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Inclusive Competence of Ukrainian Teachers in the Context of Sustainable Development Goals: Evidence for Continuous Professional Development Design

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ABSTRACT:
This study examines how Ukrainian educators working in inclusive classrooms (primary school teachers, subject teachers, teacher assistants, etc.) assess their level of inclusive competence in the context of advancing the Sustainable Development Goals, particularly those related to quality education, reduced inequalities, and well-being.
A questionnaire was developed based on the Ukrainian Teacher Professional Standard and included both open- and closed-ended questions. A total of 473 respondents participated in the survey. The

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data were analysed using qualitative and quantitative methods, including arithmetic mean and Pearson's correlation coefficient (r).
The findings indicate that most educators demonstrate a positive attitude towards inclusive education, along with a certain level of theoretical knowledge and practical skills, contributing to the implementation of SDG 4: Quality Education. However, the study also identified several challenges, including insufficient collaboration among team members, limited understanding of learners' special educational needs, and a lack of effective inclusive teaching strategies. These gaps may hinder efforts to reduce educational disparities, as emphasized in SDG 10: Reduced Inequalities, and to ensure supportive learning environments that promote student well-being in line with SDG 3: Good Health and Well-being.
The results enabled the identification of specific teacher needs that can inform the development of a professional development curriculum aimed at enhancing inclusive competences. Strengthening such competencies is essential for improving institutional effectiveness and inclusiveness in education systems, aligning with the principles of SDG 16: Peace, Justice and Strong Institutions.
The proposed curriculum will become a key component of a continuous professional development initiative for Ukrainian teachers and will be based on Finnish experience adapted within the international project "Bridge to Inclusion: Empowering Ukrainian Educators with Special Needs Training", reflecting the importance of international cooperation and knowledge exchange in achieving SDG 17: Partnerships for the Goals.

Keywords: inclusive education; inclusive competence; teacher professional development; continuous professional development (CPD); sustainable development goals (SDGs); educational inequality; special educational needs (SEN); teacher self-assessment; educational policy; Ukraine.

1. Introduction

Since the 1990s, inclusive education (IE) in schools have been defined as a key priority in educational systems worldwide (Unesco 1994; UN 2006). Ukraine has been aligning with international education policy and actively implementing IE as accessible, safe, and supportive learning environment for all.

Over the past decade, Ukraine has been transitioning from medical (International Classification of Impairments, Disabilities, and Handicaps, World Health Organization 1980) to social (Convention on the Rights of Persons with Disabilities, UN 2006) model of disability. This process has been hindered by a lack of coherence and consistency in legislative support, limited financial resources, and predominantly theoretical approaches.

This issue is widely presented as originating from the policy–practice gap—conflict between commitment to non-discrimination and recognition of human diversity on the one hand, and the continuing dominance of medical model in education of children with special education needs (SEN), on the other (Martynchuk et al. 2021). As a result, Ukrainian education policy continues to reflect influence of extensive system of segregated (special) establishments (European Research Association 2012; Alishavskane et al. 2019; Martynchuk et al. 2023).

One of the strengths of institutionalised system is its high level of structure and stability, which ensures a results-oriented approach (Hanssen 2021). Moreover, these institutions are typically staffed by highly specialised professionals in the field of special education. In contrast, education of learners with SEN frequently encounters significant barriers. A particularly persistent issue is the lack of teacher competence in organising

effective learning for such students. In relation to findings which highlight the pivotal role of teacher competence in bridging the gap between the vision for inclusion and its reality in classroom (European Agency for Development in Special Needs Education [EADSNE], Teacher Education for Inclusion – TE4I 2012), learners with SEN may be being excluded from mainstream schools due to teachers' inability to adequately support their inclusion (Martynchuk 2018; Boiko et al. 2021).

The need for quality IE in Ukraine has become more acute due to increasing number of learners with SEN (CMU 2021, CMU 2024) and because of the full-scale invasion: physical and psychological trauma, internal displacement, disruption of stable access to education (Go Global 2023; Gradus Research Plus 2023; SavED 2024). Development of effective education system that is responsive to the needs of every child has become one of the key challenges facing both state policy and educational community (CMU 2024; Making Cents International 2023).

