perception of others... and [a] tendency to evaluate oneself negatively... that occurs frequently among individuals who do ‘people-work’ of some kind” (Maslach & Jackson, 1996, p. 1). It mainly affects professionals who

work with others, provide support and assistance, and whose work is based on frequent interactions with others (Fengler, 2000; Maslach, 2003; Pikuła et al., 2024; Świętochowski, 2011).

The concept has three fundamental components: 1) emotional exhaustion (which involves, among other things, increasing and lasting fatigue connected with a subjectively experienced absence of vital power and the will to act, somatic symptoms like digestive and immune system disorders, headaches, and insomnia); 2) depersonalization (physical and cognitive distance between oneself and others, leading to dehumanized perceptions and treatment of others); and 3) reduced personal accomplishment (manifested as a lack of adequate competence, decreased effectiveness, and a negative perception of one's professional achievements) (Maslach & Jackson, 1996; Maslach et al., 2001). Research by Maslach and Leiter (2011) shows that specific burnout components are interdependent. Job demands directly influence the progression of emotional exhaustion, while individual predispositions contribute to a growing dissatisfaction with one's professional accomplishments and increasing depersonalization in relationships with others. This, in turn, results in growing psychological costs for the affected person, as well as consequences for the hiring institution (such as increased absence, reduced productivity, reduced cooperation between employees, and a tendency to avoid responsibilities) (Maslach & Leiter, 2016).

In addition to this classic approach, other researchers have proposed new models (see, e.g., Demerouti et al., 2001, 2003; Montero-Marín et al., 2011, 2012). Given the conceptual assumptions underlying the research tool used in this project, this article adopts an approach developed by Demerouti et al. (2001), who proposed the Job Demands-Resources (JD-R) model. The JD-R model assumes that "every profession has some specific risk factors which can lead to burnout in case of insufficient resources. Regardless of the type of job, professional burnout develops as a result of excessive job demands which are not modified using one's own resourcefulness. Understood in this way, burnout consists of two components: exhaustion and disengagement from work" (Baka & Basińska, 2016, pp. 31–32). In this model, the emphasis is not only on the emotional

but also on the physical and cognitive aspects of exhaustion. “They treat it as a result of a lasting, chronic tension caused by physical, emotional and cognitive job demands” (Demerouti et al., 2003, p. 15)

Demerouti et al. (2003) replace the term ‘depersonalization’ with ‘disengagement from work’. They define it as “an attitude of withdrawal from clients, coworkers, job content and the whole work-related context, for example, responsibilities, employee values and organizational culture. In addition, disengagement from work includes relations with the job itself, such as identification with one’s work and plans to stay in the profession” (Baka & Basińska, 2016, p. 32). This category is close to Maslach’s concept of “reduced personal accomplishment” (2003).

For the purpose of this project, the conceptual approaches of the contentment with work category according to Zalewska (2001) and the burnout category according to Demerouti et al. (2001) serve as the basis for developing a quantitative methodology and selecting the requisite tools and methods for statistical description.

Methodological assumptions

In order to investigate the relationship between contentment with work and professional burnout among academic teachers, a study was conducted between 1 May and 30 December 2024 at a university in southern Poland. The sample consisted of 163 university teachers with various scientific degrees and titles. The sampling was convenience. The study’s objectives were to identify and evaluate correlations between contentment with work and areas of burnout, as well as selected socio-demographic and work-related factors. The following research questions were formulated:

- P1: What is the relation between contentment with work and exhaustion and disengagement from work as areas of professional burnout?
 P2: Is there a correlation (and if so, how strong is it) between job contentment, burnout, and socio-demographic factors (age, gender,

experience, academic degree/title, and experience from other workplaces)?

A research hypothesis was formulated for P2:

- H: There is a correlation between contentment with work, burnout, and socio-demographic factors (age, gender, experience, academic degree/title, and experience from other workplaces). These factors determine the level of contentment and absence of burnout. When it comes to contentment, the literature describes these factors as personal. Wudarzewski (2013, p. 333), for example, lists age, gender, years of professional experience, academic degree/title, and needs.

The main hypothesis was further specified with the following hypotheses:

- H1: Age determines greater contentment with work and absence of burnout. Studies in this area, including Ang et al. (1993, pp. 31–39) and Pikuła et al. (2024), confirm that contentment with work increases with age, minimizing the risk of professional burnout.
- H2: Gender determines greater contentment with work and absence of burnout. Previous research (e.g., Clark 1996, 1997; Murray & Atkinson, 1981; Pikuła et al., 2024; Świętochowski, 2011) that takes the gender variable into account confirms that women are more content with their roles in social professions, reducing the risk of burnout.
- H3: Years of experience and academic degree/title determine greater contentment with work and absence of burnout. Studies in this area (e.g., Białas & Litwin, 2013; Jinnett & Alexander, 1999; Johnson & Johnson, 2000; Moorhead & Griffen, 1992) confirm that the more years of experience one has and the higher one's position, the greater their contentment. This is due to stabilization and the attainment of a certain professional status and its corresponding privileges, which also decrease the risk of burnout. The opposite results – namely, more years of experience and higher positions leading to lower levels

of job satisfaction – were presented by Clark and Oswald (1996). This was due to differences between expected and actual rewards obtained from certain promotions.

H4: Experience across multiple workplaces predicts greater contentment with work and the absence of burnout. Due to a lack of existing studies that include this variable, it will not be described in relation to the subject matter literature confirming the hypothesis.

The study was conducted using the survey method. The MSQ-SF questionnaire, developed by Weiss et al. (1967) and adapted by Borucki (1988), was used to assess contentment with work, and the OLBI questionnaire was used to evaluate professional burnout.

The scale developed by Borucki and used herein consists of 18 job items identified by Weiss et al. (1–18) and two factors developed by Borucki (19 and 20) (Jachnis, 2008, p. 143). Respondents indicated how much they agreed with certain statements on a 5-point Likert scale.

The Oldenburg Burnout Inventory (OLBI), adapted by Baka and Basińska, measures two key burnout components: exhaustion and disengagement from work (Baka & Basińska, 2016, p. 32). The Polish-language version of the OLBI was developed by Cieślak with the permission of the questionnaire's author (Baka & Cieślak, 2010). The OLBI consists of 16 items across two subscales: exhaustion (8 items) and disengagement from work (8 items). Answers are indicated on a 4-point Likert scale (Baka & Cieślak, 2010).

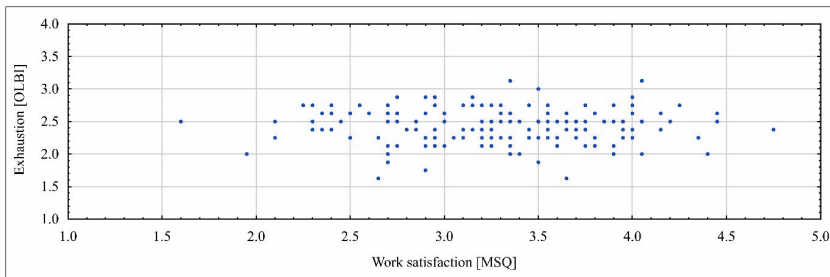
Data analyses were conducted using statistical methods and processed using Statistica 13.3. An alpha level of 0.05 was selected for all analyses. To answer the research questions about the differences between the two groups, the Mann-Whitney U-test was used, supported by the Glass rank-biserial coefficient (r_G). Correlation analysis was conducted using the Spearman correlation coefficient (r_s). Non-parametric methods of data evaluation were chosen due to the ordinal nature of the demographic variables and the non-normal distribution of the quantitative variables.

Results

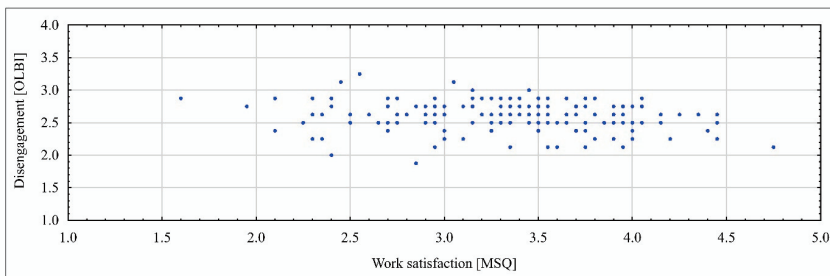
Exploring and identifying contentment with work and professional burnout in relation to socio-demographic variables is of particular importance for those who manage human potential in universities and design supportive measures. The study enabled an initial diagnosis of academic teachers' function in these areas. The analysis of the results and discussion are presented below.

Regarding the question about contentment with work in relation to exhaustion and disengagement from work as areas of professional burnout, Spearman's correlation coefficient was applied. The correlation summary is presented in Figure 1.

Figure 1. Scatterplot of raw work satisfaction scores with professional burnout of university teachers in the areas of exhaustion (A) and disengagement (B)



A. Professional burnout: exhaustion.



B. Professional burnout: disengagement.

Note. N=163.

The data analysis revealed a statistically significant correlation between contentment and disengagement from work ($r_s = -0.19$; $p = 0.020$), whereas the correlation with exhaustion was not statistically significant ($r_s = -0.04$; $p = 0.627$). The correlation between disengagement from work and contentment was negative and weak. In short, the higher the level of contentment with work, the lower the level of exhaustion. However, this conclusion does not apply to the area of disengagement from work.

The analyses of the relations between contentment with work, professional burnout, and selected socio-demographic and work-related factors will be presented in order of the detailed hypotheses. First, differences in contentment and burnout by gender were analyzed using the Mann-Whitney U-test, and the results are presented in Table 1.

Table 1. Analysis of differences in psychological variables between men and women

Tested variables		Women N=103		Men N=58		z	p	r_g
		M	SD	M	S			
Work satisfaction		3.30	0.55	3.32	0.60	-0.34	0.734	0.03
Professional burnout	Exhaustion	2.41	0.27	2.47	0.25	-1.00	0.316	0.10
	Disengagement	2.60	0.22	2.60	0.23	-0.28	0.781	0.03

Note. N – number of observations, M – mean, SD – standard deviation, z – Mann-Whitney standard test value, p – significance, r_g – effect size

The analysis showed that academic teachers did not differ significantly in their level of work satisfaction (contentment) and burnout results (exhaustion and disengagement) by gender. The results were low or very low.

Another socio-demographic factor was the respondents' age. Table 2 presents a summary of the analysis using Spearman's correlation coefficient.

Table 2. Correlation analysis of psychological variables with age

Tested variables		Age	
		r_s	p
Work satisfaction		0.15	0.051
Professional burnout	Exhaustion	-0.07	0.346
	Disengagement	-0.02	0.813

Note. N=163, r_s – Spearman’s coefficient, p – significance

Professional burnout did not correlate significantly with the respondents’ age in either area (exhaustion or disengagement from work). The relation between contentment with work and age was within the statistical tendency. The analyses indicate that the level of contentment with work increases with age.

Spearman’s correlation coefficient was also used to evaluate the relationships between contentment and burnout and years of experience and academic title. The results are presented in Table 3.

Table 3. Correlation analysis of psychological variables with work experience and title

Tested variables		Work experience		Title	
		r_s	P	r_s	p
Work satisfaction		0.21	0.007	0.19	0.014
Professional burnout	Exhaustion	-0.05	0.509	0.02	0.849
	Disengagement	-0.01	0.930	0.09	0.264

Note. N=163, r_s – Spearman’s coefficient, p – significance

According to the analyses, neither area of professional burnout (exhaustion and disengagement from work) correlates with the level of experience or degree/title of university teachers. However, contentment with work correlated with both title and years of professional experience.

These correlations were positive and weak: the longer one's experience and the higher position they held, the greater their contentment with work.

The last investigated data component was the difference in psychological variables based on having experience in another academic unit, analyzed using the Mann-Whitney U-test. A summary of the results is presented in Table 4.

Table 4. Analysis of differences in psychological variables between those with experience working at another university

Tested variables		Lack of experience N=53		With experience N=110		Z	p	r _g
		M	SD	M	SD			
Work satisfaction		3.24	0.56	3.33	0.57	-1.14	0.253	0.11
Professional burnout	Exhaustion	2.38	0.28	2.46	0.25	-1.84	0.065	0.18
	Disengagement	2.61	0.23	2.59	0.23	0.41	0.685	0.04

N – number of observations, M – mean, SD – standard deviation,
 z – Mann-Whitney standard test value, p – significance, r_g – effect size

Teachers' level of contentment with work did not differ significantly depending on whether they had experience of working at another university. Similarly, there were no differences in the areas of professional burnout. However, it is worth noting that respondents with experience at other universities reported higher results in the area of exhaustion (statistical tendency).

Discussion and conclusions

Regarding the relationship between contentment with work and burnout in the two areas under study (exhaustion and disengagement from work), there was a statistically significant correlation between contentment with work and disengagement. This means that the higher the

level of contentment with work among university teachers, the more they can disengage from it; consequently, they experience less emotional, psychological, and physical overload (Świętochowski, 2011).

As for the socio-demographic variables, the analysis showed that academic teachers did not differ significantly by gender in their level of work satisfaction and burnout results (exhaustion and disengagement). Thus, the correlation between female gender and higher work satisfaction was not confirmed (Clark, 1996, 1997; Murray & Atkinson, 1981). This most likely results from the nature of the job itself and factors such as relationships with students, personal responsibility for the results of internal exams, the sense of autonomy, self-decisiveness of students, etc., as well as the different social status of university teachers compared to primary or secondary school educators (Świętochowski, 2011). Being satisfied with work reduces the risk of burnout among university staff.

With regard to age, professional burnout did not correlate significantly with teachers' age. However, the hypothesis that the level of contentment with work increases with age was confirmed. Thus, satisfaction among women and men increases with age, as confirmed by correlational analyses linking age and contentment factors (Ang et al., 1993; Piękna et al., 2024; Świętochowski, 2011). It also minimizes the risk of professional burnout.

Professional experience and scientific degree/title do not correlate significantly with the areas of burnout studied. However, there were correlations between work satisfaction and both title and experience. Therefore, it was confirmed that contentment with work increases with years of professional experience (Białas & Litwin, 2013, p. 162; Jinnett & Alexander, 1999; Johnson & Johnson, 2000). A similar result was found regarding scientific degree/title. The higher one's title, the greater their level of satisfaction with work. The results also indicate that individuals who advance in their careers show high levels of contentment, as they are convinced that their future prospects improve with each promotion (Moorhead & Griffen, 1992; Ronen, 1978; Świętochowski, 2011). In addition, contentment, as determined by a sense of greater professional stability and holding a certain professional status and privileges, reduces the risk of burnout.

The last variable investigated was experience in other universities. This variable did not correlate with work satisfaction. However, academic teachers with experience at other universities scored higher in the burnout scale (statistical tendency) than those who had worked at only one workplace. The hypothesis regarding the first burnout area (exhaustion) was therefore not confirmed. The most likely explanation is that working in two places at once is more emotionally and physically demanding. In the event of changing one's workplace, the new place and the process of adapting to new conditions may contribute more to teachers' sense of exhaustion. There are no relevant literature references, so any comparisons or analogies are impossible.

The analyses indicate that academic teachers are content with their jobs. The majority of them do not experience burnout. Slight burnout was evident among respondents with experience in other workplaces. This means that managers of human potential in universities should focus particularly on empowering the youngest employees and staff members with experience in other working environments. Greater contentment with work facilitates behavioral changes and minimizes the risk of burnout (Białas & Litwin, 2013, p. 167).

Method limitations and further research

Like any method, the one used in this study has its limitations. First, the research must be further developed and conducted in a representative sample of university teachers. There is also a need to explore job satisfaction and burnout further among the youngest teachers, the least experienced academic teachers with the lowest scientific degrees and titles, and teachers who have just begun working in a new workplace/university. Such research will help diagnose the situation of these staff members and take supportive, empowering measures to prevent, for example, professional burnout, low levels of contentment with work, and, consequently, the outflow of teachers from universities or a decrease in the quality of their work.

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Hospital school teachers: Identities, challenges, and sense of professional success

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Abstract

Research objectives (aims) and problem(s): The purpose of the study is to explore the reality of hospital education from teachers' perspectives. Special focus is placed on perceptions of the goals and tasks of education, general support offered to hospitalized children and youth, and teachers' professional identity and strategies. The article poses the question of the circumstances under which different professional identities are formed and how they shape interactions with students, parents, and medical personnel.

Research methods: Qualitative research methods were used: group and individual interviews with teachers and principals of hospital schools (N=10), participant observation and research walks in two hospital schools, and desk research. The study design was ethnographic.

Process of argumentation: Whereas most national and international studies are focused on pupils' perspectives of hospital education, our

Keywords:

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teacher's identity,
sense of professional
success,
ethnography of school

attention is on the teachers' side: identities, strategies for coping with everyday school life, the construction of these strategies, and their professional roles. The aim of this article is to explain how teachers define their position in the process of hospital education.

Research findings and their impact on the development of educational sciences: The study reveals a typology of four basic models of professional identity conceptualized through the lens of action strategies employed by teachers working with hospitalized youth and children: *Chameleon*, *Rescuer – Clown Doctor*, *Rescuer – Therapist*, and *Braveheart*. All of them reveal different forms of coping with the tension between the perceived mission of supporting youth and children with complex educational, emotional, and psychological support and an unfavorable institutional environment, lack of psychological competencies, and other barriers.

Conclusions and/or recommendations: The study's main recommendation is to provide complex support for teachers employed in hospital schools. It should include training in psychological and emotional support, clarifying formal relationships between the primary institutional actors involved, and sharing responsibility for hospital education of youth and children.

Introduction

Teachers working in schools organized within medical institutions constitute a professional group that receives little attention, both in academic circles due to the limited number of studies in this field (Deręgowska, 2017) and in the public debate and among educational policymakers. Poland has no up-to-date registry of such schools, no monitoring of the demand for them, nor any tracking of the number of teachers employed in these institutions. Research on the daily functioning of hospital school teachers, their needs, and the challenges they face in their work is scarce.

Contemporary approaches are moving away from the medical model of pediatric care focused solely on the treatment of disease. Instead, emphasis is being placed on a more humanistic approach that considers the psychosocial sphere of the patient (Caggiano et al., 2021). Researchers highlight the role these schoolteachers play in the recovery process. Their responsibilities include delivering educational activities and care-related functions tailored to chronically ill students (hospital patients). Consequently, the nature of their work significantly differs from that of teachers

in mainstream schools (Jiliberto & Zárata Alva, 2025). Beyond implementing the curriculum from the student's home school, these teachers fulfill a therapeutic role, supporting students through treatment and recovery to ensure a smooth return to their regular educational path (Owerczuk, 2020) while maintaining at least a semblance of normalcy in the hospital environment (Steinke et al., 2016). Teachers are also expected to have a basic understanding of specific illnesses, enabling them to adapt their teaching methods to the individual capabilities of each child.

Hospital schools are characterized by high student turnover, requiring teachers to be flexible in planning lessons, which are often delivered individually or in small, age-diverse groups (Moszyńska & Antoszewska, 2019). These teachers are therefore expected to possess strong subject knowledge, didactic skills adapted to special educational needs, therapeutic competencies for offering emotional support to students and their families, and basic medical awareness of how various illnesses affect functioning.

This unique scope of responsibilities, inherent to teaching in schools within medical facilities, forms a distinct set of challenges and sources of satisfaction specific to this professional group (Beningo & Fante, 2020). The greatest stressor for these teachers is exposure to their students' suffering and illness. Additionally, organizational difficulties – such as limited time and space for teaching and restricted communication with medical staff – negatively affect their well-being. On the other hand, sources of satisfaction include recognition from the children's families, direct interaction with the students, and the relationships they build (Beningo & Fante, 2020).

In our analysis, we present a typology of identities among hospital school teachers, along with the associated challenges and areas of professional satisfaction. We understand identity as a social construct – not formed solely by an individual, but jointly created through interaction (Hałas, 2005, p. 33). Identity refers to knowledge expressing one's self-concept; it is a genetically significant component of the "self" and, from the standpoint of human condition, influences self-perception and one's way of being in the world (Witkowski, 2010, p. 143). From the teacher's

perspective, one's way of being in the world is reflected in their teaching strategies, understood as their ways of coping with everyday school life, their relationships with students, parents, and fellow teachers, and institutional demands (Woods, 1990). Accordingly, identity is linked to the roles we assume, the situations we find ourselves in, and the groups to which we belong, anchored in a sense of belonging and perceived similarity to others (Hałas, 2005, p. 34). A teacher's identity is shaped by a sense of social placement arising from relationships with key school actors – students, parents, and other educators. It is a social construct influenced by personal values and institutional context (Mockler, 2011), dependent on context, relationships, and individual beliefs (Day et al., 2006). Given its narrative nature (Beauchamp & Thomas, 2009), it is best revealed through professional storytelling.

Method

This study uses an ethnographic design (Hammersley & Atkinson, 1995), involving the collection of a variety of data on the culture of hospital schools. The aim is to explore the poorly recognized system of hospital schools in Poland, in particular the organization and conditions of teaching work, the support provided by the schools' social environment, and teachers' relationships with students, parents, public schools, and hospital staff (Authors, 2025). The analyses presented in this paper focus on identifying the identities of hospital school teachers, their problems, and sources of job satisfaction.

Qualitative research methods were used: group and individual interviews with teachers and principals of hospital schools, participant observation and research walks in two hospital schools, and desk research. A total of 10 individual, diad, or triad interviews were conducted. The first four interviews were conducted online, based on a common script that covered issues relating to (1) the day-to-day functioning of hospital schools, (2) the interactions between teachers, students, parents, and medical staff, i.e., between those directly involved in the educational

processes in the hospital, (3) institutional cooperation with the environment, especially with the students' schools of origin and the management of the medical institutions, and (4) hospital school teachers' problems, successes, and expectations. Further online interviews with school directors focused on the formal-legal framework of hospital schools functioning at the intersection of the education and healthcare systems. The remaining interviews were conducted in person during research walks in the selected schools.

Due to the project's tight schedule (October 2024–January 2025) and the need to start fieldwork promptly, sampling was based on availability. Interview participants and schools for observation were recruited by the snowball method (Babbie, 2014), using contacts from both the research team and the School with Class Foundation team, which initiated the study. A total of 14 female teachers participated in the interviews, including three in leadership positions. Participant observation and research walks were conducted in two schools in provincial cities, functioning in large, public, multi-department, general, pediatric hospitals.

Interviews were transcribed verbatim and anonymized. In the first phase of the analysis, the collected data was open-coded. This was followed by "sense categorization" (Kvale, 2007). During the analysis, a code tree was created, consisting of categories and subcategories. In this article, we analyze the material assigned to the category *Teachers' professional identity*, consisting of the following subcategories that reflect the components of teachers' identity described in the literature (Beauchamp & Thomas, 2009; Day et al., 2006; Kelchtermans, 1993, 2005): (1) the role of a teacher at school; (2) their professional values and goals; (3) their emotional commitment to work; (4) their relationships with students, parents, and colleagues; and (5) challenges arising from adopted identities.

Findings: Teachers' professional identities

Identity 1: Chameleon

The first type of professional identity is the *Chameleon*. This identity is based on the belief that the teacher's main task is to be flexible and adapt to the hospital school's unique environment. This includes adjusting to unusual spatial conditions, the psychophysical capabilities of the students, and the expectations and demands of students, parents, home schools, and hospital staff. The daily reality in a hospital is dynamic and constantly changing. Students in hospital schools "come and go" every day (ID2), which results in constant rotation within student groups. Within a single instructional group, students vary in age and have diverse educational needs. Lessons are conducted individually or in small groups and in various locations (e.g., the patient's bedside or shared spaces), which are not always suited to educational purposes. Furthermore, each student is covering different material in their home school and expects something different from their time in the hospital school. Teachers must adapt to these conditions.

The core value guiding *Chameleon* teachers is flexibility: "We've gotten to the point where we're so flexible that we come up with the lesson content on the way to class" (ID2). In teachers' narratives, flexibility is also seen as a condition for growth and job satisfaction, as the constant change protects them from routine and professional stagnation. As one principal humorously commented: "Thanks to this, we're not at risk of dementia – I really believe that" (ID4). Adaptability is also a working strategy in the hospital school, determining how *Chameleon* teachers organize and deliver lessons: "You just have to be flexible and think on your feet (...), with mixed-age classes, I try to strike a balance, so everyone takes something away from the lesson" (ID2). Hospital school teachers are also flexible when it comes to meeting the educational needs defined by the home schools: "Right now, we try – though sometimes it's technically difficult – but we try to identify and cover the most important topics [being taught in home schools]" (ID3).

There are several challenges associated with the *Chameleon* identity. First, there is the necessity of adapting to the hospital's spatial conditions,

which often limit the possibility of conducting satisfactory lessons. Hospital schools usually do not have a separate building. According to Article 128(1) of the Polish Education Law Act, medical institutions are obligated to provide suitable spaces for educational and developmental activities. However, such dedicated rooms are rare (Authors, 2025). As one hospital principal explains: “Most often, classes are held in makeshift spaces. We regret that the playroom is better suited for play than we are for teaching” (ID1). As a result, lessons sometimes take place in playrooms, cafeterias, hallways, or hospital rooms:

Teachers of older students go with them into the hospital rooms where, well, the conditions are better. ‘Better conditions’ – that’s not really accurate, because there are basically no conditions. It’s done off the cuff (...). But at least it’s quiet and calm. (ID2)

The conditions are inadequate for both teaching and storing educational materials or providing comfortable staff areas: “We were thrown into this tiny, let’s say, cubicle. (...) We’re moved from our staff area practically every year. We’re kind of living off the hospital’s hospitality” (ID2). This reveals a second challenge: adapting to the conditions imposed by hospital staff, who hold authority over the teaching personnel:

First and foremost, the child is at the hospital to get treatment, and that’s absolutely non-negotiable and the top priority. (...) We work around the treatment schedule (...), we adapt to it one hundred percent. We know we come second. (ID3)

The *Chameleon* teacher does not feel at home in the hospital school environment; rather, they feel like a guest, expected to follow the rules set by the medical staff. Another challenge is adapting to the varying psychophysical conditions of students undergoing hospital treatment:

The nature of the work differs because the illnesses are different. We adjust to the specific situations. (...) We’ve developed a kind of sensitivity –

for example, we don't go to the oncology ward first thing in the morning, right? We know those children often need more sleep. We need to adapt flexibly to that. (ID3)

Finally, there is the difficulty of aligning the topics taught with the curriculum requirements of the students' home schools and planning hospital-based lessons based on the content the child missed during their absence. This is particularly challenging given that hospital teachers typically teach groups of students from different schools and grades.

Identity 2: Rescuer

Another identity emerging from the statements of hospital school teachers is the *Rescuer*. Their role is to support students, parents, and even medical staff, which goes far beyond the area of teaching. Respondents emphasized that this primarily concerns the hospital school's therapeutic function, which is realized through emotional support for the hospital community. Within this area, we identified two subtypes of identity.

The ***Clown Doctor*** identity is built around responsibility for the child's emotional state and well-being during treatment. It focuses on offering engaging activities, bringing joy, and improving mood. In the narratives of teachers representing this type, there is a prevailing sense that they are "some sort of attraction" (ID1), "like a Clown Doctor ... just missing the red nose" (ID3). These teachers often spoke about methods of making lessons more entertaining as their main tools of work, describing them as their "superpower":

I simply have various exercises for them on my tablet (...), I also have different artistic programs, like Procreate or something else (...). I also always carry glue, scissors, cutouts, a large notebook, various crayons – good, thick, colorful ones – and I do a lot of drawing with them. (ID3)

Clown Doctors emphasize the pride they feel in every action that brings joy to the student-patients and their families, which distracts them from unpleasant experiences relating to illness, therapy, and being in the hospital:

These kids are very open toward us and very happy that someone is coming to visit them, especially since we always offer them something attractive, fun (...), we are smiling, focused on the child. (ID3)

This type of teacher also plays an important role in integrating the hospital environment, organizing the hospital's cultural life, and supporting collaboration with external entities. Often, at the hospital director's request, *Clown Doctors* organize performances by or for children, as well as concerts and special events:

The hospital management organizes some theater, foundation visits, and so on, and later, the staff – the head doctor – expect us as the school to host these guests. To organize the meetings, etc. We are responsible for who, when, and what needs to be arranged and how to prepare the children. (ID2)

The *Clown Doctor* identity comes with a heavy burden – the need for teachers to “shut down” their own emotions to fully focus on the child's mood. As one teacher said:

Even though I may feel all sorts of things inside – because we're only human, we have our emotions, our own experiences, etc. – I come in, and I have to play that clown. Put on the red nose and start the lesson: “So, what do we have today? What are we doing?” (ID3)

Regardless of their own emotional state, *Clown Doctors* feel somewhat obligated to bring joy to students and serve as ambassadors for the hospital. They accept this role, understanding that caring for the child's well-being during therapy is a fundamental expectation of them.

The second subtype of *Rescuer* identity is the **Therapist**. Here, teaching takes a back seat – what matters more is empathy and building a relationship with the student-patient, being interested not only in their knowledge and skills but also, and most importantly, in their problems and emotions. *Therapists* justify their need to go beyond the traditional

educational role by pointing to the special needs of their students, who “require an individual approach, and it’s really important to sense their mood that day. Even that hour. Sometimes we have to know a lot about them to respond adequately to their illness” (ID2).

The therapeutic function is embedded in the work of a hospital school. Teachers speak, for example, about the meaning of grades given in hospital schools:

First and foremost, it’s a therapeutic grade, meaning we evaluate the child not only for the knowledge they’ve acquired or the skills they’re developing. This is a sick child, right? When a child is sick at home (...) they lie in bed, no one expects them to study while they’re ill (...), so very often, our grade isn’t just for the child’s knowledge but for the effort they put in. (ID3)

Therapists’ therapeutic role extends beyond students to include their parents as well. First, by taking care of the child during class, the teacher gives the parent a moment of respite. Second, the parent may look to the teacher as an empathetic listener and emotional guide during difficult times of the child’s therapy:

I try not to ask parents too many questions, because sometimes one simple question can trigger an hour and a half of talking – because that mom, for example, just doesn’t have anyone to talk to. That happened to me recently. And it’s really difficult to be in that role, because these moms often complain, are lonely, and are just looking for an emotional outlet. (ID3)

Finally, the *Therapist* is a teacher who protects the child within their home school. They communicate with the school staff about the student’s health and educational needs to ensure comfortable learning conditions after the end of hospital treatment:

Well, I act as a kind of therapist who explains to the principal or the homeroom teacher on the other side that the child, ill and physically

altered by disease, and socially withdrawn due to a long absence from peers, has a huge resistance to standing in front of the whole class and presenting something, whether they know it or not. (ID4)

The *Therapist* identity, which goes beyond ordinary educational engagement, is often accompanied by loneliness and helplessness. Even though this type of teacher provides supportive, therapeutic work, they are not trained therapists and do not always know “how to deal with a child with mental disorders, personality issues, or a child who has attempted suicide” (ID2). Unlike psychologists, they also do not receive support to cope with the strong emotional burden that accompanies their daily work with student-patients.

One of the main challenges of this identity is maintaining and defining boundaries within the teacher role, as society increasingly expects them to assume therapeutic responsibilities. The teacher must find a balance between the educational-pedagogical function for which they are trained and the therapeutic one that typically exceeds their competencies. As one respondent put it: “Parents and students often expect help from us, and not all of us are always capable of providing it” (ID2). *Therapists* struggle with assessing whether these external expectations align with their role and competencies. Throughout the study, they frequently expressed a need for training and supervision.

Identity 3: Braveheart

The final identity type is *Braveheart*. These teachers have a strong sense of mission and agency and speak with pride about their unique role in medical institutions, often describing their work as essential for maintaining order in the hospital: “In these situations, I think we manage really well (...). They really thank us for helping” (ID2). According to these teachers, their mission includes helping students view school as a place that serves them – one that is on their side. Participants often recalled students saying they wanted to stay in the hospital school or wished that mainstream schools were run the same way: “Kids say that if school was like this, they would love to go every day. Well, yes – but this is a very

specific kind of school, of course” (ID2). One hospital director proudly stated that a student is cared for from the very first moment of their hospital stay: “In fact, from the very first minute in the hospital ward, the student is under educational and instructional care” (ID4). Another teacher recalled returning to the hospital after the COVID-19 pandemic:

The hospital director often said she couldn’t imagine functioning without us... When we came back after the pandemic, once it was allowed, you could see such visible relief on the nurses’ faces... It was so nice to hear, “Oh my God, thank goodness you’re back, it was really tough without you.” (ID3)

This strong sense of mission is often accompanied by a sense of threat to their job, role, and professional status. Some respondents indicated that hospital schools and their teachers’ competencies are underappreciated by mainstream school staff and leadership. *Braveheart* teachers also feel anxiety and uncertainty about the future of hospital schools and unclear legal regulations in this area:

It’s hard to say what’s really going on – whether they’ll shut us down or not. So we’re sort of sitting on a ticking time bomb, and that’s the worst part, really. (ID2)

Participants also expressed concerns about excessive oversight by the Ministry of Education. For instance, they criticized the reporting system, which has not been adapted to the specific context of hospital schools with high student turnover. School administrators fear issues with reporting student attendance, which is key for funding from local authorities. Coping with this professional uncertainty is another major challenge for teachers, who sometimes work multiple jobs across different locations and with various funding sources.

Discussion and Conclusions

The majority of teachers who participated in the study expressed a strong sense of mission in their work with children and adolescents. All reported a high level of attachment to their workplace and a general sense of job satisfaction. However, they also emphasized that their work is emotionally burdensome and requires ongoing professional development.

The findings indicate a broad spectrum of professional identities adopted by hospital school teachers, which in turn shape their workplace strategies. Table 1 presents a synthesis of the identity types described in the study, along with their defining components.

Table 1. Components of teachers' identities

	<i>Identity 1</i>	<i>Identity 2</i>		<i>Identity 3</i>
	<i>Chameleon</i>	<i>Rescuer – Clown Doctor</i>	<i>Rescuer – Therapist</i>	<i>Braveheart</i>
Role of the teacher	The teacher must adapt to the working conditions of a hospital school. Adaptation is a necessary and effective work strategy.	The teacher is responsible for improving patients' moods by offering engaging activities that bring joy to children.	The teacher goes beyond the role of an educator and becomes a therapist for both students and parents.	The teacher is the person responsible for maintaining the school and ensuring that children receive an education.
Professional values and goals	Flexibility as a goal, value, and condition for development	Focus on the child, their needs, and their emotions	Empathy and emotional support as core values	Defense of the child's well-being and the existence of the hospital school
Emotional engagement in work	Satisfaction with the ability to adapt, but also burden and frustration due to the working conditions to which they must adapt.	Pride in bringing joy to children and distracting them from the hardships of illness, therapy, and hospital stay. Disconnection from one's own emotions.	Loneliness, helplessness, feeling overwhelmed by the problems of children and adolescents, and frustration due to the lack of psychological support in hospitals.	Sense of responsibility for the hospital, feeling needed. Fear of the facility being closed and concern for the fate of the students.
Relationships with students, parents, and colleagues	The teacher is a secondary figure, adapting to the needs, expectations, and ways of working of students, medical staff, parents, and home schools.	For children and parents, the teacher is a source of attraction and pleasure. For other stakeholders, the teacher is a representative of the hospital.	The teacher is someone who goes beyond their formal competencies in relationships with students and parents.	The teacher has a combative attitude in their relations with the governing body and medical facility management. Their focus is on their relationships with students, parents, and staff.

	<i>Identity 1</i>	<i>Identity 2</i>		<i>Identity 3</i>
	<i>Chameleon</i>	<i>Rescuer – Clown Doctor</i>	<i>Rescuer – Therapist</i>	<i>Braveheart</i>
Challenges resulting from adopted identities	Limitations relating to the facility's physical conditions, students' psychophysical capabilities, and the expectations of home schools and medical staff.	The necessity to focus entirely on the child's joy, disconnecting from oneself and one's emotions. Duties relating to organizing the hospital's cultural life.	Balancing between the educational and up-bringing role and the therapeutic role, which goes beyond teachers' competencies. Lack of institutional support in this area.	Uncertain status of the school and one's own professional situation. Inspections, unclear regulations. The need to seek employment in multiple institutions.

A number of previous studies have highlighted the emotional challenges faced by children and adolescents in hospital-based education and the resulting need for tailored pedagogical approaches (e.g., Coyne & Conlon, 2007; Welbourne & Leeson, 2012). These conditions place unique demands on educators working in hospital schools (Mintz et al., 2018). Findings from the current study indicate that teachers feel compelled to engage not only educationally but also emotionally and, at times, therapeutically. This often involves establishing and sustaining affective bonds with their students.

Not all teachers are equally equipped to meet these multidimensional demands. When educators are unable to provide holistic support, they may adopt coping strategies characterized by frustration (e.g., *Rescuer – Therapist*) or short-term, reactive adjustments (e.g., *Chameleon*). In contrast, teachers who are able to implement a comprehensive, emotionally responsive, and therapeutic approach to teaching tend to experience professional fulfillment, a sense of agency, and a proactive attitude toward their work (e.g., *Rescuer – Clown Doctor*, *Braveheart*).

Key factors contributing to a sense of professional success include the availability of effective institutional support, adequate resources, and clearly defined educational goals. Teachers who perceive a deficit in institutional backing often resort to minimal engagement strategies, limiting their responsibilities only to essential educational tasks.

Limitations of the Study

This study was exploratory in nature; the fieldwork was planned for a short period (4 months) and covered a limited group of schools and teachers. Therefore, the study's scope was narrow, providing only an initial overview of the subject matter. The results cannot be extended to the whole system of hospital schools in Poland. Moreover, the study only included the perspectives of teachers and school management. Further in-depth research is required from the perspectives of students, parents, and medical staff for a more complete picture of the functioning of hospital schools.

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Psychosocial determinants of life satisfaction in musically gifted students and their importance in relation to the teacher

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Abstract

Research objectives (aims) and problem(s): The aim of this paper is to identify the relationships between psychosocial resources, such as basic hope, dispositional optimism, and personality traits (extraversion, openness to experience, emotional stability, agreeableness, and conscientiousness), and the life satisfaction of musically gifted students. In addition, the analyses aim to show the importance of these characteristics for teacher-student relationships.

Research methods: The study sample consisted of 66 musically gifted students attending first- and second-cycle music schools aged 15 to 19 ($M=16.13$; $SD=1.16$). The following research instruments were used: the Satisfaction with Life Scale (SWLS), the Revised Life Orientation Test (LOT-R), the Basic Hope Inventory (BHI-12), and the Ten-Item Personality Inventory (TIPI-P). The study used the paper-and-pencil interviewing method.

Process of argumentation: Artistically gifted students require particular attention due to their specific way of functioning, especially in their personalities and emotional and social aspects. Education offered in art schools differs from that in schools of general education, and musically gifted students face additional challenges that may significantly affect their well-being and life satisfaction. This research focuses

on analyzing the relationships between selected psychosocial resources and life satisfaction among musically gifted individuals. It is expected that personality traits will play a significant role in building satisfying teacher-student relationships, which in turn will contribute to educational success.

Research findings and their impact on the development of educational sciences: The results show that basic hope, dispositional optimism, and such personality traits as openness to experience, conscientiousness, and extraversion are associated with higher life satisfaction. The findings are of considerable importance for educational practice and for the optimization of aptitude development. Education in music schools promoting versatile student growth, including in terms of strengthening their well-being and life satisfaction, requires consideration of the role of the subjective characteristics in question in a teacher's work.

Conclusions and/or recommendations: The findings might be used to develop appropriate curricula for music schools that consider the specific ways of functioning of musically gifted students. This is reflected not only in students' life satisfaction and achievement of educational goals but also among teachers.

Introduction

Nowadays, educational objectives should focus on pupils' multifaceted growth. The need to create specific conditions for persons with special education needs has also been increasingly emphasized. This group includes gifted and talented children and adolescents (Limont, 2005). The question of aptitudes and talents has been analyzed from different angles. Attention has increasingly been drawn to the need to reshape the curricula and methods of working with gifted students. Recent studies have shown that individuals with above-average aptitudes and abilities do not always fully realize their potential and often experience failures and disappointments when pursuing their objectives. In the process of ability development, cognitive characteristics, personality, and emotional and motivational domains play a vital role (Kuśpit, 2015, 2018). Research has shown that students gifted in the arts require more focus and attention due to their specific way of functioning, especially in their personalities and emotional and social aspects (Tokarz, 2005). Instruction received in art schools differs from education offered by schools of general education; therefore, musically gifted students may experience stress caused

by exhaustion, performances in front of audiences, exams, or a lack of support from their teachers or their loved ones (Gluska, 2010; Kumik, 2012; Labonde & Müllensiefen, 2022). The need to succeed may also contribute to competition and high stress levels (Kuśpit, 2018). Therefore, it appears essential to identify and support the functioning of gifted students regarding their life satisfaction and its determinants.

Life satisfaction is the degree to which a person positively evaluates the achievements and conditions of his/her life as a whole (Diener et al., 1985). In the literature, life satisfaction is also referred to as quality of life, satisfaction with life, well-being, welfare, and happiness (Czapiński, 2004; Jaracz, 2001; Ruggeri et al., 2020). This paper adopts Juczyński's (2012) definition of life satisfaction, recognized as the result of an informed, cognitive comparison of one's own situation with one's own standards. If the outcome of the comparison is satisfactory, then one feels satisfaction. Research has also pointed to the relationships between satisfaction and pro-growth activity – satisfaction may not be so much an outcome as a factor driving one to take action (Judge & Hurst, 2008). The sense of satisfaction involves a more robust formulation of goals and higher levels of life and social activity (Nie et al., 2025; Veenhoven, 1988). Life satisfaction has also been found to depend on factors beyond an individual's control and on factors depending on the individual's activity. Factors beyond an individual's control may be divided into external ones, such as place of birth, and internal ones, such as health status or temperament (Krämer et al., 2025; Mądrycki, 2002).

In this paper, the authors focused on internal factors and their significance for the life satisfaction of musically gifted adolescents. The first factor is basic hope, defined as the "general belief that the world is sensible and benevolent (Trzebiński & Zięba, 2003a, p. 5). Research has shown that basic hope plays a regulating role in difficult life situations. A positive relationship was found between the strength of hope and life satisfaction and mental health, while a negative relationship was found between fear, psychosomatic symptoms, and depression (Dejna, 2020; Scioli, 2020; Trzebiński & Zięba, 2003a). Basic hope has also been found to be significant for the formation of the personality structure. Studies have shown

that stronger hope reduces the level of personality factors disturbing the process of adjustment, such as anxiety and depression, and decreases the occurrence of somatic symptoms of these types of disorders. As hope increases, the level of development-promoting factors, such as optimism, well-being, self-confidence, and the belief that one will succeed, increases as well. Basic hope is also a factor determining the subjective probability of a good or bad fortune scenario (Dursun, 2021; Pleeqing et al., 2021; Trzebiński & Zięba, 2003a).

According to Scheier and colleagues (1994), dispositional optimism is a personality trait that expresses an individual's general expectation of a positive outcome from his or her actions. It increases, among other things, their resilience to stressors and moderates their assessment of the situation. It is an important dimension of planning for the future, linked to life orientation and construed as a general expectation regarding the future. Optimism, defined as a dispositional trait reflecting one's generalized expectation of positive outcomes, is positively related to motivation, persistence, and determination to achieve specific goals. What is more, it facilitates fast decision-making in situations that an individual finds difficult (Poprawa, 2001). Dispositional optimism also determines one's well-being, resilience to stress, life accomplishments, and openness to career (Major et al., 2006). Cassidy also found a positive correlation between optimism and a motivation to succeed, a positive evaluation of one's health status, and mental well-being (Cassidy, 2000, cited in Ogińska-Bulik & Juczyński, 2010, p. 154).

Personality traits are another aspect analyzed in this study in the context of life satisfaction. These are relatively permanent human dispositions to respond (at the emotional level) in a specific manner as part of a specific behavior (Łaguna et al., 2014). Gifted persons, due to their uniqueness, uncommonness, and high expectations of themselves, as well as their environment, may experience various types of difficulties and be exposed to stress (Helsper et al., 2025; Sękowski, 2001). In addition, gifted persons display higher anxiety and perfectionism (Guignard et al., 2012), as well as higher emotional tension (Soktoeva, 2010), which may exert a negative impact on their activity and development. Kuśpit

(2018) has shown that musically gifted students are conscientious and very well-organized, pursue their goals persistently, and have a strong motivation to act. While performing their tasks, they are more reliable, meticulous, and dutiful than students gifted in the visual arts or students attending schools of general education (non-profiled). As regards extraversion, on the other hand, musically gifted students differ in the level of this trait from students gifted in the visual arts or who attend schools of general education. Musically gifted adolescents are more open-minded, active, and inclined to seek stimulation in their immediate environment. For this reason, personality traits may determine effective coping in difficult situations (Kuśpit, 2018). Among the personality traits of musically gifted individuals, Manturzevska (1969) listed persistence and a high need to succeed alongside manifestations of neuroticism, while Chruszczewski (2009) listed agreeableness, conscientiousness, and divergent thinking. Such personality traits may facilitate the achievement of one's goals and further develop one's aptitudes.

One of the models most widely used by scholars exploring human personality is the Big Five model. According to McCrae and Costa's theory, traits are construed as individual differences and generalized dispositions that manifest across cognitive, emotional, and behavioral domains (McCrae & Costa, 2005). Personality, however, is stable and universal and should be differentiated from moods and tensions that change over time (McCrae & Costa, 2005). The Big Five components, as determined by Costa and McCrae, are extraversion, agreeableness, conscientiousness, neuroticism, emotional stability, openness to experience (McCrae & Costa, 1997; Oleś, 2000). Since McCrae and Costa found the list to be exhaustive, the authors of this paper used their model in the present study.

Beyond individual predispositions to develop specific personality traits, one's social environment, including the teacher of a gifted student, also plays an important role. The teacher's support of the student in various areas of his or her activity is important for shaping his or her individual potential, including personality. The key to educational success and ensuring the development of a student who can meet the demands of modern life is duality in the teaching and educational process. This process

is determined by the relationship between the teacher and the student in a given situation and the tasks being performed. The subjects of this situation are both the teacher and the student (Kuśpit, 2018).

According to Wiśniewski (2009), this type of situation is characterized by bidirectional influence: the teacher's behavior affects the student, and the student's behavior influences the teacher. Alternating behaviors can lead to different outcomes in participants' reactions, the specific content of the influences, the participants' activity and personal contributions, and the purposefulness of the action. It is up to the teacher to decide whether the student's communication experiences will contribute to the development of their subjectivity, sense of autonomy, and activity, or, on the contrary, will weaken the young person's subjectivity, which may lead to conformism, dependence on others, a sense of lack of influence on their own life and environment, and a lack of competence. An essential condition for education in the subjectivity paradigm is for the teacher to move away from a dominant and egocentric attitude toward supporting the student's development and building a dialogue with them. This is one of the key elements in supporting the potential of musically gifted students both in the educational process and in the development of their personality (Kuśpit, 2018; Zalewska-Bujak, 2013).

In line with the above, it may be assumed that the personality traits of musically gifted individuals are associated with life satisfaction and contribute to motivation and the undertaking of different activities; this, consequently, may promote the optimized development of talents and achieving success in various areas of activity. An analysis of the psychosocial aspects of the functioning of musically gifted students and their relationships with life satisfaction may also help with adapting school curricula to individual needs, optimizing student achievement, fostering their proper development, and improving interpersonal relations, including mutual interactions between the teacher and the student.

Materials and methods

This study aims to identify the psychosocial determinants of the life satisfaction of musically gifted students. The determinants were presumed to be basic hope, dispositional optimism, and personality traits. The research problem was formulated as follows:

- P: What are the relationships between the life satisfaction of musically gifted students and such psychosocial resources as basic hope, dispositional optimism, and personality traits (extraversion, openness to experience, emotional stability, agreeableness, and conscientiousness)?

The following research hypothesis was put forward:

- H: The life satisfaction of musically gifted students is expected to be positively related to basic hope, dispositional optimism, and personality traits (extraversion, openness to experience, emotional stability, agreeableness, and conscientiousness).

Method

Participants

The sample consisted of 66 musically gifted secondary school students attending music schools. Girls accounted for 53% of the study group and boys for 47%. The participants' age ranged from 15 to 19 ($M=16.13$; $SD=1.16$). The majority of students participating in the study (60.6%) lived in a city with more than 200,000 people, nearly one-third (31.8%) lived in rural areas, and the remaining participants (7.6%) lived in a city with fewer than 200,000 people.

Procedure and measures

Paper-and-pencil interviews were conducted between September 2022 and March 2023 with students from first- and second-cycle music

schools after obtaining the relevant consent. Participation in the study was voluntary, and participants could withdraw from it at any time. Data obtained with the instruments listed below were anonymized and used only for collective analysis:

- The *Satisfaction with Life Scale (SWLS)*, translated into Polish and validated by Juczyński (2012), measures one's level of satisfaction with one's life. It consists of 5 items ranked using a scale from 1 (I completely disagree) to 7 (I completely agree).
- The *Revised Life Orientation Test (LOT-R)*, translated into Polish and validated by Juczyński (2012), measures dispositional optimism, construed as the generalized expectation of positive future outcomes and the belief that unfavorable events will occur occasionally or not at all. The test consists of 10 items, 6 of which have a diagnostic value. Respondents rank the items using a scale from 0 (I strongly disagree) to 4 (I strongly agree).
- The *Basic Hope Inventory (BHI-12)*, developed by Trzebiński and Zięba (2003b), measures basic hope, understood as the belief that the world is orderly, sensible, and benevolent. It consists of 12 items, 9 of which have diagnostic significance. Respondents rank the items using a scale from 1 (I completely disagree) to 5 (I completely agree).
- The *Ten-Item Personality Inventory (TIPI-P)*, translated into Polish and validated by Łaguna and colleagues (2014), consists of 10 items ranked using a scale from 1 (I completely disagree) to 7 (I completely agree). The scores allow the researcher to determine the level of respondents' personality traits according to the Big Five model: extraversion, openness to experience, Emotional stability (ES), agreeableness, and conscientiousness. *Extraversion* involves looking for stimulation and engaging in activities, as well as the frequency and intensity of interpersonal contacts. *Emotional stability* determines the level of stress resilience, the level of inclination toward irrational actions, and the use of adaptive coping. *Openness to experience* relates to one's curiosity, tolerance for innovation, willingness to learn new things, and willingness to undertake unfamiliar experiences.

