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

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Abstract

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

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students with disabilities and the assessment of specific competencies for educating students without disabilities among the surveyed teachers?
Research Methods: The data for this analysis was collected using the *Questionnaire of Teacher's Perceived Professional Competence* (KPKZN). A total of 107 teachers of grades IV–VIII (the 2nd stage of primary education) participated in the study.
Structure of the Article: The article begins by introducing the concepts of competence, inclusion, and subject-specific teacher preparation for working with students with disabilities based on existing literature. It then outlines the research methods, followed by an analysis and discussion of the results.
Research Results and Their Impact on the Development of Educational Sciences: The research findings indicate that teachers' self-assessments of most competencies, as well as their overall evaluation of competence when working with students with disabilities, are significantly lower compared to their self-assessments of competence when working with students without disabilities.
Conclusions and Recommendations: Teachers working with students with disabilities require specialized competencies—such as evaluative, psychological, substantive-methodological, innovative, and communicative skills—that enable them to effectively support and teach their students.

***Keywords*:** competence, teachers, education, students, disability

Introduction

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

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

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

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

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

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

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

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

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

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

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

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

Research method

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

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

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

The specific research questions addressed are:

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

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

The following tool was used to collect the research material:

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

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

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

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

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

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

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Description of the Surveyed Group

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

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

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

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

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

Analysis of Survey Results

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

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

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

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

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

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

- When working with students without disabilities, communicative competence received the highest ratings (MKKubn = 4.49), while evaluative competence ranked the lowest (MKEubn = 3.49);

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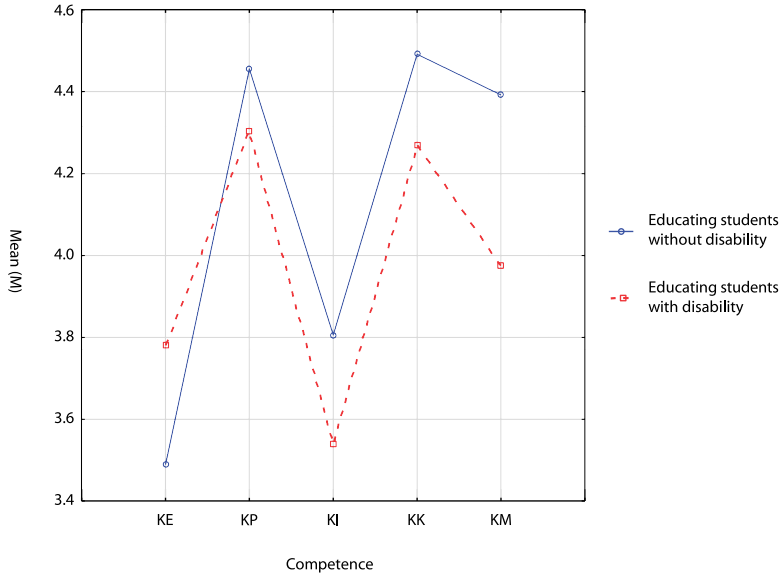
- When working with students with disabilities, psychological competence was rated the highest (MKPuzn = 4.30), whereas innovative competence received the lowest rating (MKluzn = 3.54).
- The largest discrepancies were observed in the self-assessment of substantive-methodological competence.

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

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



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

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

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

Variable	KE_{ubn}	KP_{ubn}	KI_{ubn}	KK_{ubn}	KM_{ubn}	KO_{ubn}	KE_{uzn}	KP_{uzn}	KI_{uzn}	KK_{uzn}	KM_{uzn}	KO_{uzn}
KE_{uzn}	–											
KP_{ubn}	0.65 ***	–										
KI_{ubn}	0.82 ***	0.52 ***	–									
KK_{ubn}	0.51 ***	0.84 ***	0.42 ***	–								
KM_{ubn}	0.69 ***	0.71 ***	0.64 ***	0.65 ***	–							
KO_{ubn}	**0.88** ***	**0.85** ***	**0.84** ***	**0.77** ***	**0.87** ***	–						
KE_{uzn}	0.65 ***	0.55 ***	0.55 ***	0.54 ***	0.53 ***	0.67 ***	–					
KP_{uzn}	0.38 ***	0.64 ***	0.31 ***	0.69 ***	0.47 ***	0.56 ***	0.71 ***	–				
KI_{uzn}	0.65 ***	0.45 ***	0.68 ***	0.44 ***	0.52 ***	0.67 ***	0.89 ***	0.57 ***	–			
KK_{uzn}	0.39 ***	0.58 ***	0.34 ***	0.67 ***	0.46 ***	0.55 ***	0.74 ***	0.92 ***	0.66 ***	–		
KM_{uzn}	0.53 ***	0.53 ***	0.51 ***	0.55 ***	0.62 ***	0.65 ***	0.89 ***	0.77 ***	0.82 ***	0.80 ***	–	
KO_{uzn}	0.58 ***	0.60 ***	0.54 ***	0.63 ***	0.58 ***	0.69 ***	**0.94** ***	**0.86** ***	**0.88** ***	**0.90** ***	**0.95** ***	–

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

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

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

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

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

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

KOuzn – overall assessment of competence to educate students with disabilities; R – multivariate correlation coefficient; R^2 and Adjusted R^2 – coefficients of determination; F – F-test value; p – significance level; BETA – standardized regression coefficient; B – unstandardized regression coefficient; t – t-test statistic.

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

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

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

Discussion and Conclusions

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

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

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

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

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

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

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

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

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

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Conflicts of Interest: The authors declare no conflict of interest.

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