The findings also resonate with evidence from other post-conflict and crisis-affected educational systems, where the implementation of inclusive education reforms often remains inconsistent despite progressive legislative frameworks (Bartels et al. 2024; Arar et al. 2025; Xerri, Herrera 2026). International studies indicate that teachers in such contexts frequently experience insufficient professional preparation, limited interdisciplinary cooperation, and institutional constraints that hinder the practical realization of inclusive pedagogy (Tange 2016; Sorkos & Hajisoteriou 2021; Li & Ruppar 2021). Therefore, the Ukrainian case may be interpreted within a broader international pattern demonstrating that sustainable inclusive transformation requires not only policy reform, but also systematic investment in continuous professional development and institutional support mechanisms.

To bridge the gap the government of Ukraine in 2024 developed the National Strategy for the Development of IE until 2029 (CMU 2024). One of the strategy's core objectives is systematic enhancement of professional competencies of educational staff particularly regarding organisation of high-quality educational processes for children with SEN.

A few stakeholders are involved in achieving this goal, including Ukrainian higher education institutions, non-governmental civil society organisations, and international partners. Notably, in 2024–2025, academic staff from Borys Grinchenko Kyiv Metropolitan University (BGKMU), in collaboration with Häme University of Applied Sciences (HAMK, Finland), participated in the international project "Bridge to Inclusion: Empowering Ukrainian Educators with Special Needs Training" (2024–2026).

HAMK and BGKMU are jointly developing a 5-credit (5 ECTS) course on IE, to be integrated into the curriculum of the master's in SEN. In addition, it will be offered as continuous professional development (CPD) to teachers currently working in inclusive classrooms.

In the context of our research, it is impossible not to turn to the Sustainable Development Goals (SDG), as they provide an understanding of inclusive education as a component of broad social transformations. The educational system in modern conditions acts not only as a medium for transferring knowledge, but also as a tool for ensuring social equality, supporting well-being, and forming an inclusive society. Analysis of inclusive competence of teachers allows us to assess the readiness of educational institutions to

respond to global challenges, in particular in the field of overcoming inequality, ensuring access to quality education, and supporting the psycho-emotional well-being of education seekers. At the same time, integrating sustainable development approaches into the study of educational processes contributes to the alignment of national reforms with international strategic guidelines. Thus, using the framework of sustainable development goals allows for a comprehensive analysis of the researched issues and emphasizes their significance in a global context.

In the context of SDG 4: Quality Education, the research is particularly relevant, as it focuses on ensuring inclusive, equitable, and quality education for all learners. In particular, the development of teachers' inclusive competence is associated not only with improving the quality of teaching, but also with strengthening students' participation, accessibility of learning environments, and opportunities for individualized educational support. Effective professional development in inclusive education may contribute to long-term educational outcomes for learners with SEN through enhanced instructional adaptability, interdisciplinary cooperation, and inclusive classroom practices. In this regard, continuous professional development of teaching staff corresponds to the strategic objectives of SDG 4 aimed at ensuring equitable access to quality education and strengthening the capacity of teachers to work in diverse educational environments.

SDG 10: Reduce Inequality, inclusive education is one of the key tools for overcoming educational and social inequalities. In particular, ensuring access to quality education for students with special educational needs contributes to their full participation in the educational process and social integration. Insufficient inclusive competence of teachers can be a factor in the reproduction of inequality, limiting the opportunities of certain groups of students to realize their educational potential. At the same time, the development of professional skills of teachers in the field of inclusion is considered an effective mechanism for reducing barriers to learning.

SDG 3: Good health and well-being, the study highlights the importance of the educational environment as a factor in maintaining students' mental and emotional well-being. In particular, an inclusive approach to learning involves creating safe, supportive, and trauma-sensitive environments, which is especially relevant in the contemporary Ukrainian context. This is also linked to the growing need for educators to develop competencies related to supporting the psycho-emotional well-being of children, particularly those who have been exposed to stressful or traumatic events. This is consistent with the objectives of SDG 3 on ensuring mental health and well-being for all.