Conscientiousness is characteristic of well-organized individuals who are persistent, dutiful, and strongly motivated to pursue their goals. *Agreeableness* refers to avoiding conflict, having altruistic attitudes, and gentleness in interpersonal relations (McCrae & Costa, 2005; Zawadzka et al., 2016).

Results

Table 1 presents descriptive statistics for the study variables.

Table 1. Descriptive statistics for the study variables (N=66)

	<i>Min.</i>	<i>Max.</i>	<i>M</i>	<i>SD</i>	<i>Me</i>
Life satisfaction	6.00	30.00	18.05	5.97	18.5
Dispositional optimism	1.00	24.00	13.53	5.15	14.00
Basic hope	17.00	38.00	28.82	4.58	28.00
Extraversion	1.00	7.00	5.05	1.61	5.50
Openness	1.00	7.00	5.50	1.32	6.00
Agreeableness	1.50	7.00	4.72	1.33	5.00
Conscientiousness	1.00	7.00	4.39	1.45	4.50
Emotional stability	1.00	6.50	3.26	1.51	3.00

Note: *M*-mean, *SD*-standard deviation, *Min.*-minimum value, *Max.*-maximum value, *Me*-median.

The results presented in Table 1 show an average level of life satisfaction (sten score 5) in the study group. Similar results were reported for dispositional optimism (sten score 5) and basic hope (sten score 5). Regarding the personality traits, scores slightly higher than the mean were reported for openness to experience ($M=5.50$; $SD=1.32$; $Me=6.00$, $Mo=6.50$) and extraversion ($M=5.05$; $SD=1.61$; $Me=5.50$, $Mo=6.00$), whereas emotional stability was reported to be lower than the mean ($M=3.26$; $SD=1.51$; $Me=3.00$, $Mo=2.00$).

Table 2 presents the results of correlation analyses (Pearson's r) investigating the relationships among dispositional optimism, basic hope, personality traits, and the life satisfaction of musically gifted students.

Table 2. Correlations between dispositional optimism, basic hope, personality traits, and the life satisfaction of musically gifted students (N=66)

	LS	N	C	A	E	O	DO
Life satisfaction (LS)							
Emotional stability (ES)	$r=.205$ $p=.101$						
Conscientiousness (C)	$r=.288$ $p=.019$	$r=-.032$ $p=.803$					
Agreeableness (A)	$r=-.029$ $p=.816$	$r=.199$ $p=.111$	$r=.061$ $p=.624$				
Extraversion (E)	$r=.386$ $p=.001$	$r=.223$ $p=.074$	$r=.165$ $p=.185$	$r=.249$ $p=.044$			
Openness (O)	$r=.354$ $p=.004$	$r=.070$ $p=.579$	$r=.279$ $p=.023$	$r=.169$ $p=.175$	$r=.283$ $p=.021$		
Dispositional optimism (DO)	$r=0.711$ $p<.001$	$r=.358$ $p=.003$	$r=.143$ $p=.253$	$r=.181$ $p=.146$	$r=.472$ $p<.001$	$r=.437$ $p<.001$	
Basic hope (BH)	$r=.591$ $p<.001$	$r=.238$ $p=.057$	$r=.088$ $p=.482$	$r=.117$ $p=.350$	$r=.275$ $p=.025$	$r=.181$ $p=.147$	$r=.675$ $p<.001$

The results demonstrate statistically significant positive correlations between the life satisfaction of musically gifted students and basic hope ($r=.591$, $p<0.001$), dispositional optimism ($r=.711$, $p<0.001$), extraversion ($r=.386$, $p=0.001$), openness to experience ($r=.354$, $p=.004$), and conscientiousness ($r=.288$, $p=0.019$). No statistically significant relationships were found between life satisfaction and such traits as emotional stability ($r=.205$, non-s) or agreeableness ($r=-.029$, non-s).

Discussion

The present study investigated the relationships between the life satisfaction of musically gifted students and psychosocial determinants: dispositional optimism, basic hope, and personality traits (extraversion, agreeableness, conscientiousness, openness to experience, and emotional stability).

The results show that there is a positive relationship between basic hope and life satisfaction. This means that the higher the level of basic hope, the higher the life satisfaction. Basic hope is recognized as an indicator of children's and adolescents' mental health (Kryk & Stefańska-Klar, 2013) and as a factor determining the interpretation of current events and expectations about future occurrences (Trzebiński & Zięba, 2003b). Therefore, belief in a sensible and benevolent world promotes the life satisfaction of musically gifted students. This resource appears to be particularly important among gifted adolescents, as it helps them function better in their environment and promotes effective coping with difficulties specific to this group (see Lewicka-Zelent & Abramciów, 2014; Trzebiński & Zięba, 2003b).

The results also revealed a positive relationship between dispositional optimism and life satisfaction – the higher the dispositional optimism, the higher the life satisfaction. Dispositional optimism facilitates engagement in different forms of activity, strengthens motivation, self-confidence, and faith in people and the world, and enhances the persistent pursuit of goals despite encountered difficulties, which promotes life satisfaction (Ogińska-Bulik & Juczyński, 2010; Pietras-Mrozińska, 2016). A positive attitude allows one to approach the experienced failures as transitory. Moreover, optimists reach for more beneficial and relevant coping strategies when faced with difficult situations (Zadworna-Cieślak & Ogińska-Bulik, 2013). Optimism acts as a buffer protecting an individual against the negative outcomes of difficult situations to which gifted students are exposed (Pietras-Mrozińska, 2016).

The results also indicate a higher level of openness to experience among gifted youth. Similar results were obtained by Iskra (1998) in her

study on artistically gifted adolescents. Her findings showed that gifted adolescents who are more open to experience were more active, more inclined to spontaneous action, and aspired to be self-reliant, independent, and self-confident, which may lead them to evaluate their lives as satisfactory.

Another personality trait found to promote life satisfaction in gifted students is conscientiousness, a characteristic of happy individuals (Zawadzka et al., 2016). Conscientiousness is often treated as an adaptive characteristic, especially in the context of school achievement (see Filipiak & Łubianka, 2019), and for this reason, it may determine students' life satisfaction. Moreover, among school students, conscientiousness is positively related to pursuing long-term objectives, which also may account for the relationship between this personality trait and life satisfaction (Mendolia & Walker, 2015).

Finally, the results demonstrate that students' life satisfaction increases with their level of extraversion. The positive relationship found between extraversion and life satisfaction confirms the findings of other scholars (e.g. Filipiak & Łubianka, 2019; Zawadzka et al., 2016). Extraversion involves searching for and maintaining satisfying relationships with others, which promotes the feeling of satisfaction with one's life and its various aspects. Previous analyses also show that nurturing interpersonal relationships and cultivating social values promote feelings of happiness (Zawadzka et al., 2016).

Implications for educational practice

The results are of considerable importance for educational practice and for the optimization of aptitude development. It should be stressed that, beyond the demands placed on students, it is essential to individualize the educational process. It was found that basic hope, dispositional optimism, and certain personality traits (openness to experience, conscientiousness, and extraversion) are associated with higher life satisfaction among musically gifted students. Therefore, their education should

not only take their cognitive potential into account but also consider psychosocial factors that may play an important role in promoting feelings of life satisfaction, which, in turn, may contribute to higher motivation in pursuing goals and satisfaction from their implementation. Professionals involved in the education of gifted individuals often focus on their potential and high level of specific skills, failing to consider the psychosocial factors (Limont, 2005). However, developing aptitudes requires teachers to increase students' self-awareness of their resources and the significance of specific personality traits to improve their well-being and cope with difficulties more effectively.

It is recommended that specific psychosocial dispositions of gifted adolescents be developed. Support from teachers, parents, and peers, as well as their mutual cooperation, is vital in this respect. Gifts in music are associated with more complex functioning in different life domains (Limont, 2005). Education in music schools is specialized and differs from instruction in schools of general education. Therefore, it is essential to use well-matched strategies and methods of working with gifted students to guide their growth in the proper direction. Teachers play a significant role here, as does the way in which they build relationships with their students. In this way, they can contribute to maintaining and shaping characteristics that are important for development, such as basic hope, dispositional optimism, openness to experience, conscientiousness, and extraversion. These traits enhance gifted students' life satisfaction, thereby increasing teachers' satisfaction and contributing to mutual educational success.

Conclusions

The results show that, in the group of musically gifted students under study, higher life satisfaction is promoted by psychosocial characteristics: basic hope, dispositional optimism, and personality traits (openness to experience, conscientiousness, and extraversion). The findings might be used to develop appropriate curricula for music schools that

take the specific ways gifted students function into account. The results may also contribute to increasing teachers' awareness of personality traits in students that optimize the development of their talents, enhance their well-being, and, consequently, elevate the satisfaction of teachers in performing their educational tasks.

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Self-efficacy and well-being in students of pedagogy and teacher education programmes: The moderating role of passion

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education faculties,
moderation analyses

Abstract

Research objectives and problems: The aim of the study is to determine whether passion moderates the relationship between self-efficacy and well-being – in both its eudaimonic and hedonic dimensions – in students of pedagogical and teacher education programmes. The study addresses the following research problem: Does passion moderate the relationship between self-efficacy and eudaimonic and hedonic well-being in students of pedagogical and teacher training programmes, and, if so, in what manner?

Research methods: The data for this analysis were collected using the General Self-Efficacy Scale (GSES), the Psychological Well-Being Scale (PWBS), the Satisfaction with Life Scale (SWLS), and the Self-Reported Passion Scale (SRPS).

Process of argumentation: The article begins by introducing the concepts of self-efficacy, well-being and passion. 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 results show that the moderating role of passion in the relationship between self-efficacy and well-being occurs only in the context of hedonic well-being, not for eudaimonic well-being.

Conclusions and recommendations: In light of the obtained data, the systematic reinforcement of self-efficacy among university students should be regarded as key.

Introduction

The period of one's education is a time of gaining new knowledge and skills essential to one's future career, of searching for one's identity, and of determining one's goals in life. It is also a time for facing new situations, learning how to be independent and responsible, establishing new relationships, and developing new interests and passions. In the context of coping, the disposition manifested in self-efficacy becomes an important issue. Self-efficacy is the belief in oneself and one's abilities, which is helpful in achieving success and releases additional energy. It is responsible for human motivation and behaviour, which makes it regulate human pursuits, as the belief in one's capabilities determines the amount of stress an individual is able to cope with, as well as their determination and perseverance in searching for new solutions and achieving their goals (Byra, 2011; Juczyński & Juczyński, 2012; Kwiatkowski, 2020).

University students with high self-efficacy display good adjustment ability, look for help in difficult situations, are less stressed (Landis et al., 2007; von Keyserlingk et al., 2022), make informed decisions related to the choice of their study programme, and draw more satisfaction from studying (Carranza Esteban et al., 2022; Nowak et al., 2018). Consequently, they are more motivated to learn and feel more responsible for their learning process and learning outcomes (Dybiec et al., 2021; Rodek, 2020), which translates into higher academic achievements (Landis et al., 2007; Lin et al., 2022). Moreover, students with high self-efficacy much more often establish interpersonal relations full of trust and warmth, believe they have the higher competencies necessary to achieve their goals (Gabryś, 2023), report higher well-being, and pursue their passions harmoniously (Bochniarz & Olejnik, 2025b). Students who believe they have high self-efficacy also more often engage in health-related activities, are more consistent in caring about themselves, and are more aware of their

role in maintaining their health (Han et al., 2022; Nowak et al., 2018; Reide et al., 2023).

Well-being is also of considerable importance for a young person's personal and social functioning. Psychological concepts of well-being usually stem from two main philosophical concepts: hedonic and eudaimonic well-being. Hedonic well-being focuses on pleasure and subjective satisfaction with life. Eudaimonic well-being, on the other hand, centres on the sense of fulfilment that results from the development of human potential and living in harmony with one's own nature; therefore, it emphasizes searching for and pursuing the meaning in life (Karaś & Ciecuch, 2017; Kołodziej-Zaleska & Przybyła-Basista, 2018b; Kossakowska & Zadworna, 2019). Keyes, Shmotkin and Ryff (2002) refer to these two approaches as subjective well-being (also called emotional well-being or happiness) and psychological well-being. The former relates to evaluating life in terms of satisfaction and balance between the positive and negative affect, while the latter entails an individual's perception of coping with existential challenges (Keyes et al., 2002). Comparative analyses of subjective well-being based on the hedonic approach and psychological well-being stemming from the eudaimonic approach have shown that a combination of the two is the most rewarding. At the same time, it has been emphasized that these two concepts complement each other, allowing for a more complete description of different aspects of well-being (Ilska & Kołodziej-Zaleska, 2018).

Previous studies conducted on groups of university students found a positive relationship between the respondents' self-efficacy and mental well-being (Bochniarz & Olejnik, 2025b; Gabryś, 2023). Well-being is also positively associated with harmonious engagement in the passions pursued by university students (Bochniarz & Olejnik, 2025b). Access to more extensive material assets, the ability to generate income, physical activity, engagement in an intimate relationship, emotional support experienced in interpersonal relationships, or a higher sense of satisfaction from one's studies are all significant factors contributing to students' enhanced mental well-being (Jach, 2012; Kulawska, 2019; Szepe & Meszaros, 2024). Moreover, students who are motivated to learn are kind to one another and tend to report high mental well-being (Kotera et al., 2022). On the other

hand, highly negative self-evaluations, the constant need for struggle and competition, perfectionism, and high stress or fear before examinations are associated with poorer mental well-being among students (Chang, 2006; Kotera et al., 2022; Słodkowska & Bokszczanin, 2012; Szepe & Meszaros, 2024).

Passion is most often construed as a driving force that gives meaning to life and develops personal interests. It is a self-defining activity in which an individual invests time and which he or she finds important. It results from the willingness to satisfy the needs for independence, competence, and maintaining people-to-people links. Passion makes an individual better prepared to cope with challenges and derive satisfaction from standing up to them, which positively impacts public perception of the individual (Bochniarz & Olejnik, 2025a; Buczak & Łukasik, 2024; Freire et al., 2020; Vallerand & Paquette, 2024). However, passion is not always adaptive; sometimes it may transform into compulsion, evoking negative emotions and unnatural perseverance, making it difficult to achieve a balanced and fulfilling life (Curran et al., 2015; Frask, 2020).

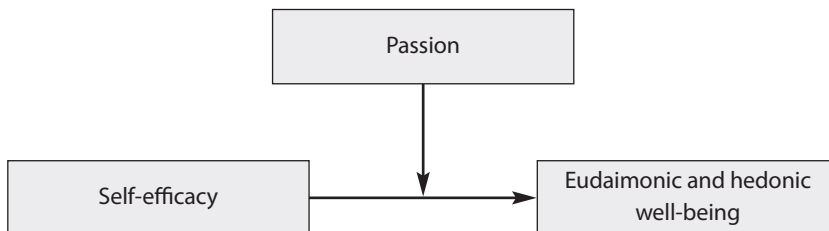
Having a harmonious passion for learning offers numerous advantages: students experience positive emotions and have more fulfilling relationships with their peers and teachers. Moreover, pursuing a passion is linked to students' perception of studying as an interesting and developmental experience, enhancing their inner motivation and engagement, which in turn translates into higher perseverance in the face of learning challenges and better academic achievement (Abdellatif, 2023; Mudło-Głagolska & Larionow, 2023; Zhao et al., 2021; Zinczuk-Zielazna, 2021). Harmonious passion promotes students' higher well-being and enhanced self-efficacy, ego-resiliency, and self-esteem (Abdellatif, 2023; Bochniarz & Olejnik, 2025a; Bochniarz & Olejnik, 2025b; Byra & Zielińska, 2024; Vallerand & Paquette, 2024).

Research problem and aim

The study's aim was to analyze the relationship between self-efficacy and eudaimonic and hedonic well-being in students of pedagogical and teacher education programmes, bearing the moderating role of passion in mind. Therefore, the study addresses the following research problem: Does passion moderate the relationship between self-efficacy and eudaimonic and hedonic well-being in students of pedagogical and teacher training programmes, and, if so, in what manner? Based on theoretical assumptions and previous empirical research, and subsequently verified by the author's own study, the following hypotheses were formulated:

- H1: Self-efficacy is positively associated with eudaimonic and hedonic well-being in university students.
- H2: Passion acts as a moderator in the relationship between self-efficacy and eudaimonic and hedonic well-being.

Figure 1. Relationships between study variables



Method and sample characteristics

A diagnostic survey was used to achieve the study's aims and verify its hypotheses. The authors administered questionnaires that included socio-demographic questions and normalized measures: the General Self-Efficacy Scale (GSES), the Psychological Well-Being Scale (PWBS), the Satisfaction with Life Scale (SWLS), and the Self-Reported Passion Scale (SRPS).

The GSES, developed by Schwarzer and Jerusalem and translated into Polish and validated by Juczyński, consists of 10 items rated on a four-point scale to measure an individual's general belief in their self-efficacy in coping with difficulties. The measure has satisfactory internal reliability (Cronbach's $\alpha = 0.88$) (Juczyński, 2000).

The PWBS, developed by Ryff and translated into Polish and validated by Karaś and Ciecuch (2017), measures six aspects of well-being: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. In this study, the short 18-item version was used. The items are rated using a six-point scale. Although individual scales displayed low reliability, the total score ultimately confirmed satisfactory reliability (Cronbach's $\alpha = 0.82$) (Karaś & Ciecuch, 2017).

The SWLS, developed by Diener and colleagues (1985), was translated into Polish and validated by Juczyński (2001). The instrument consists of five items measuring the respondent's general level of satisfaction on a seven-point Likert scale. This scale measures hedonic well-being and is widely applied in research on subjective well-being. The measure's reliability is satisfactory (Cronbach's $\alpha = 0.81$) (Juczyński, 2001).

The SRPS consists of two parts. In Part 1, respondents list their passions and rate them on a five-point scale. Part 2 consists of nine items encompassing three sub-scales: 'Personal benefits of pursuing a passion' (five items), 'Way in which passion was developed' (two items), and 'Passion-life balance' (two items). These aspects are measured using a five-point scale (Byra et al., 2025). The present study used the SRPS to obtain an overall indicator of passion. Respondents who declared at least one passion and provided ratings in Part 1 of the inventory were classified as "with passion," whereas those who did not identify any passion were classified as "without passion." This operationalization was consistent with the main research question, which examined whether the presence of passion – rather than its specific type – moderates the relationship between self-efficacy and well-being.

Although Vallerand's dualistic model of passion emphasizes the importance of distinguishing between harmonious and obsessive passion, the present study was designed as an initial step to investigate whether passion in general influences the self-efficacy-well-being link among

students. Therefore, the study employed a dichotomous indicator of passion (present/absent); a more fine-grained differentiation between harmonious and obsessive passion was reserved for future research.

The sample consists of students of bachelor's and master's degree programmes who voluntarily agreed to participate in the study. The study was conducted online in accordance with the ethical standards governing scientific research. In total, the sample consisted of 1,165 students, 779 of whom (66.9%) reported having a passion, while 386 (33.1%) failed to identify any passion in themselves. The vast majority of respondents were female (923, 79.9%). The mean age of the respondents was 23.2 (SD = 4.68). Most respondents lived in a city (740, 63.5%) and were not married (584, 50.1%).

Data analysis

Correlation analyses of the study variables were conducted using SPSS software. To determine the moderating role of passion in the relationship between self-efficacy and eudaimonic and hedonic well-being, moderation analysis was conducted using the PROCESS macro (model 1) for SPSS software (4.2 beta).

Results

In the first step, correlation analysis of the study variables was conducted.

Table 1. The relationship between self-efficacy, eudaimonic well-being and hedonic well-being – Pearson's correlation coefficients

Variable	Self-efficacy	Eudaimonic well-being	Hedonic well-being
Self-efficacy	1	0.538**	0.476**
Eudaimonic well-being	0.538**	1	0.473**
Hedonic well-being	0.476**	0.473**	1

** < 0.01

A number of statistically significant relationships can be identified based on the results of the correlation analysis. All correlations were statistically significant. A strong positive correlation ($r = 0.538$) was found between self-efficacy and well-being. This means that students who believe more strongly in their capabilities and ability to cope with adversity report higher well-being. An average positive correlation ($r = 0.476$) was found between self-efficacy and satisfaction with life. This suggests that individuals who more strongly believe in their own competencies are more likely to see their lives as valuable and fulfilling. This points to the importance of self-efficacy not only for task-based functioning but also for the emotional evaluation of well-being. An average positive correlation ($r = 0.473$) was also found between eudaimonic and hedonic well-being. This suggests that students who feel fulfilled in life grow and achieve their goals while also viewing their lives as a whole in positive terms. As found in the literature, this points to the permeation of eudaimonic and hedonic aspects of well-being. All study variables showed positive and statistically significant relationships. The strongest relationship was between self-efficacy and eudaimonic well-being.

In the next stage of the study, the role of passion as a moderator in the relationship between self-efficacy and eudaimonic well-being was examined.

Table 2. Passion as a moderator in the relationship between self-efficacy and eudaimonic well-being

Variables	B	SE	T	p	LLCI	ULCI	
Eudaimonic well-being	Constant	56.958	4.707	12.098	0.000	47.7114	66.2046
	Self-efficacy	0.6939	0.161	4.298	0.000	0.3769	1.0109
	Passion	-3.208	3.186	-1.007	0.314	-9.4676	3.0499
	Self-efficacy x Passion	0.066	0.112	0.590	0.555	-0.1547	0.2876
Model: $R^2 = 0.294$; $F(3,570) = 79.20$; $p < 0.001$							

The data presented in Table 2 show that the designed moderation model is statistically significant and accounts for 29.4% of the variance in eudaimonic well-being in the responding students. However, the interaction between self-efficacy and passion is not significant ($p = 0.555$), which means that the relationship between self-efficacy and eudaimonic well-being is not moderated by passion ($R^2 = 0.294$). Further analyses revealed a moderating role of passion in the relationship between self-efficacy and hedonic well-being.

Table 3. Passion as a moderator between self-efficacy and hedonic well-being

Variables		B	SE	t	p	LLCI	ULCI
Hedonic well-being	Constant	11.28	3.47	3.25	0.001	4.4540	18.0982
	Self-efficacy	0.30	0.12	2.52	0.011	0.0667	0.5347
	Passion	-4.49	2.35	-1.91	0.056	-9.1026	0.1270
	Self-efficacy x Passion	0.1446	0.08	1.74	0.042	0.0185	0.3077
Model: $R^2 = 0.332$; $F(3.569) = 57.36$; $p < 0.001$							

The data presented in Table 3 point to the moderating role of passion in the relationship between self-efficacy and hedonic well-being ($R^2 = 0.332$). The agreed moderation model is statistically significant and accounts for 33.2% of the variance in hedonic well-being in study participants. A positive relationship between self-efficacy and hedonic well-being was found only in students who reported having a passion.

Conclusions

The aim of the study was to determine whether, and, if so, in what manner, passion moderates the relationship between self-efficacy and well-being (eudaimonic or hedonic) in a group of students of pedagogical and teacher training programmes. The results confirmed hypothesis H1,

that is, self-efficacy is positively related to psychological (eudaimonic) well-being and satisfaction with life (hedonic well-being). Hypothesis H2, on the other hand, was only partially confirmed, as the moderating role of passion occurred only in the context of hedonic well-being. The relationship between self-efficacy and satisfaction with life was found to be positive, but only among students who reported having a passion.

In line with Bandura's self-efficacy theory (1997), the belief in one's capabilities not only mobilizes one to action but also improves one's resistance to academic and social stressors. The results, therefore, are consistent with previous findings showing that high self-efficacy is associated with lower tension and higher life satisfaction (Byra, 2011; Juczyński & Juczyński, 2012). In the literature on mental well-being, eudaimonic and hedonic well-being are often treated as complementary (Keyes et al., 2002). This approach is also reflected in the study's findings, which confirmed that self-efficacy impacts both the emotional aspect of well-being (satisfaction, emotional balance) and the psychological experience of meaning and personal growth. A strong relationship with eudaimonic well-being suggests that believing in their abilities helps students achieve their goals and overcome obstacles effectively, which translates into a sense of fulfilment and self-realization. At the same time, the moderation analysis revealed that the mere presence of passion does not further moderate this relationship in a statistically significant manner. Although passion may be a motivational resource, in the presented model, it failed to act as a modifier of the impact of self-efficacy on well-being. The mere presence of passion may not be as important as its type (harmonious or obsessive); however, this requires further research and detailed qualitative analysis.

The results regarding the moderating role of passion in the relationship between self-efficacy and well-being showed that it does not occur in the context of eudaimonic well-being, only hedonic well-being. Hedonic well-being, as measured by the SWLS, primarily refers to the balance between positive and negative emotions, as well as subjective pleasure (Keyes et al., 2002). Passion, construed as an engaging activity evoking strong positive feelings, may directly enhance pleasures and optimism; therefore, the moderating effect can be observed in the hedonic

model. In other words, students who have a passion more strongly believe in their abilities and experience more satisfaction than their less engaged peers. Eudaimonic well-being, on the other hand, involves meaning in life, autonomy, personal growth, and life purpose (Ilska & Kołodziej-Zaleska, 2018). These aspects require not only emotional intensity but also a permanent sense of competence, value, and relations with others. Self-efficacy here serves as the key motivational and cognitive resource, irrespective of whether it is accompanied by passion. Consequently, the moderating function of passion “fades away” – the strong belief in one’s abilities is enough to increase one’s sense of fulfilment, whereas passion no longer offers a clinical “bonus”.

In sum, passion enhances pleasure and satisfaction here and now (hedonism), but when we speak about meaning in life and growth (eudaimonia), the belief in one’s abilities is of more importance. High self-efficacy and the feeling that “I can make it” is enough for the sense of fulfilment. The additional factor, i.e., passion, fails to significantly boost this feeling, as the fundamental tenet of eudaimonia is the ability to act efficiently, not to experience pleasure. What is more, Byra and Zielińska (2024) showed that it is not so much the presence of passion that is of importance but the way it matches the individual’s resources and the contextual framework. Students pursuing passions that are strongly focused on personal growth may make better use of their belief in their self-efficacy in achieving goals, which may not necessarily translate into experiencing pleasure or finding fulfilment. The study by Mudło-Głagolska and Larionow (2023) complements this approach by showing that harmonious passion correlates with well-being only when accompanied by social support and adequate environmental conditions; however, these factors were not considered in the moderation model presented in this paper.

In light of the obtained data, the systematic reinforcement of self-efficacy in university students should be regarded as key. This may be achieved by extending the curricula with dedicated training workshops focused on developing the ability to cope with stress and solve problem-based tasks. The curricula should also include models focused on

developing self-reflection skills, as well as on the formulation and verification of one's personal goals and values. An integral part of this support should be a mentoring and academic coaching scheme under which younger students would receive regular personalized feedback from their more experienced peers or lecturers. This approach would not only build relationships of an emotional and substantive nature but also contribute to a factual reinforcement of one's self-efficacy in academic tasks.

Finally, considering the relationships between self-efficacy and health-promoting behaviours, it would be advisable to focus on the close integration of health-promoting education – including health psychology seminars and intellectual wellness workshops – with traditional forms of education. In this manner, one can simultaneously support a sense of control over one's functioning, improve one's physical and mental well-being, and strengthen one's motivation to learn and care for one's health amid daily academic practices. It also seems reasonable to include targeted personal development workshops that combine self-efficacy enhancement with elements supporting the development of passion. These short, cyclically repeated small-group programmes, led by psychologists or career counsellors in cooperation with teaching staff, could focus on realistic goal setting, coping with stress and basic skills training (planning, self-reflection, emotion regulation), which is consistent with the present results indicating the importance of self-efficacy and passion engagement for students' life satisfaction.

However, the ambiguity of the present study's results contrasts with the approach proposed by Vallerand and Paquette (2024), who, in their dualistic model of passion, distinguished between harmonious passion (favouring well-being) and obsessive passion (inducing excessive engagement and stress). The SRPS makes no distinction between harmonious and obsessive passion, which could have masked subtle differences in the impact of passion on eudaimonic and hedonic well-being. Another limitation of the study was its cross-sectional, self-report design; passion and self-efficacy measured at a single point in time may be subject to fluctuations associated with examination-related stress or current learning load (Kotera et al., 2022; Szepe & Meszaros, 2024).

In future studies, scholars should therefore consider a longitudinal design that will allow them to render the dynamics of the impact of passion and self-efficacy on well-being at different stages of semesters or research projects. What is more, the sample consisted solely of students from pedagogical and teacher training programmes. For this reason, the results are not representative of students from different faculties, age groups, professional statuses, or cultural contexts. When designing future studies, researchers should consider contextual variables, such as social support, material assets, and environmental factors (Mudło-Głagolska & Larionow, 2023), which may considerably moderate well-being, self-efficacy, and the role of passion. The above limitations point to the need for further analyses that consider a broader range of variables.

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Music and its presence in human life through the lens of pedagogy of accompaniment: Towards teacher stress prevention

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teacher well-being

Abstract

Research aim/problem: The aim of this article is to demonstrate the role of music in human life through the lens of the pedagogy of accompaniment, presented as a practical tool to mitigate teachers' stress. The research problem focuses on the following question: What values does music embody, and how can it accompany and support individuals both in their daily life and in the context of stress?

Research method: The study is based on the autobiographical narrative of a teacher educated in both music and music therapy. A proxemic analysis was conducted on selected excerpts from the autobiography that focus on the subject's lifelong relationship with music.

Process of argumentation: Music, as a pervasive phenomenon, fulfils a range of roles in human life, including social, humanistic, and therapeutic functions. The article examines its values, especially the personal relationship with music, through the conceptual framework of Zbigniew Marek's pedagogy of accompaniment. This perspective, incorporated into the analysis, highlights the spaces in which the author of the autobiographical narrative has improved her functioning through her connection with music.

Research findings: Music emerged as a companion across different dimensions of life, providing support, closeness, and assistance in difficult situations, everyday struggles, moments of reflection, and spiritual experience.

Conclusion/recommendations: Engagement with music as a means of coping with stress may constitute a valuable dimension of individual

burnout-prevention strategies and contribute to improving the quality of teachers' professional functioning and teaching practice, as well as more systemic solutions, including the implementation of programmes that incorporate music into teacher well-being support initiatives.

Introduction

The educational environment is frequently associated with stress. Various theoretical approaches have conceptualised this phenomenon over time. Hans Selye understood stress as the organism's non-specific response to external demands, whereas Richard Lazarus and Susan Folkman emphasised the dynamic interaction between the individual and the environment. Johannes Siegrist's effort–reward imbalance model explains occupational stress as resulting from a discrepancy between work effort and received rewards. Closely linked to stress is professional burnout, conceptualised by Christina Maslach as consisting of emotional exhaustion, depersonalisation, and a reduced sense of personal accomplishment. In this perspective, burnout develops through prolonged exposure to emotional and interpersonal stressors combined with insufficient recovery (Wilczek-Rużyczka et al., 2019).

For these reasons, teaching is recognised as a highly challenging profession, as chronic stress constitutes a significant risk factor for mental and physical well-being as well as burnout. Teachers' psychological health is particularly important because it indirectly affects the pupils they teach (Agyapong & Wei, 2024; Agyapong et al., 2022). Teacher stress is considered an international phenomenon characterised by unpleasant emotions resulting from teaching work, including excessive workload, time pressure, low student motivation, diversity in the classroom, conflicts with colleagues, lack of administrative support, and value conflicts. These stressors may contribute to a reduced sense of self-efficacy and increased emotional strain, which in turn influence teachers' perceptions of stressors within the school environment (Skaalvik & Skaalvik, 2016).

Considering the consequences of stress and professional burnout, it is essential to develop preventive strategies that address teachers'

personal needs in the context of contemporary educational challenges. A review of stress-reduction interventions used among teachers identified multiple approaches, including mindfulness-based interventions, yoga, cognitive behavioural therapy (CBT), stress management training, relaxation techniques, physical activity, emotional intelligence models, gratitude interventions, and spiritual practices such as prayer (Agyapong et al., 2023; Agyapong & Wei, 2024; Avola et al., 2025).

One such possibility, and the focus of this article, is engagement with music from a music therapy perspective. Music interventions, understood as purposeful experiences involving listening to music, making music, or singing, support the development of a personal relationship with music. Although music therapy research widely recognises the stress-reducing effects of music (e.g., Chanda & Levitin, 2013; Koelsch, 2015; Mehr et al., 2019, as cited in de Witte, 2021), this issue still rarely appears in broader interdisciplinary discourse. The aim of this article, therefore, is to demonstrate the role of music in human life through the lens of the pedagogy of accompaniment, presented as a practical tool to mitigate teachers' stress. This approach to music's presence in everyday life serves as an attempt to answer the question of what values music embodies and how it can accompany and support individuals in their daily lives, particularly in the context of stress.

Music as a ubiquitous contemporary phenomenon

Music has accompanied humanity since its earliest existence, evolving from natural sounds supporting survival to a universal cultural phenomenon created and experienced by people across societies (Stachyra, 2012). Throughout history, music has been recognised for its aesthetic, educational, and therapeutic potential (Natanson, 1978). Artistic expression is considered an innate human characteristic, like speech or tool-making, evidenced by prehistoric artistic artefacts such as cave paintings, figurines, and statuettes, dating back between 50,000 and 100,000 years, and instruments such as the 45,000-year-old bone flute (Thaut, 2015; Vick, 2014).

The earliest written accounts of music's healing effects are found in Egyptian papyri from the 15th century BCE (Stachyra, 2012). In ancient Greece and Rome, these properties were developed particularly through the theory of ethos, which assumed a close relationship between music and the soul. Human beings were understood as a microcosm reflecting the harmony of the cosmos; consequently, music, especially through scales, rhythm, and catharsis, was believed to restore inner balance and support healing. The theory of musical ethos became a foundation of Greek *paideia* (Bramorski, 2012). While early understandings of music were closely linked to metaphysical and magical-religious beliefs, Hippocrates introduced a more rational perspective grounded in observations of human nature and the body, shifting attention away from mystical interpretations of healing (Thaut, 2015).

Today, music is considered a ubiquitous phenomenon accompanying everyday life. (Czerniawska, 2012). When strategically used in commercial settings, music can influence consumer behaviour, enhance brand identity, and shape purchasing intentions (Łopaciuk-Goc, 2012; Makomaska, 2020). Music is also present in sports, film, and theatre, shaping audiences' emotional reception of the visual narrative (Migut & Wrzałka, 2012).

In everyday life, music takes on yet another dimension. Listening to, performing, or singing music initiates a direct engagement and a unique form of contact. Listening to music is a significant aspect of daily life, as people often devote more time to it than to other leisure pursuits (Rentfrow & Gosling, 2003). This widespread appeal is attributed to music's capacity to generate emotional rewards (Zentner et al., 2008). Listening activates the brain's reward system, the same one stimulated by food, sweets, sex, alcohol, and certain drugs (Christensen, 2019). Listening to music may be either passive or active. When music serves as background noise during other tasks, it generally does not engage conscious awareness, remaining at the periphery of the listener's attention. In contrast, active listening places music at the centre of attention, requiring intentional and volitional focus (Makomaska, 2020).

These modes of listening initiate human interaction with music, involving both direct and mediated forms of engagement, such as through

a physical device like an audio player. Direct engagement occurs when people attend live performances or participate in musical activities, experiencing sound as a form of physical energy. This experience activates what is known as behavioural resonance. One of the primary reasons people attend concerts is to experience this resonance – the sensation of being physically moved by music. These internal states are not based on cognitive reflection or musical analysis but are instead described in deeply embodied terms such as “corporeal immersion in sound energy,” being “carried away,” or even “getting absorbed by music” (Leman, 2008, p. 4). The experience of direct engagement is subjective and rooted in personal perception as well as social interaction. It emerges when one is part of an audience listening at a concert, or when a performer within a group is playing music or singing (Leman, 2008).

Qualities of music and the human relationship with it

Music is a pervasive element in human life and, depending on the context of engagement, it performs educational, aesthetic, cathartic, and social functions, shaping attitudes and fostering social identification (Gołaszewska, 1986; Lewandowski, 2014). Moreover, music holds significant educational potential. Listening to music can support the development of personal identity, prompt reflections on adulthood, and contribute to the shaping of adult life (Leman, 2008; Łuciuk-Wojczuk, 2023).

The qualities of music stem from its dual character: it is both a physical phenomenon, consisting of acoustic waves, and a perceptual experience. As a symbolic art form, its perception is shaped by a range of musical components – melody, timbre, dynamics, harmony, and rhythm – each of which can affect the human being, including on a physiological level. Perception is also influenced by an individual’s psychophysical condition, the context of musical engagement, personal preferences, and cultural background (Juslin & Västfjäll, 2008). The physiological impact of music is linked to its vibratory nature, as music and sound act directly on the brain and body (Bonde, 2019a).

These characteristics of music can be analysed across several levels, which are particularly relevant in therapeutic contexts but are also evident in everyday experiences, even those that occur without deliberate engagement. In addition to the physiological level, these are the syntactic, semantic, and practical-interpersonal ones. The syntactic level refers to experiencing music as a communicative language, which is aesthetically expressive and identifiable through musical styles such as classical, popular, folk, or jazz. At this level, the organisation of acoustic elements according to musical structure plays a significant role. The semantic level addresses the existential and spiritual significance of music, as well as its ability to evoke moods and meanings. These aspects contribute to the development of a personal relationship with music, as listeners often ascribe extra-musical meanings to it. During musical engagement, multi-modal imagery, a broad spectrum of emotions, and spontaneous associations with personal experiences or existential themes may be activated. The final level – the practical and interpersonal – encompasses the social and cultural dimensions of music, including its use in rituals and recreational activities. Such experiences foster new social bonds and strengthen existing ones (Bonde, 2019b).

Beyond its multifaceted qualities, music's evocative potential is especially important. It can elicit a wide range of emotional responses through mechanisms such as brainstem reflexes, evaluative conditioning, emotional contagion, visual imagery, episodic memory, and musical expectancy. Insights from neuroscience and psychology have contributed to our understanding of these processes and the still-emerging knowledge of how music affects humans (Edwards, 2016; Galińska, 2015; Juslin & Västfjäll, 2008).

A specific form of deepening the relationship with music as a stress-regulation strategy is music therapy practice, such as music listening. De Witte et al. (2022) report that music listening is strongly associated with stress reduction through decreased physiological arousal, including lower cortisol levels, heart rate, and mean arterial pressure. It also reduces negative affect, such as worry, anxiety, restlessness, and nervousness, while enhancing positive emotions, including happiness. These effects are

linked to the music-induced modulation of brain structures involved in emotional and motivational processing, particularly the amygdala and the mesolimbic reward system. Moreover, the systematic use of music in therapy tailored to patient needs may enhance these effects. Group-based music activities can foster interpersonal synchronisation, contributing to feelings of togetherness and social bonding, potentially mediated by endorphin and oxytocin release, which are important in stress regulation. Finally, music listening may also reduce stress by providing cognitive distraction from stress-inducing thoughts and emotions (de Witte et al., 2022).

Methodological assumptions

The source material analysed in this study is the autobiography of a teacher and music therapist, which formed part of the primary dataset for the doctoral dissertation *The experience of music therapy in shaping women's adulthood*. The present re-analysis serves to deepen the original research project, which focused on exploring how music therapy experiences shape adulthood in women. As the original analysis revealed a strong lifelong bond and even love for music among the participants, this subsequent examination centres on gaining a deeper understanding of that relationship and interpreting it through the lens of Zbigniew Marek's (2017) pedagogy of accompaniment.

The pedagogy of accompaniment is rooted in the traditions of Ignatian pedagogy and the Ignatian model. Drawing on the spiritual and pedagogical insights of Saint Ignatius of Loyola, this approach emphasises the role of the teacher as a companion who supports the student in achieving the fullness of personal and social development (Marek, 2017). The resulting Ignatian model organises the learning process into a coherent developmental path, consisting of the following stages: context (identifying the essential value of a given experience), reflection (uncovering the deeper meaning of that experience), inspiration for action (fostering the formation of values, attitudes, and ideals), and assessing

the outcomes of these actions (Marek & Walulik, 2020). As Marek notes, this form of pedagogical accompaniment “can be likened to a shared journey toward the achievement of a common goal” (2017, p. 292).

The analytical method applied in this study – proxemic analysis – represents an emerging trend in qualitative research. It considers qualitative data as spatially and temporally situated, requiring a holistic understanding of life histories and their lived context (Marek & Walulik, 2019). This approach involves identifying entities within five categories – actors (both personal and non-personal), time, place, values, and expectations – as well as uncovering the relationships that connect these entities and categories, which play a significant role in attempting to understand the experience (Marek & Walulik, 2020).

The use of the pedagogy of accompaniment in analysing the music therapist’s autobiographical narrative enabled the personified role of music to be foregrounded. Music may be understood as a relational presence, both internally in subjective experience and externally within therapeutic interaction, where it functions as a “third element” alongside therapist and client (Bryndal & Procter, 2012). In this form, music generates personally meaningful, affectively grounded experiences that emerge from lived context and become integrated into the individual’s emotional and cognitive world.

Analysis

During the analysis of the autobiography, narrative fragments (entities) were identified within the categories of actors, place, time, values, and expectations, with a focus on music as a companion in everyday life. Music emerged as the central, personified actor, accompanying the narrator across multiple domains of experience.

Within the pedagogical framework of accompaniment, the categories of time and place were deemed analytically marginal and excluded. A clear overlap was observed between the entities identified within the categories of values and expectations: values were understood

as the meanings attributed to music, while expectations reflected the anticipated recurrence of these valued experiences. Due to space limitations, only selected narrative excerpts are presented.

In the actors category, the following excerpts portray music as a companion:

“music accompanies me at all times, in moments of joy and sorrow”

“each day, music accompanies me in discovering the beauty of the world, helping to reveal what is most beautiful and perfect”

“from early childhood, music accompanied me during play, and later, during my school years, in learning”

Within the values category, the following entities reflect the significance of music as a companion to the narrator:

A helping companion: “I could feel the positive vibration in this music [by W. A. Mozart]... the harmony... the beauty of the sounds... it made it easier for me to concentrate and study”

A companion of closeness: “in moments of isolation and a lack of close relationships, it was music that embraced me and stayed by my side”

A companion of reflection: “through playing or listening, I was able to [...] pause, reflect, and see my experiences from a different perspective”

In the expectations category, the following content reflects the recurring value brought by music:

A background companion in daily life: “It helps me act (clean, cook, bake), to relax, to reflect, and to ease my loneliness”

A companion offering support: “it often helps me through difficult situations involving male-female relationships [...] and also through challenging moments at work”

The narrator’s professional life is also shaped by her role as an accompanist for a girls’ choir:

A companion in a relationship with God: “I left rehearsals feeling fulfilled [...] sometimes I like to pray using the words of a song, silently hearing the melody”; “Gospel singing gave me a sense of being enveloped, of calm, of joy in being and singing together”

These excerpts reveal the pervasive presence of music throughout the narrator’s life, illustrating her multifaceted, deeply personal relationship with music that began in her early childhood and developed over time and across her life experiences.

Research findings

The proxemic analysis focused on narrative elements related to experiences of a relationship with music. Examining these experiences through the lens of the pedagogy of accompaniment enabled the formulation of several key conclusions and, despite the individual and limited scope of the findings, allowed for the identification of synergistic qualities as well as the contexts and areas in which a person’s relationship with music is shaped in a personalised manner.

Drawing on the narrator’s lived experiences interpreted within the framework of the pedagogy of accompaniment, music was understood as a companion offering help, support, closeness, and a sense of presence in difficult situations, moments of reflection, everyday experiences, and relationship with God. Furthermore, the relationship with music as a companion was found to illuminate pathways of everyday existence and resonate deeply within the author, including at a transcendent level, encompassing both internal and external experience.

Framing these conclusions within the pedagogy of accompaniment highlights the role of music in shaping human interiority. Music not only evokes experiences but also conveys individualised meaning understood uniquely by the experiencing person. As an emotional medium, music’s evocative potential elicits emotional responses on physiological, syntactic, semantic, and practical-experiential levels (Bonde, 2019a; Juslin

& Västfjäll, 2008), which participate in fostering a meaningful relationship with music.

The message conveyed through musical experience is deeply embedded, as music exerts multidimensional influence on personality, supporting emotional, cognitive, creative, and aesthetic experiences (Galińska, 2015). From a music therapy perspective, musical experiences engage brain mechanisms associated with learning and transfer to non-musical functions, thereby influencing behavioural and cognitive functioning through neural plasticity and the activation of multiple brain regions (Altenmüller & Schlaug, 2013; Thaut, 2005, as cited in Galińska, 2015).

This conceptualisation of musical experience aligns with the Ignatian model, consisting of context, experience, reflection, action, and evaluation. These dimensions may be applied to understanding musical experiences occurring in everyday contexts – whether intuitive or conscious, physiological or emotional, aesthetic or spiritual. Music may inspire reflection and appreciation of its influence on human functioning, including its professional application in therapeutic contexts such as music therapy.

The findings presented above lead to the conclusion that music emerged as a companion in various dimensions of life, offering support, closeness, and assistance in difficult situations, everyday struggles, moments of reflection, and spiritual experience. This conclusion aligns with one of the outcomes of the dissertation, which indicated that the relationship with music served as an educational path for all narrators in their personal and professional lives (Łuciuk-Wojczuk, 2023)..

On the basis of all the presented outcomes, an interdisciplinary implication emerges: the personal use of music by teachers as a means of coping with stress may constitute a valuable dimension of individual burnout-prevention strategies and, indirectly, contribute to improving the quality of their professional functioning and teaching practice. These implications are further supported by music's well-documented role in stress reduction and well-being enhancement (de Witte et al., 2022), as music therapy practices in the educational environment contribute to more effective professional functioning and, indirectly, to improved

teaching and learning outcomes. Such practices may help prevent stress-related burnout and reduced well-being. Engagement with music may also strengthen teachers' sense of self-efficacy (Skaalvik & Skaalvik, 2016).

The findings also suggest broader educational implications. Owing to music's multidimensional regulatory and supportive functions, engagement with music may represent a meaningful component of preventive strategies aimed not only at teachers but also to students functioning within the same educational environment. The lack of teacher support is observed as a "flow-on effect," as teachers' mental health is said to have a direct correlation with students' mental health. This phenomenon has been observed globally, particularly since the onset of the COVID-19 pandemic; as a result, numerous initiatives involving music therapy interventions among students are currently underway in educational contexts (Krüger et al., 2023). Studies conducted among medical students, for example, indicate that music therapy used as a holistic approach yielded promising results in improving mood and regulating emotions. Consequently, music-based and music therapy interventions may constitute valuable tools for supporting emotional regulation, reducing stress-related burdens, and strengthening psychological resources among students exposed to chronic school-related stressors (Chen et al., 2024).

Examples of innovative solutions and initiatives are being developed in Norway for teachers who, in response to global needs, implement approaches based on the concept of *learning to learn* using music therapy-informed theories, which are both relevant in classroom settings and a vehicle for creating learning environments that support students' psychological well-being (Krüger et al., 2023).

In summary, by supporting stress reduction and strengthening emotional regulation, a personal relationship with music and music therapy practices may contribute to more effective professional functioning among teachers. At the same time, by reducing the perceived intensity of stressors, they may strengthen teachers' sense of self-efficacy and indirectly support improved teaching and learning outcomes.

Conclusion and recommendations

The findings and implications emerging from both the present study and the existing literature allow several interdisciplinary recommendations to be formulated, particularly within educational environments characterised by high levels of emotional strain.

The inclusion of specialised music therapy approaches within school support programmes may constitute a valuable direction for contemporary educational and mental health practice, particularly in light of the growing recognition that the emotional condition of both teachers and students significantly influences the quality of educational processes and interpersonal functioning within school environments. Preventive initiatives may therefore encompass both individual strategies undertaken by teachers and students and systemic educational solutions, including the implementation of innovative programmes aimed at supporting emotional regulation and psychological well-being in educational settings. Such recommendations appear particularly relevant given the growing interest in the potential of music as a supportive resource within school communities (Krüger et al., 2023).

At the same time, the consequences of stress are increasingly recognised as a global challenge affecting educational environments, further emphasising the need for interdisciplinary preventive interventions supporting psychological resilience, emotional well-being, and effective professional functioning. The findings also indicate the need for further empirical and interdisciplinary research examining the role of music-based interventions in educational contexts, particularly with regard to their long-term impact on stress reduction, emotional regulation, teachers' professional functioning, and educational outcomes. Such research may contribute to the development of evidence-based educational and therapeutic practices responsive to the contemporary challenges faced by school communities.

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Determinants of technostress in the teaching profession: A cross-sectional analysis

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Abstract

Research objectives and problems: The main objective of this study is to analyze the causes and relationships associated with technostress experienced by teachers with varying levels of professional experience and demographic characteristics. The study addresses the following research questions: What is the level of technostress among in-service and pre-service teachers? To what extent is the level of technostress among in-service and pre-service teachers differentiated by socio-demographic variables such as gender, place of residence, age, and length of service?

Research methods: The data were collected through a cross-sectional, questionnaire-based study conducted during the summer semester of the 2024–2025 academic year. The study sample included 60 in-service teachers and 394 pre-service teachers.

Process of argumentation: In recent years, scientific research has increasingly focused on the concepts of technostress – stress resulting from the use of information and communication technologies (ICT) and technophobia, understood as anxiety related to technology and its application. These phenomena affect not only teachers' well-being but also their professional functioning by reducing work efficiency, job satisfaction, and the quality of their relationships with students. Consequently, they may negatively impact teachers' overall professional success and their ability to meet the expectations of their educational environment. This paper analyzed the above-mentioned assumptions.

Keywords:

technostress,
primary school,
in-service and
pre-service teachers,
information and
communication
technologies,
ICT

Research findings: The study revealed that both in-service and pre-service teachers reported generally low levels of technostress. However, in-service teachers experienced significantly higher abilities-demands technostress than pre-service teachers. Age and work experience were positively correlated with technostress, but only among in-service teachers. Place of residence significantly influenced technostress levels in this group as well, with the highest levels observed among those living in medium-sized cities. No significant gender or residence-related differences were found among pre-service teachers.

Conclusions: The study highlights important differences in technostress levels among teachers related to their experience, age, and living environment. Understanding these variations can help inform strategies to better support teachers in adapting to technological demands in education.

Introduction

The teacher's role today goes far beyond traditional knowledge transmission. Teachers are now seen as guides in the information-rich world, mentors fostering students' social, emotional, and digital skills, and active participants in the school's social and cultural life (Hejnicka-Bezwińska & Śliwerski, 2015; Michalski, 2024; Zbróg & Bałachowicz, 2024). Rising societal expectations also require ongoing professional development (Szempruch, 2022). Following the outbreak of the COVID-19 pandemic, teachers encountered new challenges, particularly with remote learning, including digital skills (teachers and students), equipment access, the quality and acceptance of digital materials, a lack of experience in online teaching and assessment, and the social and psychological difficulties linked to digital education (Bielak et al., 2021).

The constant pressure to adapt to rapidly changing technology can cause negative psychological effects. Research increasingly refers to technostress (stress from using information and communication technologies, or ICTs) and techno-anxiety (fear of technology use) (Fernández-Batanero et al., 2021; Kumar, 2024). These issues impact teachers' well-being and professional lives by reducing their effectiveness, job satisfaction, and relationships with students (Wang et al., 2024). In turn, they may hinder overall professional success and the ability to meet societal expectations (Aktan & Toraman, 2022).

Understanding how digital challenges affect teachers' emotional well-being is now a key area of interdisciplinary research, linking pedagogy, occupational psychology, and technology. This paper explores the regularities in technostress experiences among teachers, accounting for differences in levels of work experience and demographic background.

Technostress in educational research

Stress refers to a psychological strain resulting from situations in which an individual's coping resources are insufficient to meet external demands (Colman, 2015). When these demands stem from technology, the resulting strain is termed 'technostress' (El Kiassi & Jahidi, 2023).

The inability to cope with ICT and the resulting tension are effectively explained by person-environment (P-E) fit theory (Rademaker et al., 2025; Ragu-Nathan et al., 2008). According to this framework, technostress arises from the interaction between personal characteristics and environmental demands. The environment is multidimensional, shaped by organizational cultures, expectations, and diverse interpersonal dynamics, and requires individuals to collaborate and meet responsibilities across various contexts.

P-E fit occurs when personal traits align with environmental demands, boosting well-being and satisfaction. Conversely, P-E misfit induces stress, harming individuals' well-being and performance. Technostress arises from the interplay between personal traits, such as low competence, and environmental stressors, such as techno-overload, insecurity, invasion, uncertainty, and complexity (Fernández-Batanero et al., 2021; Qi, 2019).

Technostress has been studied systematically since the mid-1980s. Initially defined by Brod (1984) as a modern adaptation disease caused by the inability to cope with computer technologies, it is now seen more holistically. Current views highlight the psychological effects of technology overload, stressing its negative impact on well-being and attitudes due to uncertainty about adapting to tech demands (Kumar, 2024; Salanova et al., 2013).

Viewing technostress as a disease is justified given its harmful impact on functioning. Its physiological, psychological, and social effects include fatigue, insomnia, mental overload, frustration, skepticism, low self-efficacy, reduced satisfaction and commitment to work and family, lower productivity, and impaired work-life balance (Kumar, 2024).

Functional relevance of technostress in teachers' professional work

Technostress can be managed in more or less functional ways. Based on Lazarus and Folkman's (1984) classification, three coping strategies can be distinguished. The first – task-oriented coping – involves active problem-solving and planning. The two less functional methods – emotion-focused coping and avoidance – involve seeking support or distancing oneself and waiting out the problem. Task-oriented coping improves with stronger personal resources. In the case of technostress and related technophobia, teachers' professional knowledge and skills are key (Brivio et al., 2018; El Kiassi & Jahidi, 2023).

According to Salanova et al. (2013), technological anxiety is one of three technostress dimensions alongside techno-addiction and techno-strain. The first involves ICT use generating fear, apprehension, and arousal. Anxiety here includes insecurity arising from needing to use technology and the fear of losing important information.

The second dimension relates to workaholism – being unable to disconnect from ICT devices and compulsively working outside normal hours. Technology addiction causes a fear of disconnection, as seen through constant notification checking, loss of control over use, motivational conflict with other activities, and anger when interrupted. The final dimension, techno-strain, involves tension experienced during ICT interaction. This stress can reduce willingness to engage in unpleasant tasks (Salanova et al., 2013).

It is difficult to determine how much anxiety causes technostress and how much technostress causes anxiety. The relationship is two-sided,

with both factors strongly affecting performance, either negatively when they paralyze action or positively when they accelerate it. In the first case, arousal is too low or too high; in the second, it is optimal, considering the teacher's nervous system endurance to strong stimulation and the complexity of classroom activity (Strelau, 1998). The curvilinear relationship between arousal and performance is described by the Yerkes-Dodson Law (1908), a principle established almost 120 years ago.

We may feel insecure when using ICT. Limited competence in operating techno-tools can cause negative tension. Fear of failure and stress may prompt us to reject new solutions in favor of familiar but less effective ones. A key emotional antecedent to technostress is low self-efficacy, stemming from a poor self-assessment of one's ability to act effectively. According to Bandura (2006), knowing how to act is not enough – one must also believe the goal is achievable. In the wider population, self-efficacy in using ICT varies greatly, from deep skepticism and doubt to confidence and technoenthusiasm (Wang et al., 2020a).

Besides personal antecedents like low self-efficacy, several non-personal technostress triggers can be identified. These relate to the context of technology use and tools' characteristics, which – due to their growing complexity – can evoke feelings of inadequacy (Wang et al., 2020b). Salanova et al. (2013) argue that research on technostress sources often points to specific features of technology or its implementation. Thus, technostress creators may include techno-overload, techno-insecurity, techno-invasion, techno-uncertainty, and techno-complexity.

These factors affect both private and professional life. In the case of techno-overload, we receive large amounts of information from multiple channels at once, making it hard to process – especially when the data is ambiguous. With techno-insecurity, people may fear losing status within or outside the workplace due to an inability to stay “up to date” with technological innovations.

Constant ICT connectivity without temporal or spatial limits keeps teachers continually available for work. As a result, techno-invasion, along with technology addiction, can threaten work-life balance. Techno-uncertainty arises from changes in the nature of the job and the introduction of

new ICTs, causing tension and detachment from the work environment. Techno-complexity reflects the discomfort of facing technologies that, regardless of one's efforts, feel unmanageable.

Research problems

This paper attempts to answer the following research questions:

- Q1: What level of technostress characterizes in-service and pre-service teachers?
- Q2: To what extent does the level of technostress among in-service and pre-service teachers vary according to socio-demographic variables such as gender, place of residence, age, and seniority?

Materials and methods

Data were collected using a cross-sectional questionnaire survey administered in the summer semester of the 2024–2025 academic year among in-service and pre-service teachers.

Participants

The sample was recruited using a convenience-voluntary scheme (Gravetter & Forzano, 2010). In-service teachers ($n = 60$; 59 women, 1 man) and pre-service teachers ($n = 394$; 309 women, 85 men) were included based on the following criteria: (1) participants provided written consent to take part in the study, and (2) they had school-related experience – i.e., they were employed as teachers or were currently undertaking/had previously completed an internship at a school.

The average age of in-service teachers was 35.62 ($SD = 9.27$), while that of pre-service teachers was 24.58 ($SD = 6.92$). In-service teachers' places of residence were fairly evenly split between rural areas (23%), cities with up to 50,000 residents (25%), cities with 51,000 to 100,000 residents (25%), and cities with over 100,000 residents (27%). Among pre-service

teachers, the respective percentages were 32%, 16%, 9%, and 43%. The average length of service of in-service teachers was 6.54 years (SD = 8.67).

Instruments and materials

Teachers' technostress was measured using Wang et al.'s (2020a) 8-item Person-Environment Fit Scale of Technostress (P-EFST). The tool assesses two components of technostress as mismatches in the dimensions: abilities-demands misfit (ADT, 4 items) and needs-supplies misfit (NST, 4 items). Statements were rated on a 5-point scale from 0 (strongly disagree) to 4 (strongly agree). Cronbach's alpha for the entire scale was 0.920; for ADT and NST, it was 0.883 and 0.876, respectively. The Polish version was translated by the authors following Hambleton et al.'s (2004) guidelines. Selected socio-demographic variables were also included. Participants reported their gender, place of residence, age, and length of service.

Research and analytical procedures

The data were collected online. When participants were asked to complete the questionnaire, they were informed about the study's purpose, their anonymity, and that participation was voluntary. They then provided informed consent before taking part in the survey. All data were collected during a single session of the cross-sectional survey.

Variables were described using basic descriptive statistics – arithmetic means and standard deviations. The internal consistency of the P-EFST was assessed using Cronbach's alpha coefficients. Relationships between variables were examined using correlation analysis, the Mann–Whitney U test, and ANOVA. All analyses were conducted using JASP v. 0.19.3.

Results

The average levels of technostress, comprising ADT, NST, and total technostress, were quite low in both groups: 1.301 (SD = 1.010), 1.466 (SD = 1.097), and 1.386 (SD = 0.985), respectively, based on raw scores from the P-EFST scale (0–4 range).

Next, technostress levels were compared between pre-service and in-service teachers. Due to unequal group sizes, the non-parametric Mann–Whitney test was applied. A significant difference emerged for the ADT component – in-service teachers ($M = 1.567$; $SD = 1.091$) experienced greater mismatches in the abilities–demands dimension than pre-service teachers ($M = 1.261$; $SD = 0.993$) (MW test = 13697.50, $p = 0.046$, Cohen's $d = 0.159$). No significant differences were found for the needs–supplies dimension or total technostress ($M = 1.471$ vs. 1.466 ; $SD = 1.260$ and 1.072 ; MW test = 11569.50; $p = 0.791$, and $M = 1.521$ vs. 1.365 ; $SD = 1.125$ and 0.962 ; MW test = 12597.00; $p = 0.411$, respectively).

Subsequently, the extent to which technostress varied according to selected socio-demographic characteristics was examined. Participants' age correlated with both components and the overall technostress score. For ADT, the correlation coefficient was $r = 0.264$ ($p < 0.01$); for NST, $r = 0.143$ ($p < 0.01$); and for the total score, $r = 0.215$ ($p < 0.01$). As age increased, respondents reported a stronger sense of mismatch between their abilities, resources, needs, and the demands of information technology in the work environment. Interestingly, these relationships disappeared among pre-service teachers but remained significant among in-service teachers. Among the latter, the strongest correlation was again observed for the ADT component ($r = 0.262$, $p < 0.01$), followed by total technostress ($r = 0.220$, $p < 0.01$) and NST ($r = 0.152$, $p < 0.01$).

The observed relationships were also replicated for the seniority variable. Among in-service teachers, higher seniority was associated with increased technostress (ADT: $r = 0.257$; NST: $r = 0.271$; total score: $r = 0.277$; $p < 0.05$). This result is unsurprising, given the naturally strong positive correlation between seniority and age. Notably, the association between age and the NST component was almost twice as weak as that with seniority ($r = 0.152$ vs. 0.271).

Differences in technostress levels between females and males were also examined, but only within the pre-service teacher group, as there was only one male among the in-service teachers. Females reported higher levels of technostress than males (ADT: $M = 1.359$ vs. 0.815 , $SD = 1.015$ and 0.815 , MW test = 16537.00, $p < 0.01$, Cohen's $d = 0.259$;

NST: $M = 1.536$ vs. 1.209 , $SD = 1.057$ and 1.092 , MW test = 15684.50 , $p < 0.01$, Cohen's $d = 0.194$; total: $M = 1.450$ vs. 1.058 , $SD = 0.973$ and 0.858 , MW test = 16168.50 , $p < 0.01$, Cohen's $d = 0.231$).

Finally, technostress levels were compared according to respondents' place of residence: rural areas, cities with up to 50,000 residents, and cities with 51,000–100,000 residents. Among pre-service teachers, place of residence showed no significant link with ADT [$F(3,390) = 2.296$; $p = 0.077$], NST [$F(3,390) = 1.087$; $p = 0.354$], or total technostress [$F(3,390) = 1.785$; $p = 0.150$]. However, for in-service teachers, place of residence significantly affected ADT [$F(3,56) = 2.287$; $p = 0.046$; $\eta^2 = 0.132$] and total technostress [$F(3,56) = 2.869$; $p = 0.044$; $\eta^2 = 0.133$], but not NST [$F(3,56) = 2.459$; $p > 0.05$].

The highest levels of ADT were reported by participants living in cities with 51,000–100,000 residents ($M = 2.150$; $SD = 1.149$), followed by those in cities with over 100,000 residents ($M = 1.594$; $SD = 1.099$), rural areas ($M = 1.464$; $SD = 1.168$), and cities with up to 50,000 residents ($M = 1.050$; $SD = 0.689$). A significant difference was found between those living in cities with up to 50,000 residents and those living in cities with 51,000–100,000 residents [$t(56) = 2.887$; p Tukey = 0.027]. A similar trend appeared for total technostress, with the highest level again in cities with 51,000–100,000 residents ($M = 2.159$; $SD = 1.099$), followed by cities with over 100,000 residents ($M = 1.511$; $SD = 1.088$), rural areas ($M = 1.502$; $SD = 1.219$), and cities with up to 50,000 residents ($M = 0.961$; $SD = 0.824$).

Discussion

This study had two main objectives: to assess technostress levels among pre-service and in-service teachers and to examine the relationships between these levels and the respondents' socio-demographic variables.

The results indicate medium to low levels of technostress in the analyzed groups. Significant differences appeared in the ADT component, which affected in-service teachers more than pre-service ones. In-service

teachers experienced greater discomfort in the ADT dimension, while no significant intergroup differences were found in the NST dimension or total technostress score.

This supports the notion of technonativity (Prensky, 2001) among younger generations, who, having grown up with technology, do not fear it or perceive a mismatch with its requirements and functionalities. In contrast, older generations may feel discomfort not only with the tools themselves but also with the broader philosophy of technology's role in life, e.g., AI's function and relationship with humans. Still, the sense of mismatch in the ADT dimension proved a stronger source of technostress than the NST dimension (Penado Abilleira et al., 2021; Saltan et al., 2024).

Several previous studies have indicated a strong link between teachers' need to continuously keep up with technological advances in education and their emotional responses, such as anxiety and stress (Betoncu & Ozdamli, 2019; Fernández-Batanero et al., 2021). Consequently, technostress negatively impacts teachers' job satisfaction (Estrada-Muñoz et al., 2020) and, in turn, their beliefs about education and professional development (Aktan & Toraman, 2022).

The present study revealed associations between technostress and selected socio-demographic characteristics. Among in-service teachers, feelings of inadequacy in abilities, resources, and needs to meet ICT demands in the workplace increased with age – an effect not observed among pre-service teachers. Similar findings regarding a positive relationship between technostress, seniority, and teacher age have been reported by other researchers (Penado Abilleira et al., 2021; Ram & Kannaujia, 2025; Wang et al., 2023).

In this study, technostress levels varied by gender among pre-service teachers. It is difficult to determine the extent to which the observed differences stem from females' objectively lower proficiency with modern technologies (Koh et al., 2015; Scherer et al., 2017) or from gender stereotypes. While men may overestimate their technological competence or mask feelings of inadequacy in meeting technological demands, women may underestimate their competence in using modern technologies.

Topal and Akgün (2015) have shown that male pre-service teachers have significantly higher self-efficacy perceptions of Internet use for educational purposes than female pre-service teachers. In contrast, Wang et al. (2023) found that male primary school teachers felt greater technostress than female teachers. The authors attribute this result to an imbalance in the gender distribution in elementary schools, where male teachers may be perceived as more familiar with technology and are given more technology-related tasks. This thread seems remarkably interesting and worthy of further exploration.

Finally, in our study, technostress was significantly associated with place of residence among in-service teachers. Higher levels of technostress were observed among those living in larger cities than among those in rural areas and smaller towns. One possible explanation for this is that schools in more populous urban areas may place greater demands on digital competence, making the work environment more taxing than in rural or smaller-city schools. This assumption requires further investigation, although similar findings were reported by Wahab et al. (2022). However, their results concern Malaysian teachers, so cultural differences should be considered when making comparisons.

Limitations and Conclusions

The present study has certain limitations that should be acknowledged. First, it employed a cross-sectional design, with variables measured at a single point in time. As a result, it is not possible to assess the stability of the technostress diagnoses among pre- and in-service teachers or to determine their sensitivity to contextual factors such as location, timing, or participant characteristics (Gravetter & Forzano, 2010). A related limitation concerns the substantial overrepresentation of females in the analyzed subgroups. Gender-related characteristics – such as the typically higher levels of neuroticism observed among females (Weisberg et al., 2022) – may have influenced the results and potentially biased the findings.

The study's cross-sectional nature precludes inferring causal processes. However, it is worth emphasizing that, according to the developers of the P-EFST scale (Wang et al., 2020a), technostress is a relational phenomenon. Therefore, it is difficult to determine the extent to which the variables measured in the study are related. It is only possible to infer their co-occurrence or co-variation.

Second, the study was conducted via an online questionnaire. As a result, the level of participant engagement in completing the survey may have been suboptimal, potentially reducing the quality of the collected data (Jaeger & Cardello, 2022). Finally, the sample was recruited through a volunteer-based approach. Consequently, any generalizations based on the collected empirical material apply only to those who participated in the study rather than to the population at large.

Despite the acknowledged limitations, the results of this exploratory study are noteworthy. Interest may arise from the observed relationships between participants' gender, place of residence, and levels of technostress. Moreover, the findings have practical value, as they can inform the development of empirically grounded interventions aimed at reducing technostress in school settings (Zhao & Song, 2021). It is also important to note that teachers are the primary agents of technology-enhanced education, often serving as designers, administrators, and decision-makers simultaneously. Without the active engagement of teachers who feel confident using ICT, the effective implementation of technology-supported education remains unlikely (Woodlands & Dart, 2023).

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Past tense, present stress: Mnemohistory of teacher burnout

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Abstract

Research objectives and problem: This viewpoint article aims to re-frame teacher burnout through a mnemohistorical lens and address the problem that contemporary discussions of burnout often overlook the influence of historical educational policies and cultural narratives.

Research methods: Adopting a conceptual and comparative approach, the article draws on mnemohistory (the study of collective memory across time) to explore how teachers' roles and expectations have been shaped across different national contexts, including the UK, Japan, Finland, the USA and Taiwan.

Process of argumentation: The argument develops by tracing how past reforms, policy decisions and cultural expectations continue to structure present-day teaching conditions. It positions burnout as an outcome of historically accumulated pressures and narratives.

Research findings and their impact on the development of educational sciences: The article centres that teacher burnout is bound to mnemohistorical processes and reveals how unresolved historical legacies shape current educational systems. This perspective contributes to educational sciences by introducing a temporally layered understanding of teacher well-being, expanding beyond immediate policy and psychological frameworks.

Conclusions and recommendations: The article concludes that addressing teacher burnout requires historically informed policy approaches that acknowledge these long-term influences. It recommends the development of more sustainable and inclusive educational structures that take into account the historical conditions shaping teachers' work.

Keywords:

mnemohistory,
teacher burnout,
cultural memory,
educational policies,
historical narratives,
stress

Burnout beyond the present

Teacher burnout is conceptualised as a contemporary crisis, driven by escalating workloads, bureaucratic constraints and evolving educational demands (Chang, 2009; Ghanizadeh & Jahedizadeh, 2015). However, this phenomenon can be understood within a broader historical and sociocultural framework. The enduring legacies of past educational policies, institutional structures and cultural memory continue to shape present-day stressors within the teaching profession. This article adopts an interdisciplinary perspective and engages with mnemohistory, a concept introduced by Assmann (2010), to explore the ways in which historical narratives and collective memory inform contemporary experiences of teacher burnout across national contexts. This is a conceptual exploration where literature informs the argument but is not examined in an empirical or analytical sense.

Mnemohistory extends beyond traditional historiography by looking into past events and the ways in which societies remember, reinterpret and mobilise these histories in the present (Assmann, 2010; Tamm, 2024). In the context of education, this entails looking into how historical constructions of the teaching profession (such as the idealisation of the self-sacrificing educator or the perception of teaching as a moral vocation) persist in shaping contemporary professional expectations and the lived realities of teachers. Rather than being static, these historical discourses are continuously reactivated in policy frameworks, institutional cultures and public perceptions, contributing to the structural conditions that exacerbate teacher stress and burnout.

This article discusses how different educational systems engage with historical legacies in relation to teacher well-being. While some nations have implemented systemic reforms aimed at mitigating burnout, others continue to reinforce entrenched ideals that intensify professional stress (Rudow, 1999). This study underscores the necessity of situating teacher burnout within a historical and sociocultural continuum and recognises the enduring impact of collective memory on the evolving conditions of the teaching profession.

Bridging time: Mnemohistory as a lens for understanding teacher burnout

Drawing from memory studies, historical analysis and social theory, mnemohistory posits that individual and collective memories, shaped by past events, policies and cultural narratives, influence the present experiences of individuals within a given social structure (Assmann, 2010; Tamm, 2024). In the case of teachers, their professional lives are defined by contemporary conditions, and they are also entangled with the legacies of past educational systems, policies and societal expectations. Teachers' responses to stress, burnout and professional satisfaction can often be traced back to historical configurations of teaching norms and state-imposed expectations that have shaped their professional roles over time (Bodenheimer & Shuster, 2020; Chang, 2020). Thus, mnemohistory opens the door to a refined investigation of how educational systems' evolving philosophies and pedagogical approaches (underpinned by cultural memory) have contributed to shaping current stressors within the teaching profession.

Within this theoretical framework, burnout can be understood as a contemporary phenomenon and as a process that has been influenced by longstanding historical and sociocultural determinants. Teachers' roles have been shaped by societal expectations, which often intersect with changing educational policies and the perceived value of education (Bodenheimer & Shuster, 2020). For instance, over the years, educational reforms and curricula shifts have framed the teaching profession as a dynamic one, constantly evolving to meet the demands of society, including "the extensive efforts needed to meet parents' or administrators' expectations due to reform" (Chang, 2009, p. 204).

However, the demands placed on teachers (particularly in contexts of increased accountability, standardised testing and demands for inclusive education) have gradually eroded their sense of professional autonomy, well-being and job satisfaction (Pishghadam et al., 2014). These shifting dynamics can be understood through the lens of mnemohistory, where past educational structures and political imperatives have set

the stage for the stress and burnout teachers face today. Moreover, societal values regarding the importance of education and the status of teachers have shifted, often leading to conflicting pressures: on one hand, there is an expectation for teachers to provide high-quality education with limited resources, while on the other, teachers are seen as expendable in the face of policy shifts or public criticism (Hamm et al., 2024; Rodríguez-Hidalgo et al., 2024).

Burnout is a response to individual workloads or challenges and is also linked with the sociopolitical forces within educational systems. Studies consistently show that factors such as excessive workload, lack of autonomy, societal undervaluation of teaching and lack of support all contribute to teachers' experiences of burnout (Cao et al., 2024; Wang et al., 2024). From a mnemohistorical perspective, these findings can be interpreted as manifestations of broader historical and cultural forces that have shaped the teaching profession. The notion of teachers as "saviours" or "role models", often glorified in educational discourse, stands in tension with the increasing pressures placed on them, leading to a form of cognitive dissonance and emotional strain (Jiménez Raya et al., 2024). Further, global comparisons of teacher burnout reflect the varying ways in which educational systems across different nations have approached the issue, pointing to the importance of understanding the historical and sociocultural context in which burnout manifests.

For example, the United States' emphasis on standardised testing in the 1990s and 2000s resulted in heightened stress for educators (Gonzalez et al., 2017; Rubin, 2011), while in countries like Finland, where teachers are accorded a higher level of trust and autonomy, burnout rates have historically been lower (Pyhältö et al., 2021). That said, Finland is not without its challenges in preventing teacher burnout. Mnemohistory offers the possibility to explore these patterns through a contemporary lens, including by linking them to past educational policies, cultural narratives and social movements, which have all contributed to shaping the conditions under which teachers operate today.

Mnemohistory lays the groundwork for looking into teacher burnout as a multidimensional issue influenced by historical, sociocultural, and

policy-related factors. By understanding how past experiences, narratives and policies have shaped contemporary teaching environments, this approach allows for a more holistic understanding of “the challenges expressed by teachers as they faced instability and additional professional demands” (Robinson et al., 2023, p. 78). Moreover, it opens up possibilities for a subtler interpretation of the factors contributing to burnout and how these might differ across different global contexts. Through the lens of mnemohistory, burnout can be seen not only as a personal crisis but also as a reflection of larger societal and historical dynamics and suggests pathways for both preventive and corrective interventions in educational systems worldwide.

Detention in history: The long shadow of teacher exhaustion

In exploring the historical narratives surrounding teaching and stress across various countries, it is critical to utilise a mnemohistorical framework, which emphasises how collective memory and past experiences inform contemporary practices and cultural norms. By going into the educational histories of the UK, Japan, Finland and Taiwan, we can trace the mutually shaping role of societal transformations, educational reforms and collective memory and their enduring impact on the profession of teaching. Through this approach, this article explores how the reverberations of past educational crises and cultural expectations continue to influence the lived experiences of teachers in the present day.

The UK, with its longstanding history of formal education and teacher unions, provides an illustrative example of how educational reforms, societal changes and economic crises have shaped the role of teachers and their stress levels (Various, 2021). The Industrial Revolution and the rapid urbanisation of the 19th century altered the landscape of education in Britain. Teachers (often seen as mere conduits of knowledge) faced mounting pressures as they were tasked with meeting the educational needs of an increasingly diverse student body. The implementation of standardised tests and national curricula in the 20th century further increased teachers’ workload, consolidating the role of the educator as one bound

by increasingly rigid regulations (Grace, 2021). As Britain entered the 21st century, the era of teacher performance management and the push for measurable outcomes created a new wave of stress, underpinned by a pervasive culture of accountability (Kidger et al., 2021; Skinner et al., 2021). However, the past also holds a crucial place in shaping teachers' experiences today. The collective memory of historical strikes, such as the 1980s teachers' strikes in response to government cuts and policy shifts, still resonates within the profession and contributes to an elaborate chronicle of teachers as both resilient and burdened by the state's expectations (Lyddon, 2015; Wiborg, 2017). The UK's education system, shaped by progressive and conservative reforms, has fostered a tension between the pursuit of educational equity and the stresses induced by bureaucratic structures. Mnemohistory, in this case, underscores how the educational reforms of the past continue to shape contemporary teacher stress and reveals an ongoing struggle between state demands and teachers' personal autonomy (Stevenson, 2013).

Turning to Japan, we encounter a very different yet comparably influential historical narrative of teaching and stress. Historically, Japan's education system has been rooted in Confucian values, emphasising discipline, collectivism and respect for authority (Collcutt, 1993; Tu, 1996). This cultural foundation has influenced teachers' roles and their relationship with students. Post-war Japan, particularly during the period of rapid economic growth in the 1950s and 60s, witnessed an intensification of educational demands (Morito, 1955). Teachers were viewed as both academic and moral guardians, a role that brought with it immense responsibility. The culture of *karoshi* (death by overwork), which became prevalent during the post-war economic boom, has heavily influenced teachers' stress levels, as they often work long hours beyond the classroom to meet the expectations of parents and administrators (Takagi, 2023; Tsuyuguchi, 2021). Educational reforms, such as the introduction of standardised tests and the emphasis on rote memorisation, created an environment in which students and teachers are subjected to tremendous pressure. Teachers in Japan, like their British counterparts, are also influenced by past educational policies and societal expectations, leading

to a singular mnemohistorical exploration of stress. The memory of the economic pressures that shaped Japan's educational system continues to shape contemporary experiences of teacher burnout, with many educators still working long hours and under constant pressure to meet societal expectations. With "a lack of understanding about their emotionality by policymakers and school administrators" (Nagamine, 2018, p. 259), the continued prevalence of these historical pressures highlights how past societal values and cultural expectations of education continue to shape the present reality of teaching in Japan.

Finland, often heralded as a global model for education, offers a contrast to both the UK and Japan in terms of teacher autonomy and public perception. Historically, Finland's education system has been shaped by the country's commitment to egalitarian principles (Välilä, 2021). The development of its educational framework in the late 20th century, including the decentralisation of authority to local schools and the promotion of teacher professionalisation, led to a cultural shift where teaching was viewed as a respected and autonomous profession (Mandavkar, 2024). However, Finland's historical trajectory is also marked by periods of political and social upheaval, particularly during the wars of the early 20th century, which required adaptations in the educational system. The Finnish education system's emphasis on a balance between teacher responsibility and support, as well as its focus on student-centred learning, allowed it to develop a model of education that was less burdened by the stressors seen in more hierarchical systems (Sahlberg, 2007). However, the global success of its education system, especially its ranking in international assessments like the PISA tests, has also introduced new stressors for teachers (Rautalin, 2018; Sahlberg, 2018). The pressure to maintain this international reputation has introduced new tensions, as teachers may feel the burden of having to perform at an ever-higher standard. The historical memory of Finland's commitment to educational equity, however, continues to underpin its approach to teaching and offers a counter-narrative to the stress-laden educational landscapes found in other countries. The Finnish example underscores the importance of teacher autonomy and professional support in mitigating stress, showing how

a historical focus on equity can shape a more sustainable teaching model in the present, supporting the understanding that “education authorities and political leaders believe that teachers, together with principals, parents and their communities, know how to provide the best possible education for their children and youth” (Sahlberg, 2007, p. 157).

An additional persuasive illustration is provided by Taiwan, where historical shifts in education (particularly in the post-martial law era) have influenced teachers’ roles and the stress they experience (Fang et al., 2015). The educational system has undergone significant transformations since the lifting of martial law in 1987, during which time educational reforms were aimed at modernising the curriculum and democratising access to education. The shift towards a more globalised education system, alongside Taiwan’s emphasis on technology and innovation, has created both opportunities and challenges for teachers (Law, 2002). The intense pressure to perform well in global assessments and the heightened competitiveness among students have significantly impacted teachers’ workloads (Huang & Asghar, 2018; Yu & Bairner, 2011). Moreover, Taiwan’s strong Confucian influence, with its focus on discipline and respect for authority, continues to shape teachers’ roles and their relationships with students (Fwu & Wang, 2002). Like Japan, teachers in Taiwan are often expected to take on a moralistic role and guide students both academically and in terms of character development. The legacy of Taiwan’s educational reforms and its relationship with societal expectations have created a system where teachers are constantly negotiating between fulfilling their pedagogical duties and meeting the expectations placed on them by both parents and the state (Fwu & Wang, 2002; Hung, 2015). Past crises, such as the political instability during the Cold War and the socio-political transformations post-martial law (Wang, 2011), continue to resonate within the Taiwanese educational system, creating a fragmented historical recollection that shapes contemporary experiences of teacher stress.

Applying a mnemohistorical perspective to the historical narratives of teaching and stress across different countries allows us to see how the echoes of the past continue to shape the present. Whether in the UK, Japan, Finland or Taiwan, pressures of educational reforms, societal

expectations and historical crises in the teaching profession exist and contribute to the ongoing stress faced by educators. By understanding how these historical experiences have been encoded into the collective memory, we can better appreciate teacher stress today and the ways in which past reforms and cultural expectations continue to influence contemporary educational practices (VanSledright, 2010). Mnemohistory provides a framework that helps us go into these layers of historical memory and offers a more expansive and detailed view of how the stresses of the past are perpetuated in the present.

Can we break the cycle of teacher stress by looking at history?

By reflecting on the persistent nature of these historical legacies, we can understand the way past policies and reforms continue to shape contemporary educational experiences. One way to appreciate this continuity is to understand how these historical forces linger in present-day teaching. For instance, the role of teachers has often been redefined by policy decisions, from being seen purely as instructors to becoming emotional caretakers, societal role models and even cultural architects, yet there is little recognition or support for these added responsibilities (Francisco et al., 2024; Javed & Akhter, 2024). These historical imprints are relics of the past but continue to define the present. A more critical understanding of how the past shapes the present can help us better support teachers today and avoid repeating past mistakes. This means that the issues of teacher burnout, which are so prevalent in education systems worldwide, are not isolated or temporary challenges but instead rooted in the ongoing effects of these past decisions: looking at history “establishes the required psychological distance that frames incidents as ‘benign’ and allows the event to be revisited without the original concerns of the time” (Mead, 2025, p. 1103).

With this in mind, the call for more historically informed policy decisions becomes imperative for alleviating teacher stress and preventing burnout, and policymakers must recognise that current issues in education

are shaped by past reforms and shifts. To reduce teacher stress, it is essential to design policies that consider these historical influences and address the structural causes of burnout rather than simply treating the symptoms. For example, policies could focus on reducing teacher workload, ensuring that teachers have more professional autonomy and providing adequate mental health support (Marshall et al., 2024; Pressley et al., 2024). In addition, it is important to recognise that teacher stress is a global issue, not limited to specific regions or countries. While educational systems differ, countries worldwide face similar struggles, such as excessive workloads, societal expectations and lack of support. Looking to examples that emphasise teacher autonomy, trust and well-being could offer lessons in addressing these issues (Dehne et al., 2025). By taking a cross-cultural approach, we can adapt strategies from different educational contexts and apply them globally and offer a more supportive environment for teachers worldwide.

Understanding teacher stress through the lens of historical narratives helps to uncover the deep-rooted causes of burnout and grants useful revelations for creating more effective and sustainable policies. Rather than focusing on short-term fixes, we must look to the long-term effects of past decisions and work to address the historical structures that have led to the current state of stress in education. Temporal continuity, as a concept within mnemohistory, underscores the enduring influence of past events, policies and cultural narratives on contemporary systems and experiences (Le Poidevin, 2000). Integrating this framework into policymaking will enable a history-conscious approach that prevents the recurrence of previous errors and facilitates the creation of educational environments that support teachers. By recognising the persistent impact of these historical legacies, we can foster a more enduring educational system that prioritises teacher well-being and enhances learning outcomes globally.

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Sources of stress and successes in the work of early school teachers

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Abstract

Research objectives (aims) and problem(s): This article aims to identify factors contributing to occupational stress and successes based on the opinions of early childhood teachers. It seeks to answer the following research questions: What are the sources of stress for teachers in lower grades when confronted with the realities of school? What is the scope of achievable success?

Research methods: A diagnostic survey was conducted using a questionnaire and written statements about professional successes.

Process of argumentation: The interrelationships involved in participants' engagement in teaching and educational processes are changing and require updating to highlight factors related to teachers' job satisfaction.

Research findings and their impact on the development of educational sciences: The sources of problems include low wages, excessive parental expectations, legal liability, teachers' involvement in their professional role, fatigue, excessive teaching and administrative responsibilities, lack of remuneration for project implementation, extracurricular school competitions, contests and olympiads, bullying, poor working conditions, undesirable behavior among students, professional development obligations, perfectionism, the need to acquire new digital skills, self-presentation, and the idealization of a teacher's socio-professional position. Teachers' satisfaction is driven by student success and a sense of professionalism.

Conclusions and/or recommendations: Early childhood teachers find fulfillment in working with children. Despite experiencing many difficulties, they believe their work is important to society and offers

Keywords:

competence,
responsibility,
commitment,
motivation,
remuneration

opportunities for personal and professional development. Teachers' responsibilities include recommending actions to ensure students' active participation in school life.

Introduction

The better the education, the greater the chances for individual and social well-being. However, proposals for improving its quality cannot be universal, as each school, when making an effort for change, adopts a specific educational philosophy (Fullan, 2007). The key to success is a teacher with authority built through active relationships with students seeking role models. Substantive knowledge of the subject taught is not enough; appropriate personality traits, understood as psychological conditioning (Oleśniak, 2010, pp. 70–71), as well as pedagogical competence in the social skills desired by students (Łukasik, 2021a, 2021b), are essential. A professional teacher in grades 1–3 is expected to implement integrated education efficiently to create a comprehensive picture of the world in an engaging and holistic manner. A teacher must select materials to provide students with essential information at the beginning of their education, without overwhelming them with information overload (Strykowski, 2005, p. 20). Teaching is a profession prone to high levels of stress due to its wide range of duties, high responsibility, and social expectations regarding the level of education and upbringing. The social competencies a teacher should possess include ways of coping with stress, which can also have a motivating effect (Tucholska, 2009, p. 49).

Description of the study

The article discusses several sources of problems present in teachers' work. The identified trends are global in nature; no division was made according to the schools in which the respondents worked, as this was not a factor that differentiated the fears and anxieties experienced, nor did it determine the areas of proposed changes in teachers' work. This

study, therefore, identifies factors contributing to occupational stress based on the opinions of teachers of younger grades of primary school regarding their success in teaching and educational work. The aim was to understand the needs and expectations of teachers that contribute to students' spiritual and psychological growth. The research questions addressed were as follows: What are the sources of stress for teachers in lower grades when confronted with the realities of school? What is the scope of achievable success? It was assumed that the main sources of stress for teachers in the younger grades are workload, relationships with parents and teachers, and interactions with children, while success is multidimensional, spanning educational achievements, educational outcomes, and personal professional satisfaction.

Early childhood teachers and part-time students of preschool and early childhood education were asked to complete a survey and provide written statements about potential successes in their professional careers. The research method was a diagnostic survey conducted in 2025, and the preliminary data obtained were both quantitative (numbers and percentages) and qualitative (descriptions of the sources considered). The study was non-reactive, meaning it did not require interaction between the researcher and participants. The opinions presented below were expressed by 100 early childhood teachers from the Kuyavian-Pomeranian Voivodeship who participated both traditionally (N=50) and online (N=50). Opinions were shared primarily by women aged 25–39 who had worked primarily in public institutions in urban areas for approximately 1–16 years. Analysis of the obtained data allowed leading trends in respondents' self-assessments to be identified; these were then grouped into general categories.

Problems identified in the survey

This section describes 17 sources of stress that early childhood teachers rated in terms of frequency. The results are presented in Table 1.

**Table 1. What causes stress in the work of early childhood teachers?
(N=100)**

Stress-inducing factors	<i>Often</i>	<i>Rarely</i>	<i>Never</i>
Low pay	78 (78%)	20 (20%)	2 (2%)
Excessive expectations from parents	75 (75%)	23 (23%)	2 (2%)
Legal responsibility	75 (75%)	22 (22%)	3 (3%)
Commitment to professional role	72 (72%)	23 (23%)	5 (5%)
Mental and physical fatigue	72 (72%)	20 (20%)	8 (8%)
Excessive teaching and administrative duties	72 (72%)	20 (20%)	8 (8%)
Lack of remuneration for developing and implementing projects	68 (68%)	22 (22%)	10 (10%)
Competition subject to specific rules (voluntary participation in competitions, contests)	68 (68%)	30 (30%)	2 (2%)
Mobbing (persistent and long-term intimidation, exerting pressure from superiors, causing a lowered assessment of professional usefulness)	68 (68%)	30 (30%)	2 (2%)
Poor working conditions	68 (68%)	30 (30%)	2 (2%)
Undesirable behavior of pupils	65 (65%)	30 (30%)	5 (5%)
Obligations in the field of professional development	62 (62%)	30 (30%)	8 (8%)
Lack of motivation to work	62 (62%)	33 (33%)	5 (5%)
Perfectionism	57 (57%)	30 (30%)	13 (13%)
Challenges of education of the future	55 (55%)	30 (30%)	15 (15%)
Self-presentation and the need for public speaking	53 (53%)	42 (42%)	5 (5%)
Idealization of the teacher's social and professional position	43 (43%)	40 (40%)	17 (17%)

The primary source of problems in the teaching profession is low wages, which fall into the category of safety needs (Springer, 2011). Four features influence the assessment of wages: the level of wages, the pace

of change, the internal structure, and the external structure (relations), which allows wages to be considered fair (Juchnowicz, 2014, pp. 46, 48). The sense of fair payment for work is determined by the transparency of the remuneration system (Rasch & Szytko, 2013, pp. 65–67). An individual employee takes into account three dimensions in assessing fairness: the ratio of the remuneration received to the effort put in, the ratio of the effort of other employees to the remuneration they receive, and the assessment of one's own effort and the remuneration received for a given job (Borkowska, 2012, p. 32). The present analysis demonstrates that the amount of monthly remuneration does not determine teachers' attitudes toward work and is not related to the assessment of its fairness.

Excessive demands from parents are a significant source of stress for early childhood teachers. A teacher ought to be friendly toward students, conscientious, thoroughly educated (Sosnowska-Bielicz, 2019), patient, hard-working (Parczewska, 2019), decisive and consistent in making decisions, persistent, and ready to take risks (Colker, 2008). The respondents stated that the vast majority of early childhood teachers (75%) often encounter excessive expectations from parents, some rarely (23%), and only two people (2%) never.

Another source of stress for teachers is legal responsibility within the scope of duties and rights specified in regulations (Teacher's Charter, 2023). The teacher's duties include the period of students' stay at school and conducting classes outside of school, e.g., during trips (Kowalski, 2024, p. 96). The teacher is subject to both public law (a set of legal norms relating to the state's interests) and private law (relating to the interests of an individual) (Morawski, 2014). They function in the school community and have a "double" responsibility – for themselves and for others (Kowal, 2004, pp. 106–148). They bear a collective responsibility in relation to their pupils, parents, and teachers, which is why the choices they make must be made with others in mind (Krzywonos-Rynkiewicz, 2007). For the vast majority of early childhood teachers (75%), legal responsibility is a frequent source of stress; for some (22%), it is a rare source of stress; and only three people do not feel stressed by it.

Teachers' engagement in their professional role relates to their functioning at school and to their role as a person directing the educational process (Kowalczyk, 2018; Kutrowska, 2008). Their engagement comprises three components: cognitive-evaluative, behavioral, and emotional. Cognitive engagement is expressed by searching for appropriate means and methods of work, selecting information that activates students (Fredricks et al., 2004), positively coping with educational challenges, improving one's own competencies (Newman et al., 1992), and having the appropriate motivation, passion, and creativity (Zeidner et al., 2000). Behavioral engagement is divided into organizational activity (administrative activities and other mandatory tasks) and work engagement (educating and shaping students' personality) (Saks, 2006). Emotional engagement refers to emotional reactions caused by environmental stimuli (Fredricks et al., 2004), which are crucial for shaping students' personalities. Almost all teachers (95%) stated that engagement in their professional role is a source of stress for them; only five (5%) disagreed.

Fatigue is a feeling of physical and mental weakness associated with one's efforts. It occurs when there is a conflict between current and expected demands (Hockey, 2011). The causes of this state are individual characteristics and the conditions in which the work is performed (De Vries et al., 2003). Teachers often feel tired (Bortkiewicz et al., 2020) and stressed (Mojsa-Kaja et al., 2015). This was confirmed in the present sample; 92 people reported feeling tired, while only eight stated that their work never tires them.

An excess of duties results not only from the implementation of the teaching load but also from the obligation to prepare teaching materials, correct papers, examine, and perform numerous administrative formalities, such as entering data into IT systems, preparing reports, and participating in committees. The school reality is increasingly entangled in the virtual space, so knowledge of digital media is becoming crucial (Wrońska, 2020); as such, teachers must acquire new competencies (Gałuszka, 2017). In addition, the structure of the education system puts pressure on test standardization and focuses on exam results (Mazur-Mitrowska, 2021; Sęk, 2004; Stańczyk, 2012). The influx of students from

other countries also leads them into contact with different systems of values and ways of upbringing, which is a problem for Polish education in terms of school practice and courses preparing for the profession (Badowska, 2018). 92% of early school teachers stated that the excess of teaching and administrative duties is a source of stress, and only eight claim that they carry out all their tasks without unnecessary stress.

Another source of stress is the lack of remuneration for the implementation of projects beyond the mandatory tasks. Organizational and relational capital, i.e., the effect of teachers' competence potential, depends on their creativity and innovation, and a sense of fair remuneration is a condition for their willingness to develop and share knowledge (Kulikowski, 2017, p. 227). Remuneration is considered fair if the ratio of the individual's expenditure to the obtained benefits is equivalent to the assessment of such relations in a given professional group. For 90 early school teachers, the lack of remuneration for the work put into the implementation of projects that constitute an additional burden is a source of stress, whereas for the remaining 10, it does not matter.

Extracurricular school competitions, contests, and olympiads are a form of testing students' knowledge and skills. They make school classes more attractive and are initiated by teachers. Students who achieve high results in such tests are rewarded with diplomas, distinctions, and gifts, some of which are monetary. These forms have a school, regional, provincial, national, or international scope. Teachers have an influence on students' achievements (Hanushek & Rivkin, 2006). For most teachers, educational success is a student who passes an exam well, places high in various competitions, or gets into a prestigious course (Słotwińska, 2021, p.116). Almost all early school teachers (98%) reported that competition subject to specific rules is a source of stress; only two people never feel tension because of it.

A particularly negative phenomenon is mobbing, which occurs when intimidation, harassment, and pressure from superiors persist over a long period. It is commonly assumed that the time threshold is at least six months and that the above-mentioned behaviors occur at least once a week during this period (Einarsen et al., 2003). Teachers exposed

to mobbing at work function poorly in the school environment, are burned out, and have mood disorders, which may manifest in aggressive behaviors toward students. Mobbing practices include excessive control over work, burdening employees with too many responsibilities, assigning tasks below their competence level, or ignoring their opinions and views. The specific nature of the school environment fosters conflicts, toxic relationships, and excessive pressure. Almost all teachers surveyed (98%) had experienced mobbing; only two had never encountered it.

The work of a teacher requires an appropriate environment. The basic material requirements are the local conditions and the number and quality of teaching resources, without which it is difficult to operate effectively in the classroom to meet students' needs. Factors that facilitate work include a permanent, well-equipped classroom with multimedia equipment, access to the materials necessary for the implementation of the program, and the possibility of storing teaching resources (Józwiak, 2010). Almost all early school teachers (98%) rated their working conditions as poor and a source of professional stress; only two people had never encountered it.

Undesirable behaviors of pupils toward teachers are a common phenomenon (Stańkowski, 2009), which includes cheating, obstructing the lessons, using vulgar words, making threats, and destroying and hitting things (Ostrowska, 2008, pp. 18–20), as well as aggression carried out via the Internet or mobile phones (Pyżalski, 2012). Such behaviors must be corrected even in the youngest children, because emotional habits, codes of conduct, and basic knowledge about the world are formed in the early period of life (Surzykiewicz, 2008, pp. 189–190). The vast majority of early school teachers surveyed (95%) encounter this problem in their work and find it a source of professional stress; only five believe that they do not experience undesirable behaviors from pupils.

Professional development obligations stem from the rapid and diverse changes of contemporary life. Knowledge is the most important value, so a teacher must have constant access to information and be able to process and apply it (Toffler, 2001, p. 222). Education requires inspiration and support from many sciences; knowledge of the processes and directions

changing our lives will facilitate conscious entry into the information reality (Banach, 2015, p. 119). Research participants realize that wisdom means knowing and doubting, while being aware of its limitations (Fazlagć, 2005, p. 13). Early childhood teachers play a significant role in shaping the way we perceive the world, teaching children to use knowledge and skills rationally and practically, which makes this aspect of their professional work a source of stress for most (92%). A few (eight respondents) stated that professional development obligations do not pose any problem.

Teachers' motivation to work depends on both internal and external factors. Internal factors result from such values as satisfaction with the achieved results, a friendly atmosphere at school, prestige, good working conditions, and a sense of responsibility (Gawrecki, 2003, p. 89). External motivation refers to involvement in activities as a result of external pressures or for benefits (Aronson et al., 1997, p. 235). While a salary should provide a decent living, this is not the case, since the most common source of stress is low pay. Only five people stated that they never lack motivation to work, and 95% believe that this is a reason they feel stressed.

Perfectionism is characterized by striving for flawless performance in one's assigned tasks, a strong focus on order, competition, achieving only professional successes, and intolerance of failures (Hornowska & Paluchowski, 2007). A perfectionist work style can lead to professional burnout, manifested as exhaustion of emotional resources, indifference to others, and a low assessment of personal achievements and professional effectiveness (Stoeber & Damian, 2016). Most early school teachers (87%) stated that perfectionist concerns expose an individual to severe stress, but for 13 respondents, perfectionism promotes perseverance and concentration, thereby strengthening self-confidence.

The rapid pace of technological change necessitates continuous learning (Kwiatkowski, 2016, p. 81), and the use of digital media in the educational process requires the creation of a new methodology (Tanaś, 2015, p. 14). Digital media increasingly cause axiological chaos, globalization, uncertainty, rapid information penetration, and difficulties in adapting to new challenges and coping with threats (Bednarek & An-drzejewska, 2017, p. 25). The aforementioned challenges are a source

of stress for 85% of early school teachers, while 15% of the respondents do not see any problems in this area.