SDG 16: Peace, Justice and Strong Institutions, the study focuses on the role of the education system as an important institutional mechanism for ensuring equal access to education and respecting human rights. In particular, the development of inclusive education is considered as a component of creating a just and non-discriminatory educational environment. Theoretical analysis of the problem revealed a gap between declared educational policies and their practical implementation, which indicates the need to strengthen the institutional capacity of the education system. In this context, increasing the inclusive competence of teachers is an important tool for ensuring the effective implementation of state strategies and regulatory documents.

SDG 17: Partnership for Sustainable Development, the study highlights the importance of international and inter-institutional cooperation as a key factor in the

development of inclusive education. In particular, the implementation of joint educational initiatives with the participation of Ukrainian and foreign partners contributes to the exchange of experience, the introduction of innovative approaches and improving the quality of teacher training. Integrating international experience, including Finnish practices of inclusive education, allows for the adaptation of effective teacher training models to the national context. Such cooperation creates conditions for the sustainable development of the education system and its capacity to respond to modern challenges. Partnerships between higher education institutions, government institutions, and civil society organizations are consistent with the objectives of SDG 17 to strengthen global partnerships and mobilize resources to achieve the SDG.

To design an effective professional development curriculum, this study addresses the following research questions:

RQ1) How do Ukrainian teachers self-report their level of inclusive competence (IC)?

RQ2) What are the key demands of Ukrainian educators that will form the basis for a training course aimed at enhancing IC?

Ukraine's current education system is oriented toward ensuring inclusive and equitable education for all learners, regardless of their individual characteristics, educational needs, or social status. The principles that underpin IE are included in Ukraine's legislation (Verkhovna Rada of Ukraine (VRU) 2017; 2020), which guarantees all learners the right to quality education, accessible to them, irrespective of their social or cultural background, disability, home language, or other circumstances (VRU 2017). The state is required to ensure that learners with SEN have access to education tailored to their individual needs, abilities, and interests—in special needs schools (VRU 2017) or in inclusive classrooms (VRU 2017).

According to the Ministry of Education and Science of Ukraine, as of 2025, over 53,000 pupils with SEN are enrolled in general education schools, including inclusive and special classes (MESU 2025). UNICEF estimates that approximately 4.8 million children in Ukraine urgently require educational support (UNICEF 2024). These circumstances underline the fact that Ukraine's education system is operating under multiple sources of pressure: ensuring the need for continuity and quality of education for children with SEN; addressing the needs of children who have experienced trauma, displacement, or the loss of a stable learning environment. As a result, current situation in Ukraine requires a model of educational support for all children with SEN. All this support must be provided either within IE environments or in special education institutions (Law of Ukraine "On Education" 2017).

According to the New Ukrainian School reform, launched in 2016, teachers are expected to use their pedagogical expertise to individualise learning in inclusive, safe, and motivating environments (MESU 2016). This aligns with global vision of "school for all," in which every child is valued member of school community (UNESCO 1994). While most Ukrainian teachers endorse this vision and appreciate value of diversity (European Research Association 2012), implementing inclusive approaches into everyday practice remains a significant challenge (Martynchuk et al. 2021).

In Ukraine, teachers are trained on IE both during tertiary education and following graduation through professional development courses. At the bachelor's level,

the study of IE is a mandatory component of teacher training curricula. Also, all teachers are required to complete at least 150 hours (6 ECTS credits) of professional development every five years (VRU 2017; CMU 2019).

Numerous Ukrainian higher education institutions offer degrees in special education, designed to prepare specialists for work in inclusive settings. Course content within these programmes focuses on assessment of learners, adaptation of materials, modification of curriculum, and teaching methods for learners with SEN.

Despite the availability of educational opportunities, the level of IC among Ukrainian teachers remains insufficient. This is evident in ongoing difficulties in application of IE in classroom, especially provision of individualised support for learners, effective collaboration with teacher assistants, parents (Gradus Research Plus 2023; SavED 2024).

Consequently, there is an urgent need for systematic development of teachers' IC. Numerous national and international studies underscore the importance of IC as a key factor in effective learner engagement within inclusive settings (MESU 2020).

2. Theoretical Background

IE requires coordinated policies between agencies at the national level, school level, and classroom level (European Agency for Special Needs and IE [EASNIE] 2022). To meet the diverse educational needs of learners, teacher training curricula need to include competencies essential for IE (Letzel-Alt and Pozas 2025). Also, there is a need for both formal education and training for all teachers (Tveitnes et al. 2025).