Self-presentation is an important factor in the teacher-student relationship because it is about effective communication. Social psychologists emphasize that striving to be accepted and liked by others and being a competent, controlling, and respected person are two separate and independent features of the minds of social actors (Forgas et al., 2005, p. 27). Therefore, there is no connection between subjective self-assessment and the actual implementation of communicative acts (Tokarz, 2006, p. 314). The teacher conveys information to a group of people, and the necessity of such forms of presentation is a cause for anxiety. Time must be devoted to preparing and practicing lessons in order to build good relationships with students, convey an orderly structure, and control the non-verbal messages sent (Pearson et al., 2006). Almost all teachers (95%) stated that self-presentation is a source of stress for them, and only 5% reported no problem with it.

Finally, most participants (83%) considered the idealization of the teacher's social and professional position and the expectation that they will be a role model a source of stress, but 17 did not share this opinion. Pedagogues are aware that each student needs a guide and guardian in their activities, an organizer of collective life, capable of authentic cooperation in an atmosphere of kindness and creativity and, at the same time, equipped with management skills (Skonieczka, 2006, p. 44). An excellent teacher lives in accordance with the truth, imparts knowledge impartially, and does not impose their own opinion on students. A teacher's personality is revealed in their behavior when they represent a high ethical level both at work and in their private life.

Success in the work of an early childhood teacher

Success means achieving a successful outcome in an undertaking, reaching an intended goal, or gaining fame, wealth, or a high position (Bralczyk, 2007, p. 800). In each case, it can be analyzed objectively and

subjectively. The objective dimension concerns achievements above the norm relative to those of others in the successful person's social environment (Byłok, 2005), while the subjective dimension results from potential, commitment, perseverance, empathy, self-confidence, ambition, drive, optimism, or a sense of self-efficacy.

The early school teacher motivates children to act in ways that ensure their success in learning. The proper process of growing up requires the opportunity to experience success related to intellectual challenges, the need to belong to a group, and life skills acquired during this time, which largely depend on the nature of the situation and the competencies offered by the group (Witkowski, 2000, pp. 48–49). Students' success is measured by their school achievements, such as grades, recognition from both teachers and peers, and awards won in various types of competitions or contests (Sękowski, 2000, p. 89). In the early school period, education creates opportunities to practice and experiment with the development of creative and social skills. At this stage of education, teachers are particularly important because, thanks to them, students undertake increasingly difficult and new tasks (Czykwin, 2017, p. 12).

If work meets one's expectations, gives one a sense of self-fulfillment, brings satisfaction, and is a source of personal satisfaction, then it can be considered a hobby or passion (Madalińska-Michalak, 2016, p. 14). A teacher influences students with his or her example, conversation, experience, and personality, which is particularly important at the initial stage of education. The basic criteria of professionalism for every teacher are continuous development, having a genuine interest in other people, and noticing and stimulating students' abilities, talents, and development potential.

The statements of the study participants indicate that early school teachers are fulfilled in their professional work, believe that what they do is important, and see the effects of their actions both in the educational process and in the sphere of educational influence. Below are the answers to the question: What constitutes a teacher's professional success?

- Observing students' development, their achievement of better and better results in learning. If all my charges complete the first stage of education and move on to the fourth grade of primary school, then I consider myself successful.
- Noticing the improvement in the behavior of students who require an individual approach and systemic solutions.
- Experiencing kindness and gratitude from students, which indicates their positive attitudes toward other people.
- The need to focus on tasks that lead to achieving specific results.
- Increased motivation and commitment in order to track students' progress in learning.
- Building relationships with students that require openness and transparency, mutual care, and dependence.
- A sense of mission, i.e., an awareness that pedagogical work makes sense because it contributes to students' development.
- The dynamic nature of the work – a teacher's tasks and professional requirements change quickly and frequently, which requires flexibility and continuous adaptation to new conditions.

Summary

The survey identified the most troubling sources of stress affecting early childhood teachers and outlined the extent to which they find them stressful. Respondents' statements, observations, and comments paint a picture of a teacher fulfilling their profession despite the many significant sources of stress associated with their work. While the surveys were collected from teachers in the Kuyavian-Pomeranian Voivodeship, which limits the generalizability of the results, the research goal was achieved by identifying specific stress-inducing factors. The surveys combine cognitive and practical functions, enabling effective action in the participants' immediate environments and thereby improving educational quality and social support. Based on this, educational strategies tailored to the teaching profession can be developed. Future research should integrate

a larger body of international research on teacher burnout to compare it with the Polish context. The value of such research is significant for the development of the pedagogical discipline and, above all, for educational practice in early childhood education.

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The teacher in the educational system: Toward an optimal psychological profile

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Abstract

Research objectives (aims) and problem(s): The aims of this article are to analyze the literature on the optimal personality traits and competencies expected of teachers and to examine their potential role as a counterbalance to the external demands of the education system. It also focuses on teachers' mental state, the distinctive features of the educational system as a workplace, and the relationship between teachers' mental state and these features.

Research methods: This article is theoretical in nature and is based on a literature analysis.

Process of argumentation: The well-being of Polish teachers requires greater attention and a more in-depth, comprehensive analysis. It is influenced by the characteristics of the educational system, which represents a distinctive work environment where occupational stress emerges. The line of argument, therefore, begins with a brief overview of three key elements: teachers' mental state, the characteristics of the educational system as a workplace, and contemporary definitions of occupational stress. The nature of these elements creates an urgent need to identify an optimal personality profile for teachers. The article presents existing proposals in this area.

Research findings and their impact on the development of educational sciences: The key findings suggest that the specific nature of teachers' work environment may contribute to occupational stress, while contemporary models of occupational stress emphasize the interaction between external and internal factors. Strengthening teachers' heuristic and developmental personality traits appears to be a promising direction for promoting the well-being of this professional group.

Keywords:

stress,
personality,
creativity,
mental health,
teachers

Conclusions and/or recommendations: To support teachers' well-being, one can modify requirements, increase rewards, or provide external resources. Certain personality traits can be an effective counterbalance to external stresses.

Introduction

The present article explores Polish teachers' mental state within their professional environment to identify stressors unique to the educational system and propose interventions to enhance teacher well-being. To do so, it addresses four questions:

1. What is the level of mental health of Polish teachers?
2. What are the distinctive features of the educational system as a workplace?
3. What is the relationship between teachers' mental state and the idiosyncrasies of the educational system as a workplace?
4. What suggestions exist for the enhancement of teachers' well-being?

The mental state of Polish teachers

The extant literature on the mental condition of Polish teachers indicates the very heterogeneous nature of this phenomenon. Many studies have shown an association between the teaching profession and significant negative psychological consequences.

A review of studies on teacher burnout does not provide clear conclusions regarding the phenomenon's scale. On the one hand, 12% of educators meet the criteria for burnout (Glinski, 2014, p. 37); on the other hand, up to 41% are reported to be burned out or disillusioned (Glinski, 2014, p. 38). A slightly older study by Mandal indicated that professional burnout syndrome affects nearly 53% of teachers in primary and secondary schools (cited in Wilski, 2011, p. 362).

In contrast, more recent research indicates that almost 30% of teachers sometimes experience general symptoms of occupational burnout,

and more than 36% often feel exhaustion as one of the symptoms (Paliga, 2023, p. 14). Another study by Strutyńska revealed that 9.2% of the 21,550 teachers surveyed had been subjected to bullying (response categories ranged from “rarely” to “almost daily”). Of these, 2.8% admitted to being bullied “every now and then,” while 0.4% considered themselves victims of bullying “several times a week” or “almost daily” (Strutyńska, 2014, p. 142). Regarding stress levels, 23% of teachers reported that their professional activity was very stressful, 64% that it was moderately stressful, and 13% that it was not stressful (Wilski, 2011, p. 357). In contrast, Paliga found that nearly 30% of respondents feel stress “quite often” and more than 35% “sometimes” (2023, p. 13).

As Okulicz-Kozaryn (2014) asserted, the mental well-being of teaching professionals in Poland is a matter of concern: 86% of teachers perceive their workload to be greater than that of their counterparts in other professions. Moreover, 34% of these educators report experiencing mental exhaustion following meetings with parents. A substantial majority (70%) think that the educational challenges faced by schools can be attributed to the perceived disproportion in rights afforded to students compared to educators (Okulicz-Kozaryn, 2014, pp. 6–7). Furthermore, researchers at the Nofer Institute of Occupational Medicine have highlighted the absence of systematic, structured diagnostic research on the health of teachers in Poland (Bortkiewicz et al., 2020). The only information available pertains to the prevalence of occupational diseases associated with excessive vocal exertion.

An analysis of foreign literature and regional studies reveals that mental disorders in teachers resulting from occupational stress are a significant factor affecting their functionality (Bortkiewicz et al., 2020). However, in the TALIS survey, over 10,000 respondents reported high job satisfaction: 93% of middle school teachers declared overall satisfaction (TALIS average: 91%), 90% liked working at their school, 85% would recommend it as a good workplace, 93% were satisfied with the quality of their work, and only 17% would consider changing schools (Hernik, 2014, pp. 35–38).

The specificity of the educational work environment

Quantitative statistical surveys are an undoubted source of information on the specifics of teaching. At the same time, however, when analyzing the psychosocial characteristics of this professional group, qualitative aspects should be taken into account. Researchers in the teaching profession identify several interesting aspects of teaching, leading to conclusions about the profession's extraordinary complexity and dynamics.

Teachers are subject to expectations formulated by multiple sources, including school management, parents, students, government, and local government institutions. These expectations are often different and sometimes even divergent (Kutrowska, 2008, pp. 49–60). Moreover, a plethora of disparate, often arduous criteria are used to evaluate a teacher's work. A proportion of the community endeavors to quantify the evaluation of the effectiveness of teaching work, reducing it to an analysis of test results. However, this approach is arguably overly simplistic (Kutrowska, 2008, pp. 49–60).

Furthermore, teachers are expected to demonstrate a broad and complex set of competencies, encompassing personal, technical, creative, and moral and ethical dimensions (Lorek, 2011, pp. 25–37). Teaching also involves a significant degree of ambivalence and contradiction, as teachers are required to operate within rigid organizational structures while simultaneously remaining creative, reflective, and autonomous; to define rules and enforce discipline and boundaries while also building empathetic, partnership-based relationships with students that respect their subjectivity; and to balance individualized support with the demands of working with entire groups (Kozubska, 2013, pp. 4–16).

Consequently, those engaged in the teaching profession are confronted with many divergent and frequently discordant expectations from many stakeholders and a wide array of expected competencies. It is imperative to ascertain whether educators are cognisant of the intricacies inherent in their professional milieu. As awareness of their professional situation grows, they will be able to identify more effective solutions

to support their well-being. Therefore, the question that arises is: What solutions might these factors provide?

The foundation of this article is the firm belief, grounded in cognitive-behavioral psychology, that the driving force behind an individual's actions is emotions, originating in their thoughts about different life situations. A direct implication of this assumption is that effective teaching of others (understood as a process and a specific catalog of behaviors) requires the development of a specific profile of emotionality in the teaching person. This statement is of particular significance, especially in the context of the aforementioned teacher requirements.

Acknowledging the numerous stakeholders who formulate expectations of teachers through their behavior is imperative. However, with the adept utilization of communication skills and the cultivation of optimal levels of stress resistance, teachers can effectively function constructively within such contexts. Moreover, the circumstance in which disparate stakeholders delineate the criteria for evaluating teacher effectiveness in divergent manners is not subject to alteration. Conversely, if the teacher has confidence in their effectiveness, competence, and a sense of control over the teaching process, this variety of evaluations will not cause frustration. Finally, since a teacher is required to acquire a wide variety of skills, and this process takes time and many inputs, it is necessary to develop and nurture in teachers such qualities as openness, flexibility, cognitive curiosity, a focus on the process, life optimism, and creativity.

Contemporary models of occupational stress

The literature points to several basic models of stress related to work. The most popular today are the Demands-Control-Support (DCS) model, the Effort-Reward Imbalance (ERI) model, and the Job Demands-Resources (JD-R) model (Widerszal-Bazyl, 2009, p. 7). In the DCS model, tension at work results from the interaction of three factors: demands, control, and social support. Challenging working conditions are those dominated by high demands, a low sense of control, and low levels of social support

(Widerszal-Bazyl, 2003, p. 94). In the ERI model, the balance between an employee's effort and the rewards they receive (salary, opportunities for recognition, being a member of a work-related social group, and opportunities to raise self-esteem) is crucial. The model is based on reciprocity: the employee "invests" effort and expects benefits in return. In situations the employee defines as imbalances, stress arises, which, as a rule, is actively minimized by reducing work effort and/or earning more rewards (van Vegchel et al., 2005). The JD-R model assumes that any structure contains two categories: requirements and employee resources. Requirements may refer to a job's physical, psychological, social, or organizational aspects. Resources include social support, a sense of autonomy, and constructive feedback. Occupational stress results from the interaction between the categories (Bakker & Demerouti, 2007).

Heuristic and developmental personality of teachers as a response to the challenges of occupational stress

Krzysztof Rubacha is the author of one of the most important concepts of role fulfillment in pedagogy. The concept assumes, among other things, the centrality of three structures in the model of teacher functioning: attitudes to knowledge, values, and the student. Attitude to knowledge consists of interdisciplinarity, cognitive curiosity, and tolerance of cognitive incompatibility; attitude to values is formed by non-conformism, a sense of agency, and orientation to professional development; and attitude to the student is constituted by interpersonal openness, acceptance of oneself and students, understanding of others, and effective social action (Kosiba & Madejski, 2014, pp. 104–105). Thus, this concept emphasizes the psychosocial dimension of individual functioning.

In a study conducted among 225 teachers, 26.4% scored low on the PRN test, which examines the scales in question, 37.7% scored medium, and 35.9% scored high (Kosiba & Madejski, 2014, p. 105). The study's authors interpreted the results using the adaptive-heuristic model of teacher performance. High results indicate that the teacher performs their role

in a heuristic, highly active way, emphasizing the student's subjectivity and encouraging activity and challenges. More than one-third of the educators in this study fell into this category. In contrast, adaptive educators function in a highly conformist, submissive, and often passive manner, using strategies for survival within the system. The rest constitute the so-called "intermediate state," ambivalent, depending on current trends and environmental impulses (Kosiba et al., 2014).

It is a truism worth emphasizing that in the current dynamic world of change and innovation, a heuristic teacher will more efficiently and effectively prepare the next generation of students to function outside the education system. Moreover, the cited studies indicate that nearly 70% of teachers do not fit the adaptive-heuristic model. The key question thus becomes: How can this state of affairs be changed? This question is all the more important because the consequences of teachers' adaptability are negative not only for students but also for teachers themselves, especially in the area of occupational stress.

Teacher stress can be examined by juxtaposing the adaptive-heuristic model of the teacher's role with the models of occupational stress described above. Expectations defined for educators are complex, multi-dimensional, and full of contradictions. Meeting them, therefore, requires flexibility, openness, and several other competencies and resources typical of a heuristic view of the teacher's role. Behavioral strategies, such as attempting to adapt to conditions and passivity, which are defining characteristics of adaptability, can intensify stress in multiple ways. First, because of modern students' expectations and characteristics, they will certainly not cooperate with a passive teacher. Second, the school system is institutionally heterogeneous and increasingly complex. Given the current development of knowledge, educational technology, and innovation, it will become even more so. Thus, adopting a conformist, survival-oriented role will intensify the gap between work demands, resources, and attitudes, compounding the tension. In terms of the ERI model, it could be argued that an adaptive employee engages a similar amount of energy in pursuing his or her strategies as a heuristic employee (although, of course, this energy is absorbed by quite different activities) but is less likely

to obtain additional rewards, if only in the form of students' gratitude, his or her job satisfaction, or a sense of commitment (so-called flow). This can result in increased levels of occupational stress.

Another interesting concept of the desired personality profile of a teacher is proposed by Wilski (2011, pp. 336–344), who refers to Kazimierz Obuchowski's work and asserts that self-improvement is necessary to maintain a certain level of functioning in life. The author defines three types of teachers' personalities, differing in their level of competence and readiness for development. The typical characteristics of the first type of personality, the reactive personality, are laziness, a low level of commitment, rigidity in thinking, the tendency to reproduce ready-made patterns of behavior, and passivity. According to Wilski, this type of teacher is an ideal implementer of the curriculum. Moreover, a school, like an institution, can promote reactivity through its rules and organization.

The second type is a drifting personality, referring to educators who, at some point in their careers, lose dynamism, proactivity, and motivation. Development is also a cost associated, for example, with uncertainty about the correctness of the choices made or the need to overcome difficulties in the process. For some people, the path of permanent change can prove frustrating for various reasons, resulting in disinhibition. As Wilski states: "it is impossible not to notice that a drifting personality is a stunted developmental personality" (2011, p. 341). This "freezing" may affect people for whom achieving individual goals is a task rather than a conscious and accepted life plan. In this case, overcoming successive stages is accompanied by disappointment rather than a sense of fulfillment.

Developmental personality is the most desirable but also the least common model. It is associated with ambition, self-esteem, prosociality, a creative approach to tasks, spontaneity, and independence. A developmental teacher wants to engage students, showing them what passion is and helping them discover new aspects of reality. This approach is close to the heuristic model of an educator described above. Kowalik, writing about the difficulties of students, defines three basic tasks of teachers in this regard: make a proto-diagnosis, that is, recognize the problem and determine its further development; intervene, based, among other things,

on a comprehensive knowledge of the student and their family environment; and plan preventive measures. How each of the above-mentioned activities is carried out depends, in part, on the specific functioning of the teacher, as well as on their sensitivity, sense of responsibility and effectiveness, and readiness to function under conditions of uncertainty (Kowalik, 2011, pp. 40–46).

Heuristic or developmental personality traits seem to be crucial in the process of supporting students academically. Teachers now have many ready-made intervention scenarios at their disposal, and access to specialized knowledge is disproportionately better than it was a dozen years ago (valuable online sources, training courses, EU-funded development programs, modern technologies in the service of education, etc.). However, will a teacher be willing to use them, or will he or she choose a strategy of avoidance and non-recognition, depending on his or her beliefs about self-efficacy, openness, or readiness to take on creative challenges? Reactivity or adaptability (depending on the perspective adopted) may invite the teacher to be passive.

Analyzing the available research in the Polish context on the optimal psychological profile of teachers, several conclusions can be drawn (Poraj, 2014). First, the higher the teacher's self-esteem, the more positively they perceive the student. Moreover, optimistic attitudes toward themselves, the world, and other people, high task efficiency, and a readiness to make changes in their work are conducive to the teacher's effective professional development. According to Tucholska (cited in Poraj, 2014), "suitable teachers" were characterized by a high ability for emotional control, a positive attitude toward themselves, the world, and other people, high social competence, the ability to build good interpersonal relations with the environment, and persistence and discipline. In addition, Poraj found that "passionate people" were considered the most desirable to work in education (Poraj, 2014). These individuals have a positive attitude toward the world and others, believe in their competence and capabilities, and enjoy challenges. They can deal with problems effectively and are eager to overcome obstacles. They build relationships easily and are cordial, always ready to help, and assertive. They are characterized by cognitive

curiosity, acceptance of novelty, a lack of fear of change, and an enjoyable, rich inner life. They show a high level of commitment at work and are persistent and reliable. They do not tend to dominate others but offer them partner relationships. They show a very low level of aggression syndrome, along with a high ability to control their emotions and behaviors. Consequently, it is evident that teachers should be educated not only in subject-matter competence but also in shaping an appropriate psychosocial and pedagogical profile. This is particularly important as each study highlights similar qualities that characterize the “ideal teacher.” In this context, aspects related to optimism and communicative openness appear to be of key importance.

Teachers’ psychological well-being cannot be fully understood without reference to contemporary research on creativity. Recent studies indicate that creative and heuristic thinking may function as important psychological resources. The literature distinguishes four levels of creativity relevant to learning. At the most basic level, “mini-c” refers to the internal processes underlying creative thought, such as divergent thinking, forming remote associations, using analogies, and reasoning through problems. The next level is “little-c” creativity, which involves solving problems and generating novel products without the expectation of producing groundbreaking outcomes. Teachers may also display “pro-c” creativity, reflected in the development of new and useful solutions in their work, such as designing original teaching methods or materials. Finally, “big-C” creativity refers to exceptional achievements and is beyond the scope of this discussion (Kaufman & Beghetto, 2009, as cited in Zielińska et al., 2024).

A growing body of research indicates that creativity is positively associated with well-being. However, this relationship is modest and mediated by creative self-efficacy, defined as the belief in one’s ability to produce creative outcomes. Higher levels of creative self-efficacy are associated with greater life satisfaction, a stronger sense of meaning, and increased psychological richness (Liu et al., 2025). Research also indicates positive associations among teachers’ autonomy support, self-efficacy, and creative thinking (Orakci & Durnali, 2022). Moreover, engaging in

creative activity may help individuals perceive situations as less stressful by enhancing their sense of competence (Fiori et al., 2022). Creative teachers tend to think imaginatively, take risks, reflect on their practice, and remain open to new approaches, while work engagement is positively associated with creativity (Levin et al., 2026).

Taken together, these findings suggest that creative and heuristic thinking may help teachers navigate the complex and often contradictory demands of the educational system, thereby supporting their well-being. Nevertheless, the teachers' education system underestimates the essence and practical importance of educators' psychosocial competence. Teacher education in professional, practical preparation is incomplete and unsatisfactory. It is characterized by over-theorizing the transmitted content, which is often outdated and of little use in school practice. The connection between theory and practice, the development of reflexivity, and competence in solving educational problems and establishing verbal contact with students are also deficient. According to statements from school principals, methodologists, and inspectors, subject teachers are unable to communicate with students, make choices, and overcome adaptation difficulties. Nowak-Dziemianowicz (2014) has emphasized the peculiar imbalance between the substantive, didactic, and pedagogical-psychological preparation of modern teachers (to the disadvantage of the latter). At the same time, she points to education as a primarily communicative process based on active listening, understanding of different perspectives (openness), and cognitive curiosity.

The question "Why does the Polish teacher education system ignore psycho-pedagogical aspects?" seems important because, as the available literature shows, psychological traits are important for various aspects of educators' functioning. Recent publications in this area indicate, among other things, that teachers' psychological traits such as openness to experience, conscientiousness, neuroticism (Zebarjadian & Zadeh, 2015), professional optimism (McIlveen & Perera, 2015), level of hope (Sezgin & Erdogan, 2015), or sense of competence (Künsting et al., 2016) correlate with the level of job satisfaction or effectiveness. Researchers also point to the need for solutions, such as training, that will enhance the positive

impact and neutralize the negative impact of various “character” factors in teachers on the educational process. The effectiveness of this type of action is all the more likely because intensive research is still underway to abstract both categories of “traits,” i.e., those with a negative impact and those with a positive impact, yielding increasingly clear results.

It would seem that, given the above data, stakeholders should be seriously invested in intensifying activities aimed at constructing an “educationally effective” psycho-pedagogical profile of the teacher – especially since this is a scientifically researched area within which the directions of expected development are clearly defined. Moreover, it remains undisputed that the formation of the psychosocial profile is – within certain limits – practically possible, thus providing another argument for raising the profile of psycho-pedagogical knowledge (and practice!) in the education of school personnel. Training, counseling, and development activities with psycho-pedagogical themes could benefit both teachers and students. Psychology and pedagogy provide several solutions and even ready-made development plans for teachers.

Summary

We all function in systems, whether these be family, friends, professional, legal, or otherwise. We, as individuals, are systems. Our psycho-physical state and behavior are partly the result of interactions among the elements of the various systems within which we function (Ludewig, 1995). Improvements in an individual’s psychological state (increases in well-being, decreases in stress levels) can occur due to external or intra-system change. The presented models of occupational stress also emphasize this interaction. In caring for teachers’ well-being, one can modify requirements (DCS model), increase rewards (ERI model), or provide resources (JD-R model). However, these changes depend on several systems external to the individual (e.g., institutions governing the education system, state finances, and the goodwill of the executive and legislative branches). This article has emphasized internal sources of enhancing well-being

and strengthening specific qualities and competencies that would provide an effective counterbalance to external burdens. Practitioners and researchers in pedagogy point to clearly defined personality areas, the strengthening of which would benefit educators. This text has presented several of them.

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The burnout buffer? Volunteering and resilience in pre-service teacher development

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Abstract

Research objectives (aims) and problem(s): The study investigates whether volunteering in educational settings can reduce burnout among student educators and shape their professional identity. Using a case study of language education students, the research explores how volunteering affects resilience, motivation, and perceptions of teaching.

Research methods: The study employs a mixed-methods approach using psychometric survey data and qualitative interviews. Quantitative instruments measured burnout and life satisfaction, while interviews focused on students' motivation, emotional demands, and institutional support.

Process of argumentation: This study draws on the author's experience as founder of the Study Buddy volunteering programme. Although volunteer teaching is widely recognized as a valued developmental experience, its psychological costs and benefits remain underexplored, mainly in pre-service teacher contexts. This study fills that gap by questioning how structured volunteer programmes can either buffer or exacerbate early career burnout.

Research findings and their impact on the development of educational sciences: Volunteer teaching enhanced professional confidence and emotional engagement, creating potential for burnout prevention. Participants also reported emotional fatigue and stress related to a lack of institutional support. Strong intrinsic motivation emerged as a protective factor, while institutional gaps intensified strain.

Conclusions and/or recommendations: Volunteer teaching should be recognized as a formative phase of teacher growth. Institutions must

offer structured mentoring, reflective supervision, and formal recognition to ensure that such experiences build long-term resilience and reduce the potential for burnout.

Introduction

The Study Buddy Foundation, established in 2022, connects University of Rzeszów students with children in childcare institutions across Podkarpacie, Poland, offering free, tailored English tutoring. What makes the programme particularly valuable is its dual emphasis on language development and emotional support, delivered through consistent, one-on-one sessions. Unlike many short-term or informal volunteering efforts, Study Buddy integrates pedagogical intent with sustained mentoring, making it a potential model for scalable, university-led outreach. Its structure, built on reflective supervision, peer support, and institutional recognition, offers a replicable framework for other teacher education programmes seeking to combine community engagement with professional development.

While volunteer teaching is often fulfilling, it also brings emotional demands that may lead to stress and burnout. Student volunteers face challenges such as forming emotional ties with disadvantaged learners (Kelly, 2023), limited pedagogical preparation (Sanz-Vergel et al., 2010), and balancing studies with volunteer work (Lavy, 2022).

Though volunteering's mental health benefits are well-documented, few studies have examined its impact on early teacher development, especially regarding burnout and identity formation. This study addresses that gap through the lens of the Study Buddy programme, where pedagogy intersects with emotional complexity. As the programme's founder, I approach this research as both investigator and insider. This role provided valuable access and context, while requiring reflexivity to represent participants' voices with integrity.

Framed by this dual perspective, the study explores how volunteering shapes future educators' well-being, resilience, and professional efficacy.

It examines both supports and stressors to answer the guiding question:
Does volunteering reduce burnout?

Theoretical framework

Volunteer teaching in educational contexts

Volunteer teaching significantly contributes to education, particularly in underserved communities, through non-traditional settings such as community centres, orphanages, and refugee camps where university students, retired teachers, and community members volunteer their time and expertise without financial compensation (Locke et al., 2003; Mori, 2025).

García and Weiss (2019) echo the above by arguing that volunteering benefits both students and educators. Students gain improved access to education, academic performance, and social-emotional growth, while volunteer educators develop teaching skills, enhance professional identity, and gain career motivation (Fényes et al., 2021). Forster and colleagues (2015) noted that pre-service teachers in particular acquire practical classroom experience and pedagogical skills.

Nevertheless, volunteer teaching presents challenges, including emotional labour and burnout, particularly when working with disadvantaged students (Blackmore et al., 2023). Many volunteers lack formal training, affecting instruction quality and classroom management (Moreno-Jiménez & Villodres, 2010). Additionally, without proper support and supervision, volunteer teachers may struggle with engagement and effectiveness (Resuello et al., 2024). Thus, as pointed out by Lavy (2022), institutional backing, mentoring, and structured frameworks are critical for sustaining these programmes.

In the context of language education, volunteer teaching supports second-language learners by pairing them with fluent speakers to develop speaking, listening, and comprehension skills (Baker, 2018). However, as emphasized by Sowa and Piatak (2024), mismatched expectations, resource limitations, and cultural barriers must be addressed to optimize programme success.

The interplay between student engagement, life satisfaction, and burnout in volunteer teaching

Student engagement (SE) is often defined as a multidimensional construct, combining behavioural, cognitive, and emotional engagement (Fredricks et al., 2004, 2011). Behavioural parts of engagement are “related to attendance, participation, and positive conduct”, cognitive engagement relates to “students’ level of investment in learning”, and emotional engagement to the “extent of positive (...) and negative (...) reactions to the school, teacher, and activities” (Fredricks, 2011, p. 328). Shaufeli et al. (2002) viewed SE as comprising vigour (commitment to studies and mental flexibility), dedication (enthusiasm and sense of importance), and absorption (full immersion in studies).

Life satisfaction (LS) is a key component of subjective well-being, encompassing positive and negative affect (Diener et al., 1985). Vittersø (2025) defined LS as an individual’s conscious evaluation of life quality based on self-imposed standards, while Schmitter et al. (2003) linked high LS with factors such as finding pleasure in life, a sense of meaning, achievement, positive self-evaluation, physical well-being, quality social relationships, and financial security. Other authors agree; LS has been found to be associated with positive outcomes, including meaningful social relationships, increased commitment (Barger et al., 2009), and career satisfaction (Erdogan et al., 2012).

The connection between SE and LS becomes evident when considering how engagement in meaningful educational activities enhances individuals’ sense of purpose and personal growth. Numerous studies suggest that students who are actively engaged in teaching roles experience greater fulfilment and motivation, which, in turn, contribute to higher LS (Heffner & Antaramian, 2016; Renshaw & Cohen, 2014). Volunteer educators who feel valued in their roles and witness the impact of their work on students’ learning are more likely to report higher LS. This is particularly relevant in volunteer teaching contexts, where educators’ intrinsic motivation plays a crucial role in sustaining engagement. However, the relationship between SE and LS is not always linear, as excessive engagement without adequate institutional support may lead to exhaustion and, ultimately, burnout.

Burnout is characterized by depersonalization, cynicism, emotional distancing from work and other people, negative self-appraisal (Maslach & Jackson, 1981) and inefficacy (Maslach et al., 1996). It reflects a state of exhaustion described by Malach-Pines (2005, p. 78) as “the end result of a process of attrition wherein highly motivated individuals lose their spirit”. Burnout among teachers is associated with several undesirable outcomes, such as counterproductive work behaviours, early retirement, health problems, attrition, and reduced student achievement (Brunsting et al., 2014; Lavy, 2022).

High rates of teacher burnout have been attributed to various factors, including job characteristics and challenging organizational contexts, such as heavy workload, student misbehaviour, and lack of administrative support (Chang, 2013; Grayson & Alvarez, 2008; Skaalvik & Skaalvik, 2010). Teachers’ low social status may also contribute to their emotional strain (Perry-Hazan & Birnhack, 2019). These conditions decrease teachers’ effectiveness and prevent them from fully experiencing the life satisfaction that should accompany a meaningful career in education.

Volunteer teaching amplifies this interplay between engagement, satisfaction, and burnout because of its unique challenges. While many volunteer educators enter their roles with high intrinsic motivation and a strong sense of purpose, the emotional labour involved in working with disadvantaged students can lead to mental and emotional exhaustion (Kelly, 2023). Sustained engagement in a volunteer teaching role can be fulfilling, but when combined with a lack of pedagogical training, unclear institutional expectations, and emotional distress, it may lead to burnout rather than increased life satisfaction (Lavy, 2022; Sanz-Vergel et al., 2010).

These conceptual frameworks inform the current study’s central aim: to investigate how engagement in volunteer teaching impacts life satisfaction and burnout. By combining established constructs (SE, LS, burnout) with empirical analysis, this research seeks to uncover the emotional and professional dynamics shaping student volunteer educators’ experiences.

Research rationale

While volunteering is widely recognized for its positive effects on mental health and life satisfaction (Kelly, 2023; Metzger et al., 2024), its specific impact on pre-service teachers, particularly in relation to burnout and identity development, remains underexplored. Teaching-based volunteering involves emotional labour and pedagogical challenges that set it apart from general volunteer work (Lavy, 2022; Sanz-Vergel et al., 2010). Moreover, institutional support strategies to prevent burnout in student volunteers have received little attention (Johnston, 2023; Wondimu & Admas, 2024).

This study addresses these gaps through the lens of the Study Buddy programme. It asks: Does volunteering reduce burnout among student educators? To answer this, it addresses the following questions:

1. What sustains engagement and well-being in student volunteers?
2. How do emotional demands and workload impact burnout?
3. How does volunteer teaching shape early professional identity?
4. What institutional supports help prevent burnout?

Methods

Participants and sampling

Convenience sampling was used to recruit participants from the University of Rzeszów, Poland. In Phase 1, quantitative data were collected via two online-adapted psychometric tools. Seventy-seven student volunteer teachers were invited to participate (female: 69, 89.61%; male: 8, 10.39%). The participants, aged 20–25 ($M = 22.68$, $SD = 1.6$), provided demographic details including their age, gender, and study year. The sample included 30 freshmen (38.96%), 16 sophomores (20.78%), 16 juniors (20.78%), 4 fourth-year students (5.19%), and 11 final-year students (14.29%). In the qualitative phase, interviews were conducted with six students (female: 3; male: 3).

Tools

To assess participants' burnout and engagement, the Polish adaptation of the Oldenburg Burnout Inventory (OLBI) was used (Chirkowska-Smolak & Kleka, 2011). The tool measures two dimensions (exhaustion and disengagement), using 16 positively and negatively worded items rated on a 4-point Likert scale (1 = strongly agree, 4 = strongly disagree). Minor wording adaptations were introduced to ensure contextual relevance to volunteer tutoring, while preserving the original construct structure of the OLBI. The scale demonstrated high internal consistency (Cronbach's alpha = 0.89). As the OLBI includes both positively and negatively worded items, negatively keyed items were reverse-coded prior to analysis. Two subscale scores (exhaustion and disengagement) and the overall burnout index were computed as mean values in accordance with standard OLBI scoring procedures, in order to preserve the original 4-point response metric.

The Satisfaction with Life Scale (SWLS), adapted into Polish by Janowski (2015), was used to evaluate overall life satisfaction. It consists of five items rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). The internal consistency of the scale in this study was excellent (Cronbach's alpha = 0.91).

For the qualitative phase, semi-structured interviews were conducted with selected participants. The interviews were based on a custom protocol that explored motivations for volunteering, sources of satisfaction, challenges, emotional fatigue, and perceived support needs. All interviews were conducted in Polish and later translated into English by the author for analysis and reporting.

All participants were informed about the purpose of the research, their right to withdraw at any time without consequence, and how their data would be anonymized and used solely for academic purposes. To protect confidentiality, pseudonyms were used in transcripts, and identifying information was removed during the transcription process.

Data analysis

The study employed a mixed-methods design combining correlational analysis with inductive qualitative interpretation, following Pietluch and Trinder (2024), who advocate integrating statistical trends with participant narratives. This approach aligns with broader calls to balance quantitative scope and qualitative depth (Creswell & Plano Clark, 2018; Johnson et al., 2007).

Descriptive statistics were calculated for demographic and psychometric data. Due to non-normal distribution, Spearman's rank correlation was used to examine relationships between burnout, life satisfaction, and related variables (Field, 2013). Qualitative data were analyzed thematically using Braun and Clarke's (2006) six-phase framework. Interviews (30–45 minutes) were transcribed verbatim and coded for themes such as motivation, emotional strain, satisfaction, and institutional support. Coding was reviewed collaboratively, with peer debriefing to ensure inter-coder agreement. Data saturation was achieved after six interviews. Trustworthiness was enhanced through peer review by an experienced qualitative researcher, who validated the coding and refined theme definitions.

Findings

Quantitative results

This section outlines the main quantitative results, highlighting patterns and correlations that inform the broader research question regarding volunteering and burnout.

Burnout, engagement, and life satisfaction

Students reported moderate burnout ($M = 2.45$, $SD = 0.17$ on a 4-point scale) and high life satisfaction ($M = 5.30$, $SD = 0.44$ on a 7-point scale), indicating that most volunteers maintained a relatively positive sense of well-being despite the emotional demands of volunteer teaching. These findings suggest that volunteering may help protect against severe burnout, although some emotional strain was evident.

Table 1 presents descriptive statistics for the two OLBI subscales (exhaustion and disengagement), the overall burnout score, and life satisfaction. As the two instruments used different response formats, differences in score ranges reflect the measurement design rather than analytical inconsistencies.

Table 1. Descriptive statistics of burnout dimensions and life satisfaction among student volunteers

Measure	Mean	SD	Min	Max
Exhaustion (OLBI, 4-point scale)	2.45	0.24	2.00	2.88
Disengagement (OLBI, 4-point scale)	2.44	0.19	2.12	2.75
Total Burnout (OLBI, mean score)	2.45	0.17	2.12	2.69
Life Satisfaction Score (SWLS, 7-point scale)	5.30	0.44	4.60	6.00

The mean exhaustion score ($M = 2.45$, $SD = 0.24$) indicates moderate emotional strain among participants. Similarly, the mean disengagement score ($M = 2.44$, $SD = 0.19$) suggests that while students experienced some emotional distance, their overall involvement in volunteering remained relatively stable. The total burnout score ($M = 2.45$) indicates moderate levels of burnout symptoms rather than severe burnout.

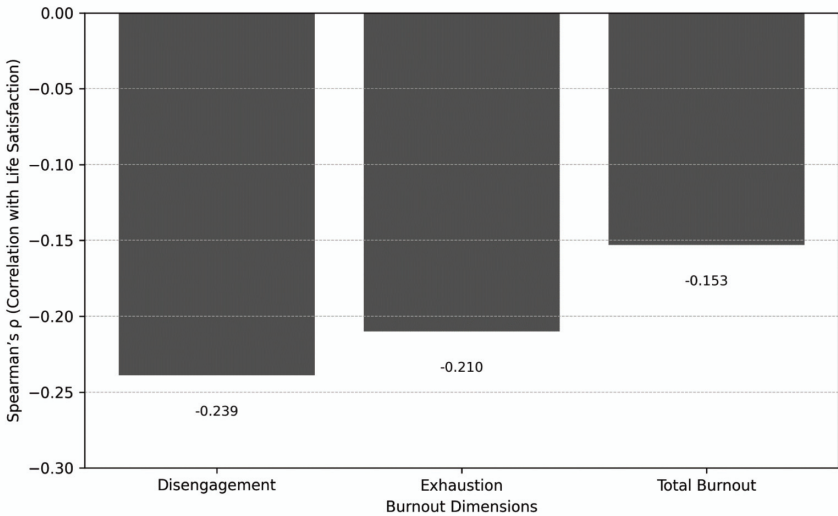
In contrast, the SWLS mean score ($M = 5.30$) remained consistently high, reinforcing the interpretation that participants experienced a generally strong sense of life satisfaction despite engaging in emotionally demanding volunteer work. The relatively low standard deviation for life satisfaction ($SD = 0.44$) indicates a fairly uniform perception of well-being across the sample.

These subscale-level results indicate a balanced pattern: student volunteers exhibited moderate burnout symptoms, particularly in the domain of emotional exhaustion, while simultaneously reporting high levels of life satisfaction, pointing to the coexistence of strain and psychological resilience within the volunteering context.

Correlation analysis

To examine the relationship between burnout and well-being, Spearman's rank-order correlations were conducted between life satisfaction (SWLS) and the two OLBI subscales (exhaustion and disengagement), as well as the overall burnout score (computed as the mean of both subscales). Spearman's rho was selected due to the non-normal distribution of the data. The results are presented graphically in Figure 1.

Figure 1. Spearman's correlations between burnout dimensions and life satisfaction



The strongest negative correlation was found between disengagement and life satisfaction ($\rho = -0.239$, $p = .038$), indicating that students who felt emotionally disconnected from their volunteer roles tended to report lower well-being. This statistically significant result suggests that emotional engagement plays a protective role, supporting the idea that volunteering can reduce burnout when students feel meaningfully involved.

Exhaustion also showed a negative correlation with life satisfaction ($\rho = -0.210$, $p = .066$), though it did not reach conventional significance. Still, this trend is consistent with prior research linking emotional fatigue to decreased well-being (Erdogan et al., 2012; Maslach et al., 1996).

Interestingly, the total burnout score had a weaker, non-significant correlation with life satisfaction ($\rho = -0.153$, $p = .497$), possibly because combining the two subscales masks the distinct influence of disengagement.

Overall, these findings suggest that volunteering may reduce burnout, particularly in the form of disengagement, but only when emotional connection is preserved. This interpretation is echoed in the qualitative data, where students identified emotional detachment and lack of support as key stressors.

Qualitative findings

Thematic analysis revealed four interrelated themes highlighting both protective and risk factors in volunteer teaching. Developed using Braun and Clarke's (2006) six-phase method, these themes capture the emotional dynamics of volunteering and its influence on student educators' resilience, motivation, and susceptibility to burnout.

Motivation and sense of purpose

Participants consistently described strong intrinsic motivation for joining the Study Buddy programme. Many were driven by a desire to help children and gain teaching experience. For example, one student said, "I just wanted to do something that mattered – to help kids who don't get as many chances." Others were influenced by university encouragement: "I joined because my lecturer mentioned it a few times in class, and it just felt right."

A shared sense of meaning and purpose emerged as a key factor in sustaining engagement and guarding against emotional exhaustion. This theme aligns with previous research showing that early teaching experiences, especially in altruistic contexts, can accelerate professional identity formation (Nickel & Crosby, 2022).

Sources of satisfaction

Volunteers often described their experiences as emotionally fulfilling, particularly when witnessing students' progress or enthusiasm. One participant pointed out: "When I see my student laugh or improve, it gives

me energy for the whole week.” Another student reflected on the value of personal connection by stating: “Knowing they’re waiting for me and that I matter to them – that’s what keeps me going.”

These experiences reflect the motivational process described in the Job Demands-Resources model offered by Bakker and Demerouti (2007), in which emotional feedback from students functions as a resource that promotes engagement and mitigates strain.

Emotional challenges and burnout symptoms

Despite positive sentiments, some participants reported signs of emotional fatigue. Students spoke of difficulty relaxing after sessions or feeling drained by stating: “There are days I feel exhausted after tutoring, especially when I still have assignments waiting for me.”

Others mentioned emotional overload from hearing children’s stories: “Sometimes their situations stay with me for days. It’s hard to switch off.”

This theme resonates with Hochschild’s (1983) concept of “emotional labour” and Maslach et al.’s (1996) model of burnout, particularly the risk of emotional exhaustion when personal boundaries are not maintained.

Institutional support and its gaps

The lack of structured support from the university or programme coordinators was a recurring theme. Students voiced a need for mentoring and emotional guidance: “We need someone to talk to – not just about teaching, but about the feelings that come with it.”

Many also felt their work was not fully recognized within their academic journey: “It felt like extra work. I wish it counted toward something official, like practicum hours.”

These perceptions support findings by Lavy (2022) and O’Donnell and Reschly (2020), who emphasize that institutional support plays a crucial role in determining whether volunteering becomes a protective or harmful experience.

Discussion

This study examined whether volunteer teaching can mitigate burnout among student educators and support the development of their professional identity. Drawing on a mixed-methods approach, the findings point to a complex interplay between emotional engagement, life satisfaction, and burnout, which aligns closely with the theoretical constructs of student engagement, life satisfaction, and emotional exhaustion.

Quantitative results revealed that while average burnout levels were moderate, the dimension of disengagement was significantly and negatively correlated with life satisfaction ($\rho = -0.239$, $p = .038$). This finding underscores the protective role of emotional connection, a component of both Fredricks' (2011) framework on SE and Schaufeli et al.'s (2002) triad of vigour, dedication, and absorption. When students were meaningfully engaged in their teaching roles, they were more likely to report higher well-being, suggesting that purpose-driven service strengthens psychological resilience.

The qualitative findings reinforced this interpretation, revealing how intrinsic motivation and perceived impact on learners sustained emotional energy. This reflects Diener et al.'s (1985) conceptualization of life satisfaction as a subjective, meaning-driven evaluation of one's life. In this study, helping children and witnessing progress served as a critical source of fulfilment, positioning volunteer teaching as a potentially restorative practice, especially when integrated with positive feedback loops and personal growth.

However, not all engagement was protective. Some participants reported emotional fatigue, particularly during exam periods or when exposed to children's traumatic backgrounds, indicating the risks associated with emotional overinvolvement, a key aspect of burnout theory (Maslach et al., 1996). The presence of such symptoms echoes Pines and Aronson's (1988) view of burnout as "the attrition of spirit", highlighting how even high intrinsic motivation can deteriorate under unmanaged emotional demands.

Furthermore, the absence of institutional scaffolding, such as mentoring, emotional debriefing, and formal recognition, emerged as a critical mediating factor. This supports Lavy's (2022) argument that institutional environments either amplify or buffer burnout risk depending on the level of emotional and pedagogical support provided. In line with Sanz-Vergel et al. (2010), the study confirms that burnout in volunteer educators is not merely an individual response but a structural outcome shaped by programme design and institutional responsiveness.

As the founder of the Study Buddy programme, I acknowledge my insider positionality; therefore, reflexive practices were systematically applied during qualitative analysis, including peer debriefing, collaborative coding validation, and ongoing critical reflection to reduce interpretative bias and enhance analytical transparency.

Overall, this research contributes to an emerging understanding of volunteering as a developmental space for pre-service teachers. It positions emotionally engaged service not only as a buffer against early burnout but as a space where professional identity, emotional stamina, and vocational clarity begin to crystallize. However, it also cautions against assuming that volunteer work is inherently protective. Without adequate institutional support, meaningful engagement can tip into emotional depletion, making the difference between burnout prevention and burnout production.

Concluding remarks and limitations

To fully realize the developmental value of volunteer teaching, institutions should offer resilience and emotional literacy training, mentoring, and structured reflective supervision. Based on the interview data, a hybrid model combining peer-led reflective meetings (focused on emotional sharing and mutual support) and faculty-led supervision (focused on pedagogical guidance and boundary-setting) appears to be the most effective. Additionally, formal recognition of volunteer hours and peer support networks can further enhance volunteering's protective effects while reducing emotional fatigue.

This study has several limitations. First, the small, single-institution sample limits the generalizability of the findings, and self-reported measures may be subject to response bias. The cross-sectional design also prevents the assessment of long-term burnout trajectories and professional identity development. An additional limitation concerns the use of convenience sampling, which may introduce selection bias, as participants were recruited from one university and were already engaged in a structured volunteering initiative. Consequently, the sample may overrepresent students with higher intrinsic motivation and prosocial engagement than the broader population of pre-service teachers. Furthermore, the specific socio-cultural context of Poland should be considered when interpreting the relatively high life satisfaction scores. Engagement in community-oriented and prosocial activities within this context may be associated with enhanced perceived meaning and well-being, which could influence SWLS outcomes. Therefore, caution is warranted when generalizing the results to different cultural, institutional, or educational settings.

Future research should adopt longitudinal and cross-cultural approaches to explore how programme structures and cultural factors shape burnout, engagement, and identity. Identifying institutional best practices can support volunteer teaching as a formative professional experience.

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Motivational and demotivational factors in the teaching profession: Perspectives of teachers considering and not considering attrition

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Abstract

Research objectives (aims) and problem(s): The aim of the study is to examine whether there are differences between working teachers considering a career change and those who are not in terms of the motivation accompanying teachers at different stages of their careers.

Research methods: The study involved 513 Polish preschool and primary school teachers, of whom approximately 35% declared their willingness to leave the profession. The study was conducted using a closed-ended questionnaire, and the data were analyzed statistically (chi-square test, Fisher's test).

Process of argumentation: The observed phenomenon of leaving the profession exacerbates the shortage of staff in educational institutions, negatively affects the quality of education, and increases the workload of other teachers. Therefore, this phenomenon should be studied in greater depth.

Research findings and their impact on the development of educational sciences: The findings indicate that internal and altruistic motives

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are the main drivers for entering and practicing the teaching profession, regardless of career plans. Teachers considering a career change report declining motivation more often due to external and organizational factors and cite habit, fear of change, and limited job alternatives as reasons for staying. Those not considering leaving report higher job satisfaction and professional fulfillment, despite criticizing bureaucracy and frequent reforms. Younger teachers and those working in preschools are more likely to consider leaving the profession.

Conclusions and/or recommendations: Limiting the outflow of teachers requires not only improving salaries but also systemic actions, such as improving working conditions, providing organizational and emotional support, and creating conditions for maintaining internal motivation and a sense of meaning in teaching work.

Introduction

The phenomenon of teachers leaving the profession has been observed for several years in many highly developed countries with democratic, market-based economies. In the 2022/23 school year, an average of 6.5% of fully qualified teachers across all levels of education resigned from their jobs in 19 OECD countries (OECD, 2025). This rate varied from country to country, ranging from around 3% (France, Greece, Ireland, Israel) to over 10% (Denmark, Estonia, Lithuania). In Poland, the rate exceeds 4%.

The data on preschool education is particularly worrying; as many as 7.3% of teachers resigned from their jobs, and this trend is on the rise. In primary schools, this rate was 5.8%, while in secondary schools it was 5.9%. Importantly, data from seven countries (Austria, Estonia, Israel, Slovakia, Sweden, Denmark and Poland) show that in five countries at least 30% of teachers who resigned had served for less than five years.

Data from the Central Statistical Office of Poland (Główny Urząd Statystyczny, GUS) indicate that despite the relative stability in the number of jobs, more and more teachers are deciding to change their career path or give up working in education altogether (Główny Urząd Statystyczny, 2024). An analysis of GUS data from 2020–2025 also shows a systematic decline in the number of children, teachers, and educational institutions

themselves (Główny Urząd Statystyczny, 2020, 2025). The largest decline in employment in preschool education was recorded in the 2024/25 school year (11.92%). Such a significant increase in the number of teachers who resigned coincided with growing uncertainty caused by planned legislative changes allowing the employment of people without teaching qualifications.

Teacher shortages are becoming a serious problem that requires systemic solutions. In this context, it is worth considering the motivational factors that sustain and weaken the desire to work as a teacher. This motivation manifests itself across three time horizons: the past (motivation accompanying the career choice), the present (motivation accompanying daily work), and the future (motivation related to the decision to continue working in the profession).

An OECD report published in 2005 found that the primary motivation for choosing the teaching profession was the desire to teach and work with children (OECD, 2005). Intrinsic motivation, related to the joy of working with children, a sense of intellectual fulfillment, and contributing to the good of society, appears to be the dominant element in the attractiveness of a teaching career. A meta-analysis of studies conducted worldwide demonstrated the dominance of intrinsic and altruistic motivation among those beginning their teaching careers (See et al., 2022). Polish studies have yielded similar conclusions (Dróżka & Madańska-Michalak, 2016; Szczyrba-Poroszewska, 2023).

Dobkowska et al. (2024) indicate that teachers are most motivated in their daily work by contact with children and young people and the visible results of their work. According to teachers, contact with children is a source of joy, pleasure, and “positive energy”; it provides them with the opportunity to help and shape others and to experience satisfaction from work and student success. The most frequently cited demotivating factors in daily work included salary, difficulties in collaborating with parents, and the conditions and organization of work in the institution. As Hornyák (2025) points out, a lack of motivation significantly impacts teaching effectiveness, increases burnout, and leads to more frequent job losses. Teachers with low motivation are less likely to use innovative

methods, demonstrate less sensitivity to student needs, and often contribute to poorer academic performance. Low motivation limits collaboration between teachers and limits the school's ability to adapt to external changes.

The most frequently cited motives for leaving the teaching profession in the literature on the subject are a decline in the attractiveness and prestige of the profession, low salaries, excessive workload (including administrative duties), growing diversity in qualification levels, demographic pressure, and the increasing average age of teachers (Dobkowska et al., 2024; Łukasik et al., 2023). The aging of the teaching staff and the lack of effective generational replacements are deepening this crisis, and the forecasts for the coming years are not optimistic (Instytut Badań Edukacyjnych, 2024).

The phenomenon of leaving the profession not only exacerbates the shortage of staff in educational institutions but also negatively affects the quality of education and increases the workload of remaining teachers. Awareness of these consequences must be linked to an in-depth diagnosis of the causes, which has already been partially undertaken in studies by research teams from the University of Warsaw (Dobkowska et al., 2024) and the University of Agriculture in Krakow (Łukasik et al., 2023).

In the present research, we focus on the factors that motivate teachers to pursue or leave teaching. We want to examine whether there are differences in this regard between working teachers who are considering a career change and those who are not. The aim of this research is therefore to understand the relationship between the desire to remain in or leave the profession and the motivation that accompanies teachers at different stages of their careers.

Methodology

Research problems

The research problems were formulated in the form of three questions:

1. What are the differences, if any, between active teachers considering and not considering a career change in terms of factors motivating them to work in the teaching profession?
2. What are the differences, if any, between active teachers considering and not considering a career change in terms of factors demotivating them to work in the teaching profession?
3. Are socio-demographic variables related to teachers' declared willingness to change professions?

Study participants

The study involved 513 Polish teachers (97% women) aged 24 to 70. Most teachers in the group were aged 36–45 (33.53%), 46–55 (20.27%), and 30–35 (17.35%). Most respondents worked in preschools (59.65%), followed by grades 1–3 (27.10%) and grades 4–8 (33.14%). (The percentages do not add up to 100% as the question was multiple-choice.) Most teachers had 6–10 years of experience (20.27%), followed by 11–15 years (13.06%) and over 30 years (12.48%). Young teachers with up to 5 years of experience accounted for 29.83% of the respondents. Among the participants in the study, 33.53% were certified teachers, 24.17% were appointed teachers, 13.06% were contract teachers, and 19.88% were novice teachers. Nearly 10% of respondents had no professional advancement.

Tools

The study used a questionnaire that included questions about demographic data, such as gender, age, place of residence, and distance from home to work, as well as information related to their job, including type of institution, educational level, length of service in the profession, and degree of professional advancement. Subsequent questions concerned factors that motivate and demotivate teachers to remain in the profession. Most of them were closed questions with a prepared set of answers. Respondents were asked to indicate at least five factors in each question. This research tool was developed based on the results of research conducted by Dobkowska et al.(2024).

Statistical analyses

The comparison of qualitative variables between groups was performed using the chi-square test (with Yates' correction for 2x2 tables) or Fisher's exact test when the chi-square test assumptions regarding the so-called expected frequencies were not met. The analysis employed a significance level of 0.05; thus, all p-values below 0.05 were interpreted as indicating significant relationships. The analysis was performed using R software, version 4.5.1.

Research procedure

The study was conducted between March and June 2025. Invitations to participate were distributed through announcements in selected educational institutions and via the authors' social media. A purposive sampling strategy was used, as eligibility to participate required employment in a preschool or primary school. Participation in the study was voluntary and anonymous. Prior to taking part, participants were informed about the purpose of the study and provided their informed consent. The study was approved by the University Committee for Scientific Research Ethics at Ignatianum University in Krakow (No. 11/2025).

Results

1) Motivating factors in a teacher's work

One question in the questionnaire asked respondents whether they were considering leaving their profession. Based on their responses, the group was divided into two subgroups. Of the 513 teachers surveyed, 177 (34.5%) reported that they are considering leaving the teaching profession.

To answer the first research question about the motivating factors for working as a teacher, the respondents were asked to indicate why they chose the teaching profession (Table 1), what motivates them in their daily work (Table 2), and why they work in their profession (Table 3). The results presented below show the aggregate responses (513 respondents) and according to whether teachers are considering a change of profession (177 respondents) or not (336 respondents).

Table 1 shows the differences between active teachers considering and not considering a career change in terms of motives for choosing the teaching profession.

Table 1. Motives for choosing the teaching profession

	Total (n=513)	Considering a career change (n=177)	Not considering a career change (n=336)	p
Opportunity to work with children/young people	364 (70,96%)	119 (67,23%)	245 (72,92%)	p=0,213
Interests and professional aptitudes	358 (69,79%)	116 (65,54%)	242 (72,02%)	p=0,156
Love for children	229 (44,64%)	79 (44,63%)	150 (44,64%)	p=1
Opportunity to work for the benefit of society and shape future generations	156 (30,41%)	65 (36,72%)	91 (27,08%)	p=0,031*
Job stability	108 (21,05%)	30 (16,95%)	78 (23,21%)	p=0,123
Many days off during the school year	91 (17,74%)	32 (18,08%)	59 (17,56%)	p=0,98
Work organization allowing for additional classes/work	89 (17,35%)	31 (17,51%)	58 (17,26%)	p=1
By chance	50 (9,75%)	17 (9,60%)	33 (9,82%)	p=1
Opportunity to work in various types of educational institutions	47 (9,16%)	14 (7,91%)	33 (9,82%)	p=0,581
Continuation of family traditions	46 (8,97%)	15 (8,47%)	31 (9,23%)	p=0,904
Opportunity for promotion and professional development	42 (8,19%)	16 (9,04%)	26 (7,74%)	p=0,733
Salary – stability of earnings	38 (7,41%)	8 (4,52%)	30 (8,93%)	p=0,102
Ease of finding a job	29 (5,65%)	9 (5,08%)	20 (5,95%)	p=0,839
Prestige of the profession, social authority	26 (5,07%)	13 (7,34%)	13 (3,87%)	p=0,135
Other	16 (3,12%)	6 (3,39%)	10 (2,98%)	p=1
Easy studies	15 (2,92%)	9 (5,08%)	6 (1,79%)	p=0,067
Preferences and expectations of family/relatives/friends	13 (2,53%)	5 (2,82%)	8 (2,38%)	p=0,773
Salary – level of earnings	4 (0,78%)	0 (0,00%)	4 (1,19%)	p=0,304

Note: Teachers could select multiple answers; therefore, the percentages do not add up to 100%.

p – chi-square test or Fisher’s exact test.

* statistically significant difference (p<0.05)

The three most important motivations for taking up a teaching profession are the opportunity to work with children and young people (70.96%), professional interests and aptitudes (69.79%), and a love for children (44.64%). A significant difference between the groups concerns the motive of working for the benefit of society and shaping future generations, which is expressed more often by teachers considering leaving the profession.

Table 2 shows the differences between active teachers considering and not considering a career change in terms of factors motivating them to work on a daily basis.

Table 2. Factors motivating teachers to work in their profession on a daily basis

	Total (n=513)	Considering a career change (n=177)	Not considering a career change (n=336)	p
Contact with children/young people	394 (76,80%)	122 (68,93%)	272 (80,95%)	p=0,003*
Work effects	241 (46,98%)	74 (41,81%)	167 (49,70%)	p=0,107
Work atmosphere	224 (43,66%)	68 (38,42%)	156 (46,43%)	p=0,1
Working hours	172 (33,53%)	60 (33,90%)	112 (33,33%)	p=0,976
Cooperation with teachers	84 (16,37%)	27 (15,25%)	57 (16,96%)	p=0,71
Working conditions	72 (14,04%)	17 (9,60%)	55 (16,37%)	p=0,05*
Opportunities for professional development	67 (13,06%)	19 (10,73%)	48 (14,29%)	p=0,319
Cooperation with the principal	63 (12,28%)	17 (9,60%)	46 (13,69%)	p=0,231
Salary	58 (11,31%)	23 (12,99%)	35 (10,42%)	p=0,466
Organization of work at school/kindergarten	44 (8,58%)	12 (6,78%)	32 (9,52%)	p=0,374
School/kindergarten management	35 (6,82%)	11 (6,21%)	24 (7,14%)	p=0,832
Cooperation with parents	33 (6,43%)	10 (5,65%)	23 (6,85%)	p=0,737
Other	23 (4,48%)	9 (5,08%)	14 (4,17%)	p=0,8

Note: Teachers could select multiple answers; therefore, the percentages do not add up to 100%.

p – chi-square test or Fisher’s exact test.

* statistically significant difference (p<0.05)

Teachers' daily motivation is based primarily on contact with children and young people (76.80%), a sense of the effects of their work (46.98%), and a positive atmosphere in the workplace (43.66%). For 33.53% of respondents, working hours are also important. Teachers who are not considering leaving the profession more often cited contact with children/young people and a positive assessment of working conditions as motivating factors.

Table 3 shows the differences between active teachers considering and not considering a career change in terms of general reasons for working as a teacher.

Table 3. Reasons for working as a teacher

	Total (n=513)	Considering a career change (n=177)	Not considering a career change (n=336)	p
Interests and professional aptitudes	319 (62,18%)	104 (58,76%)	215 (63,99%)	p=0,287
Opportunity to work with children/young people	292 (56,92%)	91 (51,41%)	201 (59,82%)	p=0,083
Good atmosphere at work	175 (34,11%)	55 (31,07%)	120 (35,71%)	p=0,339
Job stability	153 (29,82%)	55 (31,07%)	98 (29,17%)	p=0,728
Satisfaction with work and professional achievements	141 (27,49%)	26 (14,69%)	115 (34,23%)	p<0,001*
Opportunity to work for the benefit of society and shape future generations	121 (23,59%)	42 (23,73%)	79 (23,51%)	p=1
Work organization allowing for additional activities/work	111 (21,64%)	39 (22,03%)	72 (21,43%)	p=0,964
Habit	103 (20,08%)	48 (27,12%)	55 (16,37%)	p=0,006*
Many days off during the school year	100 (19,49%)	29 (16,38%)	71 (21,13%)	p=0,241
Salary – stability of earnings	79 (15,40%)	24 (13,56%)	55 (16,37%)	p=0,478
Fear of changing job	74 (14,42%)	51 (28,81%)	23 (6,85%)	p<0,001*
Difficulties in finding a new job in another profession	48 (9,36%)	24 (13,56%)	24 (7,14%)	p=0,027*
Feeling of influence on the functioning of the school/kindergarten	40 (7,80%)	11 (6,21%)	29 (8,63%)	p=0,425
Cooperation in the school team	40 (7,80%)	9 (5,08%)	31 (9,23%)	p=0,136
Opportunity to work in different types of educational institutions	31 (6,04%)	8 (4,52%)	23 (6,85%)	p=0,392

	Total (n=513)	Considering a career change (n=177)	Not considering a career change (n=336)	p
Ease of finding a job	29 (5,65%)	14 (7,91%)	15 (4,46%)	p=0,16
Feeling appreciated by the principal	29 (5,65%)	8 (4,52%)	21 (6,25%)	p=0,545
Continuing family traditions	21 (4,09%)	3 (1,69%)	18 (5,36%)	p=0,079
Opportunity to receive support and training at school and other institutions	16 (3,12%)	4 (2,26%)	12 (3,57%)	p=0,586
Salary – level of earnings	14 (2,73%)	6 (3,39%)	8 (2,38%)	p=0,572
Opportunity for promotion and professional development	10 (1,95%)	3 (1,69%)	7 (2,08%)	p=1
Other	6 (1,17%)	0 (0,00%)	6 (1,79%)	p=0,098
Prestige of the profession, social authority	5 (0,97%)	3 (1,69%)	2 (0,60%)	p=0,346

Note: Teachers could select multiple answers; therefore, the percentages do not add up to 100%.

p – chi-square test or Fisher’s exact test.

* statistically significant difference ($p < 0.05$)

The dominant reasons why respondents remain in the teaching profession are professional interests and aptitudes (62.18%), the opportunity to work with children and young people (56.92%), and a positive working atmosphere (34.11%). Teachers considering a career change were significantly more likely to cite habit, fear of changing jobs, and difficulties in finding a new job in another profession as reasons for remaining in the profession. Teachers who were not considering a change were more likely to declare satisfaction with their work and professional achievements.

2) Demotivating factors

In order to identify the factors that discourage teachers from remaining in the profession, respondents answered two questions. The first question focused on the factors that discourage them from their daily work (Table 4), while the second asked them to indicate the five main reasons why teachers leave the profession (Table 5).

Table 4. Factors discouraging teachers from working in their profession on a daily basis

	Total (n=513)	Considering a career change (n=177)	Not considering a career change (n=336)	p
Bureaucracy	263 (51,27%)	75 (42,37%)	188 (55,95%)	p=0,005*
Taking on too much responsibility	251 (48,93%)	112 (63,28%)	139 (41,37%)	p<0,001*
Difficulties in cooperating with parents	244 (47,56%)	90 (50,85%)	154 (45,83%)	p=0,323
Constant changes related to education reform	228 (44,44%)	65 (36,72%)	163 (48,51%)	p=0,014*
Physical fatigue	222 (43,27%)	86 (48,59%)	136 (40,48%)	p=0,095
Salary	222 (43,27%)	97 (54,80%)	125 (37,20%)	p<0,001*
Working conditions	107 (20,86%)	54 (30,51%)	53 (15,77%)	p<0,001*
Organization of work at school/preschool	92 (17,93%)	45 (25,42%)	47 (13,99%)	p=0,002*
Work atmosphere	72 (14,04%)	32 (18,08%)	40 (11,90%)	p=0,075
Difficulties in cooperating with the principal	62 (12,09%)	25 (14,12%)	37 (11,01%)	p=0,376
Little or no results from work	52 (10,14%)	22 (12,43%)	30 (8,93%)	p=0,273
Difficulties in cooperating with other teachers	46 (8,97%)	20 (11,30%)	26 (7,74%)	p=0,238
School/preschool management	40 (7,80%)	20 (11,30%)	20 (5,95%)	p=0,048*
Other	28 (5,46%)	10 (5,65%)	18 (5,36%)	p=1
Limited opportunities for professional development	20 (3,90%)	7 (3,95%)	13 (3,87%)	p=1
Working hours	15 (2,92%)	7 (3,95%)	8 (2,38%)	p=0,465
Contact with children/young people	6 (1,17%)	4 (2,26%)	2 (0,60%)	p=0,189

Note: Teachers could select multiple answers; therefore, the percentages do not add up to 100%.

p – chi-square test or Fisher’s exact test.

* statistically significant difference (p<0.05)

Factors that discourage people from working in their profession on a daily basis include bureaucracy (51.27%), taking on too much responsibility (48.93%), and difficulties in cooperating with parents (47.56%). Other significant reasons include constant changes related to education reform, salary, and physical fatigue.

There are many differences between the groups in terms of demotivating factors. Bureaucracy and constant changes related to education reform are more likely to discourage teachers who are not considering changing professions. In contrast, those considering leaving the profession more often point to excessive responsibility, problems with work organization, working conditions, salary, and school management as significant sources of dissatisfaction.

Table 5. Reasons for teachers leaving the profession

	Total (n=513)	Considering a career change (n=177)	Not considering a career change (n=336)	p
Salary	370 (72,12%)	129 (72,88%)	241 (71,73%)	p=0,862
Difficulties in cooperating with parents	350 (68,23%)	124 (70,06%)	226 (67,26%)	p=0,585
Increasing disciplinary problems	295 (57,50%)	107 (60,45%)	188 (55,95%)	p=0,376
The education system	224 (43,66%)	77 (43,50%)	147 (43,75%)	p=1
Working conditions	221 (43,08%)	86 (48,59%)	135 (40,18%)	p=0,083
Bureaucracy	193 (37,62%)	61 (34,46%)	132 (39,29%)	p=0,329
Lack of support in working with children with special needs	166 (32,36%)	72 (40,68%)	94 (27,98%)	p=0,005*
Organization of work in preschool/school	141 (27,49%)	63 (35,59%)	78 (23,21%)	p=0,004*
Difficulties in cooperating with the management	87 (16,96%)	33 (18,64%)	54 (16,07%)	p=0,539
Current reform	69 (13,45%)	22 (12,43%)	47 (13,99%)	p=0,722
Difficulties in cooperating with other teachers	57 (11,11%)	24 (13,56%)	33 (9,82%)	p=0,257
Political situation	35 (6,82%)	11 (6,21%)	24 (7,14%)	p=0,832
Other	24 (4,68%)	8 (4,52%)	16 (4,76%)	p=1
Lack of support in working with children with migration experience	11 (2,14%)	4 (2,26%)	7 (2,08%)	p=1

Note: Teachers could select multiple answers; therefore, the percentages do not add up to 100%.

p – chi-square test or Fisher’s exact test.

* statistically significant difference (p<0.05)

The main reasons given by teachers for considering leaving the profession were low salary (72.12%), difficulties in cooperating with parents (68.23%), and increasing disciplinary problems (57.50%). The education system, working conditions, and bureaucracy are also frequently cited as reasons for leaving the profession. Lack of support in working with children with special needs and problems related to the organization of work in preschool or school were mentioned more often by teachers considering a career change.

3) Demographic and social variables differentiating the respondents' decisions to change profession

Of the demographic variables studied, only age distinguishes between the groups ($p < 0.001^*$): younger teachers were more likely to consider leaving the profession than older ones. Several social variables are also related to the desire to change profession: educational level (preschool teachers were more likely to consider leaving the profession than primary school teachers, $p = 0.024^*$), length of service in the profession (teachers with shorter service consider leaving the profession more often than teachers with longer service, $p < 0.001^*$), and degree of professional advancement (contract and appointed teachers are more likely to consider a change than certified teachers, $p < 0.001^*$).

Conclusions

This research aimed to examine whether there are differences between active teachers considering a change of profession and those who are not in terms of motivation accompanying teachers at different stages of their careers. All the teachers we surveyed chose this career path and find daily motivation to work in this profession thanks to the sense of purpose they derive from working with children and young people and the conviction that they are fulfilling their own interests and professional aptitudes. This result is confirmed by numerous studies conducted worldwide (Fray & Gore, 2018), including in Poland (Dobkowska et al., 2024). The decision to enter

the teaching profession is therefore invariably linked mainly to internal, often altruistic motivations. From the perspective of human resource management in education, this means that activities that support the development of personal competences and maintain a positive atmosphere in the workplace can significantly influence the motivation and retention of teachers.

Are there any differences in this regard between teachers considering a career change and those who are not? The first difference is related to the motives for choosing this profession, which were recognized retrospectively. The group of teachers who consider a career change was significantly more likely to believe that the teaching profession involves working for the benefit of society and shaping future generations. Recalling the beginnings of scientific reflection on burnout, Schaufeli notes that its basic component is “frustrated idealism” (2017).

Another difference is the stronger role of habit, fear of job change, and difficulties in finding alternative employment among those considering a career change, confirming earlier findings (Dobkowska et al., 2024). This group more often experiences shifts in motivation over time – from internal to external – which may be linked to burnout. As Maslach notes (cited in Mańkowska, 2018), burnout stems primarily from organizational conditions rather than the nature of the work itself, allowing teachers to value their profession while experiencing stress and fatigue.

This is confirmed by the differences in the factors that reduce motivation to work in the profession by teachers considering a career change and those who are not. The first group points to a significantly greater number of external/organizational factors that reduce motivation to work in the profession than the second group (problems with work organization, working conditions, school management, etc.). However, it is worth noting that issues such as low salaries and bureaucracy are important factors for both groups. Similar results were obtained by Dobkowska et al. (2024), and similar complaints are also reported by teachers in other countries (Steiner et al. 2025).

What is interesting, however, is the lack of difference between teachers who are thinking about leaving the profession and those who are not in areas related to cooperation with parents and educational problems. Both groups assess these phenomena similarly: as highly demotivating.

The demotivating factors that were cited more frequently by teachers considering a career change were a lack of support in working with children with special needs and organizational difficulties. These results may indicate an overload of responsibilities and insufficient institutional preparation for working in a diverse educational environment. On the other hand, teachers who declared their willingness to remain in the profession more often pointed to institutional factors such as bureaucracy and constant changes resulting from education reforms. This may suggest that they feel frustrated with systemic imperfections. For teachers considering leaving, working conditions, school management, and salary were also significant demotivators, which is consistent with the broader context of research on job satisfaction in education (Ingersoll, 2001).

These differences may indicate a need for more individualized support for teachers, both emotionally and structurally. Research shows that factors such as work overload, lack of a sense of effectiveness, and the structure of school goals have a significant impact on teachers' motivation to remain in or leave the profession (Skaalvik & Skaalvik, 2017).

Analyses also show that in many countries, up to 25% of novice teachers leave the profession within the first 3–5 years (Łukasik et al., 2023), with national studies indicating a similarly worrying situation in Poland (Dobkowska et al., 2024). Nearly half of young teachers declared that they are considering a career change, while one-third of all respondents are contemplating leaving teaching. These tendencies are significantly stronger among younger teachers, which can be explained by human capital theory: lower accumulated investment in the profession makes early-career teachers more likely to leave, whereas each additional year of work reduces this likelihood (Łukasik et al., 2023).

Such declarations may reflect a broader generational trend. Data indicate that 31% of Generation Z plan to change employers within two years, compared to 17% of Millennials (Deloitte, 2025). This tendency is interpreted as a conscious strategy aimed at achieving greater stability, work–life balance, and development, leading young people to challenge traditional career models.

We are aware that the method of sample selection and the number of respondents make it impossible to draw clear conclusions about the entire

population of teachers in Poland. Nevertheless, the results reveal certain general trends worth considering in future analyses of the phenomenon of leaving the teaching profession.

Pedagogical implications

By analyzing the responses of the study participants, it is possible to identify risk factors and factors that increase the likelihood of remaining in the teaching profession. Protective factors include job satisfaction and a positive assessment of working conditions and the atmosphere at work. Risk factors, on the other hand, include the accumulation of negative experiences related to organizational factors and the clash between teachers' initially idealistic beliefs and the realities of school life.

In view of the changing attitudes toward professional careers among young people, including teachers, it would be advisable to strengthen them in the areas they identify as priorities in order to retain them in the profession. These include financial benefits and improved working conditions, providing them with a sense of security, support, and stability.

Salary increases or organizational changes (...), which are relatively easy to implement, will certainly have a positive effect, but they will not provide sufficient motivation to stem the outflow of teachers from the profession, nor will they encourage young people to choose teacher training. (Dobkowska et al., 2024, p. 59)

Therefore, it also seems important to create opportunities for teachers to experience a sense of meaning in their work and to maintain internal motivation to perform it.

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Challenging student behaviors and teachers' psychological burden: The significance of a systemic approach

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Abstract

Research objectives (aims) and problem(s): The research explores Polish teachers' experiences managing challenging student behaviors, especially aggression and peer violence, and the emotional impact of these behaviors on teacher well-being. It also addresses the lack of systematic research on effective interventions in Poland and examines the support available to educators.

Research methods: The article uses a qualitative method, involving semi-structured interviews with eight experienced teachers from various subjects and schools in the Mazowieckie Voivodeship. Thematic analysis with inductive coding identified key themes related to behavioral challenges, emotional strain, and support mechanisms.

Process of argumentation: The article begins by noting the global prevalence of school violence and its effect on teacher burnout and attrition, reflecting similar issues in Poland. It highlights Polish teachers' frequent reports of class disruptions, safety concerns, and stress. The Positive Behavioral Interventions and Supports (PBIS) model is introduced as an internationally proven, systemic approach that improves school climate, reduces problem behaviors, and lowers teacher stress. PBIS's multi-tiered framework fosters positive teacher-student relationships and collaborative networks.

Research findings and their impact on the development of educational sciences: The findings reveal that challenging behaviors cause chronic stress, helplessness, and burnout, which are worsened by insufficient training and systemic support. The study advances educational sciences by emphasizing systemic, data-driven methods that

Keywords:

challenging student behaviors, teachers' stress, teachers' burnout, Positive Behavioral Interventions and Supports (PBIS), school-wide approach

promote student development and teacher resilience, suggesting sustainable improvements.

Conclusions and/or recommendations: The study recommends implementing PBIS in Polish schools to better manage challenging behaviors and enhance teacher well-being. It also calls for future research to adapt and evaluate PBIS in Poland, with a focus on teacher training and institutional support. The findings highlight the need for systemic, collaborative strategies to foster positive educational environments and sustain gains in teacher motivation and student outcomes.

Introduction

Challenging student behaviors, such as aggression and peer violence, place a significant strain on teachers, negatively impacting their well-being, instructional quality, and job satisfaction – factors linked to professional burnout (Alarcon, 2011). This stress can also affect student achievement (Arens & Morin, 2016). Teachers working under pressure without adequate support are particularly vulnerable to occupational stress (Travers & Cooper, 1996), often lack confidence in their behavioral strategies, and report that their training did not sufficiently prepare them for such challenges (Gajdzica, 2020; Skura, 2018). Despite the scale of the problem, the Polish educational system lacks a consistent, evidence-based framework for behavioral intervention. In response, there is growing interest in systemic approaches such as the Positive Behavioral Interventions and Supports (PBIS) model that improve student behavior, enhance teacher efficacy, and reduce stress (Horner & Sugai, 2015)

Background

Study context

Challenging student behaviors and teacher stress

Problematic student behaviors – particularly acts of aggression and peer violence – significantly diminish teachers' motivation to remain in the profession. According to UNESCO data (Eck et al., 2016), nearly one in three students globally experiences school-related violence, while over one-third

are involved in physical altercations. Both empirical research and educational practice confirm that behavioral challenges constitute one of the key factors driving teacher attrition – a global phenomenon (Brill & McCartney, 2008; den Brok et al., 2017) that is equally evident in the Polish context (Skura & Wheeler, 2024). Polish educators frequently identify managing challenging student behavior as one of the most demanding aspects of their profession (Pyżalski, 2012), exposing them to frequent disruptions of instructional time and safety concerns, both of which contribute to elevated psychological strain.

Teaching is widely recognized as an emotionally and psychologically demanding profession (Johnson et al., 2005). Teachers face heavy workloads, time pressure, and challenges balancing work and personal life. These stressors are worsened by bureaucratic burdens, strained relationships with colleagues and supervisors, and anxiety over classroom management and external evaluation (Mercer & Gregersen, 2020). Emotional exhaustion can reduce teachers' engagement in lesson planning and student relationships, which may negatively impact students' motivation and sense of competence (Evers et al., 2004; Klusmann et al., 2016). Teacher stress arises from personal and occupational factors, including a lack of social support (Krause et al., 2013), but school-related issues like classroom disruptions, student disengagement, and disciplinary problems are particularly significant (Kyriacou, 2001).

Disruptive behaviors fall into aggressive and non-aggressive categories, with aggressive acts – such as direct challenges to teacher authority – being especially stressful (Wettstein, 2008). Poor teacher responses, often due to inadequate training or support, can worsen these behaviors and increase stress (Wettstein, 2010). Therefore, implementing evidence-based support models and multi-tiered assistance systems is crucial to help teachers understand students' needs, apply effective behavior management, and reduce challenging behaviors.

Supporting teachers in working with students through the PBIS framework

PBIS is a data-driven framework designed to help teachers manage educational and behavioral challenges in daily student interactions. At its core is the accurate assessment of student and school-wide needs, enabling informed decisions and evaluation of intervention effectiveness. By using data systematically, teachers can make better pedagogical choices and track improvements in student behavior and academic outcomes (Santiago-Rosario et al., 2022).

PBIS's effectiveness is well documented in studies across the United States and Europe (Karhu et al., 2020; Michael et al., 2024; Närhi et al., 2014; Nelen et al., 2020), suggesting it could benefit Polish schools facing rising teacher burnout and limited systemic support. Research shows PBIS improves school climate (Bradshaw et al., 2008), reduces problem behaviors (Waasdorp et al., 2012), decreases disciplinary actions (Bradshaw et al., 2010), and lowers teacher stress (Ross et al., 2012). Clear procedures and consistent student expectations give teachers more control and effectiveness in handling behavioral challenges.

PBIS uses a three-tiered support model tailored to student needs. Tier 1 offers universal strategies to build positive relationships, teach prosocial skills, and engage families. Tier 2 provides early, manageable interventions that do not overburden teachers. Tier 3 involves specialized teams for intensive support, easing teachers' responsibilities with high-need students. Implementing PBIS increases teachers' sense of safety, structures their behavior management, and provides practical tools for challenges. Teachers no longer face difficulties alone but work within a cohesive support system benefiting the whole school community.

Purpose

This study aimed to explore the lived experiences of general education teachers in Poland in relation to students' challenging behaviors both during classroom instruction and in non-classroom settings, such as breaks, school trips, and common areas. The purpose was to investigate how these behaviors affect teachers' psychological and emotional

well-being and to understand the kinds of support – formal and informal – that teachers receive in addressing such behaviors. The study sought to address the following research questions from the perspective of teachers: What types of challenging student behaviors do teachers most frequently encounter in their everyday educational and pastoral work, both in the classroom and beyond? How do teachers experience emotional and psychological strain in connection with these behaviors, and in which situations is this strain most strongly felt? What forms of support do teachers receive in dealing with challenging behaviors, and how do they evaluate the effectiveness of that support in meeting their professional needs?

Methods

A qualitative research design, based on semi-structured interviews with teachers representing various subjects, was chosen as the most suitable approach to gain an in-depth understanding of their professional experiences and to explore their perspectives on working with students who display challenging behaviors.

Ethical considerations

The research did not involve the collection of sensitive data about teachers or students and complied with established procedures for conducting academic research within educational institutions. All personal information was kept strictly confidential, and each participant was assigned a pseudonym to ensure anonymity. Teachers were asked to avoid disclosing any personal information about students. In cases where such information was mentioned during interviews, it was removed during the transcription process.

Data collection

To achieve the aims of our study, teachers who were recruited were required to meet the following criteria: they worked in primary schools teaching grades 4–8; they had at least five years of professional experience;

as a group, they represented schools located in towns with varying population sizes; and, as a group, they included teachers of different subjects. Recruitment took place in the Mazowieckie Voivodeship, one of the most populous regions in Poland, allowing participants from diverse socio-demographic backgrounds and locations with varying population sizes to be recruited.

A total of eight teachers were purposively selected for the study (Patton, 2015). Initially, 16 primary schools were contacted by phone; 10 agreed to participate in a preliminary survey to identify eligible teachers. School principals consented to their teachers' involvement, and individual teacher consent was subsequently obtained. The final sample comprised two Polish language teachers, two mathematics teachers, one English teacher, one history teacher, one geography teacher, and one physics teacher. All the participants were women, reflecting trends in the Polish education system. Their average teaching experience was about 25.5 years. Participants worked in schools located in towns of varying sizes – from large cities to small localities – and selection also considered regional differences, access to care and psycho-educational services, and other socio-demographic factors (see Annex).

Data were collected through semi-structured interviews conducted in Polish by the study's author via a video conferencing platform. Each interview lasted between 45 and 90 minutes and was both audio- and video-recorded, except for one, where the video was temporarily disabled due to technical issues. Participants were informed about the study's purpose and procedures and gave their consent to being recorded. Most teachers joined from home, while a few participated from school outside working hours. The interview questions were prepared in advance to align with the research aims. Examples include: "What is your biggest challenge in your daily work with students?" and "What difficult student behaviors do you most often observe outside the classroom (e.g., during breaks, school trips, or after-school activities)?" Open-ended questions encouraged participants to share their experiences freely, and the format allowed them to raise additional topics not initially planned by the interviewer (Adams, 2015; Blandford, 2013).

Data analysis

All interviews were fully transcribed, and participants' identities were protected by assigning unique reference numbers in place of names. The analysis followed a grounded theory approach (Charmaz, 2006) supported by qualitative analysis software. Coding was conducted in two phases: open coding followed by focused coding, without any predefined framework. This flexible method helped minimize bias and revealed unexpected themes (Blandford, 2013). Two researchers independently coded the data – one was the interviewer, the other an education professional not involved in the interviews. Although minor differences occurred, consensus was reached through discussion, leading to a shared coding scheme. This collaborative and inductive process allowed key thematic areas relevant to the research questions to emerge naturally.

Table 1. Main and sub-themes emerging from the analysis

Main theme	Sub-themes	Frequency of mention
Challenges in teachers' daily work	(1) In the classroom	
	Low engagement/reluctance to follow instructions	5
	Distracted by other things/low or no concentration on lesson content	7
	Disrupting others/disturbing the lesson – shouting, crying, walking around, undirected aggression (e.g., swearing, kicking objects)	6
	Aggression toward other students (including verbal aggression)	2
	Aggression toward the teacher	2
	Avoidant behaviors (withdrawal, isolation, no response to external stimuli)	2
	(2) In the wider school	
	Reluctance to follow instructions	5
	Disrupting others – shouting, crying, aimless walking, undirected aggression (e.g., swearing, kicking objects)	6
	Aggression toward other students (including verbal aggression)	4
	Aggression toward teachers or other adults	3
	Avoidant behaviors (withdrawal, isolation, no response to external stimuli)	2
Other – vandalism	2	

Main theme	Sub-themes	Frequency of mention
Teachers' psychological and emotional burdens	Stress and tension	7
	Feelings of helplessness	6
	Emotional exhaustion	7
	Frustration and irritation	7
	Anxiety and fear	3
	Low sense of professional efficacy	6
	Problems with interpersonal relationships	2
	Feelings of loneliness	6
Support that teachers receive	Educational support (e.g., training and professional development)	1
	Psychological support (e.g., supervision, counseling)	2
	Team-based support (e.g., collaboration with school specialists and other teachers)	6
	Social support (e.g., cooperation with parents)	4
	External institutional support (e.g., psychological and pedagogical counseling centers)	2
	Personal support (e.g., mental health professionals)	2

The analysis identified three main thematic areas related to the experiences of school specialists: challenges in teachers' everyday work, teachers' psychological and emotional burdens, and the support teachers receive. Table 1 presents these three main themes along with their corresponding sub-themes. The table also includes the frequency of each sub-theme. The following subsections present the findings in detail, grouped according to the main thematic areas. Where relevant, the analysis is supported by translated, anonymized quotations drawn from the interview data.

Challenges in teachers' everyday work

A wide array of challenging student behaviors that teachers confront in their daily instructional and educational practice emerged from the qualitative analysis of the interviews. Respondents frequently pointed to a lack of concentration and engagement among students during lessons,

often manifesting as outright refusal to participate. As one interviewee remarked, *"They simply say they don't want to respond, that they don't want to work at all"* (W11).

Another prevalent category of problematic behavior was students' need to attract attention through provocations and by assuming the role of the "class clown." One respondent described this as follows: *"It involved certain gestures, obscene ones... this kind of provocation... and while the children might not react the first or second time, eventually it builds up. And the anger, the pressure, it bursts"* (W4). Another participant added: *"They act like the class clown... fooling around a bit, talking back, arguing a little... and the lesson passes by"* (W4).

Teachers also highlighted behaviors that distracted other students, particularly in the case of physically hyperactive children: *"They simply disrupt, they can't sit still, they need to move, and they distract the whole class"* (W6). Simultaneously, there were concerns about students who withdrew from classroom activity, closed themselves off, and avoided interaction: *"They are slumped on their desks, say nothing, shut down... they can't even explain what's wrong"* (W6).

Teachers further indicated difficulties that arise beyond the classroom setting. One of the primary challenges noted was students' lack of self-discipline, especially during collective activities or organizational tasks at school: *"There's no sense of order – if a meeting is supposed to be at a certain time, there's always someone who just doesn't show up"* (W4).

A particularly serious issue was the violation of teachers' personal boundaries – both physical and verbal. Respondents reported instances of disrespect, inappropriate remarks, and even direct verbal abuse. As one participant stated: *"Students sometimes say things that are simply beyond belief... swearing at teachers..."* (W6). Another added: *"You call them out, and they just laugh in your face"* (W11).

Teachers also frequently have to contend with sudden outbursts of energy and emotion that pose risks to other students' safety. These behaviors are often impulsive and unconsidered: *"They run down the hallways – they might bump into someone, hurt someone"* (W4). Another intensifying issue was the prevalence of aggressive behavior, particularly

verbal aggression, often linked to poor emotional regulation and limited understanding of social norms. As one respondent observed, *“Verbal aggression among students is unfortunately on the rise”* (W3), while another noted: *“They don’t control what they say”* (W7).

Interview data also revealed concerns about peer conflict (W8), which disrupts group dynamics and peer relationships, as well as growing problems related to the misuse of mobile phones. Teachers emphasized that students often record or photograph others without their consent and upload the material online. As one respondent put it: *“They take pictures or record videos of others and post them online”* (W11).

The analysis illustrates that educational challenges extend well beyond the classroom and exhibit a multidimensional nature. The behaviors identified not only disrupt the learning environment but also undermine teachers’ professional well-being, the general sense of safety, and the school’s overall climate.

Teachers’ psychological and emotional burdens

Challenging student behaviors, along with the organizational and pedagogical demands teachers face on a daily basis, contribute significantly to their psychological and emotional strain. Many participants described experiencing chronic stress and tension caused by the unpredictability of student behavior and the lack of effective tools to manage difficult situations. As one respondent noted: *“I feel like I’m walking through a minefield all day. I never know when something is going to explode”* (W12). Teachers frequently reported feelings of helplessness and loss of control, particularly when working with withdrawn or aggressive students: *“Sometimes I feel like no matter what I do, I just can’t reach this child”* (W7).

Emotional exhaustion emerged as a common issue, as reflected in numerous accounts of psychological fatigue that intensifies with each successive challenge. One teacher admitted, *“I come home and feel like I have no energy left to be a mother or a partner – I’m completely burned out”* (W6). Many respondents also pointed to a decline in their sense of professional efficacy, expressing frustration that, despite their education and

experience, they were struggling to meet the demands of their roles: *"I have the education, I have the experience, and yet I feel like someone who just can't cope"* (W11).

These difficulties also negatively affect interpersonal relationships both within and beyond the school environment. As one participant observed, *"I've started avoiding conversations in the staff room – everyone's either irritated or exhausted. Sometimes it's better to say nothing at all"* (W6). In addition, teachers frequently mentioned a strong sense of isolation in dealing with professional challenges: *"I feel completely alone with all of this. In theory, we're a team, but in practice, everyone's dealing with their own issues, and no one has time to talk"* (W12).

These testimonies clearly illustrate the profound impact that student behavioral challenges and task overload have on teachers' psychological and emotional well-being. The absence of systemic, comprehensive support, combined with high expectations and a limited sense of agency, leads to serious consequences for mental health and job satisfaction within the teaching profession.

Support received by teachers working with students with challenging behaviors

Teachers emphasize that while professional training and development are undeniably necessary, they are often insufficient in quantity or quality to address challenging student behaviors effectively. As one respondent remarked, *"There are occasional training sessions, but they are infrequent and don't always address the specific issues I face"* (W5).

A similar situation applies to psychological support. While school psychologists are available, their limited working hours and scope of duties often render their assistance inadequate. One teacher noted, *"Unfortunately, our school psychologist only works part-time and is unable to handle all the difficult cases"* (W8), while another added, *"Sometimes the conversations help, but they're too few to really manage the students' problems"* (W7).

Collaboration with school pedagogues and other specialists is also frequently limited, which teachers perceive as a barrier to effectively resolving behavioral challenges: *"Consultations are helpful, but I can't always*

count on prompt support from specialists” (W11), and “I often feel left alone with these issues because not all specialists have the time to engage” (W6). Teachers repeatedly emphasize the importance of social support, particularly from parents, as a key factor in successful behavioral intervention: “When parents are engaged in working with their child, it’s much easier to find solutions” (W8). They also acknowledge that “a lack of parental support makes our job significantly more difficult” (W12).

In conclusion, despite the formal availability of various types of educational, psychological, team-based, and social support, their scope, quality, and accessibility are often insufficient. This presents a considerable daily challenge for teachers when working with students exhibiting difficult behaviors and negatively impacts the effectiveness of their educational efforts.

Discussion

Analysis of the gathered responses clearly indicates that teachers routinely contend with a wide spectrum of challenging student behaviors, including lack of concentration, refusal to cooperate, provocative attitudes, verbal aggression, and violations of personal boundaries. These behaviors are complex, multifaceted, and often rooted in students’ individual emotional, social, or cognitive needs. This reality demands a flexible and personalized approach from educators. Within this context, the intentional design of the educational environment becomes crucial – not merely as a reactive measure, but as a proactive strategy aimed at preventing difficulties by fostering conditions conducive to students’ social, emotional, and cognitive development (Barrett et al., 2018). As emphasized by researchers at the Center on PBIS, such an environment should be not only safe and predictable, but also responsive and supportive of diverse developmental needs among children and adolescents.

Equally important is the presence of clear and consistent classroom rules. Visual displays of expectations, regular reminders, and shared practice of desired behaviors – such as asking for help or managing frustration – help reduce power struggles and enhance group dynamics. Crucially,

effective prevention strategies should go beyond eliminating problematic behaviors; they must also systematically reinforce and recognize positive behaviors at both the individual and group levels (Wheeler & Richey, 2019). Such an approach not only increases student motivation but also cultivates a classroom climate of cooperation and mutual respect.

The behavioral challenges described by participants contribute significantly to chronic stress, feelings of helplessness, and emotional exhaustion among teachers. Many reported experiencing frustration, anxiety, and diminished professional efficacy – factors that negatively impact their mental health and motivation. Kelm and McIntosh (2012) suggest that systemic support for managing student behavior not only helps structure school practices but also enhances teachers' professional self-confidence, which in turn may improve instructional quality. A heightened sense of self-efficacy can also mitigate feelings of overload and burnout. In schools implementing proactive PBIS models, teachers are more likely to feel competent, possess clear response strategies, and perceive greater control over student behavior – all of which support long-term effectiveness and professional engagement.

Teachers further noted that psychological support, professional development, and collaboration with specialists are often insufficient or short-lived, hindering their ability to address behavioral challenges effectively. Many participants emphasized that one-off, theoretical training sessions held at the beginning of the academic year fall far short of their actual needs. Their comments suggested a strong demand for ongoing, systematic support in the form of regular workshops, consultations, and supervision – opportunities to analyze real-life classroom challenges and explore constructive solutions. This highlights the need for comprehensive and sustained support for educators.

A noteworthy example is the Swedish IBIS model (aligned with the PBIS framework), in which each school forms an implementation team comprising the principal and several staff members. This team participates in a year-long online training program (25 hours) led by Uppsala University and receives continuous support from national instructors. Schools are also provided with practical tools, procedures, and scenarios.

Unlike many ad hoc or superficial initiatives, IBIS ensures continuity, practical resources, and systemic collaboration. This structure significantly strengthens teacher competencies and reduces their burden when addressing challenging student behaviors (Karlberg et al., 2022).

Teachers in the study also highlighted the critical importance of parental involvement and collaboration with school psychologists and counselors in effectively managing behavioral issues. They emphasized that the absence of parental support considerably hampers their efforts. Crucially, the proactive PBIS model helps teachers to foster parent collaboration at multiple levels, creating communication bridges and a cohesive support network around the student. PBIS promotes the development of clear, shared behavioral expectations and encourages regular positive communication about student progress – efforts that build trust and a sense of partnership. Parents are actively engaged in school activities, enabling them to better understand and reinforce the behavioral strategies employed in the classroom. This consistent approach between home and school enhances the effectiveness of interventions and strengthens teacher–family relationships (Minch et al., 2020).

Limitations

It should be noted that this study only involved eight subject teachers from the Mazowieckie Voivodeship. Although the interviews were detailed and data saturation was reached, the small sample size may not represent teachers from other regions. Furthermore, interviews were conducted in Polish and later translated, which could have introduced errors or lost some contextual nuances in participants' responses.

Conclusions

The PBIS model can help teachers manage work-related stress by creating environments that promote learning and prosocial behaviors. Through clear expectations, the systematic reinforcement of positive behaviors, and a data-driven approach, it supports all students, including

those with special needs. This reduces the occurrence of challenging behaviors, making classroom management easier and lowering teachers' stress levels. Implementing PBIS in Polish schools could enhance teachers' skills in supporting students and building a positive school climate, thereby helping to prevent burnout and improve job satisfaction.

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Annex. Participants' profiles

Symbol	Type of teacher	Local population	Length of service (years)	Number of pupils in the classroom	Number of pupils with behavioral challenges	Additional training in working with students with behavioral challenges
W11	General teacher	20,000–100,000	25	18–25	4–5	Workshops: System of counteracting aggression and peer violence; Ways of dealing with manifestations of dysfunctional behavior in students; Prevention of difficult behaviors; Cooperation with parents; Risky sexual behaviors of children and adolescents
W5	General teacher	500,000+	4	20	8	None
W4	General teacher	20,000–100,000	20	25	9	Workshop: Dealing with provocative student behavior
W6	General teacher	500,000+	30	20–22	21	None
W3	General teacher	20,000–100,000	23	23–29	15	Workshop: Challenging behaviors of children with special needs
W7	General teacher	100,000–500,000	18	18	4	None
W8	General teacher	3,000–20,000	24	15	6	None
W12	General teacher	20,000–100,000	20	23	6	TUS: Behavioral therapy (3-step course)



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The image of teachers in selected studies. An international and Polish perspective

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Abstract

Research objectives (aims) and problem(s): This article presents important issues related to knowledge about teachers that are not always connected to the teaching process but can play a significant role in the teaching profession. Furthermore, it aims to fill a gap in research on teachers by referring to several different issues in a single text.

Research methods: The method used is primarily a comparative analysis of existing data from international, large-scale quantitative studies and works derived from official national studies. A social desirability scale is also provided, aimed at verifying the opinions and responses of the surveyed teachers.

Process of argumentation: The article consists of four main parts and a summary. The introductory part refers to methodological issues in teacher research. Relevant findings from studies using the social desirability scale are quoted to examine whether teachers' opinions may be distorted to align more closely with social expectations. The second part is a socio-demographic characterisation of teachers. The third part presents teachers' beliefs and attitudes. These relate to the most important elements of professional preparation and to teachers' sense of self-efficacy in their work. The fourth part completes the image of teachers based on public opinion of the profession in Poland.

Research findings and their impact on the development of educational sciences: Among the issues discussed are the feminisation and ageing of the teaching staff, teachers' perceptions of their preparedness for teaching, the importance of teachers' self-efficacy, discrepancies between public opinion of teachers and what teachers think

about themselves, and how society values them. The research indicates that it is worth observing the teaching profession not only from the perspective of the classroom.

Conclusions and/or recommendations: Given that teachers are leaving the profession, government policies should introduce changes in their professional status. The issues most frequently raised by teachers are the salary situation and the need to increase their ability to influence politicians' decisions regarding education. An equally important issue – in light of the analyses and postulates cited – is the effective attraction of young candidates to the teaching profession.

Introduction – methodological remarks

Knowledge about teachers and school principals comes primarily from two basic sources: the teachers and headteachers themselves, based on their statements and opinions (rather than tests, as is the case with students in projects such as PISA and TIMSS), and public opinion, also derived from the statements of those surveyed. It is predominantly on this basis that the image of teachers is shaped in educational research environments and in society. In this case, is there any reason to believe that teachers' responses may be distorted or untruthful?

For over 60 years, various groups (primarily psychologists) have been studying people's tendency to respond to questionnaires in accordance with social expectations, using social approval scales constructed by researchers. One such study on social approval was conducted specifically for TALIS 2013, covering almost 77,000 teachers (almost 3,700 in Poland) at ISCED 2 schools¹ (Van de Vijver & Ha, 2014). Of the 34 countries participating in the TALIS survey, 18, including Poland, volunteered to participate in this verification of teachers' responses. Such research was not conducted for either the previous (TALIS 2008) or subsequent (TALIS 2018) editions. The basis for this research was an analysis of 10 statements (five positive and five negative) that formed a scale of social approval. Each statement was rated on a 7-point scale, ranging from 7 (strongly agree) to 1 (strongly disagree). Positive statements included 'I always

¹ Equivalent to lower secondary schools or schools with grades 7–9.

listen carefully to my students’, ‘I help students and teachers if they have problems’, and ‘I admit when I don’t know something if a student asks a question in class’. Negative statements included ‘I have doubts about my ability to succeed as a teacher’, ‘I say things that hurt my colleagues’ or students’ feelings’, and ‘I get angry when colleagues express views that differ from mine’ (Van de Vijver & Ha, 2014, p. 13).