Teacher competence in education is defined as interaction of attitudes, skills, and knowledge (EASNIE 2022). Research highlights the role that skills and knowledge play in shaping a positive attitude towards inclusion: the more successful a teacher is in inclusive classroom, the more positive their attitude (Paju et al. 2016). This underscores the importance of teacher training programmes that provide practical skills (Moser et al. 2023). However, knowledge and skills are only useful when teachers know how to adapt them to the context of their own classroom to meet the changing and diverse needs of their learners (Moser et al. 2023).

At the European level, a consensus has been reached regarding competencies required by educators in IE (EASNIE 2022). These have been classified in terms of attitudes and beliefs, knowledge and understanding, skills and practical abilities in valuing learner diversity, supporting all learners, collaborating with professionals, and engaging in personal and professional development (EADSNE, Teacher Education for Inclusion – TE4I 2012). Lozano et al. (2023) applied a shortened version of the Teacher Efficacy for Inclusive Practices scale in their study, which identified critical domains: ability to assess learners and adapt learning materials according to need, effective classroom management, and fostering productive cooperation with parents and interdisciplinary team members.

These areas of competence are echoed by other researchers: reported challenges include assessment of individual student needs, adaptation of instructional materials, effective teamwork practices, and time management to allow time for social and emotional learner support (Hanssen et al. 2025; Letzel-Alt and Pozas 2025; Nimante and Kokare 2022; Paju et al. 2016; Ryökkynen et al. 2022). Letzel-Alt and Pozas (2025) emphasise the

need to define components of key competencies on a practical level, to enable development and delivery of teacher training courses that target practical skills required in inclusive settings.

Recent European and world empirical studies demonstrate that, despite the expansion of inclusive education policies and competence-based teacher training frameworks, many teachers continue to experience difficulties in implementing inclusive pedagogical practices in everyday classroom settings (Beazido 2023; Larios, Zetlin 2023; Agbenyega, Klibthong 2021; Balikci et al. 2025). Researchers emphasize persistent gaps between formal competence models and the practical realities of differentiated instruction, interdisciplinary collaboration, and support for learners with SEN, particularly in contexts affected by institutional transformation or educational crisis (Morrissey 2025; Pozas & Letzel-Alt 2023; Smets & Struyven 2020). These findings are consistent with the Ukrainian context, where the implementation of inclusive education reforms also depends on teachers' practical preparedness, institutional support, and access to continuous professional development opportunities.

Recognising teacher's key role in implementing high-quality IE, Ukrainian academics have actively contributed to conceptualisation and interpretation of the term "IC" General definitions are presented in the table below.

Table 1: General definitions of IC in the Ukrainian academic literature.

Definition	Indicator	Author(s)
Complex knowledge and skills related to inclusion, professional and personal qualities, ability to support wellbeing and use teaching methods for cognitive development.	Teacher willingness to work in inclusive settings.	Boichuk, Borodina, Mykytiuk 2015
A system of values and beliefs, assessment and planning of instruction, innovative approaches, communication and collaboration, and professional excellence.	Teacher ability to perform professional functions in an inclusive classroom.	Nakhod 2020
A complex process that combines motivation, values, practical and theoretical knowledge, reflective practice.	Teacher ability to implement effective inclusive practices; professional growth	Vasyluk 2022
A combination of professional competencies, complex knowledge and skills needed by teachers in an inclusive setting, the ability to adapt to learners' complex needs.	Teacher ability to ensure the inclusion of learners with SEN for their personal growth.	Nagorna, Kravtsova, Rudenko 2023
A level of knowledge and skills necessary to perform professional functions in IE based on professional competence.	Theoretical and practical readiness to implement inclusive practice	Figol 2020
Personal and interpersonal qualities of educators; inclusive literacy and ability to work productively in teams.	Teacher ability to plan and implement high-quality IE, analyse the effectiveness of	Skrypnyk, Martynchuk 2024

	actions, and improve professional skills	
Knowledge and skills for effective communication in inclusive settings (e.g., "teacher–student", "teacher–parent")	Successful implementation of professional activity; ability to analyse and monitor one's own performance	Smerechak 2024
A combination of knowledge, skills, abilities, and personal characteristics necessary for working effectively with learners with diverse educational needs.	Mastery of specialised teaching methods, skills to adapt instruction to individual student abilities	Tovstogan, Tsehelnik, Shevchenko 2024
Knowledge, skills, and abilities developed through life-long learning; capacity to successfully implement IE	Teacher ability to ensure a productive and high-quality educational process for each child	Kasyanova, Demyanenko 2025
A complex practical and theoretical set of knowledge and skills, a personal and professional combined characteristic of a modern teacher.	Teacher readiness to organize a high-quality learning experience for all learners	Provalna 2025