It is worth noting that none of the 77,000 teachers selected the answer ‘strongly disagree’ (rank 1), while only 140 teachers selected the answer ‘strongly agree’ (rank 7) – in Poland, there were nine such answers (Van de Vijver & Ha, 2014, pp. 10–11). The averages calculated for individual countries indicate that, for positive statements, the ratings were close to ‘strongly agree’ (ranging from 5.25 in Malaysia to 6.34 in the UAE; Poland scored 5.91). Ratings for negative statements were further from the extreme (‘strongly disagree’) (ranging from 1.69 in the UAE to 2.97 in Korea; Poland scored 2.76). Higher ratings of positive statements indicate a stronger tendency to attribute positive traits and behaviours to oneself, while negative ratings indicate a stronger tendency to deny them (Piwowski, 2023).

Subsequently, 17 constructs/modules were identified, representing various aspects of teachers’ work and beliefs (e.g. cooperation with other teachers, relationships with students, sense of effectiveness and job satisfaction, and professional development). These 17 constructs were correlated with the previously described ratings of positive and negative statements. Correlations at the country level were generally much stronger than at the individual level; moreover, they were positively correlated for positive statements and negatively correlated for negative statements. This was especially true for teachers’ sense of effectiveness, which related to classroom management, teaching, and student engagement (Piwowski, 2023). These calculations were then corrected using the effect size. However, this did not result in any measurable changes in the correlation values relating to the two groups of (positive and negative) statements, which were used as the basis for determining the social approval scale.

It turned out that the strongest correlations (calculated at the national level), indicating the greatest susceptibility to social approval, concerned

satisfaction with the current work environment ($r = 0.77$), sense of effectiveness in teaching ($r = 0.73$), and overall job satisfaction ($r = 0.72$). These results show that not all modules are equally susceptible to social approval and that teachers' response styles also have different effects on the modules. 'There is evidence that response styles are most evident in questions about personal matters, when fear of evaluation may be strongest' (Van de Vijver & Ha, 2014, p. 35). Teachers react more emotionally, with greater personal involvement in assessing their effectiveness in teaching, and less emotionally towards their own professional development.

It is also worth noting that although the selection of countries surveyed cannot be considered representative (voluntary participation in the study of susceptibility to social approval), the authors of the report (Van de Vijver & Ha, 2014) conclude that the sample proved successful in demonstrating cultural differences in the assessment of the 10 statements. The response styles from Central and South America and East Asia differed significantly from those in other regions of the world. Furthermore, teachers from countries with higher levels of social development (measured by the Human Development Index) and student performance (measured by PISA) are less susceptible to social approval. However, the most important conclusion is that, despite some differences in susceptibility to social approval, there is no basis for claiming that the picture of teachers' responses is distorted.

It should be added that information about teachers, which is generally derived from research, is not always collected repeatedly over time. In some cases, such information is valuable, but nevertheless, it remains based on a single data collection point. This applies even to large-scale studies such as TALIS, which include and assess certain questions or statements only once. Furthermore, this article addresses only some of the issues related to the image and perceptions of the teaching profession. It omits, for example, a discussion of teachers' earnings and their pay compared to other professions, which also significantly shapes their image both in society and among teachers themselves. A number of reports, articles and statistical studies have been published on this subject (including Arnold & Rahimi, 2024; OECD, 2024b; Piwowarski, 2024).

Socio-demographic characteristics of teachers

It seems that the OECD's comprehensive reports provide a fairly accurate picture of teachers in terms of simple demographic and professional characteristics. These are TALIS reports on teachers and headteachers. The data contained therein are significant due to the large number of teachers surveyed (currently several dozen participating countries, with several hundred thousand teachers and headteachers), but they are only representative of more developed and wealthier countries. Teachers of lower secondary schools, covering grades 7–9, are the most numerous group in these studies; for this reason, the following characteristics will be limited to this group of teachers (and headteachers).

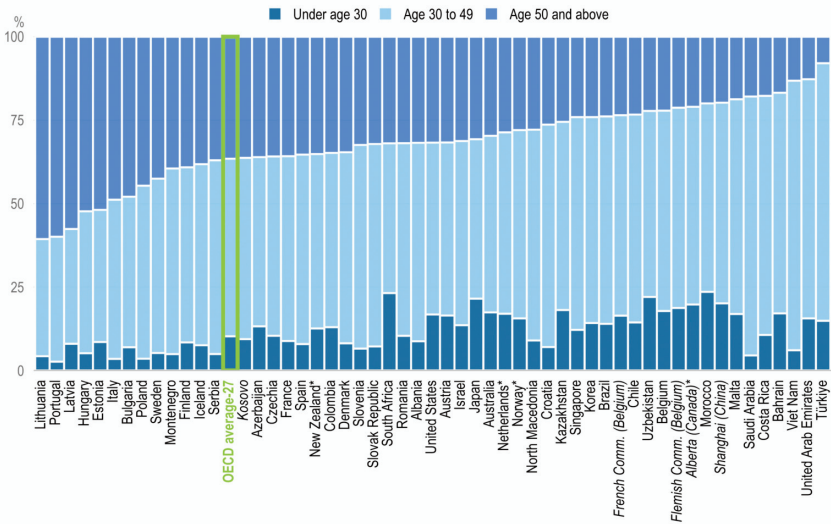
The level of feminisation among teachers is characterised by two key features. First, the higher the organisational level of an educational institution, the lower the level of feminisation (highest in kindergartens, lowest in schools that grant access to higher education). The second feature that can be observed is the stabilisation of this indicator over at least the last 10 years. According to TALIS data, women accounted for an average of 68–69% of teachers in lower secondary schools (in Poland, this was slightly more, approximately 75%). Female headteachers in the same countries and period averaged 46–48% (in Poland, 67%). However, significant differences can be observed across the indicators in individual countries. First, female teachers accounted for 40–50% of all teachers in Japan, Mexico and the Netherlands, while in Estonia, Lithuania, and Latvia, they accounted for 84–89%. The level of feminisation of headteachers also varied: in Japan and Turkey, female headteachers accounted for only 7–9% of the total, while in Latvia, they accounted for 84%.

An analysis of the age of teachers and headteachers (who are also generally teachers) shows that the proportion of teachers over 50 is increasing. Since 2008, this group of teachers has grown on average from 27% to 34% across the countries surveyed. In Poland, this change was even greater, rising from 14% in 2008 to 35% in 2018. The TALIS survey also accounted for the percentage of headteachers over the age of 60,

and an increase was noted there as well. Thus, there is an ageing of teachers and a certain stabilisation in terms of the feminisation of the teaching profession. In many environments, teachers, especially younger ones, are leaving the profession. According to a report compiled by 204 experienced teacher union activists from 121 countries, almost 50% of teachers are considering leaving the profession within the next five years (Arnold & Rahimi, 2024). This issue is increasingly being addressed by important, opinion-forming organisations. This is evidenced, for example, by the OECD webinar on September 30, 2025, devoted to the shortage of teaching staff (OECD, 2025b). This process, combined with an ageing teacher population, may cause complications in the functioning of schools.

Figure 1

Percentage of lower secondary teachers, by age group



Note: *Estimates should be interpreted with caution due to higher risk of non-response bias.
Source: OECD, TALIS 2024 Database, Table 1.3.

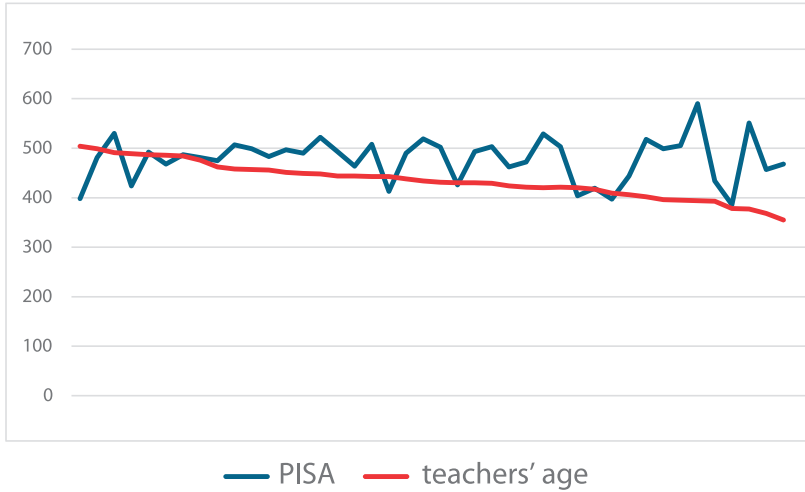
Source: OECD, 2025c, p. 36

Figure 1 shows the age structure of teachers in the countries surveyed. The left side of the chart shows countries where teachers over 50 years of age account for more than 40% or even 50% of all teachers (including Lithuania, Portugal, Latvia, and Hungary). The right side shows countries where the percentage of the oldest teachers is small (less than 10% in Turkey and the United Arab Emirates). In 2024, teachers' average age was around 45 (in 2018, it was around 44). In Lithuania and Portugal, the average age is 51, and in Latvia, it is 50 (OECD, 2025c, p. 34). Teachers aged 50 and above are more likely to teach in publicly managed schools (5 pp more than privately managed schools, on average) and in urban areas (2 pp more than rural areas) (OECD, 2025c, p. 36). In the context of this data, it is worth asking whether there is a relationship between teachers' age and students' results. It is commonly believed that older teachers are more experienced and better at solving various school problems, but they are also more prone to routine and burnout, which often leads them to leave the profession. Younger teachers are more positive about introducing changes in teaching and curricula and are more proficient in ICT.

The author conducted a statistical analysis of the average age of teachers (teaching grades 7–9) and the results in mathematics of students participating in the PISA project in 42 countries. To ensure that the data came from the same year, information from 2018 (TALIS and PISA) was used. This is only a snapshot of teacher characteristics and an incomplete picture of the achievements of 15-year-olds, but the results are worth considering. Pearson's correlation coefficient was used to determine the strength of the relationship between the analysed data. It turned out that the relationship between teacher age and student performance is extremely weak ($r = 0.14$) (see Figure 2).

Figure 2

2018: The average age of teachers and PISA results in mathematics



Note: The values 300, 400, and 500 points (PISA) correspond to teachers' ages (30, 40, and 50 years old).

Source: Calculations by R. Piwowarski.

While Georgia has the highest average age (50.4 years) and low student performance (398 points), Lithuania and Estonia have an average teacher age exceeding 49 years and high student performance, especially in Estonia (530 points). The situation is similar on the right side of Figure 2, where age does not correspond to performance (Singapore: 37.7 years, 551 points; Turkey: 35.5 years, 468 points). Thus, based only on these 'flattened' data (country averages), it is impossible to conclude that there is a relationship between student performance and the age of their teachers (all teachers, not just mathematics teachers).

However, it cannot be ruled out that if data relating to individual students and teachers of individual subjects, or even average values for schools, were taken into account, the strength of the relationship (the correlation coefficient) could be different. Research conducted among teachers across different environments, countries, and subjects taught may

reveal a stronger correlation (positive or negative) between teacher age and student achievement. This has been demonstrated, for example, by a study of all teachers in Iceland, which found that older teachers were more effective in teaching Icelandic (Aðalsteinsson et al., 2013).

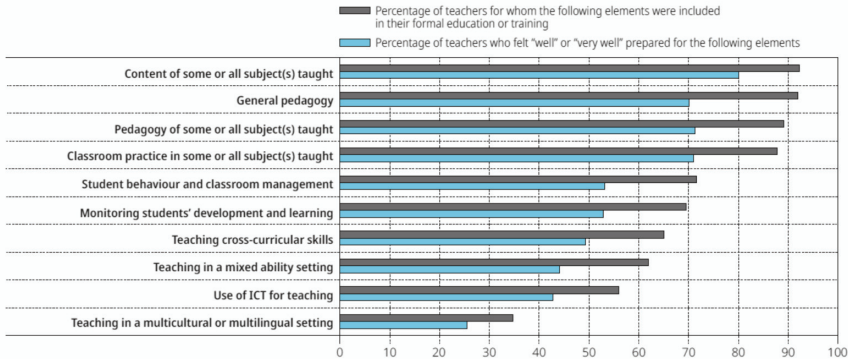
Teachers' beliefs and attitudes

One of the key issues in a teacher's job is their preparation for the various areas necessary for teaching. Figure 3 illustrates what was included in their professional training during their studies and how teachers assessed this preparation.

Figure 3

Figure 1.4.4 **Content of teacher education and sense of preparedness for teaching**


Results based on responses of lower secondary teachers



Note: ICT: Information and communication technology.

Values are ranked in descending order of the percentage of lower secondary teachers for whom the following elements were included in their formal education or training.

Source: OECD, TALIS 2018 Database, Tables I.4.13 and I.4.20.

StatLink  <http://dx.doi.org/10.1787/888933932532>

Source: OECD, 2019, p. 129

Based on Figure 3, it seems that around 90% of the teachers surveyed received formal training covering topics such as teaching content, general pedagogy, subject-specific pedagogy (teaching methods), and classroom practice in their field. To a lesser extent, the following aspects

were included in teacher training: the ability to control student behaviour, monitoring students' learning progress, and interdisciplinary teaching. Only 35% of teachers were prepared to work in a multicultural and multilingual environment, but 26% felt that they were well/very well prepared for this.

Notably, across the 10 elements considered, the percentage of teachers who felt well prepared to work in a specific area was much lower than the percentage who said the element had been included in their professional training. These discrepancies were generally significant. In many countries/economies, there were also large differences in the perceived preparedness between experienced and new teachers. This was particularly true for pedagogical preparation in the subjects taught: 30 pp in Israel, 29 pp in Estonia, and 27 pp in Romania. In Finland, France and Japan, however, these differences were small (6 pp) (Schleicher, 2018, p. 62). The size of these differences suggests that new teachers may need more support in developing effective pedagogical strategies for teaching content.

For many years, attention has been drawn to the fact that the quality of work performed and the results achieved by pupils/students depend to some extent on their sense of self-efficacy. Furthermore, low self-efficacy can lead to higher levels of stress (Masoom, 2021; Reilly et al., 2014). The creator of social learning theory also devoted part of his scientific activity to self-efficacy (Bandura, 1997). The PISA 2012 project showed that a higher sense of efficacy among 15-year-olds in mathematics corresponds positively with their results in mathematics (OECD, 2014a, p. 93).

In a growing number of studies on teacher effectiveness, references to teachers' sense of self-efficacy occupy an important place. For example, it has been found that low self-esteem and low overall self-efficacy led to low teacher effectiveness and, consequently, to poorer student performance (Khan et al., 2015). Khan and colleagues conclude that there is a positive correlation between teacher effectiveness and their self-assessment ($r = 0.38$). No impact of self-efficacy on decision-making or the ability to influence authorities and school bodies was found. However, these interesting results should be interpreted with caution, primarily due to their relatively low representativeness. It should also be added

that it is easier to study effectiveness, or effectiveness alone, than to determine with a high degree of certainty what factors influence it.

The results of the TALIS 2018 survey on the relationship between teachers' self-efficacy, their preparation in classroom management, and their ability to manage students (primarily classroom management) indicate that, apart from the varying strength of this relationship in individual countries as measured by the linear regression coefficient, they depend more on what is taught at university (stronger correlation) than on the induction programme (mainly for young teachers) (OECD, 2019, pp. 132, 142). Furthermore, the results show that in 37 countries and economies, teachers who have been trained in teaching cross-curricular skills (e.g., creativity, critical thinking, problem-solving) are more likely to report higher levels of self-efficacy. Training in teaching in a multicultural environment also contributes to higher self-efficacy in 20 TALIS countries and economies (OECD, 2019, table I.4.46 available on line). However, regression results should be interpreted with caution, as the explanatory power of the estimated models is usually limited (as evidenced by the low R^2 values) (OECD, 2019, p. 133).

Teachers' perceptions of how valued they are (or not) by society can influence their image and performance. Although teachers generally enjoy relatively high status in public opinion compared to other professions, in many countries, they feel that they are not valued by society. This is evidenced, among other things, by research conducted as part of the TALIS 2013 project, which asked teachers from 32 countries to respond to the statement 'I think that the teaching profession is valued by society' (they could agree or disagree). Only in five countries did at least half of all teachers agree with the statement (in Europe, only in Finland – approx. 58%). In many European countries, the percentage of teachers who felt that they were valued by society was less than 20% or, in Slovakia, France, Spain, and Sweden, even less than 10% (OECD, 2014b, pp. 187, 408).

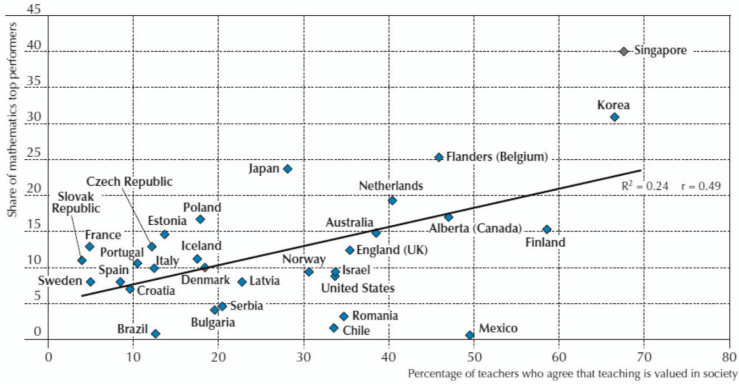
The feeling that teachers are generally not appreciated by society is also linked to the theme of teachers' sense of professional satisfaction. Comparing the results of the TALIS 2013 and 2024 surveys, it can be concluded that there was a decline in positive assessments of the profession

during this period. For example, in Finland, the percentage of teachers declaring that they would choose this path again decreased by as much as 16 pp, and in Croatia by 13 pp (Paczuska, 2025, p. 86). Moreover, teachers with a higher sense of job satisfaction are much less likely to plan to leave the profession within the next five years (Paczuska, 2025, p. 88). According to Schleicher (2018), there is a correlation between the percentage of teachers who feel appreciated by society and the share of top mathematics performers in PISA 2012. This is illustrated by Figure 4 and by the correlation coefficient ($r = 0.49$).

Figure 4

Relationship between the value of the teaching profession and the share of top mathematics performers

Relationship between lower secondary education teachers' view on the value of their profession in society and the share of top mathematics performers in PISA 2012



Source: Schleicher, 2018, p. 91.

The teaching profession in the public eye

Some of the analyses presented earlier provide convincing evidence that teachers generally feel underappreciated by society. Therefore, it is interesting to consider how the teaching profession is assessed and perceived by 'non-teachers'. This will be done primarily using the results

of representative studies conducted in Poland, which are a direct or indirect assessment of teachers' work (e.g. the profession planned for one's children).

Since 1993 respondents have been asked several times how much respect/prestige the teaching profession enjoys among dozens of professions subject to public evaluation. For many years, it has ranked between sixth and eighth in Poland (in 2025, it was ranked ninth). Teachers are outranked by doctors, miners, university professors (who once held the top position for a long time), skilled workers, nurses, and firefighters, who have held the top position for over a decade (CBOS, 2019, 2025). The least respected professions are those related to the exercise of power (ministers, members of parliament, political party activists, etc.). Furthermore, there is a trend towards 'appreciating common professions, often based on physical labour, whose recognition does not necessarily go hand in hand with socio-economic status. It seems that the prestige of individual professions is to some extent shaped by the situation on the labour market' (CBOS, 2019, p. 9). This is also evidenced by data showing that, as of 2024, Poland has the highest percentage of respondents who would like their children to obtain secondary vocational education since the 1990s (CBOS, 2024b). Teachers ranked even higher (fourth place) when respondents assessed professions in terms of honesty and reliability. The top three positions were taken by scientists, nurses, and ICT specialists, while politicians and MPs once again came last (CBOS, 2016, p. 2). Teachers also ranked fourth in a survey on trust in individual professional groups (firefighters ranked first, politicians last) (Ariadna, 2019).

Indirectly, society's attitude towards the teaching profession and its image were reflected in a 2012 survey that asked respondents whether they would like their children to work as teachers in the future. The majority of respondents answered negatively (54%), while only 34% of respondents answered 'yes' (CBOS, 2012, p. 7). Interestingly, the highest level of approval was expressed by the most religious people (51%), while the lowest was expressed by people from large cities (19%) and by those with the highest per capita income who were self-employed. Additionally, only 27% of students and pupils answered 'yes'. This may indicate

that more than a few students and pupils are aware that the teaching profession is not always easy or well paid. Although the distribution of teachers' responses to the same question was not as clear-cut, the majority still answered 'no' (48%); 46% responded positively to their children's potential future as teachers.

Several years later, a similar, more extensive study asked an open-ended question about respondents' dream profession for their daughter (regardless of whether they had children or how old they were). The most popular option was medical professions, followed by legal professions and professions related to education, social-political, or humanistic fields (such as teaching). Poles most often wanted their sons to pursue a profession requiring technical studies, followed by medical studies. However, the desire for a son to become a doctor is much less common than the desire for a daughter to become one. In third place, respondents believe that the ideal profession for their son is an ICT specialist or a lawyer (CBOS, 2024a, p. 7).

However, it is worth noting the percentage of respondents indicating particular occupational groups. While 30% of respondents wanted their daughter to enter medical professions, only 4% wanted their daughter to become a teacher or educator. For their sons, while 17% wanted them to pursue a profession requiring technical university studies or technical education and 11% a medical profession, only 1% of respondents indicated the profession of teacher or educator (CBOS, 2024a, pp. 8–9). The preferred professions for children therefore differ by gender. However, most importantly, they indirectly show the public's attitude towards teachers when it relates to their own families.

Conclusions

What we are seeing is a society that values the teaching profession. However, when we ask members of that society what profession they would like their children to pursue, only a few consider teaching to be a dream job for their children. The biggest influence may be teachers'

salary situation, about which society is well informed. While this article has not addressed the issue of teachers' salaries, such data is quoted in many statistical reports and publications (see, e.g., OECD, 2024b, 2025a; Piwowski, 2024). It is well known that teachers generally earn less than workers in other professions with a similar level of education. Despite this, it is not always possible to explain the discrepancy between teachers' perception of being undervalued and the teaching profession's relatively high status in terms of respect and esteem. Data from OECD programmes – PISA and TALIS – indicate that 'the most effective education systems are found in countries/economies where society values the teaching profession' (Schleicher, 2018, p. 91).

Research conducted under the auspices of teacher trade union activists points to Korea as an example of good practice, where teachers enjoy both competitive salaries and job stability (Arnold & Rahimi, 2024). The report also mentions Finland, where teachers enjoy professional autonomy and high social prestige (as confirmed by the TALIS study cited earlier). It is worth recalling that students from both countries rank high in school achievement rankings (e.g., PISA). However, it should be emphasised that some of the studies analysed in this article were conducted only once (some more than 10 years ago), but they are still relevant and likely up to date (it is not always possible or advisable to rely solely on the results of current studies).

The COVID-19 pandemic has also had an impact on the image of teachers. The enforced, different way of teaching, communicating with students and assessing them has made it necessary for teachers to better master the ICT techniques necessary for online teaching and contact. In Poland, the image of a teacher will certainly have been influenced since 2022 by the growing number of students from Ukraine in Polish educational institutions.

The analyses and conclusions presented certainly do not provide a full understanding of the image of teachers. The data taken into account mainly come from large international studies and smaller, representative studies relating mainly to the situation in Poland. However, even this partial knowledge is necessary in order to be able to propose

changes to the recruitment and professional training of teachers, as well as to their professional status. The issues most frequently raised by teachers are their pay and increasing their ability to influence politicians' decisions on education. An equally important issue, in light of the analyses and proposals presented, is effectively attracting young candidates to the teaching profession.

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Teachers' authority in a decade of social changes, 2011–2022

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Abstract

Research objectives (aims) and problem(s): The study aims to examine how perceptions of teacher authority among 15-year-old students have changed over the last decade (2011/2012–2022). The research also seeks to identify the authority figures indicated by students and to capture changes in their understanding of authority in the context of socio-cultural transformations.

Research methods: A quantitative-qualitative approach was used, combining statistical analysis with a qualitative interpretation of students' responses. Data were collected through an electronic questionnaire administered on an e-learning platform. The key open-ended question – “Who is the greatest authority figure for you?” – allowed students to provide unrestricted answers without predefined categories.

Process of argumentation: The article presents selected theoretical perspectives on authority, emphasizing its personal and relational dimensions within educational contexts. This theoretical framework is followed by a comparative analysis of empirical data from two nationwide studies conducted in Poland in 2011/2012 and 2022.

Research findings and their impact on the development of educational sciences: The comparative analysis reveals significant changes

Keywords:

authority, teacher,
education,
social changes,
parents, school

in adolescents' perceptions of authority. The proportion of students indicating teachers as authority figures increased markedly, while the number identifying both parents as their main authority decreased substantially.

Conclusions and/or recommendations: The results suggest that teacher authority is undergoing transformation under the influence of social and cultural changes. Contemporary students increasingly value authenticity, empathy, and communication rather than authority based solely on formal position.

Introduction

The modern school is facing dynamic social, cultural, and technological transformations that significantly affect the way it functions. One of the most important areas of these transformations is the position of the teacher, whose previous perception as an unquestionable source of knowledge and a moral role model is gradually losing its relevance. The authority of the teacher, although indispensable for effective education and upbringing, is now increasingly contested both by students and the wider school environment, including parents. This process has serious implications for the atmosphere at school and, consequently, for the quality of didactic work and the effectiveness of educational influences. In the face of these changes, it becomes necessary to reflect on the essence and condition of teacher authority, as well as on the factors that determine its formation.

Reflecting on the authority of the teacher, the following questions arise: What qualities and behaviors are considered today as markers of authority? How has the perception of teacher authority among students changed over the years? Do changing social realities affect the way students define and evaluate authority? Seeking to answer these questions, this article is divided into two main parts: theoretical and empirical. The first part attempts to frame the issue of authority in a pedagogical and social context. It presents definitional approaches to authority and the difficulties associated with defining it unambiguously. The empirical part presents the results of quantitative surveys conducted in 2011/2012 and 2022 among elementary and middle school students from all over

Poland. A comparative analysis of the results allows us to identify changes in schoolchildren's perceptions of teachers' authority over more than a decade.

Characteristics of authority in the literature

The concept of authority is a complex category in both colloquial discourse and scientific approaches. This multidimensionality makes it difficult to define the term unambiguously or to reduce it to a single, universal interpretation. In common parlance, an authority is a person (or institution) who enjoys recognition and trust in some field primarily because of their knowledge, experience, morality, or influence. Stróżewski (1992), on the other hand, draws attention to another feature, namely, excellence in a particular field of knowledge or activity.

According to Bocheński (1993), the concept of authority functions in various cultural contexts and is described by various fields of science. For this reason, it is difficult to provide a clear, comprehensive definition of authority, as well as a precise definition of its generic affiliation. In a similar vein, Witkowski (2011) is of the opinion that authority is characterized by 'ontological fragility', and its very definition is becoming less and less clear, which indicates the blurring of this conceptual category.

Arendt (1961), on the other hand, believes that authority is a form of power based on voluntary recognition, requires neither violence nor persuasion, and derives its power from being rooted in traditions, institutions, or higher values that are universally accepted. Authority does not mean perfection. It is a person whose actions are authentic, though not free from mistakes. Moreover, admitting a mistake can paradoxically strengthen their position. Recognizing a mistake indicates deep knowledge and the willingness to acknowledge it, indicating strength of character (Stróżewski, 1997). This seems particularly relevant in the context of the issues raised related to teacher authority.

Authority does not derive from title or function but from the ability to reason logically, engage in dialogue, and justify one's views. This attitude

shapes citizens capable of independent thinking and informed participation in society, where the teacher becomes not a dogmatic source of knowledge but a guide in the search for truth.

The personal dimension of authority

In various debates, there is often talk of a 'crisis of authority'. This term is used simplistically, as if it were some kind of 'power' or 'status' that a person has or loses. Instead, it is worth asking a more fundamental question: can authority exist independently of the person? We suggest that authority is not an abstract or institutionalized phenomenon but a personal entity, rooted in a particular person, his or her values, actions, and relations with others.

According to the philosophy of personalism, represented by Emmanuel Mounier (1936), Karol Wojtyła (1969), and Jacques Maritain (1947), among others, a person is a unique being, capable of reflection, responsibility, and relationships with others. From this perspective, authority is not a function or property of an institution but an emanation of a person: their integrity, moral consistency, trustworthiness, and attitudes toward the other. Authority does not exist as a self-contained, independent phenomenon; it is inseparable from the person who embodies it.

In the philosophy of personalism, authority should not be understood in terms of domination, coercion, or subordination, but rather as a relationship based on the freedom, dignity, and mutual recognition of persons. This concept, while emphasizing the centrality of the human person, treats authority as the result of one person's natural recognition of another's spiritual, moral, or intellectual worth, rather than as an instrument of control or advantage. From this perspective, authority grows out of the authenticity of the life and responsibilities of any individual person, who then becomes a point of reference for others. It does not impose itself from the outside but is voluntarily accepted by the community or individual. It responds to the human need for meaning, guidance, and finding higher values rooted in the personal experience of truth and goodness.

The human person is a communal being who develops through relationships, dialogue, and reciprocity (Łangowski, 2016). True authority does not appropriate the freedom of the other but supports it, enabling development toward the fullness of humanity. It is therefore a servant authority, oriented not to obedience but to the formation of consciences and the building of responsible freedom.

Analyzing the structure of the human person, Wojtyła emphasized its causality, freedom, and responsibility. In the context of authority and its personal dimension, it can be assumed that it does not derive from social position, but from the authenticity of life and action. Authority does not consist in domination but flows from authentic action in accordance with conscience and truth. It attracts not by coercion, but by example. Authority does not exist in isolation, but in relation to the other person. In the 'I-you' encounter, a person recognizes the other as equal in dignity and freedom. Authority is born from this relationship, from recognition and voluntary acceptance (Martínez et al., 2021). It does not require institutional confirmation, since its source is righteous living and moral attitudes. In light of this analysis, authority turns out to be a manifestation of a person's maturity, expressed in freedom, truth, and responsibility (Wojtyła, 1969).

Relationality of authority

Educators are increasingly emphasizing the importance of relationality in the educational process, especially in the context of the formation of teacher authority. The teacher-student relationship is not just an auxiliary means of imparting knowledge; it is an essential part of education. In a world dominated by digital communication and superficial contacts on social media, young people are increasingly experiencing a sense of loneliness, despite being surrounded by hundreds of online 'friends' (Rewera, 2023). The lack of authentic interpersonal contact undermines socialization processes and hinders the formation of lasting values. A teacher who can establish a genuine relationship not only communicates educational content more effectively but also becomes a meaningful person. Only

within the framework of an authentic relationship is it possible to build authority.

Authority does not exist in isolation from the social context; it can be said that it does not 'exist in a vacuum'. Its essence lies in interpersonal relationships, not in formal attribution or external legitimacy, as is the case with job titles or hierarchical positions. This means that authority cannot be 'transferred' from one person to another. It does not operate by administrative succession but must be recognized and accepted within the framework of a specific interpersonal relationship. The fact that authority is a relationship means that it is a relationship between the one who is the source of authority and the one(s) being influenced, i.e., the 'recipient(s)' (Murawski, 1997).

The relationality of authority implies a two-way relationship: a person perceived as an authority interacts with another not through domination or coercion but through trust and credibility (Born & Vasbø, 2025). In this sense, authority is born and functions in a space built on voluntariness and recognition. Thus, it can be said that authority does not 'exist in itself' but is 'bestowed', so to speak, 'activated' in the context of a relationship in which someone perceives in another person a role model worthy of emulation.

Relationality also implies proximity – not necessarily physical, but emotional, axiological, or existential. It is this closeness that makes possible an influence that is effective because it is not based on coercion but on voluntary recognition. Therefore, authority is not based on force but on trust; it does not dominate but inspires. Only in a relationship in which there is mutual understanding is it possible for authority to exist.

Distinctive features of authority

Several studies have been conducted on authority figures in recent years. According to these explorations, it can be concluded that groups of people (family members, teachers, educators) and individuals (primarily John Paul II) are among the most frequently cited authorities. For

example, the Public Opinion Research Center reports that most respondents who admitted that there is a person in their lives whom they consider an authority and role model indicated their parents (52%). In second place was John Paul II, who is an authority for 17% of respondents (Stańdo et al., 2022), followed by grandparents (6%), spouses (6%), and teachers, professors, and educators (5%) (Centrum Badań Opinii Społecznej, 2009). These results are confirmed by our own research, presented in this paper.

Based on the above data, one may be tempted to identify the characteristics of authority. In doing so, one should be aware of certain oversimplifications and generalizations. In the case of an individual, such as John Paul II, identifying the characteristics of authority is relatively easy and precise, since each individual represents a specific, well-documented case. With regard to groups such as parents or teachers, the situation is more complex. These are very diverse categories, which makes it difficult to identify unambiguous, universal characteristics of authority. Even greater difficulties arise in the case of people generally referred to as 'well-known', since their authority status is often based on popularity rather than objective merit or ethics. However, despite these limitations, it is possible to identify some general, often recurring characteristics that are typical of those considered to be authorities. These include authenticity, a consistent and clear value system, knowledge and experience, morality, and influence based on conviction rather than pressure (no coercion). These categories will be used to further analyze the specific characteristics of authority, with particular emphasis on the authority of the teacher.

Authority is based on authenticity, without which it loses credibility and influence. Authenticity, understood as the congruence of words, actions, and values, is the foundation of trust, and thus of real authority. A teacher must be seen as authentic, competent, humane, accessible, empathetic, and fair. Authority is not something a teacher 'has' but something one constantly builds in their relationships with students. Authenticity is a deeply ethical attitude based on honesty, transparency, and the courage to be oneself, and is not merely equivalent to being 'cool' or 'laid back.' According to Rogers (1983), educators should act as personality role models worthy of imitation, embodying the values they convey. Teachers are not

mere transmitters of knowledge or enforcers of rules; students learn primarily through observation and relationships. Without authenticity and credibility, a teacher's influence is limited.

Knowledge and competence remain essential for authority. An authority is recognized for their deep understanding in a field, making their opinions respected and their guidance influential. Experts, professors, and master artisans gain trust through proven skills and experience. However, intellect alone is insufficient; moral integrity is equally important (Jagielska, 2022). A moral authority, guided by ethical principles, inspires responsibility, empathy, and courage. As Wojtyła notes (1957), the moral model is always a person whose moral perfection is visualized in his conduct, highlighting the necessity of aligning values with behavior.

Axiological aspects of authority are particularly complex, as norms, values, and sensitivities evolve over time. Respect and moral perception are culturally conditioned and generationally dynamic. Authority is therefore not a universal value but a socially and culturally constructed phenomenon, shaped by media, communication, and upbringing.

Teacher authority

It seems a truism to say that the authority of the teacher plays a fundamental role in the educational process, positively influencing students' motivation and involvement, as well as the effectiveness of teaching. A teacher who enjoys respect is first and foremost a person with a vocation, a high level of personal culture, extensive knowledge, and a commitment to moral principles. Surveys of students and their parents have shown that qualities such as fairness, a partnership approach to students, and the ability to inspire are the foundation of authority. In turn, a lack of commitment, unfairness, and harshness reduce its value, negatively affecting the teacher-student relationship and the effectiveness of teaching (Korbelak & Burkot, 2016).

In a school environment, it is particularly important to distinguish between two basic forms of authority that play an important role in the

relationship between teachers and students: formal authority and informal authority.

A teacher's formal authority stems directly from his or her professional role and place in the educational institution's structure. Employment as a teacher entails a certain set of duties, competencies, and responsibilities that gives him or her institutional prestige and legitimizes their authority in the school classroom (Zamir, 2021). The very fact that a teacher teaches classes, issues grades, enforces regulations, and shapes the teaching process makes students obliged to respect his or her decisions. Such authority is based on a system of norms and regulations governing the functioning of the school and the relationship between teacher and student.

However, in educational practice, formal authority often proves insufficient if it is not accompanied by informal authority derived from the teacher's personality, competence, work style, and manner. At the same time, it should be added that "[t]he image of authority is built over years, often through smaller or larger gestures or achievements, but it is primarily a long-term process" (Piórkowski, 2016).

According to Rybicki, an educator's authority does not derive only from his or her function or formal status but must also be earned through personal integrity, moral maturity, and a readiness to serve others. Such authority is based on sincerity, truth, consistency, and pedagogical love, and is aimed at forming a responsible, free personality in the student. A teacher with authority does not dominate, but leads by example, respect, and fidelity to the values he or she preaches. Rybicki warns against attitudes that destroy authority, such as favoritism, impulsiveness, a lack of self-control, or the instrumentalization of educational relations. In the spirit of the pedagogy of St. John de La Salle, Rybicki emphasizes the importance of seriousness, gentleness, and harmony in the attitude of the teacher, who then becomes not so much a manager as a spiritual guide (Rybicki, 1999). The importance of the mission of educators and the responsibility for the formation of the younger generation is emphasized by John Paul II:

I also address you, dear teachers and educators. You have undertaken the great task of transmitting knowledge and educating the children and youth entrusted to you. You face a difficult and serious task. The young need you. They expect role models who would be a point of reference for them. They expect answers to the many fundamental questions that trouble their minds and hearts, and above all they demand from you an example of life. It is necessary for you to be their friends, faithful companions and allies in their youthful struggle. Help them build the foundation for their future lives. (Jan Paweł II, 1999)

Research methodology

The purpose of the present study was to identify how 15-year-old students' perceptions of teacher authority have changed over the course of 10 years. The focus was on responses to the open-ended question, "Who is the greatest authority figure for you?" The research was designed not only to identify the people whom adolescents consider to be authorities but also to capture trends and changes in the values students ascribe to those authorities.

The study incorporates two measurements. The first took place in 2011/2012 as part of a nationwide mathematical diagnostics project, in which about 3,000 junior high school students from across Poland participated. The second measurement was carried out in 2022, enabling analysis of changes in schoolchildren's perceptions of authority over a decade. The study's subjects include junior high school students (2011/2012) and primary school students (2022) from all regions of Poland. By comparing the results, it was possible to identify changes in how young people think about authority: who it is, what features are important in this context, and what role the changing social, educational, and cultural realities play in this process.

In the study of students' perception of authority, a quantitative-qualitative approach was used, enabling both statistical analysis and content interpretation of students' responses. The research tool was an electronic

survey, made available to students as part of the e-learning platform. The survey contained several questions, one of which was: “Who is the greatest authority figure for you?” This question was a key element of the study and allowed students to express their opinions freely, without restrictions or predefined answer categories.

Description of research groups

E-diagnosis (online diagnostic assessment): In 2010–2012, the National Mathematical Diagnosis Campaign, *Let's Count It Together*, took place. About 3,000 students from all over Poland took part in the project. Based on the database of schools cooperating with Nowa Era, 62 of 173 junior high schools from all over Poland were selected for the study.

Eighth-grade trial exam: A nationwide study was conducted on May 10–20, 2022, using an eighth-grade mathematics trial exam. In total, 261 primary schools declared their participation, constituting approximately 1.7% of all primary schools in Poland. The study involved 6,827 eighth-grade students, accounting for 1.4% of the total student population at that level in Poland.

Research results

Two independent studies were conducted to compare categorical proportions. The first study, conducted in 2012, involved 1,277 participants, and the second study, conducted in 2022, included 2,310 participants. Only those responses where participants indicated an authority figure were included in the analysis; responses without an indicated authority were excluded.

To analyze the differences in proportions between the two studies, statistical methods from the ‘statsmodels’ library were applied. The difference in proportions ($\Delta = p_2 - p_1$) was calculated, and the ‘proportions_ztest’ function was used to assess statistical significance. Confidence intervals

for the difference were computed using the Wald method, and the effect size was estimated with Cohen's *h*. Table 1 provides a summary.

Table 1. Comparison of proportions by category between 2012 and 2022 studies

Category	Proportion study (p1)	Proportion study (p2)	Delta	p-value	95% CI lower	95% CI upper	Cohen's h
Teacher	0.0368	0.1710	0.1342	0.0000	-0.1527	-0.1157	0.4665
Dad	0.0352	0.0641	0.0288	0.0002	-0.0430	-0.0146	0.1341
Myself	0.0376	0.0511	0.0135	0.0655	-0.0273	0.0003	0.0657
Other	0.2843	0.2771	-0.0072	0.6453	-0.0235	0.0379	0.0160
Family member	0.0713	0.0580	-0.0133	0.1170	-0.0038	0.0303	0.0540
Mom	0.1480	0.1260	-0.0220	0.0635	-0.0017	0.0457	0.0641
Famous person	0.1762	0.1290	-0.0472	0.0001	0.0222	0.0722	0.1316
Parents	0.3148	0.1238	-0.1910	0.0000	0.1622	0.2198	0.4722

The growing trend of students identifying teachers as authority figures, alongside a decline in parental authority, may stem from a lack of quality time spent with children at home. Schools are increasingly taking over caregiving and educational roles traditionally fulfilled by the family.

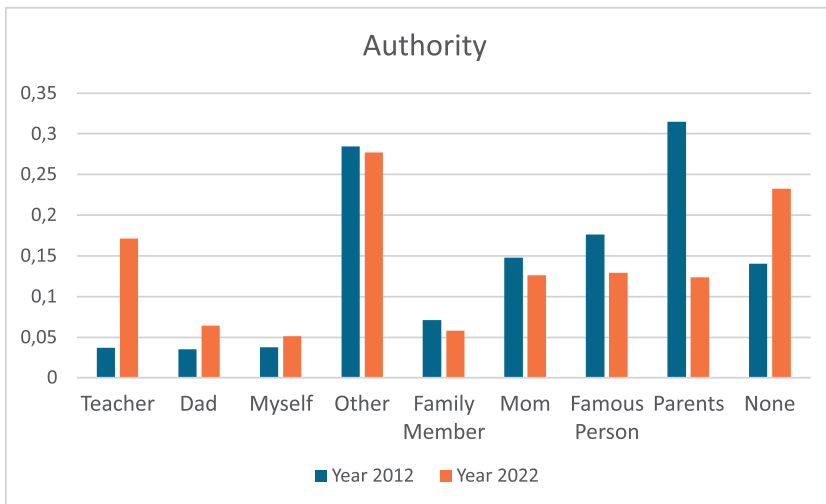
A statistical comparison of the two studies indicates meaningful changes in participants' perceived authority figures:

- Teacher: The proportion increased significantly from 3.68% to 17.10% ($p < .0001$), with a medium effect size (Cohen's $h = 0.4665$). The result is robust after Bonferroni correction, indicating both statistical and practical significance.
- Parents (both): Responses indicating both parents dropped from 31.48% to 12.38% ($p < .0001$), with an even larger Cohen's h (0.4722). This also meets the Bonferroni-adjusted threshold and reflects a substantial and meaningful decline in viewing parents as a unified authority.

- Dad: The proportion increased from 3.52% to 6.41% ($p = 0.0002$). This result remains statistically significant after Bonferroni correction ($\alpha = 0.00625$). However, the effect size is small (Cohen's $h = 0.1341$), suggesting the change, while reliable, is not strong in magnitude.
- Mom: A small decrease from 14.80% to 12.60% was observed ($p = 0.0635$), which is not statistically significant, even without correction. The effect size is minimal (Cohen's $h = 0.0641$).

These results indicate that the most meaningful shifts in perceived authority occurred for teachers (increasing influence) and parents (combined) (decreasing influence), both with large effect sizes. In contrast, individual figures show either no significant change or minor shifts that may reflect social or structural factors but not a deep reevaluation of their authority (see Figure 1).

Figure 1. Frequency of authority figure choices in 2012 and 2022 studies



Discussion

Are we really dealing with a decline of authority? The prevailing social and media perception is that this is the case, suggesting a decline in the need for role models and the collapse of traditional hierarchies. However, the results of the presented research show a more complex picture. First, we are observing significant changes in the way authorities are defined and indicated. In 2012, respondents most often indicated family members as the people with the greatest authority. At that time, parents were the main point of reference for values, norms, and attitudes toward life. However, a noticeable change occurred over the course of a decade. In 2022, the largest number of young respondents had no authority figure at all or considered “other” figures as such. Significantly, the number of references to parents as authorities decreased by more than half over the course of a decade, while references to teachers have increased severalfold. Such a clear flow of authority from the family space to the school is an interesting trend that may indicate profound changes in the model of upbringing and social trust.

It is worth emphasizing two phenomena here: the rapid increase in the number of respondents declaring a lack of any authority figure and the perception of oneself as an authority. In 2022, the percentage of people without an authority figure was almost twice as high as a decade earlier, which may indicate growing individualism, a crisis of trust in social institutions, and an increase in distance from traditional patterns. The scale of this phenomenon raises questions about the quality of interpersonal relationships and the mechanisms that shape the identity and values of the young generation today. What is particularly significant is that many young respondents are beginning to perceive themselves as authorities, which suggests a redefinition of this concept from relational to more egocentric. This phenomenon reflects a weakening need to refer to permanent, external patterns.

Another disturbing phenomenon is the weakening role of the family as the primary source of authority. This may be related to changes taking place in the structure and functioning of modern families. We are

increasingly seeing a loosening of family ties, a reduction in the time spent together, and an increase in the number of single-parent families (Grabowska, 2023). Data from the Central Statistical Office indicate that the number of divorces in Poland is increasing. In 2023, 56,892 divorces were granted, and this trend has been going on for years. As a result, more and more children and young people are growing up in conditions of family instability, which can lead to a weakening of trust in parents as unquestioned authority figures. In such circumstances, young people are more likely to look for role models outside the family home, including among teachers.

The above processes raise important questions about the axiological condition of the younger generation, the role of education, and the media's responsibility in shaping the normative sphere. In the face of these phenomena, educational institutions face a challenge to support young people in critically perceiving contemporary cultural patterns and in promoting authority figures based on knowledge, values, and social responsibility.

Conclusion

Teacher authority is one of the most important issues in educational theory and practice. It can be argued that authority is the foundation of effective teaching, upbringing, and building relationships in the school environment. In an era of dynamic socio-cultural and technological changes, traditional forms of authority are undergoing transformations, and their sources are increasingly being contested by students and reflected on by teachers themselves.

Contemporary cultural and technological changes have significantly influenced the mechanisms of shaping authority in postmodern societies. This is particularly visible among young people, where we can observe the progressive disappearance of traditional authorities, such as family members or representatives of scientific or religious institutions, in favor of others. These are often figures functioning mainly in the media space,

and their influence is based not on substantive competence but on popularity, self-promotion, and media appeal. If we assume that authority has a personal dimension, then its strength does not depend solely on systemic factors, but on whether the teacher is perceived as a person worthy of trust and emulation. The crisis that is so often talked about may therefore be more a crisis of trust in the person than in the professional role.

Brought up in a world of digital media, greater freedom of speech, and individualism, contemporary youth do not accept power resulting solely from a formal position. Therefore, a teacher, to be perceived as an authority, must demonstrate not only high substantive competences, but also communication skills, empathy, and coherence and authenticity in relationships with students. There is much evidence to suggest that difficulties in building authority result from the teacher's limited autonomy (e.g., pressure for results, rigid programs), increasingly rare personal contacts with students, changes in intergenerational relations, where the need for partnership instead of a model dominates, and general moral relativism, which weakens the social foundations of authority. Despite this, research shows that students still seek teachers they can trust and admire. The need for authority has not disappeared; it is just taking new forms. This means that instead of talking about the decline of authority, we should rather be talking about its transformation.

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Miscellaneous Articles



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The Salesians' contribution to the education of underage Ukrainian refugees after the outbreak of the war in 2022

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school education,
Ukrainian minors
in Poland,
refugees,
migration

Abstract

Research objectives and problems: This article addresses the problem of the education of Ukrainian migrant minors in Salesian schools in Poland after the outbreak of the war in 2022. Based on the available literature and the content of Salesian websites, the article aims to show the Polish Salesians' contribution to the education and upbringing of underage Ukrainian students.

Research methods: The theoretical part was developed using an analytical approach to the literature on the subject. The second part of the article presents the author's own qualitative empirical research. The method used in the above-mentioned research is document analysis.

Process of argumentation: The line of reasoning consists of two essential elements. In the first part of the article, the author discusses the legal problems related to the residence of foreign minors in Poland and points to statistical data on the presence of these Ukrainian minors in Polish schools. Further theoretical considerations concern the pupil and the teacher in a multicultural context and address the integration of minors in a pluralistic Polish society.

Research findings: *Educational problems in daily practice:* pupil turnover hinders educational work; the stress and trauma of fleeing the war, and the resulting cultural shock, hinder educational work and teaching; crisis situations become a priority for teachers; and teachers must apparently be sensitive to the needs of foreign pupils. *Organisational, management, legal and didactic problems:* incompatibility in terms of curricula raises organisational and didactic problems; school principals pay great

attention to the creation of preparatory classes; there is a need for teachers specialised in working with migrant children with special needs; school principals and teachers are willing to cooperate with parents and guardians of migrant children; and teachers are aware of the need for further training on the issue of working in a multicultural context. *Integration of pupils at the schools in question*: factors favouring integration include mixed classes and extracurricular activities; and intercultural assistants play a significant role in the integration process of foreign pupils.

Recommendations: New research tools should be used to carry out further research on Ukrainian children in Polish schools. There is a need to carry out further inquiries into the obstacles that may accompany the integration of underage migrants in Polish schools. It would also be important from a cognitive point of view to carry out comparative research: the education of underage refugees in state schools and in schools run by religious congregations.

Introduction

The armed conflict in Ukraine initiated by Russia in 2022 affected not only Ukrainian society but also, above all, mothers and children, who, forced to flee, went to Poland and other European countries in great numbers (European Union Agency for Fundamental Rights, 2024). The voice of the Catholic Church and the Salesians on the presence and acceptance of migrants in European countries is very clear (Salezjanie Don Bosco, n.d.). Helping one's neighbour, especially war refugees, is part of the logic of mercy promoted not only by John Paul II and Benedict XVI but also by Pope Francis in recent years (vatican.va, 2019). This article seeks to penetrate this new reality, aiming to show, on the basis of the available literature and the content of Salesian websites, the Salesians' contribution to the education of Ukrainian minors attending Salesian schools in Poland. The work combines the author's own qualitative empirical research with document analysis.

Ukrainian children in Poland: Legal aspects and statistics

The admission of foreign students to Poland is regulated by law. According to Polish law, compulsory education in Poland covers every child from the age of 7 to 18. Foreigners are required to have a temporary

residence permit or other permits, such as a permanent residence permit, a residence permit for a long-term resident of the European Union, a residence permit for humanitarian reasons, or a residence permit to obtain refugee status or subsidiary protection.

School-age children and young people from Ukraine are admitted to public schools and are subject to compulsory education and schooling under the conditions applicable to Polish citizens. They are entitled to language support, the opportunity to participate in additional remedial classes in various school subjects, and psychological and pedagogical assistance related to their refugee experience. As far as language issues are concerned, foreigners who do not speak Polish to a level that would allow them to benefit from learning at school can participate in additional Polish language classes (2 hours a week). The classes can be conducted individually or in groups.

Children and young people from Ukraine also have the opportunity to participate in preparatory classes in which the teaching process is adapted to students' needs and educational opportunities. Provision is also made for the assistance of a person who does not necessarily have pedagogical qualifications but who speaks the language of the country of origin and who may be employed as a teacher's assistant (intercultural assistants).

According to the Parliamentary Law on Assistance for Ukrainian Citizens, schools may also open a preparatory branch and an inter-school or inter-communal preparatory branch for Ukrainian pupils. These are special classes for foreign pupils, with an emphasis on Polish language learning (at least 6 hours per week) and adaptation, and they may forego the annual and mid-year classification of students. A child is referred to the preparatory unit until the end of the school year, with the possibility of extension for the following year. Ukrainian pupils may also benefit from remedial classes in the subjects of study organised by the school authority, but for no longer than 12 months.

A special form of assistance to Ukrainian refugee minors is psychological and pedagogical assistance consisting in the recognition and satisfaction of individual developmental and educational needs, as well as the recognition of individual psychophysical capabilities and environmental

factors influencing their functioning (Ośrodek Rozwoju Edukacji, 2024). The inclusion of new students also takes their educational and preventive needs into account, as provided for in the Regulation of the Minister of Education and Science of March 21, 2022.

In addition to these organisational and didactic aspects, in the present context, it is also important to trace the quantitative aspect of Ukrainian pupils in Poland (Kowalski, 2023). The statistical data on Ukrainian children and young people in Polish schools show ongoing transformations, including changes in the number of students due to fluctuations in the number of children (arrivals, returns of families and minors to Ukraine, or their onward travel to other European or non-European countries).

Thus, at the beginning of December 2022, according to the Educational Information System (System Informacji Oświatowej, SIO), 191,045 pupils and students who had arrived from Ukraine after the outbreak of the war had enrolled in Polish educational institutions (Rzymkowski, 2024). According to the statistical data cited by Starzyńska-Rosiecka (2024), the number of children and young people in Polish schools and kindergartens decreased slightly over the course of several months (in mid-February 2023, there were 187,900 pupils). Another source from the same period states that around 43,800 Ukrainian children had arrived in kindergartens since the outbreak of the war, around 116,800 in primary schools, and 27,200 in secondary schools (Serwis Samorządowy PAP, 2023). Information obtained from the Ministry of Education and Science (Ministerstwo Edukacji i Nauki, MEiN) in November 2023 by *Rzeczpospolita* shows that 183,461 pupils from Ukraine had arrived in Poland after the Russian invasion and had war refugee status.

Students and teachers in a multicultural context: Cultural pluralism and integration of foreign minors in the Polish school

In the Polish context, the protection of the child's welfare is a cornerstone of family law, the foundations of which are in the Constitution of the Republic of Poland (Article 72). The "welfare of the child" is understood

as a set of tangible and intangible values that are necessary to ensure the proper physical and spiritual development of the child (Łukasiewicz, 2019, pp. 64–68).

In the current Polish legal system, the obligation to guarantee respect for children's rights is carried out either in the family or in an institutional form. As far as the situation of foreign minors residing in Poland is concerned, their status depends on whether the stay of such a minor is considered legal. In the context of juvenile migration, it is important to pay attention to children's cultural, national, and ethnic identities, understood as maintaining traditions, religious customs, and dialects. Research shows that a lack of rootedness in one's own culture fosters barriers and negatively affects the integration process of young people (Grzymała-Moszczyńska, 1998, pp. 155–183).

An analysis of the literature on the subject shows that the acculturation of migrant children in a new socio-cultural environment depends on many factors, including parents' motivation to change their place of residence, cultural and religious similarities, reason for leaving the country, etc. In many cases, migrant children experience a kind of trauma related to the necessity to change their environment, which can take the form of anxiety, anger, sadness, helplessness, apathy, a kind of closure to others, and a lack of activity (Grzymała-Moszczyńska, 1998, pp. 72–73). All this is accompanied by the culture shock of starting school in Poland (Halik et al., 2006, pp. 66–68). Nikitorowicz notes that any disturbance (negative perceptions based on stereotypes and prejudices) can result in the emergence of conflicts and antagonism in the child (2005, p. 105).

Organising the education of children who mostly do not speak Polish has proven to be a great challenge, not only in terms of didactics but also in terms of organisation and finances (Śliwerski, 2022, p. 40). In the Polish context, Młynarczyk-Sokołowska and Szostak-Król emphasise the differentiated course of foreign children's education and integration, which is determined by their parents' motivations for entering Poland (for income purposes, as political refugees, as war refugees, etc.) (2016, p. 152). There are also manifestations of moderate xenophobia and racist behaviour (stereotypes, ethnic prejudice, etc.) towards foreign students

in Polish schools. Often, foreign children's reluctance to integrate stems from the attitudes of Polish pupils. For this reason, their process of integration into the school environment may be slower (Błęszyńska, 2010, pp. 65–66). The Children's Ombudsman Research Report (June 2023) shows that Polish students rarely have the opportunity to interact with Ukrainian students. Overall, however, a positive attitude of Polish students towards children and young people from Ukraine was noted (Pawlak, 2024).

Włodarczyk and Wójcik point out that two solutions are used in Polish schools to address organisational issues: grouping foreign children (all foreign children together) and placing foreign children with Polish children, which may foster better integration. This reflects a kind of balanced compromise between the two aforementioned strategies in the approach to pupils (Włodarczyk & Wójcik, 2014, pp. 184–185). Similar solutions are adopted in European schools (European Education and Culture Executive Agency, 2019). Other researchers in educational issues in the context of school, where an increasing number of foreign students are observed, postulate that the paradigm of value inclusion, the inclusion of the "other", the "alien", should be applied in the sphere of value reference (Stańkowski, 2014, pp. 831–845). Nikitorowicz emphasises that it is the task of the school to appreciate dialogue and cooperation with representatives of other cultures (2002, p. 264). The school environment is the environment *par excellence* for cultural exchange and learning about the world and all that we call humanity (Dobrowolska, 2010, p. 61). In the context of intercultural education, researchers emphasise the importance of encountering the "otherness" and the "other" (Lewowicki et al., 2015). After all, upbringing at school, with a significant presence of foreign children, is not only about imparting knowledge but also (and perhaps above all) about instilling codes of conduct and references to culture, tradition, and values.

After 1989, the end of the period of communism, the Polish school had to face new challenges outlined by intercultural and international pedagogy (Śliwerski, 2022, p. 45). Despite several decades passing since Poland opened up to multiculturalism, in general, in the eyes of researchers, Polish schools appear to be poorly prepared to meet the challenges related

to the presence of foreign students. Teachers often have a sense of helplessness and incompetence regarding multicultural issues. Some researchers argue that teachers' work with foreign students is unsatisfactory due to their insufficient preparation for working in multicultural conditions (poor knowledge of foreign languages, lack of broader orientation in migration issues, poor skills of cooperation with parents) (Butarewicz-Głowacka, 2015, pp. 103–104). Januszewska expresses the opinion that a necessary condition for integrating foreign students into the new school and cultural environment is an appropriate emphasis on the preparation of teachers and teaching staff (2017, pp. 138–139). Nevertheless, despite these many shortcomings, the Polish school appears to be a place of dialogue and meeting of cultures. Some authors have reported the successful acculturation of children and young people from Ukraine into the school environment in Poland (e.g., Kyrz, 2019).

Methodological aspects

The empirical research was conducted in Salesian primary and secondary schools across all four Polish provinces that have been working with Ukrainian migrant minors since the outbreak of the war in 2022. The study employed a document analysis of materials available on the websites of Salesian schools in Poland, covering the period from February 2022 to December 2023. Document analysis was treated as a qualitative, non-reactive research strategy. Following Rubacha, documents are understood as pre-existing sources that require interpretation, taking into account the context of their production and their function in educational practice (2016, pp. 157–164). This approach aligns with Bowen's (2009) view, which treats document analysis as a systematic procedure for analysing qualitative data, comparable in methodological rigour to interviews or observation.

Based on the collected data, this section provides a descriptive account of educational practices, psychological support, and integration activities directed at Ukrainian students. The descriptive and exploratory

approach enabled the identification of both specific solutions implemented in individual schools and general trends observed across the study period. This strategy ensured the full preservation of research findings while avoiding potential methodological criticisms associated with the limitations of content analysis for publicly accessible websites. To collect relevant information, keywords in Polish, English, and Italian were used, such as “Salesian school,” “Salesian oratory,” “Ukrainian children in Poland,” “underage refugees from Ukraine,” and “Salesian aid to children from Ukraine.”

The main objective of the research was to examine how Salesian schools in Poland responded educationally and socially to the arrival of Ukrainian students following the outbreak of the war. Five specific research questions were also posed:

1. How are Ukrainian students integrated into the educational system of Salesian schools, and what adaptive solutions are implemented?
2. What forms of linguistic, psychological, and pedagogical support are provided?
3. How do Salesian schools foster social and cultural integration between Ukrainian and Polish students, including through extracurricular and oratory activities that support adaptation and development?
4. What challenges do Salesian schools encounter in working with Ukrainian students, and how are these addressed?
5. What role do parents, local authorities, and other institutions play in supporting education and integration?

The research analysed the websites of Salesian schools located in the following towns and cities: Zabrze, Świętochłowice, Oświęcim, Polana, Kraków, Wrocław, Toruń, Tarnowskie Góry, Szczecin, Różanystok, Piła, Poznań, Bydgoszcz, Legionowo, Lubin, Leszno, Lutomiernik, Mińsk Mazowiecki, Ostróda, Przemyśl, Rumia, Sokołów Podlaski, and Łódź.

Research findings

The document analysis approach made it possible to obtain a comprehensive overview of Salesian educational activities for Ukrainian students in Poland. The adopted research framework highlights key areas of action, challenges faced by schools, and examples of best practice, providing a valuable reference for further research on migrant education in faith-based institutions. The research results are presented below:

- 1) **Access to education:** Since the beginning of the war, Salesian schools in Poland have welcomed children and adolescents aged 7–18. Most students were incorporated almost automatically into existing classes, following the Polish core curriculum. The number of students admitted to individual schools ranged from a few to several dozen. In some schools, preparatory classes were also established, which facilitated better adaptation to the Polish educational system. During the first months of their stay, teachers acted intuitively, focusing on responding to crisis situations, such as students' emotional and psychological needs.
- 2) **Preparatory and linguistic support:** For students who did not speak Polish, additional language classes and remedial lessons in various subjects were organised. In some schools, teachers applied individualisation in the teaching process, adjusting materials to the abilities and needs of Ukrainian students. Teachers gradually learned about students' needs and intellectual and educational capacities, but their limited knowledge of the Ukrainian education system was a significant obstacle. In many schools, preparatory classes for non-Polish students were established to eliminate communication problems, support adaptation, and foster empathy and tolerance among young people. Many schools also employed additional specialists, preferably fluent in Ukrainian, to enable a more individualised teaching and educational support process.
- 3) **Psychological and pedagogical support:** Salesian schools provided psychological and pedagogical support, taking into account the

traumatic experiences related to the war. Teachers and educators aimed to address students' emotional needs and ensure their sense of security and support during their first months in Poland. Students, suddenly uprooted from their natural educational and cultural environment, experienced cultural shock, often leading to loneliness, stress, alienation, apathy, and learning difficulties. Initially, achieving educational and pedagogical goals was hampered by language barriers, a lack of appropriate teaching materials, and insufficient psychological and pedagogical support. Teachers were aware of the need to quickly enhance their competencies in working with foreign children, including conducting lessons for students who had difficulties using the Polish language.

- 4) **Staff competencies:** Some schools employed teachers and cultural assistants who spoke Ukrainian or Russian, facilitating communication and the adaptation process. School staff had to reflect on the need to apply inclusive methods to ensure all students had access to education. Teachers often applied individualised approaches, adjusting educational materials to the needs of individual students or small groups of Ukrainian students.
- 5) **Oratory and extracurricular activities:** Materials analysis showed that activities organised in oratories and through sports, artistic, and recreational programmes played a key role in student integration. They enabled students to connect with peers, develop interests, and achieve success outside formal education. Artistic, musical, and sports activities offered by oratories and the SALOS Sports Association promoted relationship building, cooperation, and shared successes among students.
- 6) **Social integration:** Salesian schools implemented activities to support the integration of Polish and Ukrainian students, including joint outings, school events, group activities, and volunteer initiatives. Factors facilitating integration included mixed classroom groups, extracurricular activities, and the presence of Polish peers, which eased the acculturation process (Crolla, 2003, pp. 49–50). Polish students attempted to establish peer relationships with new Ukrainian stu-

dents in their first months in the country, forming the basis for so-called peer education that strengthened trust and group identification among young people.

- 7) **Institutional cooperation:** School activities were carried out in collaboration with local authorities, NGOs, and other institutions supporting the education and care of Ukrainian students. Cooperation included both organisational aspects and substantive student support. Schools and teachers also collaborated with Ukrainian parents, creating interaction spaces through class meetings, communication apps, and electronic registers, which allowed a better understanding of students' needs and their cultural and religious contexts. In practice, many Salesian schools employed coordinators for foreign students fluent in both Ukrainian and Polish to support their adaptation process.
- 8) **Limitations and challenges:** The analysis also identified several challenges:
 - a) high mobility of students and their families, which complicated the continuity of learning,
 - b) differences in the Polish and Ukrainian education systems, e.g., regarding curriculum and assessment,
 - c) initial language difficulties and a lack of suitable teaching materials,
 - d) the need to quickly adapt teaching methods and school organisation to new needs,
 - e) organisational challenges related to the creation of preparatory classes, requiring additional planning of student numbers, lesson hours, and teaching staff, and
 - f) the need to respond quickly to students' diverse educational needs and implement individualised teaching approaches.

Recommendations

Further research on the education of Ukrainian students in Polish schools should include additional research tools, such as interviews with students. Furthermore, it is suggested that the problem of obstacles to the integration of migrant minors be explored in future research. It would also be important from a cognitive point of view to conduct comparative research: the education of underage refugees in state schools and in schools run by religious congregations.

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Parents' perspectives on bilingual childrearing: Challenges and strategies in bilingual families

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Abstract

Research objectives and problems: The aim of this article is to present the parental perspective on raising bilingual children in Polish-European families. It focuses on problems of parents' experiences of the bilingual development process and identifies two new contributions: the bilingualism management circle and parental isolation in the Polish context.

Research methods: A qualitative, interpretative paradigm was applied. Narrative interviews with parents of bilingual families (10 families: Polish mothers and European fathers living in Poland) were analyzed using Schütze's methodology to capture their unique perspectives on the challenges they face.

Process of argumentation: The analysis reveals how parents navigate raising bilingual children, including their emotions, attitudes, and strategies. New categories emerged, such as children's fatigue from language switching, persistent parental anxieties despite using the "one parent, one language" (OPOL) model, and fathers' difficulties in providing school support.

Research findings and impact on educational sciences: Parents perceive bilingualism as a family value and a form of socio-cultural capital. However, a gap exists between this ideal and reality, causing concerns about child development. As for the impact on educational science, parents apply a cyclical management process: setting priorities, implementing strategies, engaging in reactive problem-solving, and evaluating outcomes. There is thus a clear need for institutionalized support for the development of advanced skills and professional training.

Conclusions and recommendations: Systematic support for parents should be organized, including peer support groups and teacher training to recognize typical phenomena in bilingual development. Raising bilingual children should become a priority in Poland. The findings also show that even consistent OPOL application does not eliminate parental anxieties – a novel contribution to Polish literature.

Introduction

Bilingualism is an increasingly common phenomenon, intensifying due to numerous human migrations and intermarriage. Many specialists are interested in it, which makes it interdisciplinary. The framework of this article can be classified as social and pedagogical. It shows the parental perspective. There have been studies on this phenomenon across various fields, such as pedagogy, neurology, cognitive psychology, and sociolinguistics. Raising a child to be bilingual is often presented in public discourse and literature as an unquestionable asset. For most researchers, it is an investment in cognitive development (Bialystok, 2011). However, beneath this optimistic paradigm lies the daily, complex reality of parents who directly experience the consequences of their children's bilingualism (De Houwer, 2015). Currently, there is a discussion surrounding family language policy (FLP). For instance, Curd-Christiansen (2013) analyzes the family's conscious and unconscious language policy, including its ideology, practices, and management. Studies have also shown the enormous effort mothers of bilingual families make to develop their children's languages (Melo-Pfeifer, 2015). Another line of research identifies gaps in parents' knowledge of bilingual development (Little, 2020). This article focuses on multidimensional challenges and identifies several innovative or particular in-depth aspects. It depicts specific categories and subcategories, such as bilingualism as a value, wealth in the emotional experience, and the in-depth analysis of responsibilities and actions for the development of bilingualism. Bilingualism is a lifelong project for the family, not merely a feature or disposition of the children.

The definitional placement related to the topic of bilingualism

The basic definition of bilingualism assumes the presence of two separate languages in one person, with a distinction between the national language, the dominant language, called the first language, and the second language (Schelletter, 2019). The second language is not classified as a foreign language (Baker, 2011). It is acquired spontaneously, subconsciously, and naturally, usually early in life and within the family (Mahootian, 2019). Consistency in parental language input reduces the risk of speech delays in bilingual children (De Houwer, 2007). Bilingualism is determined by attitude, origin, and competence related to its use. In the case of bilingualism, we speak of a relatively equal use of two languages in both speech and most language abilities (e.g., speaking and reading). A person alternates between two languages (Gafaranga, 2016). For some researchers, the level of language use need not be the same, but it is important to ensure a smooth transition between them (Field, 2011). It is possible to call younger schoolchildren bilingual, even though they have not mastered all language skills.

As for the criteria, there are, for example, balanced bilingualism, unbalanced bilingualism (with the dominance of one language), and passive bilingualism (Wilson, 2016). Sustainable bilingualism is when the level of competence in both languages is the same, and full bilingualism is when linguistic and communicative competence are developed in both languages, both orally and in writing. Moreover, an innovative approach posits that bilingual children have a single, consolidated language system rather than two separate languages (Garcia, 2009). The literature on the subject also divides language acquisition and language learning. Language acquisition takes place without formal instruction; it is not a process that occurs automatically and spontaneously, based on natural needs and the human ability to use the symbolic system, through free access to language expression in the child's natural environment (Rocławska-Daniluk, 2020).

Other terms associated with children's bilingualism include submersion and immersion. The former refers to the absorption of the mother

tongue into the second language, also known as impoverishing or subtractive bilingualism. Immersion occurs when language competencies in the first and second languages are fully developed and appropriately applied (Kurcz, 2005). Another important term is bilingual education and upbringing, which encompasses institutionalized and non-institutionalized activities aimed at achieving bilingualism in a child. The acquisition of a second language occurs naturally when the mother's and father's mother tongues differ, exposing a child to both languages from birth (Wilson, 2016).

To summarize the relevant definitional considerations, children from the surveyed families can be approximately classified as bilingual. They speak two languages in a relatively balanced way. Their bilingualism cannot be described as complete, as they are not yet able to write at this stage of development. According to the definition, children have acquired a second language. This was done mainly spontaneously through immersion in the language rather than through instruction or formal learning. In this case, we are dealing with immersion. The surveyed parents come from different countries and speak different languages.

The challenges of raising bilingual children

Bilingual parents create a bilingual learning environment for their children long before they enter kindergarten and school. This affects his/her cognitive, emotional, and social development, creating both great opportunities and some challenges. Children learn by imitation, thanks to mirror neurons. The proper acquisition and use of speech in various situations and social interactions depends on the efficiency of this process (Bialystok, 2001).

Parents should be aware of certain phenomena that occur when their children acquire two languages simultaneously, as this awareness will help them better understand the process. In bilingual children, code-switching occurs, involving the use of elements from both languages during conversation (Kecskes, 2007). Parents should not hastily abandon using a second

language at home, even if children mix languages, especially if the second language has already been established in the household. Failure to use the second language can lead to confusion in children (Winsler, 2009). Regarding the social and emotional aspects of learning two languages, parents should support their children's language development and foster a supportive environment. It is important to show respect to all family members and to appreciate their national language. There should be no situation in which one language is more glorified or admired (Kinginger, 2013).

In addition, language proficiency and perfect mastery of a language do not always correlate with achieving appropriate communicative efficiency and appropriate language use in a given social context (Pavlenko, 2006). As a result, the communication process is not always successful. The role of parents of bilingual children is to explain cultural contexts, model appropriate communication rules, and create social situations where children can successfully learn and apply these rules (Wilson, 2016). To conclude, parents are role models in speaking first and second languages. They should be aware of their role and organize a learning environment that is friendly and supportive (Cummins, 2000). The more aware they are of the principles of second-language learning, the better they will support their children's learning.

Research method

The research was conducted within the interpretative paradigm and employed qualitative methods. Non-standardized interviews were conducted, then transcribed and analyzed by the author. The analysis was based on Schütze's (1977) methodological framework to develop research categories. This procedure consisted of six steps: (1) audio recording and verbatim transcription, (2) extraction of narrative sequences, (3) structural analysis, (4) processual analysis, (5) condensation of categories, and (6) verification by the researcher two weeks later.

The approach focuses on the inherent processual structures of narrated life experiences and involves a sequential reconstruction of the

interviews, allowing in-depth conclusions. The research focuses on parental perspectives on the challenges of raising bilingual children. The main research question is: How do parents experience and see the challenges of rearing bilingual children? Interviews were conducted with 10 bilingual families. A purposive sampling method was applied based on the following inclusion criteria: the mother is of Polish nationality; the father is a foreigner (from Europe); the family has been living in Poland for at least two years; and at least one parent declares conscious bilingual upbringing. Both parents were also required to consent to the interview being recorded and transcribed. The sample size was considered sufficient due to theoretical saturation – after the eighth interview, the categories began to repeat. The interviewer was a Polish-speaking researcher with no personal experience of raising bilingual children. This outsider perspective may have limited the depth of empathy during interviews, but it also reduced the risk of over-identification with the mothers' narratives. All interview questions were formulated neutrally.

Results of the research

Categories could be developed based on the research results. The first, which is very common among parents, can be described as a view of bilingualism as a valuable phenomenon. This is connected to the knowledge they derive from their observations. Two further aspects can be distinguished in this category, somewhat like subcategories: intrinsic value and family. All parents recognized their children as bilingual, appreciated their children's bilingualism, and were proud that they spoke two languages.

I am happy that our family functions like that. Children can communicate with our multilingual family. (Mother, family 1)

Speaking two or more languages gives more possibilities. (Mother, family 2)

I appreciate bilingualism. (Mother, family 3)

I like the fact that my son speaks two languages. (Father, family 4)

My children speak both Spanish and Polish, and they will get better job opportunities. (Father, family 5)

Bilingualism in our family is a wonderful tradition. (Mother, family 6)

Bilingualism is a great thing. (Mother, family 7)

Bilingual children have greater access to cultural richness. (Mother, family 8)

The ability to speak two languages is very valuable. (Mother, family 9)

Thanks to foreign languages, children learn about traditions and customs. (Mother, family 10)

In the first category, bilingualism is recognized as a resource for effective communication. This can be observed as a second subcategory. Indeed, some parents have noticed that learning a foreign language makes children more open to social interactions.

I believe that my daughters, thanks to their skills in a second language, have become more tolerant. They are accustomed to interacting with children of different nationalities and even skin colors. When we travel, they communicate easily. (Mother, family 3)

It's amazing how [well] my girls interact with children of other nationalities. Their ability to communicate in multiple languages helps them make friends. (Mother, family 8)

The second category is connected to the emotional aspects of parents' perceptions of bilingualism. At the emotional level, they face some challenges. One of the most important is the fear and anxiety connected to bilingualism that occurs in some families. Parents are afraid that their children will not be understood by their peers and teachers. Some children also mix up words, accents, and conjugation rules.

We speak to our children in our national languages. I've noticed that our children use words freely while they are playing. They use words that they remember better. They inflect them according to the rules of

another language. I'm worried that they will do this in the older grades and have problems at school as a result. (Mother, family 3)

My daughters use the words they know better, no matter if they're from another language. (Mother, family 2)

Sometimes, I don't know whether they don't remember Polish words or if they prefer English words. (Mother, family 8)

Both sons mix languages; they do it very often. Will they ever use one language at once, and then another and another in a different context? (Mother, family 6)

I don't know whether this ease of switching between languages is appropriate. What consequences does it have at school? (Mother, family 10)

Some parents are also concerned about their children's ability to write correctly in both their first and second languages.

Now, my daughters haven't got any problems, but in the future, they will have to write a lot. Sometimes, even in the evening, I wonder if they can cope with spelling. (Mother, family 2).

I hope that their writing skills will develop as well as their speaking abilities. Writing is, after all, more challenging. (Mother, family 9)

Unfortunately, my children are reluctant to write. I encourage them, but it is challenging. (Mother, family 10)

Parents also noted that children can feel emotionally and mentally drained from constantly switching between languages.

I notice that he sometimes gets tired from switching between languages. It requires a lot of concentration, and he becomes irritable. (Mother, family 7)

The girls fall asleep quickly, sometimes on the couch or a mattress. They are very active, always jumping and dancing, I but believe that constantly deciding which language to use is exhausting for them. (Mother, family 1)

The third category, which is the most extensive, is connected to perceiving their responsibilities for developing their children's bilingualism and taking actions toward achieving certain goals.

This category has also been divided into some subcategories, the first of which is parental goals and priorities, which shows that balancing the use of two languages can also be challenging. Some parents choose to maintain a balance between using Polish as their first language and introducing other languages.

My husband and I aim to maintain a balance between the three languages to ensure his native language is not neglected. While we live in Poland and primarily speak Polish, we make an effort to include his language as well. (Mother, family 3)

It is important to nurture the language that is used less frequently. (Mother, family 10)

If we use the second language less frequently, it will not remain as active as the first. (Mother, family 7)

Now that we are in Poland, I notice that Polish has become the dominant language. (Mother, family 6)

The second subcategory connects proactive strategies and methods. These show that the families represent different approaches to bilingualism. Some of them have chosen a specific system of action, often supported by knowledge obtained from specialists and the relevant literature. Others pursue the goal of educating about bilingualism spontaneously (Mother, family 2), intuitively, and without preparation. Some parents do not agree on what this upbringing should look like.

In our family, we follow one rule, and it works. I speak to the children only in Polish, and my husband only in Spanish. When we talk as a group, my husband, two children, and I speak Spanish, and everybody understands. The children communicate with each other in Polish. Polish is their first language. (Mother, family 1)

In the above quote, the mother presents the “one parent, one language” (OPOL) model. They do it scrupulously and observe that it benefits their children. There is a kind of order. Parents speak to their children in their native languages, which they speak very well and without significant mistakes.

Parents also underlined the importance of using only correct language patterns in a given language, preferably in their native language or a foreign language in which they are fluent. Most often, this was English. They highlighted how they did not want to pass on bad habits to their children.

I find the Hungarian language very challenging, even though we have lived in Budapest for many years. I avoid speaking to my sons in Hungarian to prevent them from learning incorrect language. (Mother, family 6)

The third subcategory relates to reactive challenges and problem-solving. There are some differences in their approaches to their responsibilities and actions in this respect. Some parents were not initially aware of the importance of applying effective rules to organize communication. In addition, the circumstances of life were not conducive to such activities.

Our son started speaking very late. We were worried about this fact. Of course, we went to the speech therapist many times, and we followed the recommendations. We did a lot of exercises with him at home. (Mother, family 7)

Another challenge of raising bilingual children is the difficulty of helping the child at school due to insufficient proficiency in Polish.

At work, I mainly speak English and occasionally German, though not as often. My native language is Czech. Since my wife is fluent in English, I don't have to speak Polish. I understand it, but I lack the grammatical knowledge to help my son with his homework. (Father, family 4)

My husband is Italian, we live in Poland, and he runs his own business. He works long hours and hasn't had time to learn Polish. I support our children at school, while he teaches them Italian. (Mother, family 9)

Mothers often feel responsible for providing overall educational assistance and support to their children.

Recently, I had to leave my family for a few days due to a business trip. My daughter needed help with her homework, and my husband assisted her. However, they used words with incorrect inflections, which have since become a humorous part of our family vocabulary. (Mother, family 5)

The fourth subcategory relates to evaluation and future directions. Some parents noted that a superficial knowledge of two languages, rather than a deeper mastery of one, can be a disadvantage of bilingualism.

I've noticed that my sons, especially the younger ones, have a limited vocabulary. They struggle to discuss certain topics freely. (Mother, family 6)
It seems my older daughter has a superficial grasp of both languages. She also associates each language with specific family members and topics. For example, she only speaks English with my brother. (Father, family 3)

Some parents wish to improve their children's language skills more consciously and systematically.

I realize that we don't spend enough time formally teaching our children a second language, or even Polish. They pick up language from daily interactions. (Mother, family 6)

I've been considering teaching my son spelling for a while, but I haven't started yet. (Father, family 4)

I wonder how much of what we say sticks in their memory. They speak fluently and are communicative. We discuss many topics, and I know

a lot about children in the second and third grades. (Mother, family 10)
I don't teach my children myself, but they attend additional Polish lessons with a teacher. They enjoy those lessons very much. (Mother, family 8)

The final category concerns how parents perceive themselves and their bilingual children in the community. According to parents, their bilingual children's environments are generally favorable.

During the four years of our son's life, we changed our place of residence four times, but we haven't had any social problems. (Mother, family 7)

My children have been in many different environments, with international company, and they liked it. (Mother, family 3)

Our family is truly multinational. Our girls have had the opportunity to speak at least three languages and hear five languages. (Mother, family 9)

Their grandparents – I mean my husband's parents – are very understanding of children; they listen to them patiently, even when they talk too much. (Mother, family 6)

Only two girls from the same family experienced some unpleasantness because of the use of their national language in kindergarten.

The kindergarten teacher didn't like my daughters communicating in Polish and often reprimanded them. I think she was angry with their behavior. She couldn't understand what they were saying to each other. (Mother, family 8)

Despite the generally favorable environments, some parents want support from others with similar problems.

I initially struggled to find other mothers facing similar challenges in raising bilingual children. Eventually, I connected with an online group,

and now we meet once or twice a month to share observations about our children's progress and ongoing challenges. (Mother, family 1)

Conclusions

The analysis of parental perspectives reveals that raising bilingual children is a complex, multidimensional process characterized by a dynamic interplay of pride, strategic planning, emotional challenges, and continuous adaptation. Firstly, parents unanimously regard bilingualism as a significant value. This perception operates on two levels as an intrinsic family value fostering identity, pride, and cohesion, and as instrumental socio-cultural capital promising future educational, professional, and social advantages. This positive framing is the foundational motivation for their efforts.

However, this valued goal is pursued amidst considerable emotional and practical complexities. Parents navigate a landscape of anxiety, fearing linguistic confusion, academic deficits, and the cognitive-emotional burden on their children. These fears highlight a gap between the ideal of balanced bilingualism and the messy reality of its development. To bridge this gap, parents employ a spectrum of parental management strategies that form the core of their daily practice. This process is cyclical. It begins with establishing goals and priorities, which inform the adoption of proactive strategies. The implementation of these strategies inevitably encounters reactive challenges, such as difficulties providing academic support or adapting to life circumstances. This cycle culminates in ongoing evaluation and reflection, in which parents assess outcomes and express a desire for more systematic, formalized instructional support.

Finally, the communal context emerges as a crucial moderating factor. While the broader social and extended family environment is generally perceived as supportive, negative institutional experiences underscore the need for wider societal awareness. Furthermore, parents' expressed need for peer support groups indicates that the journey, though rewarding, is often experienced as isolating, pointing to the importance of

community-building among families on similar paths. In summary, parental experience is not linear but iterative, moving between valuing bilingualism, managing the emotional and practical challenges it entails, strategizing and adapting actions, and constantly evaluating results within a specific social context.

Nevertheless, the study has certain limitations, particularly the predominance of mothers' perspectives (8 women, 2 men) and the lack of older children (aged 12 or above). The research is based solely on parental declarations, with no further verification. There is also cultural homogeneity among the fathers, who were all from Europe. In terms of directions for future research, longitudinal studies spanning at least five years or comparative studies involving other parent groups, including monolingual children, could be conducted. Future research could also incorporate fathers' perspectives. It might also be important to consider which method is better: one parent, one language, or a mix. However, this needs broader longitudinal research.

Interpretation and contributions

Parents see bilingualism as both a family value and a form of socio-cultural capital, aligning with Curdt-Christiansen's (2013) FLP framework. However, this study extends her model by revealing a cyclical management process (value–goals–strategies–reactive–challenges–evaluation) that has not been documented in research on Polish bilingual families.

Emotional challenges, especially anxiety about language mixing, reflect De Houwer's (2015) concept of "harmonious bilingual development." However, even OPOL families report significant worries, contradicting earlier claims that OPOL reduces anxiety (De Houwer, 2007). Anxiety appears driven not only by input inconsistency but also by external pressures (school expectations, peer understanding). Parental loneliness and the demand for institutional support echo Little's (2020) findings, but, unlike her focus on immigrant heritage maintenance, this isolation occurs among European families living in one parent's country of origin.

Proactive strategies (OPOL, avoiding second-language use due to fear of errors) align with Kurcz's (2005) immersion/submersion distinction. Parents intuitively avoided submersion, supporting Cummins' (2000) claim that L1 proficiency underpins L2 development. Mothers remain primarily responsible for academic support when fathers lack Polish proficiency, confirming Melo-Pfeifer's (2015) findings on gendered burdens, now documented in Poland for the first time.

To sum up, this study makes four kinds of contributions. Empirically, it is the first systematic qualitative study of parental perspectives in Poland. Theoretically, the bilingual management cycle extends FLP theory beyond ideological continuity. Methodologically, Schütze's narrative analysis reconstructs processual structures. Practically, identifying parental loneliness as a distinct category leads to recommending peer-support networks – a novel priority for Polish policy.

Recommendations for future practice

For educators, we should implement training programs on typical bilingual developmental paths to reduce misinterpretations of learners' behavior. For schools, we should establish clear communication protocols with parents and facilitate access to supplemental literacy classes in the heritage or second language. For healthcare professionals, we should provide evidence-based guidance to expecting and new parents on bilingual acquisition strategies and normalize code-mixing and variations in speech pace. Regarding community and policy initiatives, we should actively help create peer support groups for parents through local centers, libraries, or online platforms. We should also develop practical resources, including workshop templates for teachers, observation forms for monitoring fluency and mixing, monthly language-activity plans, and family language agreements for parents (especially fathers), as well as checklists for educators to differentiate typical language mixing from pathological patterns.

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The impact of chronotype on second language vocabulary acquisition: Insights into timing and learning efficiency

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Abstract

Research objectives (aims) and problem(s): This study examines the connection between second language vocabulary learning and chronotype (morningness–eveningness preference). Academia has paid little attention to how biological rhythms affect vocabulary learning effectiveness, despite the fact that individual variances are widely acknowledged as having an impact on language acquisition. As a result, this study seeks to examine whether learners’ chronotype influences vocabulary acquisition outcomes and whether performance varied depending on the time of day.

Research methods: The study employed a sample of 102 people with a quantitative research approach. The Morningness-Eveningness Questionnaire was adopted to determine the learners’ chronotypes, classifying them as either morning types (“larks”) or evening types (“owls”). Both morning and afternoon sessions were used to gauge vocabulary acquisition performance. Data were analyzed using inferential statistics, including independent samples t-tests to compare vocabulary learning abilities between individuals with different chronotypes and the paired samples t-test to compare the means of each group in the morning and afternoon.

Process of argumentation: The study is based on the premise that people’s circadian preferences can affect their cognitive function. The investigation evaluates whether alignment between learners’ biological rhythms and instructional schedules improves vocabulary acquisition by comparing vocabulary learning results across chronotype groups and various times of day.

Research findings and their impact on the development of educational sciences: Based on chronotype, the results show statistically significant differences in vocabulary learning outcomes, with larks generally outperforming owls. While evening-type learners scored higher later in the day, morning-type learners performed noticeably better during morning sessions. Effect size analyses found medium to large effects, indicating the substantive importance of chronotype in second language vocabulary learning. These results contribute to educational sciences by emphasizing the role of chronobiological elements in shaping learning efficacy.

Conclusions and/or recommendations: In second language contexts, chronotype has a considerable impact on vocabulary learning performance. Aligning teaching times with students' biological rhythms may improve vocabulary acquisition and overall learning outcomes, so it is advised that language instructors and educational planners take learners' circadian preferences seriously when planning learning schedules and instructional activities. While SLA research emphasizes WHAT and HOW to teach, WHEN to teach is neglected, a matter this research tries to bring forth. The WHEN-TO-TEACH should be learner-centered; therefore, it transforms into WHEN-TO-LEARN. Learning is bound to WHEN it occurs, as each learner is open to learning in a specific biological time.

Introduction

Chronotype is defined as an individual's preferred sleep-wake pattern, influenced by genetic, age-related, and environmental factors. It reflects the time of day when a person feels most alert and productive and when they naturally tend to fall asleep and wake up. Chronotypes are categorized into three main types: morningness, eveningness, and intermediate. Morningness, or "morning larks," describes individuals who thrive in the early morning hours, while eveningness, or "night owls," describes individuals who prefer the evening and night for peak productivity. Intermediate types fall in between these extremes. Identifying one's chronotype can help optimize daily routines by aligning activities with natural body rhythms to improve well-being, sleep quality, and overall performance (Adan & Almirall, 1991; Roenneberg et al., 2007; Sletten et al., 2019). However, only two studies have looked into the relationship between chronotype and second language vocabulary acquisition (De Bot, 2013; Deli,

2020). Notably, the findings of these two studies contradicted each other. Therefore, it remains unknown whether chronotype affects second language vocabulary acquisition.

This study aims to fill the gap in the literature by contributing to the existing body of research. Its main objectives are to categorize learners based on their chronotype, investigate the relationship between chronotype and vocabulary acquisition, examine the performance differences between morning learners (larks) and evening learners (owls), explore the effect of timing on vocabulary instruction, and analyze the statistical relationship between chronotype and second language vocabulary acquisition. We hypothesize that morning learners will exhibit superior vocabulary acquisition outcomes, especially when taught in the morning, while evening learners will excel with evening instruction. Additionally, we expect no significant correlation between chronotype and vocabulary acquisition. By employing various data collection methods and a robust study design, we aim to contribute valuable insights into the role of chronotype in second language vocabulary learning and individual differences in language acquisition.

Research questions and hypotheses

Research questions

This study tried to provide answers to the following questions:

- Q1: When learning new words, are morning learners really more successful in the morning?
- Q2: Do evening learners pick up new words and remember them better during the evening?
- Q3: Are morning learners better at learning and remembering vocabulary than evening learners?

Research hypotheses

The research hypotheses of this study were as follows:

- H₀: No relationship exists between the chronotype of the students and their vocabulary acquisition.
- H₁: Language learners' chronotype positively correlates with their effectiveness in acquiring and retaining vocabulary, where "morning learners" perform better on vocabulary-related tasks during the morning and "evening learners" perform better during the evening.
- H₂: Morning learners learn and retain vocabulary more effectively than evening learners.

Previous studies

This subsection provides a brief overview of two relevant studies that explore the relationship between an individual's chronotype (circadian rhythm) and their language-related abilities. De Bot (2013) examined the impact of chronotype on language aptitude and word learning in university students, while Deli (2020) investigated the potential relationship between circadian rhythm and vocabulary learning. The findings from these studies have implications for language instruction and the development of personalized learning strategies. Further research is needed to deepen our understanding of this relationship and its practical applications.

De Bot (2013) investigated the influence of chronotype on language aptitude and word learning in university students. Using the Munich Chronotype Questionnaire, participants were categorized as "larks" or "owls" based on their preference for morning or evening activity. Language aptitude tests and word learning tasks were administered at both preferred and non-preferred times of day. The findings revealed that chronotype had a significant impact on performance in language aptitude tests, with participants performing better at their preferred time. However, no direct effect of chronotype on word learning ability was observed. Thus, individuals' morning or evening preferences may affect their perform-

ance in language-related tasks without directly influencing word learning abilities.

On the other hand, Deli (2020) suggests a potential connection between an individual's circadian rhythm and their vocabulary learning habits. His findings indicate that larks exhibit better performance in vocabulary learning tasks during the morning, while owls demonstrate improved performance in the evening. These findings are significant for language teaching and learning, as well as the development of individualized learning strategies. However, it is important to acknowledge that this study was conducted on a small scale, highlighting the need for further research to fully comprehend the relationship between circadian rhythm and vocabulary learning.

The studies reviewed in this section shed light on the potential influence of an individual's chronotype on their language-related abilities. De Bot (2013) found that chronotype may impact language aptitude but not direct word learning ability. On the other hand, Deli (2020) suggested a connection between circadian rhythm and vocabulary learning, with morning-type individuals performing better in the morning and evening-type individuals excelling in the evening. These findings have implications for language teaching and learning strategies. However, more research is needed to fully comprehend the relationship between circadian rhythm and language abilities. Future studies should consider larger sample sizes, more advanced statistical analyses, and explore learning and testing at different times of day to delve deeper into this relationship. A better understanding of this relationship could lead to more effective and personalized approaches to language instruction and learning.

Individual learner characteristics

The influence of individual learner characteristics on second language acquisition (SLA) has long been acknowledged (Dörnyei, 2005; Skehan, 1998). Learners' aptitudes, motivations, learning styles, and cognitive processing preferences differ, which may have an effect on the results of their

language acquisition (Dörnyei, 2005; Ehrman & Oxford, 1989; Gardner, 1985). Recognizing these variations has sparked the development of learner-centered methodologies that seek to adapt to learners' particular needs and enhance their capacity for language acquisition (Ellis, 1994; Nunan, 1999).

Chronotype, an individual's preferred sleep-wake rhythm affected by genetic, age-related, and environmental variables (Adan & Almirall, 1991; Roenneberg et al., 2003), is a significant component of individual learner differences. According to Roenneberg et al. (2003) and Swaminathan et al. (2017), chronotype refers to the time of day when people are at their most awake and productive, as well as when they naturally sleep and wake up. According to Adan and Almirall (1991), chronotypes may be divided into three primary categories: morningness, eveningness, and intermediate. These individual variations in chronotype affect a variety of everyday activities, cognitive functioning, and general performance (Adan and Almirall, 1991; Roenneberg et al., 2003; and Swaminathan et al., 2017).

Chronotype and cognitive functioning

Attention, memory, executive functioning, and learning have all been shown to be influenced by chronotype (Codoñer-Franch et al., 2023; Goldstein et al., 2007; Schmidt et al., 2007). Morning people, often known as "morning larks," are more awake and have greater cognitive functioning in the morning, which is when they operate cognitively at their best (Codoñer-Franch et al., 2023; Schmidt et al., 2007). Those who are "night owls," or evening personalities, perform better cognitively at night and throughout the evening hours because they are more aware and capable of higher-level thinking during these times (Codoñer-Franch et al., 2023; Schmidt et al., 2007).

The effects of chronotype on cognitive function may have an influence on vocabulary development and other language learning procedures. Learning new words requires cognitive processing, memory encoding and retrieval, and attention (Nation, 2001). As a result, a person's preferred cognitive functioning times, which are governed by their

chronotype, may affect how well they learn and remember language. While “owls” may perform better in the evening, “larks” may show improved vocabulary learning skills in the morning.

To optimize language training and account for each student’s particular learning variations, knowledge of the link between chronotype and cognitive functioning is crucial. In order to strategically design and arrange language learning activities to coincide with learners’ best cognitive periods, educators must take into account learners’ chronotypes and the cognitive functioning patterns that correspond to them. This information may aid in the development of individualized, effective teaching strategies that optimize vocabulary learning outcomes.

Participants and methods

Study design

This study used a correlational design to examine the relationship between the predictor variable (chronotype) and the outcome variables (second language vocabulary acquisition). The selection of the correlational design was due to the rarity of studies in this aspect, which made it difficult to control all the variables. In fact, studying the relationship between variables through testing hypotheses imposes the analytical nature of this study. In other words, the study used inferential statistics to explain the relationship between variables. What is more, the study is non-interventional, i.e., observational. There was no manipulation of the predictor variable. The study’s observational nature was due to the researcher’s inability to control all the variables. As the data were collected and analyzed at a single point in time, the study is cross-sectional.

Selection of participants

Selection criteria and methods

The study took place in El Jadida Kassita High School in Driouch Province, Morocco, between May 15 and June 20, 2023. The recruitment

process started on May 18, following the Vice-Ministry of Education in Midar's authorization to start the study. The subjects were selected based on various criteria. First, the participants needed to be in the senior year of high school. In the context of second language learning, senior high school students are exposed to a large body of vocabulary input. Another reason for including senior high school students is that their ages are almost the same, with a low standard deviation.

The sampling method used was probabilistic, specifically simple random sampling. First, a list frame of the student population was obtained from the Vice-Ministry of Education in Midar. Then, Microsoft Excel was used to generate random participants from the list frame using the function =RANDBETWEEN([1],[1000]). The sample size was determined before the study began. Using R Studio, the effect size (Cohen's *d*) was 0.5, the significance level (α) was 0.05, and the power was 0.8. The desired sample size for each two groups was 52.

Finally, recruitment was conducted with the help of the school administration, which asked teachers to explain the study to the students beforehand. The participants were officially recruited after informed consent forms were distributed and collected. Surprisingly, all students who were given an informed consent form agreed to participate. The author is grateful to the teachers who advised their students on the importance of this study and on how its findings will help second language learners achieve better learning outcomes.

Ethical considerations

The students were not asked to provide their names for the sake of privacy and anonymity. Instead, each student was assigned a unique identifying number throughout the whole research process. Furthermore, students were given an informed consent form at the recruitment stage to indicate whether they agreed to participate.

Data collection

Variables and instruments

The predictor variable is chronotype, a person's biological inclination to be productive at certain phases of the day and not at others. This variable had two values: larks and owls. Data for this variable were collected through the Morningness-Eveningness Questionnaire (MEQ). The outcome variable is second language vocabulary acquisition (SLVA), measured on a scale from 1 to 6. SLVA data were collected through a vocabulary test.

Data analysis

To determine the participants' chronotypes, the study used the MEQ, a 19-item multiple-choice questionnaire. Participants receive a score between 16 and 86; scores below 41 indicate an inclination toward eveningness, while scores of 59 and above indicate a preference for morningness. Scores between 42 and 58 indicate individuals who fall into the intermediate category.

Descriptive statistics such as median, mean, and standard deviation were obtained. This study also used an independent samples t-test to compare vocabulary acquisition between the two groups (larks and owls). In addition, the paired samples t-test was used to compare each group's language acquisition in the morning and in the evening. Pearson's correlation coefficient was used to examine the relationship between chronotype and other variables, such as age and gender. For inferential statistics, the alpha value was set to 0.05 and the confidence level at 95%. The use of parametric tests is due to the normality of the data. No data were missing.

Results

The results were analyzed to assess the impact of a particular time of day on the effectiveness of vocabulary learning for both morning type (MT) and evening type (ET) learners. An independent samples t-test com-

pared the two groups (MT & ET), while a paired samples t-test compared the outcomes for each group between the morning and evening. Statistical analyses were conducted using SPSS software.

Descriptive statistics

Table 1 provides a comprehensive overview of the statistical results. The table presents the mean, median, and mode for each group at different times of the day. The standard deviation for each group is also included.

Table 1. Overall morning and evening results

	MT: MSLVA	MT: ESLVA	ET: MSLVA	ET: ESLVA
N Valid	52	52	50	50
Missing	0	0	0	0
Mean	5.33	3.96	3.76	5.04
Median	5	4	4	5.5
Mode	6	4	3	6
Std. Deviation	0.76	1.05	0.98	1.21

According to Table 1, MT learners' morning results were higher than those of ET learners: the mean MT morning result was 5.33, while the mean ET morning result was 3.76. On the other hand, the evening results of the ET learners were higher than those of the MT learners: the mean ET evening result was 5.04, while the mean MT evening result was 3.96. Tables 2, 3, 4, and 5 illustrate the vocabulary outcomes of different chronotypes at different times of the day.

Table 2. Results of MT learners in the morning

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	3	1	1.9	1.9	1.9
	4	6	11.5	11.5	13.5
	5	20	38.5	38.5	51.9
	6	25	48.1	48.1	100
Total		52	100	100	

Table 2 shows that 25 MT learners acquired six words in the morning, while 20 acquired five. Only one MT learner acquired three words in the morning.