An analysis indicates that IC is conceptualised as an integral, multifaceted construct combining teacher personal qualities and professional skill set. It encompasses professional knowledge and abilities, proficiency in inclusive teaching methods and strategies, and teacher's personal characteristics—values, interests, and motivation for engaging in inclusive practices. Primary indicators of IC include a willingness to work in inclusive setting, ability to plan and implement inclusive teaching methods, adapt educational process to individual needs of each student, and create a safe and supportive learning environment. Further key elements are teamwork skills, self-assessment of effectiveness, continuous professional development, and ability to foster active participation of every child in learning.

Among recurring theoretical concepts is the view of IC as an integral, complex, and multifaceted construct. Practical concepts include inclusive knowledge, skills, and abilities; teacher personal qualities; self-reflective practices; effective implementation of teaching practices for learners with SEN; and continuous development of teacher skill set.

Concepts that are less frequently encountered in Ukrainian literature include: the belief that IC needs to be aligned with personal values, as well as with teacher interests and motivation; the need to include learners in their own academic and personal development; the teacher's capacity for creative self-realisation (Vasyliuk 2022); the ability to plan inclusive instruction and engage in team-based collaboration (Skrypnyk & Martynchuk 2024); proficiency in implementation of teaching strategies (Tovstohan 2024); and capacity to effectively implement inclusive practices (Kasiianova 2025).

3. Methods

Both qualitative and quantitative research methods were employed. Among the qualitative approaches, Interpretative Phenomenological Analysis (Smith 2008) was used to inform the development of questionnaire items and to support the subsequent interpretation of the collected data.

The questionnaire was structured into six thematic blocks corresponding to professional functions and competencies of primary school teachers in Ukraine (Ministry of Education and Science of Ukraine (MESU) 2024) (Fig. 1):

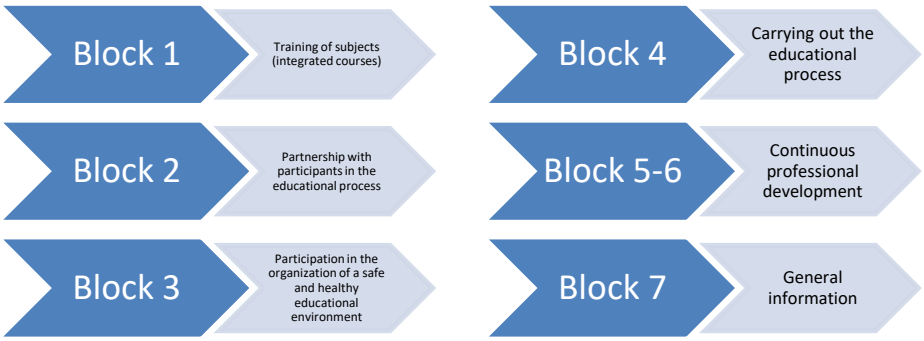

Fig. 1. Thematic blocks of questionnaire.

To support processing and interpretation of the survey data, artificial intelligence tools were partially utilised, particularly ChatGPT language model (OpenAI 2023). AI-assisted analysis was used for initial formulation of certain analytical insights based on respondents' answers. All AI-generated content was critically reviewed, refined, and adapted by authors to ensure alignment with study's objectives and academic standards. Final interpretation of results is entirely original and authored by research team.

The questionnaire was distributed to approximately 3,000 individuals, including primary school teachers, subject teachers, teacher assistants, psychologists, speech and language therapists, and other professionals who involved into team supporting learners with SEN. Questionnaire was distributed via Google Forms through various educational establishments and professional networks. At the beginning of survey, all participants gave their consent to use of survey results in a generalized and depersonalized form.