Table 3. Results of ET learners in the morning

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	2	3	6	6	6
	3	20	40	40	46
	4	15	30	30	76
	5	10	20	20	96
	6	2	4	4	100
Total		50	100	100	

Table 3 shows that 20 ET learners acquired three words in the morning, while 15 acquired four. Only two ET learners acquired six words in the morning.

Table 4. Results of ET learners in the evening

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	2	3	6	6	6
	3	3	6	6	12
	4	8	16	16	28
	5	11	22	22	50
	6	25	50	50	100
Total		50	100	100	

Table 4 shows that 25 ET learners acquired six words in the evening, while 11 acquired four. Only three ET learners acquired two words in the evening.

Table 5. Results of MT learners in the evening

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	2	3	5.8	5.8	5.8
	3	16	30.8	30.8	36.5
	4	17	32.7	32.7	69.2
	5	12	23.1	23.1	92.3
	6	4	7.7	7.7	100
Total		52	100	100	

Table 5 shows that 12 MT learners acquired five words in the evening, while 17 acquired four words. Only four MT learners acquired six words in the evening.

Inferential statistics

A paired samples t-test compared morning and evening types based on the paired differences in MSLVA and ESLVA. MT learners showed a mean difference of 1.365 (SD = 1.138, SE = 0.158), with a 95% confidence interval between 1.049 and 1.682. ET learners had a mean difference of -1.280 (SD = 1.715, SE = 0.243), with a 95% confidence interval between -1.767 and -0.793. Both differences were statistically significant ($p < 0.001$) based on the t-test with degrees of freedom (df) of 51 and 49, respectively.

An independent samples t-test was conducted to compare the means of the two groups. The t-test yielded a significant difference ($p < 0.001$), with a mean difference of 1.567 (SE = 0.173) and a 95% confidence interval ranging from 1.223 to 1.911.

A correlation test was carried out to discover if there was any correlation between the variables. Gender correlates with chronotype, with a correlation coefficient of 0.159. This correlation is positive but relatively weak. Age correlates with chronotype, with a correlation coefficient of 0.038. This correlation is positive but very weak. ESLVA correlates with chronotype, with a correlation coefficient of 0.434. This correlation is positive and moderate in strength. MSLVA correlates with chronotype, with a correlation coefficient of -0.671. This correlation is negative and relatively strong.

Discussion

The results show a link between chronotype and vocabulary learning, with substantial differences in vocabulary acquisition across the two groups at different times of day. This is contrary to earlier research by De Bot (2013) and De Bot and Fang (2017), which did not discover statistically significant differences between the groups. However, the results do agree with Deli (2020), who found a substantial correlation between chronotype and vocabulary acquisition.

The results indicated that ET learners fared better in the evening, whereas MT learners did better on vocabulary-related activities in the morning. This demonstrates a favorable association between learners' chronotype and their success in learning and remembering language, which is consistent with the first study question and hypothesis. When it came to vocabulary acquisition, MT students performed better in the morning than ET students did in the evening. The association between chronotype (an independent variable) and second language vocabulary acquisition (a dependent variable) was further supported by the paired samples t-test and independent samples t-test. The second hypothesis, that MT learners acquire and retain vocabulary more efficiently, is supported by the data, which also showed that MT learners' vocabulary acquisition was superior to that of ET learners.

It is crucial to recognize that there may be a number of explanations for the discrepancies between the results of the present research and those of De Bot (2013) and De Bot and Fang (2017), including variations in sample characteristics, assessment methods, or educational environments. The motivation, aptitude, and learning techniques of each individual learner affect the multidimensional process of language acquisition. These elements may interact with chronotype to influence the results of language learning. The complex interactions between these variables and their overall impact on acquiring vocabulary in a second language call for further investigation.

The results of this study emphasize the practical value of language learning. Educators may maximize the results of vocabulary acquisition

by considering their students' chronotypes and coordinating instruction with their biological cycles. It may be more effective to adapt teaching methods to each learner's preferred alertness and productivity windows. Language instructors may also use these data to customize their lessons and improve the efficacy of their education.

This research adds to our understanding of the relationship between chronotype and the learning of vocabulary in a second language. The findings show that a student's chronotype affects how well they acquire and remember language, with MT students showing greater results in the morning and ET students showing improved performance in the evening. These results show the possibility for customized techniques to maximize vocabulary acquisition and emphasize the need to take individual learner variations, such as chronotype, into account when planning language education. Further study is required to better understand the intricate interactions among the factors affecting language learning outcomes and to develop comprehensive instructional techniques.

Conclusion

The purpose of this research was to look at how chronotype relates to learning vocabulary in a second language. By addressing a gap in the literature about the influence of chronotype on language learning outcomes, the results add to the current body of knowledge. The study investigated timing effects on vocabulary training, performance variations between larks and owls, and the statistical link between chronotype and second language vocabulary learning.

This research has also shown that time is very important in vocabulary learning. When taught in the morning, morning learners performed better, whereas evening learners performed better when taught in the evening. These results highlight the importance of considering individual chronotypes when language instructors create instructional techniques and enhance language learning outcomes.

The findings lend credence to the idea that, in order to adapt to learners' specific needs and maximize their potential, individual variables should be taken into consideration. Teachers may better meet their students' requirements and preferences by adapting their lesson plans to incorporate knowledge of chronotypes, thereby helping students acquire more terminology.

It is important to highlight that earlier research in this area has produced inconsistent results. However, this study adds to the growing body of research that indicates a strong connection between chronotype and the learning of vocabulary in a second language. By using sound research techniques and statistical analysis, this work offers important insights into the role of chronotype in language acquisition.

In summary, the present findings support the hypothesis that second language vocabulary acquisition and chronotype are related. Learning vocabulary is more advantageous for morning learners, especially in the morning, whereas evening learners do best at night. It is advised that further research be conducted in this area to examine other variables and discover how chronotype affects other facets of language acquisition.

Implications and recommendations

The results of this research have a number of significant ramifications for SLA theory and practice. First, the established link between chronotype and second language vocabulary acquisition emphasizes the need to consider individual variations when developing language learning curricula. The effectiveness and personalization of techniques may be improved by considering the learners' chronotypes, eventually improving language acquisition results.

While earlier studies recognized the importance of factors such as ability, motivation, and learning techniques on language learning results, the significance of chronotype has generally been disregarded. This study contributes to the growing body of data demonstrating the significance of individual chronotype as a variable in SLA research and instruction.

These results have practical ramifications for educators and language instructors. Education professionals may tailor their teaching strategies to students' peak hours of attentiveness and productivity by identifying and adapting to their chronotypes. For instance, early morning learners (larks) may benefit from vocabulary education, although late evening learners (owls) may do better. This specialized kind of training has the potential to improve students' motivation, engagement, and overall experience learning a language. Teachers should also strategically organize and schedule language-related activities and evaluations by knowing how chronotype affects vocabulary learning. By leveraging learners' cognitive resources and maximizing their vocabulary learning potential, judgments can be made about the sequencing and distribution of exercises throughout the day.

The results also have significance for the creation and development of tools and programs for technology-assisted language learning (TALL). TALL platforms can accommodate learners' chronotypes, offering vocabulary training materials and activities at the most suitable times depending on personal preferences. TALL systems can also provide customized and adaptive language learning experiences that suit learners' individual traits and enhance their vocabulary acquisition results by using technical developments and incorporating information about chronotypes.

It is important to note that the current research focused specifically on the relationship between chronotype and the acquisition of vocabulary in second languages. The consequences, however, go beyond acquiring vocabulary and may be applied to other facets of language learning, including grammar, phonetics, and pragmatics. Future research should examine how chronotype affects such linguistic elements to obtain a more thorough understanding of its significance in SLA.

Finally, the results have important ramifications for SLA theory and practice. Educators can achieve both the implementation of focused instructional techniques and the optimization of language learning outcomes by identifying the link between chronotype and the acquisition of second language vocabulary. This research adds to the body of knowledge about individual variations in SLA, highlighting the significance

of considering learners' chronotypes in language education and in the creation of individualized learning strategies. This study paves the way for future research on chronotype's impact on numerous facets of language learning, as well as the use of chronotype-aware technology in classroom settings.

Declarations

Ethical Approval

This study was approved by the Vice-Ministry of Education in Dri-ouch Province, Morocco. An official document was provided to allow this study to take place in El Jadida Kassita High School. Students were also provided with informed consent forms, allowing them to choose whether to participate in the study. Students accepted that the results of this study would be published in a scholarly work.

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Conflict of interest: The author declares that there is no conflict of interest.

Availability of data and materials: Data, including raw data, questionnaires, pre-test data, and post-test data, will be available online.

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Paper and digital reading: Differences and equivalences

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Abstract

Research objectives (aims) and problem(s): Reading is a skill that Homo sapiens has acquired over the last 10,000 years. Over the past 30 years, digital tools and media have profoundly transformed this exclusively human activity. This scoping review aims to understand how these new media have affected reading processes and whether they have transformed the cognitive and educational outcomes associated with reading.

Research methods: This article analyzes recent literature on reading, focusing on articles and research from the last 15 years. The methodology is based on a scoping review of peer-reviewed studies, meta-analyses, and empirical research examining paper versus digital reading. The point of view is neuroscientific and, based strictly on the most recent experimental data, attempts to offer new analytical tools for educational interventions.

Process of argumentation: For the sake of brevity, the topics of nighttime rest, implications of using smartphones in the evening, and the relationship with gaming have not been addressed. The article explores measurements of oral reading fluency to monitor learning progress; the effects of reading support on visual patterns, reading performance, and attitudes; self-regulated learning and metacognitive processes; and the relationship between digital/paper reading, memory, and attention.

Research findings and their impact on the development of educational sciences: The findings highlight essential aspects that must be taken into consideration in educational processes, particularly how digital versus paper reading modulates memory, attention, and

Keywords:

neuroscience, emotions,
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metacognitive processes

metacognitive self-regulation. These results offer new analytical tools for designing evidence-based educational interventions that account for the cognitive transformations induced by digital media.

Conclusions and/or recommendations: The review concludes that digital media have significantly transformed reading processes, with measurable effects on cognitive and educational outcomes. It recommends that educational practices integrate awareness of these differences, promoting a balanced use of digital and paper-based reading in line with specific learning goals. Underexplored areas, such as the impact of digital reading on sleep and evening device use, warrant further investigation.

The problems of transferring massive amounts of information between brains with different structures are not insurmountable. However, existing techniques for accomplishing this task may still ultimately prove to be the most effective. One of the most recent and advanced examples of these techniques is in your hands right now.
(Hofstadter & Dennett, 1981)

Introduction

Reading is not only a process of decoding communication expressed in written form; it also presupposes the translation of visual (graphic) symbols into the verbal (articulatory) system. Precisely for this reason, one can justifiably assume that this process also includes in its organization elements of codification of communication. Therefore, basing ourselves on the constant possibility of using an integer information of communication (text), avoiding that the process takes place at the level of traces, which in the patient are particularly compromised (as evidenced by the repetition tests), we have the possibility of highlighting more precisely those phenomena of pathological inertia and inability to inhibit the emergence of secondary connections that we can observe in some experiments only in a limited way (Lurija, 1975).

The primary purpose of this article is to investigate the neurocognitive and educational differences between reading on paper and reading on screen. Specifically, the review addresses the following research questions: How do paper-based and screen-based reading compare in terms of oral reading fluency, visual patterns, and reading performance? What role do self-regulated learning (SRL) and metacognitive processes play in mediating the effects of the reading medium? How do memory and attentional processes differ between paper and digital reading? What are the practical implications of these differences for educational interventions?

Numerous studies have shown how reading on paper and on a screen differ in terms of cognitive and behavioural aspects, such as eye movement (Köpper et al., 2016; Zambarbieri & Carniglia, 2012), reading comprehension (Singer & Alexander, 2017), and attitudes (Eijansantos et al., 2020). However, there are conflicting results on whether it is preferable to read on paper or a screen. Some studies reported increased reading time (Liu 2005) and lower comprehension scores (Mangen et al., 2013; Støle et al., 2020) when reading on a screen compared to reading on paper. Other studies reported that reading comprehension and reading time are similar (Hermena et al., 2017; Sage et al., 2019; Singer & Alexander, 2017). A consensus on these differences has not yet been reached.

One possible reason for this disagreement is that numerous factors influence the reading experience. Reading is a multifaceted process, influenced by word recognition, reading strategies, comprehension, and reader motivation (McLaughlin, 2012); therefore, different reading media have different advantages. Dillon (1992) argued that examining the differences of one or a few factors between reading on screen and reading in print is insufficient. Keller (2012) suggested five aspects of reading that should be taken into consideration when comparing reading in print and on screen. These include physical and attitudinal factors, such as eye fatigue and sensations, and performance factors, such as reading comprehension.

Oral reading fluency

Teachers use oral reading fluency (ORF) measurements to monitor progress in learning to read and adapt instruction to students' individual needs. In ORF measurements, the child reads single syllables, words, or short passages aloud, and the teacher assesses in parallel where the child makes a mistake. Since administering ORF measurements on paper requires more effort on the part of teachers, computer-based administration is available. However, there are still doubts about the comparability of paper-based and computer-based testing methods (Jungjohann et al., 2023).

Few empirical studies have examined the differences in equivalence between computer-based and paper-based CBM for students (curriculum-based measurements are used for the early identification of students at high risk of severe learning difficulties). Predominantly, studies examine test formats in which students complete digital and analogue tasks independently and in groups. Many studies report significantly lower total scores on digital tests, concluding that the test formats are not comparable (Aspiranti et al., 2020; Bennett et al., 2008; Hensley et al., 2016; Seifert & Paleczek, 2022; Støle et al., 2020).

Schaffer Seits (2013) examined mode effects in ORFs based on whether reading texts were shown to students on paper or on the computer screen. Measured by total score, students read significantly more correct words in one minute on paper than on the screen. However, in both test modes, reading errors were documented manually by the administrator. This means that the assessment methods were identical for both computer-based and paper-based testing. Studies on the mode effect of summative reading assessments support Schaffer Seits' hypothesis that students read faster on paper and extend it to the conclusion that reading accuracy is lower on the computer (Lenhard et al., 2017).

Jungjohann and colleagues (2023) found that students showed significantly higher reading speed on the paper test, while no differences in reading accuracy were observed. The results confirm that there are no differences in item performance between the computerized and paper

versions. Both values, the sum of the scores and the percentage of correct reading, can be used and compared in practice. However, before the total scores of the different test modes can be interpreted together, the difference in mean values must be taken into account.

In cross-sectional comparisons, both test modes can be used for research and teaching purposes, as they are reliable and valid. Teachers are already familiar with paper-based methods, and the comparability with other paper-based tests is greater. Computer-based tests offer automatic scoring and allow remote administration, reducing the teacher's workload. For school practice in particular, it is recommended to collect and evaluate data using only a single test form, as differences in the sum of scores of several test forms may vary for each individual child. Comparability in practice could be ensured by a parallel measurement with both test forms at the same time with subsequent compensation of the values. The results support the use of both test modes and, consequently, teachers should be trained in the use of both computer-based and paper-based tests.

The effects of reading support on visual patterns

As readers become increasingly familiar with reading on screen due to the proliferation of digital devices, the understanding of the impact of the medium on reading activity is also increasing. Jeong and Gweon (2021) examined the effects of reading medium (print or digital) on readers' visual patterns, reading performance and reading attitudes. The experimental results revealed that, in terms of visual patterns, readers showed shorter fixation durations and a higher number of fixations when reading in print than when reading on a screen. Reading performance, as measured by reading comprehension and reading time, was equivalent across all three media (paper, tablets, computers). However, in terms of reading attitudes, readers reported higher levels of perceived comprehension, perceived confidence, and perceived immersion and lower levels of perceived fatigue when reading a printed text than when reading from a device.

While the performance gap between reading in print and on screen is narrowing, printed text may still be the preferred reading mode. The authors concluded that readers' performance was not negatively affected by the medium, probably due to their familiarity with digital devices. However, providing readers with a printed text might be the best solution in a learning environment, because readers have a more positive attitude towards print than towards digital devices (Jeong & Gweon, 2021).

The digital devices selected for use in Jeong and Gweon's study are commonly used for reading, and the insights gained explain how they differ from paper. Previous studies have focused on reading electronic resources from a computer and e-book environment. This study, on the other hand, focused on the comparison between printed paper and text on tablets or computers, which are increasingly used for reading, including for educational purposes (Jones & Brown, 2011; Siegenthaler et al., 2011). These data reinforce previous research on readers' visual patterns across different media. The results of the eye movement analysis indicate that screen reading is associated with higher cognitive load and skimming, which may prevent readers from reading in depth (Destefano & Lefevre, 2007; Hillesund, 2010).

Self-regulated learning and metacognitive processes

Self-regulated learning (SRL) and metacognitive processes are important in education because they contribute to effective learning and better school performance. Synthesizing the results of recent meta-analyses, Delgado et al. (2018) compared paper-based and digital reading for children and adults and highlighted the digital inferiority of the computer medium in fostering reading comprehension and learning tasks. Similarly, Clinton (2019) conducted a meta-analysis of 33 studies published between 2008 and 2018 that examined paper-based versus screen-based reading among children and adults. The results suggest that reading on paper is a more efficient way to comprehend material and improve test performance than reading on screen.

Furenes et al. (2021) also conducted a meta-analysis of 39 studies on paper and digital reading in children aged 1–8 years. Their results confirmed previous findings that showed lower comprehension rates in digital reading than in paper-based reading. However, the authors stated that digital reading that contained visual cues and story vocabulary outperformed paper reading. Latini and Bråten (2022) conducted a study with a sample of 116 Norwegian university students on reading informational texts on tablets versus on paper. Taken together, these meta-analyses consistently indicate a disadvantage for digital reading in comprehension outcomes, although specific features (e.g., visual cues) can mitigate this gap.

Sergi et al. (2023) examined the presence and use of metacognitive processes among primary school students while completing computer- and paper-based reading tasks. The study showed that students were more likely to apply metacognitive SRL skills when reading on paper than when reading on the computer. Students showed greater planning in the paper-based condition than in the computer-based condition, but their behaviours and responses differed between school grades. Elementary students applied more types of planning and control processes in the paper-based condition and demonstrated monitoring and evaluation processes in both conditions. These results suggest that the use of prior information, the integration of multimedia and verbal cues, and the level of comfort with the reading medium influence students' SRL decision-making.

The learning process involves reaching conclusions through self-reflection and self-regulation strategies (Groß, 2021); these processes are also essential in reading comprehension (Earle et al., 2020; Qi, 2021). The most appropriate way for students to extract meaning while reading is through the conscious and controlled use of reading strategies, which requires a certain degree of metacognitive skills (Koutsouraki, 2020; Pressley & Afflerbach, 1995). In particular, reading comprehension is associated with increased SRL practices (Chen, 2009; Chen et al., 2019). Supports with 'scaffolding' have been positively associated with SRL processes and metacognitive strategies in computer-based educational environments

(Serrano et al., 2018; Vidal-Abarca et al., 2010). Past research has shown that scaffolding strategies in online environments can enhance metacognitive skills in sixth-grade students, which depend on the use of prior knowledge in ninth-grade students (Bulu & Pedersen, 2012; Roussel, 2011).

Previous research has consistently shown that planning effects are present in older students (middle school, high school, and college students) during both computer-based and paper-based reading tasks (Follmer & Sperling, 2019; Manlove et al., 2007). Elementary students, on the other hand, were not found to use planning processes when using electronic media (Muis et al., 2015, 2016), which may be attributed to differences between task and medium. The results suggest that students apply planning to purposefully set learning goals and use strategies to achieve them. This is more evident in paper-based than computer-based reading tasks, as students may be more accustomed to organizing and completing paper-based tasks (Greene et al., 2010; Kuisma & Nokelainen, 2018).

The combination of current and past results indicates that planning, monitoring, control and evaluation develop during the primary school years, and this is slightly more evident in paper-based reading tasks than in computer-based ones. These findings broaden theoretical perspectives on SRL and metacognition: primary school students exposed to computer-based reading tasks show emerging self-regulatory and metacognitive traits as early as second grade, as well as increased strategy and flexibility in the upper grades. The multidimensional aspect of metacognition includes interconnected thinking processes and regulation skills, such as planning, monitoring and evaluation, which motivate students and improve academic performance (Brown et al., 1981; Flavell, 1979; Pintrich & de Groot, 1990).

Thus, it appears that primary school students have the potential to apply metacognitive regulatory strategies across reading media. Planning, monitoring, control, and evaluation are strategies to address reading deficiencies during computer-based and paper-based reading assignments across all school grades.

Digital/paper reading, memory, and attention

The reading system is always the same, but its interactions with other cognitive functions (e.g., memory and attention) change, which means the result can differ (Dehaene, 2009). When reading on a screen, one is often confronted with a continuous bombardment of unrelated information, such as advertising banners. Whenever a change occurs in the visual scene, our brain has to pay attention to it. The attention system has been shaped by millennia of natural evolution to automatically capture sudden changes in the perceptual scenery: think of how many times our ancestors must have saved themselves from predator attacks thanks to their ability to immediately notice their appearance in the visual field.

Advertising exploits this automatic attention-directing mechanism, and so the banners that constantly appear and disappear on Internet pages are very effective in distracting us from the content we are reading. The human attention system is very powerful and flexible, allowing us to inhibit certain areas of our visual field. Accordingly, we can quickly refocus on our text after being distracted by the advertising message. However, these mechanisms require cognitive and neural effort, which inevitably detracts from in-depth text comprehension and reading speed (Crepaldi, 2020).

Even when the web pages we are reading are not overloaded with advertisements, they almost always contain so-called 'secondary content': a series of texts different from the main content of the page that are typically arranged graphically as a series of peripheral boxes. Think of online newspapers that use these peripheral boxes for news related to the main content. These boxes are typically less dynamic than banner ads, but in any case, they distract our attention from the primary reading content when our eye movements bring them into the visual field.

Any information overload, especially if secondary to the attentional focus at a given moment, results in a distraction of attention, perhaps very rapid and easily reversible, but still requiring cognitive and neural effort to manage. In this respect, reading on screen is certainly less effective than reading on paper (Crepaldi, 2020).

Another advantage of reading on paper comes from ‘spatial framing’. Our memories often rely on the spatio-temporal context in which we acquired them: our memory of a certain content is ‘anchored’, for instance, at the point in the book where we read it, or at the top right-hand corner of the page where it was contained. All these details of spatial context reinforce memory, placing the content in a ‘support network’ that helps us to acquire it, retain it for longer, and then retrieve it when we need it (e.g., when the professor asks a question).

The paper text probably lends itself better to framing effects, mainly because of its stability (electronic content changes) and the simplicity of the frame itself (the defined space of the pages and the book, which contrasts with the avalanche of information we are subjected to on the web).

Finally, there is the experiential and emotional component of reading. Here, multisensoriality, the integration of stimuli from the different senses, plays a fundamental role. One certainly reads with one’s eyes, but not only with them: reading on paper brings with it a much richer experience, where touching the pages and holding a book in one’s hands, or smelling its scent, complements and enriches our understanding of the text. This generates the feeling of having an experience closer to real life in the physical world, where the five senses work together at all times and integrate different information while referring to the same objects, the same sensations (Dehaene, 2009). It is perhaps these elements that generate the greatest sense of concentration when reading on paper.

Conclusions

This scoping review set out to answer four research questions concerning the neurocognitive and educational differences between paper and digital reading. The main findings are as follows. Regarding ORF and visual patterns, paper-based reading is associated with faster reading speed and distinct eye movement patterns (shorter fixations, more fixations), although reading comprehension performance is often equivalent. For SRL and metacognition, paper-based reading appears to facilitate

greater use of planning, monitoring, and evaluation strategies, especially in elementary students. In terms of memory and attention, paper reading benefits from reduced attentional distractions, spatial framing effects, and multisensory integration, which support deeper encoding. The practical implications for education include the need to train teachers in both test modes, to consider paper for complex or lengthy texts requiring deep study, and to design digital reading environments that incorporate scaffolding and reduce extraneous cognitive load.

Electronic devices have led us to read much more often on screens than on sheets of paper. What changes from a cognitive point of view? Has the brain had to readapt and adjust its cognitive architecture? The real distinction is between readers and non-readers, rather than between paper readers and screen readers. In Italy, the ISTAT 2015 report indicates that about 75% of paper readers report having surfed the Internet in the last three months, compared to only half of non-readers (ISTAT, 2016). The proportion of people who have read online or downloaded books and e-books in the last three months increases as the number of paper books in the home increases, peaking among those with a well-stocked home library (> 200 books). This suggests that the most appropriate comparison between reading on paper and on screen is qualitative rather than quantitative: the preference between the two formats depends on what is read and for what purpose.

From the point of view of cognitive architecture, there is no reason to believe that reading changes much, whether on paper or on a screen. All processing stages are post-perceptual: they work on a type of information that abstracts from the particular perceptual event that generated it. For example, the neural activation that specifically determines the visual recognition of a word will be quite similar, whether it is read in capital letters or handwritten in cursive. The sub-lexical reading pathway (the one that serially translates individual graphemes into speech sounds) and the lexical reading pathway (the one that translates the entire word as a larger unit) will both be equally at work, regardless of the format of the reading medium. Visual word recognition systems interact dynamically with the cognitive system, and it is at this level that the

neurocognitive differences between reading on paper and reading on a screen emerge.

However, these considerations should not be understood as a guarantee of better learning on paper: the fact that readers report greater efficiency and concentration when using that format does not necessarily mean they are learning better. Moreover, even cognitive phenomena (such as spatial framing and frequent switching of visual attention) do not necessarily lead to better learning. It is possible that readers – particularly younger readers, whose brains have had earlier exposure to screen reading – have developed a remarkable adaptation to digital reading, such that they are now able to learn information equally effectively on paper and screen, or perhaps even more effectively on screen.

As far as text comprehension in general is concerned, the majority of experiments do not seem to find a particularly pronounced effect of the medium: people learn equally well when reading on paper or on a screen. Neijens and Voorveld (2016) found that those who claim to be digital readers do not actually show any differences in text comprehension across reading media. Conversely, those who report being paper readers show slightly better learning scores in that format. Mangen et al. (2013) found that a group of teenagers seemed to understand written texts on paper better than on screen. Sparrow et al. (2011) showed that if new information read on a screen comes from an online search, the memory for the keywords is typically better than for the content found. In other words, the mechanism we typically use for online reading shifts our memory resources to the ‘wrong place’, helping us to remember the process that led us to obtain the information rather than the information itself. Ackerman and Goldsmith (2011) found that screen readers tend to overestimate their own performance, believing they have better learning than what can be objectively measured. In contrast, paper-based readers do not seem to show this phenomenon and are capable of more accurate self-assessments. The authors interpreted these results as a consequence of the perception of paper-based text as more conducive to in-depth study.

In summary, paper seems to be in a better position when it comes to reading complex, long texts that require close attention and for which

one wants to keep a longer-lasting (or at least explicit) memory. The screen does not seem to perform worse in terms of memory or comprehension, but it is better suited to quick, more superficial reading, where what counts is implicit rather than explicit learning. Certainly, a difference in perceived effectiveness emerges, which does not therefore depend on objective performance but on the subjective experience of reading; in this respect, readers seem to prefer reading on paper for in-depth study. Future research should systematically investigate how digital scaffolding can compensate for the identified disadvantages of screen reading, particularly in educational contexts with younger readers.

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Students' concerns about using AI in their studies

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Abstract

Research objectives (aims) and problem(s): The research concepts were developed based on Ulrich Beck's theory of risk, Pierre Bourdieu's concept of cultural capital, and Paulo Freire's concept of critical pedagogy. The research problem is formulated as follows: What concerns do students at Kraków universities have about using artificial intelligence while studying? It was assumed that they are related, in part, to dependence on technology, algorithmic flaws, and the potential replacement of humans by AI.

Research methods: The study was conducted between 20 January and 20 March 2025, using the diagnostic survey method (CAWI) on a quota sample of 1,529 students, via the Google Forms platform. Frequency analyses and descriptive statistics were applied.

Process of argumentation: The empirical findings were interpreted in relation to broader social and educational processes associated with technological risk, digital inequalities, and critical approaches to AI in education.

Research findings and their impact on the development of educational sciences: Respondents rated their concerns using a five-point Likert scale. The strongest concerns were related to the possibility of AI replacing humans in professions such as teaching or translation (30.1% selected level 5, the highest level of concern; 13.7% reported no concern at all). High levels of concern were also recorded regarding errors and imperfections in algorithms (level 4 – 24.6%, level 5 – 23.2%). The results indicate a growing sense of social anxiety associated with the increasing use of technology, particularly concerns related to the loss of control over technological systems and the potential for technological dependency.

Keywords:

AI,
AI tools,
AI use,
concerns,
AI in studies

Conclusions and/or recommendations: Literature analyses indicate a shortage of empirical studies on students' concerns regarding AI use in higher education and highlight the need to promote informed, responsible AI use in academic environments. The study contributes to the emerging debate on AI-related risk perception among university students and expands research on technological inequalities in higher education.

Introduction

Contemporary life increasingly revolves around artificial intelligence, which is entering all areas of human activity. Higher education institutions are thus becoming places not only for gaining knowledge but also for managing technological risk. Despite the growing body of international research on AI in higher education, limited attention has been paid to students' concerns regarding the social and educational consequences of AI use in the context of Central and Eastern Europe.

International research demonstrates that artificial intelligence is transforming higher education. AI-based tools, including generative systems such as ChatGPT, are becoming increasingly integrated into students' everyday academic practices, particularly in areas such as information retrieval, text generation, language support, and personalised learning (Holmes et al., 2022; Tlili et al., 2023). Researchers emphasise that AI technologies may enhance educational accessibility and effectiveness while simultaneously generating ethical, social, and pedagogical challenges. These challenges include issues related to academic integrity, the weakening of independent and critical thinking, increasing dependence on digital technologies, and the reproduction of educational inequalities (Kasneci et al., 2023; Selwyn, 2019).

AI-related anxiety among university students has become an increasingly important area of contemporary educational research. Concerns associated with artificial intelligence include excessive dependence on technology, reduced independent thinking, algorithmic bias, automation of cognitive processes, and the possible replacement of human labour in selected professions (Cotton et al., 2023; Rudolph et al., 2023).

Researchers also point out that the growing presence of AI in academic environments may weaken the development of critical reflexivity and promote reproductive rather than analytical models of learning (Luckin, 2018; Selwyn, 2019). Although representatives of this generation are often described as “digital natives,” recent studies indicate that high technological exposure does not necessarily translate into critical digital competencies or informed AI literacy (Prensky, 2001; Zawacki-Richter et al., 2019).

Artificial intelligence, despite its growing presence in academic and public debate, poses serious theoretical and practical challenges in the Polish context due to the lack of local research relating to its application among young people. This study focuses on young adults aged 18–29 and analyses selected dimensions of AI-related concerns in higher education, including fears related to labour market automation, algorithmic imperfections, technological dependence, and loss of control over technology.

The rapid development of AI technologies in higher education may also be interpreted through broader sociological theories concerning risk, inequality, and access to resources. The growing importance of AI-related competencies increasingly differentiates students in terms of technological skills, educational opportunities, and access to digital resources. Consequently, artificial intelligence functions as an integral component of educational processes. At the same time, the expanding presence of AI technologies generates significant ethical, educational, and social concerns related to critical thinking, technological dependency, and the reproduction of social and educational inequalities.

This study's theoretical framework is based on Ulrich Beck's theory of risk, Pierre Bourdieu's concept of cultural capital, and Paulo Freire's critical pedagogy approach applied in the context of education. Combining these theoretical perspectives enables a critical understanding of the challenges that AI poses to schools, universities, and broader educational policy.

Conceptualisation of the research problem

Artificial intelligence refers to computational systems capable of performing tasks that typically require human cognitive abilities, including learning, reasoning, decision-making, and natural language processing (Russell & Norvig, 2021). The concept of artificial intelligence is commonly associated with John McCarthy, who introduced the term in 1956, while important contributions to the development of AI theory were also made by Alan Turing and Marvin Minsky (Minsky, 1986).

Bourdieu's concept of cultural capital focuses on the level of cultural knowledge that allows access to and effective use of modern technologies, through access to and familiarity with technological tools in educational environments. The accumulation of high cultural capital in education leads to educational inequalities, such as disparities in the ability to use AI tools, familiarity with their functionality, awareness of their consequences, and understanding of underlying mechanisms and manipulation risks. Technological capital may thus become a new form of cultural capital, where AI literacy becomes key to success and the further development (conversion) of competencies among students and between academic institutions. According to Bourdieu, capital should be understood in dichotomous terms: as barriers to social mobility on the one hand and as opportunities arising from social networks and the multiplication of competencies (capabilities) offered by one's environment on the other. Bourdieu argued that educational systems contribute to the reproduction of existing social inequalities by legitimising class-based differences through educational practices and cultural norms (Bourdieu, 2006; Bourdieu & Passeron, 2012). This perspective can be understood within Bourdieu's broader theory of social fields, where institutions operate according to specific structures, rules, and forms of capital that shape individuals' positions and opportunities (Bourdieu & Wacquant, 2006). According to Turner (2012), Bourdieu linked habitus with class culture, suggesting that individuals occupying similar social positions tend to develop comparable dispositions, perceptions, and patterns of behaviour (Bourdieu, 2008, as cited in Turner, 2012). This perspective is particularly

relevant to the analysis of AI in higher education, as students' ability to use AI consciously and critically may depend on their previous educational experiences, social background, and access to technological resources.

Beck's theory emphasises the continuous risks produced by technology, within which modern societies must function. These risks are generated by the very system of modernity, which, in the age of the "risk society," begins to threaten itself. They are, in his view, oversized side effects of scientific and technological progress – invisible, hard to control, and often global in nature. They are uncontrollable due to the absence of institutions that can effectively oversee or prevent them (Beck, 2002, pp. 72–84; Stankiewicz, 2008). The author identifies three characteristics of risk: delocalisation, incalculability and non-compensability (Beck, 2002; Beck, 2012). Life in a risk society is associated with chronic anxiety and a general sense of uncertainty, which is often pushed into the subconscious but not always effectively (Hryniewicz, 2014, p. 14). AI in higher education introduces risks related to algorithmic errors, privacy loss, technological dependency, automated assessment, and the potential replacement of human labour in selected professional and educational roles, such as teachers, translators, and tutors. Consequently, artificial intelligence may be understood not only as a technological innovation but also as a source of broader social and educational risks.

The integration of Beck's theory of the risk society and Bourdieu's concept of cultural capital suggests that modern education should prepare students to use AI technologies consciously and critically by fostering an understanding of both the opportunities and risks they entail. This preparation remains closely linked to unequal levels of cultural and technological capital, as access to digital competencies and the ability to use AI effectively are not equally distributed among students. An additional perspective complementing this theoretical framework is Freire's concept of critical pedagogy (1970). In line with this concept, AI technologies in educational contexts should not replace independent thinking and reflective inquiry but foster the development of critical consciousness, analytical competencies, and responsible participation in contemporary digital society.

Method

This study examined the concerns students at Kraków universities expressed about the use of artificial intelligence in the learning process. It was assumed that students' concerns may be associated with technological dependency, reduced control over cognitive and decision-making processes, algorithmic errors, and the potential replacement of human labour by AI systems. Additionally, the study aimed to identify broader social and educational dimensions of AI-related risk perception among university students and to formulate recommendations for responsible AI use in higher education.

The main dependent variable in the study was students' concerns regarding the use of artificial intelligence in the learning process. The variable was operationalised through four dimensions of AI-related risk perception: concerns about the replacement of human labour by AI systems, concerns related to algorithmic errors and imperfections, concerns regarding technological dependency, and concerns associated with reduced control over cognitive and decision-making processes.

Concerns about the replacement of human labour referred to fears that AI may replace humans in certain professions and educational roles, such as teachers or translators. Concerns related to algorithmic imperfections referred to fears of errors, inaccuracies, and limitations in AI systems used in education. Technological dependency referred to concerns about excessive reliance on AI tools in the learning process. Reduced control over cognitive and decision-making processes referred to concerns that extensive reliance on AI may weaken independent thinking and critical reflection.

All variables were measured using a five-point Likert scale, where 1 indicated no concern and 5 indicated a very high level of concern. The grouping variables used in the analysis comprised gender, year of study, and place of residence. Gender was analysed using three categories (woman, man, and no response). Year of study was divided into seven categories corresponding to the respondents' educational stage. Place of residence included five categories reflecting the size and type of locality. The collected data were analysed using Statistica 13.3 and Microsoft Excel.

Frequency analyses and descriptive statistics, including mean, median, and standard deviation, were applied. The analysis also included Pearson's chi-square test and Cramér's V coefficient. The study was conducted between 20 January and 20 March 2025, using a computer-assisted web interviewing (CAWI) survey administered via the Google Forms platform.

A quota sampling method was used. Based on the total number of students at Kraków universities, obtained from the Public Information Bulletins (BIP) of individual institutions, the overall number of students in Kraków's academic centres was estimated at approximately 135,000. The population was divided into specific groups to determine quotas, and 1.5% of students from each university were subsequently selected for the study. After verifying their responses, 1,529 questionnaires qualified for final analysis – each with a completion rate of around 95%. Due to limitations of space, only the number of qualifying participants from each Kraków university is listed below:

- Jagiellonian University – 458
- AGH University of Science and Technology – 230
- University of the Commission of National Education in Kraków – 230
- Hugo Kołłątaj University of Agriculture in Kraków – 78
- Tadeusz Kościuszko Cracow University of Technology – 139
- Andrzej Frycz Modrzewski Krakow University – 108
- Cracow University of Economics – 185
- Jan Matejko Academy of Fine Arts in Kraków – 16
- Pontifical University of John Paul II in Kraków – 40
- Ignatianum Academy in Kraków – 45

Quotas were established based on respondents' gender, year of study, and place of residence. Respondents were recruited through institutional communication channels, academic networks, and online student communities. Due to the sampling procedure, which included only students from Kraków universities, the findings cannot be generalised to the entire population of students in Poland. Nevertheless, the study makes it possible to identify significant relationships and trends.

Analysis of collected data: Student concerns

The analysis focused on four main dimensions of AI-related risk perception among university students: concerns about labour market automation, algorithmic imperfections, technological dependency, and loss of control over technology.

Table 1. Students' concerns regarding the replacement of human labour by AI systems

Response	N	%
1	209	13.67%
2	231	15.11%
3	324	21.19%
4	289	18.90%
5	460	30.09%
No answer	16	1.05%
Total	1529	100.00%

Table 1 presents the distribution of students' concerns regarding the replacement of human labour by AI systems in selected professions and educational roles, such as teachers, translators, and language instructors. A relatively high proportion of respondents expressed elevated levels of concern in this area. The largest group of surveyed students selected the highest level of concern (30.1%), while only 13.7% declared no concern. The average level of concern was moderate ($M = 3.37$; $Me = 3.00$; $SD = 1.41$), suggesting that fears related to labour market automation constitute an important dimension of AI-related risk perception among students at Kraków universities.

Table 2. Relationships between socio-demographic variables and concerns regarding the replacement of human labour by AI systems

Variable	χ^2	p-value	Cramér's V
Gender	53.39	p < .001	0.13
Year of study	151.50	p < .001	0.14
Place of residence	46.58	p < .001	0.09

χ^2 = Pearson's chi-square test; Cramér's V = effect size coefficient.

The analysis revealed statistically significant relationships between concerns regarding labour market automation and all analysed socio-demographic variables ($p < .001$) (Table 2). The strongest association was observed for year of study (Cramér's V = 0.14), suggesting that educational experience may influence students' perceptions of AI-related labour market risks. Higher levels of concern were more frequently observed among students in advanced stages of education and among respondents from smaller towns and rural areas.

From the perspective of Beck's theory of the risk society, these findings can be interpreted as broader anxieties associated with technological transformation and the growing automation of social and professional life. Differences associated with place of residence may indicate unequal access to technological and educational resources, corresponding with Bourdieu's concept of the reproduction of social inequalities through cultural capital, while also influencing the critical use of AI technologies in the learning process.

Concerns related to errors and imperfections in AI algorithms constituted another important dimension of students' technological anxiety in educational settings.

Table 3. Students' concerns regarding errors and imperfections in AI algorithms

Response	N	%
1	165	10.8%
2	259	16.9%
3	351	23.0%
4	376	24.6%
5	355	23.2%
No answer	23	1.5%
Total	1529	100.0%

As shown in Table 3, responses were concentrated primarily in the higher categories of the scale, with 24.6% selecting level 4 and 23.2% selecting level 5. The average level of concern remained moderate ($M = 3.33$; $Me = 3.00$; $SD = 1.30$), suggesting that the reliability of AI-based systems is perceived as a significant challenge in higher education.

Table 4. Relationships between socio-demographic variables and concerns regarding errors and imperfections in AI algorithms

Variable	χ^2	p-value	Cramér's V
Gender	32.35	$p < .001$	0.10
Year of study	102.96	$p < .001$	0.12
Place of residence	86.73	$p < .001$	0.12

χ^2 = Pearson's chi-square test; Cramér's V = effect size coefficient.

The statistical analysis demonstrated significant relationships between the analysed variable and all socio-demographic characteristics included in the study (Table 4). Although the effect sizes measured by Cramér's V were weak, the results indicate that perceptions of risks related to algorithmic imperfections differ depending on students' educational

experiences and social backgrounds. Higher levels of concern were particularly evident among students in more advanced years of study and among respondents from smaller towns and rural areas. These findings may be interpreted through the lens of Beck's risk society theory, according to which technological modernisation generates new forms of uncertainty and anxiety associated with automation and algorithmic decision-making.

Another important dimension of AI-related risk perception concerned fears associated with excessive dependence on technology in educational and everyday functioning.

Table 5. Students' concerns regarding technology dependence associated with AI use

Response	N	%
1	290	19.0%
2	258	16.9%
3	278	18.2%
4	261	17.1%
5	424	27.7%
No answer	18	1.2%
Total	1529	100.0%

The data analysis indicates that the largest proportion of respondents reported the highest level of concern (27.7%) (Table 5). The average level of concern remained moderate ($M = 3.18$; $Me = 3.00$; $SD = 1.48$), suggesting that technological dependency constitutes an important dimension of AI-related risk perception among the surveyed students.

Table 6. Relationships between socio-demographic variables and concerns regarding technology dependence associated with AI use

Variable	χ^2	p-value	Cramér's V
Gender	55.85	p < .001	0.14
Year of study	151.50	p < .001	0.14
Place of residence	83.52	p < .001	0.12

χ^2 = Pearson's chi-square test; Cramér's V = effect size coefficient.

The data presented in Table 6 indicate statistically significant relationships between concerns regarding technological dependency and all analysed socio-demographic variables (p < .001). Although the effect sizes measured by Cramér's V remained weak, higher levels of concern were more frequently observed among students in advanced stages of education and among respondents from smaller towns and rural areas.

From the perspective of Beck's theory of the risk society, these findings may reflect broader concerns associated with increasing dependence on technological systems and the diminishing autonomy of individuals in highly technologised digital environments. The results also correspond with critical approaches to educational technologies, which emphasise that excessive reliance on digital tools may weaken students' autonomy and reduce their engagement in reflective learning processes (Selwyn, 2019).

Concerns regarding the loss of control over technology reflected broader anxieties associated with the growing autonomy of AI systems and their increasing role in educational and everyday decision-making processes.

Table 7. Students' concerns regarding loss of control over technology associated with AI use

Response	N	%
1	203	13.3%
2	301	19.7%
3	381	24.9%
4	299	19.6%
5	338	22.1%
No answer	7	0.5%
Total	1529	100.0%

The respondents' answers were concentrated primarily around the middle and higher levels of the scale. Nearly one quarter of respondents (24.9%) indicated a moderate level of concern, while 22.1% reported the highest level of anxiety. These findings suggest that the surveyed students perceive the growing autonomy of technological systems as a significant social and educational challenge.

Table 8. Relationships between socio-demographic variables and concerns regarding loss of control over technology associated with AI use

Variable	χ^2	p-value	Cramér's V
Gender	27.54	p < .001	0.09
Year of study	202.62	p < .001	0.16
Place of residence	58.46	p < .001	0.10

χ^2 = Pearson's chi-square test; Cramér's V = effect size coefficient.

Consistent with the previous analyses, statistically significant relationships were identified between the analysed variable and all socio-demographic characteristics (p < .001). The strongest association was observed for year of study (Cramér's V = 0.16), which may suggest, similarly

to the preceding findings, that academic experience and the extent of prior engagement with digital technologies influence students' perceptions of technological control and autonomy.

These findings may reflect broader socio-pedagogical tensions associated with the growing autonomy of AI systems and the changing role of human agency in educational environments. In line with critical approaches to educational technologies, concerns regarding loss of control may indicate fears related to reduced autonomy and increasing dependence on automated systems in learning processes.

Conclusions

The analysis of data concerning the concerns of students at Kraków universities indicates that perceptions of artificial intelligence extend beyond purely technological issues and reflect broader social and educational transformations associated with the growing presence of AI in higher education. The analysed dimensions of concern suggest that artificial intelligence is perceived by respondents as a source of both opportunity and uncertainty.

The findings revealed statistically significant relationships between AI-related concerns and socio-demographic variables, particularly year of study and place of residence. Higher levels of concern among students from smaller towns and rural areas may indicate inequalities in access to digital competencies and technological resources. Simultaneously, students in more advanced stages of education demonstrated greater awareness of the potential social and educational consequences of artificial intelligence.

The results may be interpreted through Beck's theory of the risk society, according to which technological modernisation generates new forms of uncertainty shaping contemporary social life. At the same time, the observed differences correspond with Bourdieu's concept of cultural capital, suggesting that the ability to critically engage with AI technologies is becoming an increasingly important educational and social

resource. From the perspective of Freire's critical pedagogy, the findings highlight the growing importance of critical digital literacy, reflective thinking, and responsible participation in digital environments. Artificial intelligence may support educational processes; however, its implementation should reinforce rather than replace students' autonomy, critical thinking, and independent intellectual engagement, thereby promoting reflective learning instead of the passive reproduction of content generated by AI systems.

The observed differences in perceptions of AI among the surveyed students may reflect broader social tensions concerning the relationship between individual autonomy and increasing dependence on digital technologies, as well as between individual agency and the systemic influence of automated technological solutions. The findings suggest that gender, place of residence, and level of education constitute significant factors differentiating the ways in which artificial intelligence is interpreted and evaluated.

Educational implications and best practices

The findings suggest that artificial intelligence is emerging not only as a tool supporting educational processes but also as a significant factor shaping the functioning of contemporary higher education and influencing perceptions of technological risk. It creates both opportunities and challenges, particularly in relation to equal access to education, critical thinking, and digital competencies. The integration of AI into education should therefore be based on the principles of transparency, responsibility, and equal opportunity.

Drawing on Bourdieu's theory, Monika Adamczyk (2015, p. 14) emphasises that the educational system plays a crucial role in the reproduction of social inequalities through symbolic practices, authority, and pedagogical work. In this context, the implementation of AI technologies requires reflection on their potential influence on social structures, educational inequalities, and access to cultural and technological capital.

However, in light of Freire's concept of critical pedagogy (1970), AI should not replace human intellectual activity but rather support the development of analytical, interpretative, and reflective competencies necessary for responsible functioning within contemporary digital societies. From the perspective of critical pedagogy, education should strengthen individual autonomy, foster critical thinking about technology, and promote reflective engagement in learning processes.

The findings indicate that place of residence, particularly smaller towns and rural areas, may influence perceptions of AI, its role in education, and concerns associated with technological transformation. These differences may reflect unequal access to digital competencies and technological resources. These findings remain consistent with Bourdieu's concept of cultural capital and with studies emphasising that AI may reinforce existing educational inequalities rather than reduce them (Bulathwela et al., 2024; Zawacki-Richter et al., 2019). Consequently, students should be prepared not only for the technical use of AI tools but also for their critical, ethical, and responsible application. Although artificial intelligence may support learning processes through content personalisation, progress monitoring, and learning-support systems, excessive dependence on automated technologies may simultaneously weaken students' autonomy and limit the relational dimension of education.

With regard to critical thinking, the findings align with studies indicating that the growing presence of AI in education may weaken the development of critical thinking and reflective learning, particularly when reliance on generative tools is excessive (Kasneci et al., 2023; Selwyn, 2019). Similar conclusions concerning the weakening of independent and reflective learning have also been presented by Luckin (2018), who emphasised that the development of AI in education requires the simultaneous strengthening of critical thinking competencies and students' conscious engagement in learning processes. From the perspective of Freire's critical pedagogy, education should strengthen students' autonomy and their capacity to critically evaluate content generated by AI systems.

The students' concerns regarding labour market automation, loss of control over technology, and dependence on AI may be interpreted

in light of Beck's theory of the risk society. Similar tendencies have also been identified in studies on AI anxiety and perceptions of risks associated with the automation of educational and professional processes (Cotton et al., 2023). Fears related to the replacement of humans by AI systems in certain professions, such as teachers, translators, and tutors, remain consistent with earlier research indicating a growing sense of uncertainty associated with the automation of work based on cognitive and linguistic competencies (Łukasik, 2024). At the same time, researchers emphasise that AI more often leads to the transformation and redefinition of professional roles than to the complete elimination of human labour (Chan & Tsi, 2023).

Artificial intelligence is both an opportunity and a potential threat to contemporary education, a finding confirmed by this study. The surveyed students perceive AI simultaneously as a tool supporting the learning process and as a source of potential educational and social risks. Similar conclusions were formulated by Kasneci et al. (2023), who indicated that AI may enhance the effectiveness of education while simultaneously raising questions concerning cognitive autonomy, responsibility, and the quality of the educational process. Future education requires a balanced approach that combines technological innovation with the preservation of the relational, humanistic, and social values that underpin education. The observed tendencies also indicate a growing need for broader public debate concerning the impact of artificial intelligence on education, employment, and the professional identities of younger generations.

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