A total of 473 respondents participated in survey. The sample was random, as evidenced by distribution by gender, professional role, teaching experience, and region of residence or employment.

Respondents were distributed as follows: gender: 29 male, 444 female; experience: 0–5 years: n=66; 6–10 years: n=52; 11–20 years: n=106; 21–30 years: n=112; 31–40 years; n=102; more than 40 years: n=35.

The distributions by position and by region are presented in Table 2 and Fig. 2, respectively.

Table 2: General definitions of IC in the Ukrainian academic literature.

Position	Female	Male
Subject teacher	162	21
Primary school teacher	113	1
Teacher assistant	138	2
Practical psychologist	18	1
Speech and language therapist	12	0
Special education teacher	10	0
Administration	8	2
Other teachers	6	0
Other specialists	13	2
Parents, learners	2	0
Social pedagogue	5	0
Total	444	29

Distribution of respondents by region: Kyiv (city) – 137 (28.97%), Lviv Region – 84 (17.76%), Chernihiv Region – 64 (13.53%), Kyiv Region – 40 (8.45%), Dnipropetrovsk Region – 26 (5.50%), Odesa Region – 25 (5.29%), Zhytomyr Region – 24 (5.07%), Ivano-Frankivsk Region – 13 (2.75%), Vinnytsia Region – 13 (2.75%), Khmelnytskyi Region – 11 (2.33%), Sumy Region – 7 (1.48%), Poltava Region – 5 (1.06%), Chernivtsi Region – 5 (1.06%), Luhansk Region – 2 (042%), Zaporizhzhia Region – 2 (0.24%), Kherson Region – 2 (0.42%), Volyn Region – 2 (0.42%), Cherkasy Region – 1 (0.21%), Mykolaiv Region – 1 (0.21%), Kirovohrad Region – 1 (0.21%), Rivne Region – 1 (0.21%), not specified – 9 (1.90%).

A combined quantitative and qualitative analysis was employed, along with a statistical analysis of the obtained data (mean values and Pearson's correlation coefficient r). To establish correlations between the responses to the questionnaire items, Pearson's correlation coefficient r was applied at a significance level of $p \leq 0.01$. Data processing was conducted using MS Excel software.

4. Procedure

The questionnaire consisted of 35 items, including both open- and closed-ended questions: 28 closed-ended, 3 open-ended, 4 questions related to general respondent information. A Semantic Differential Scale (SDS) was applied to all closed-ended items,

based on the model by Osgood et al. (1967). One question used a five-point Likert scale (Likert 1932).

Responses to items using the SDS were further processed using a ranking scale (5-0), where: 5=strongly disagree; 4=somewhat disagree; 3=unsure; 2=somewhat agree; 1=strongly agree; 0=don't know/lack relevant skills. This scale was employed to calculate the mean response values, which served to assess the respondents' perceived competence and confidence when working with learners with SEN.

Open-ended questions were included in specific thematic blocks, where a deeper understanding of topic was essential. These included: 2. Collaboration with educational stakeholders; 3. Ensuring a safe and healthy learning environment; 5–6. Continuous professional development.

5. Results

5.1 Teaching subject matter

Most (62%) consider themselves knowledgeable and competent in IE. Substantial proportion (28%) expressed partial confidence, particularly in use of assistive technologies and specialised teaching methods. However, the need for further support and professional development remains, as a small but notable percentage (10%) acknowledged a lack of knowledge in this area (Table 3).

The highest level of confidence was reported by primary school teachers (39%), the lowest (26%) was observed among "other". The generally high percentage of agreement indicates a broad openness to IE. However, support is needed in the use of assistive technology, including communication devices, across all professional categories.

The correlation values across the other respondent categories are presented in Table 3.

Table 3: Correlation between the responses in each respondent category in Block 1.

Respondent	Max/Min	Questions	Pearson's correlation coefficient r
Primary school teachers	Max	Q3-Q1	0.605
	Min	Q3-Q2	0.398
Subject teachers	Max	Q3-Q2	0.747
	Min	Q3-Q1	0.565
Teacher assistants	Max	Q1-Q4	0.604
	Min	Q3-Q1	0.292
Other	Max	Q4-Q1	0.779
	Min	Q4-Q3	0.539

The Pearson correlation coefficients for Block 1 are statistically significant at $p \leq 0.01$ level. The strongest correlations were observed within the group of "primary school teachers" with a coefficient of 0.60 ($p \leq 0.01$) between the items: "I am aware of the types of assistive technology that can be used in IE and learning" and "I am able to establish effective communication and build trusting relationships with learners with SEN.

The weakest correlation (0.39 $p \leq 0.01$) was identified between the items: "I am aware of the types of assistive tools that can be used in IE and learning" and "I am capable of using a variety of methods and techniques to establish communication with learners with diverse individual needs".

This result could be interpreted as pointing to primary school teachers' belief that their knowledge of assistive technology for IE enables them to develop trust with learners with SEN. However, they appear to make a weaker connection between this knowledge and their ability to communicate efficiently with these learners.

5.2 Collaboration with educational stakeholders

The majority fully agree they can create a respectful, psychologically safe, and non-discriminatory learning environment. Most teachers report a strong ability to define roles and responsibilities when collaborating with teacher assistants. Together, they effectively adapt instructional materials to meet learners' needs, establish meaningful communication with learners, and create a friendly, supportive classroom atmosphere (Table 4).

Table 4: General definitions of IC in the Ukrainian academic literature.

Criteria	Primary school teachers	Subject teachers	Other
Need for additional training	85%	80%	90%
Frequency of reported difficulties when working with SEN learners	60%	55%	65%
General difficulties at work	Lack of specialised materials (80%), Curriculum modification (75%), Collaboration with teacher assistant (70%)	Adaptation of teaching materials (75%) Lack of time for 1-on-1 work (65%) Lack of specialised training (70%)	Lack of specialised materials (85%) Lack of support from teachers (60%), Communication difficulties within the team around the child (65%)
Collaboration with other professionals	75%	70%	80%
School administration support	70%	65%	75%
Positive impact of inclusion on learners with SEN	90%	85%	95%
Positive impact of inclusion on other learners	65%	60%	75%

Most needed resources	Teaching resources (85%), Additional training (80%), Assistants (75%)	Teaching assistance (80%), Specialised resources (75%), Administrative support (70%)	Specialised resources (90%), Training (85%), Collaboration between professionals (80%)

The correlation values identified using Pearson's r coefficient, along with the corresponding values for different respondent categories, are presented in Table 5.

Table 5: Correlation between the responses in each respondent category in Block 2

Respondent	Max/Min	Questions	Pearson's correlation coefficient r
Primary school teachers	Max	Q12-Q11	0.844
	Min	Q12-Q7	0.135
Subject teachers	Max	Q12-Q11	0.763
	Min	Q10-Q8	0.390
Teacher assistants	Max	Q12-Q11	0.630
	Min	Q10-Q6	0.276
Other	Max	Q12-Q11	0.732
	Min	Q10-Q5	0.368

The Pearson correlation coefficients for Block 2 are statistically significant at the $p \leq 0.01$ level. In all categories, the highest correlation was found between the ability to collaborate with other teachers, jointly identify needed adaptations and modifications based on the learner's individual needs, and work as part of a team to develop and implement an individual education plan (IEP) which is to be expected.

While the weakest correlations vary across groups, we noted that in the group of primary school teachers the lowest correlation was found between the ability to determine needed adaptations and modifications, and the ability to create a respectful and psychologically safe classroom environment. This may indicate that these teachers do not yet fully recognize the interdependence between different components of high-quality IE.

5.3 Ensuring a safe and healthy learning environment

The summary of responses to questions in Block 3 indicate that 68% of respondents positively assessed their readiness to work with learners with SEN, 20% expressed uncertainty, and 12% reported being unprepared.

A total of 78% of Ukrainian educators emphasised the need for additional training, while 22% reported no such need. The importance of teamwork is supported by 85% of respondents, with 11% remaining neutral and 4% not considering it necessary. 62% of participants regarded support from school administration as adequate, whereas 38% considered it insufficient.

The correlation, as determined using Pearson's r coefficient, along with the corresponding values for different respondent categories, are presented in Table 6.

Table 6: Correlation between the responses in each respondent category in Block 3

Respondent	Max/Min	Questions	Pearson's correlation coefficient r
Primary school teachers	Max	Q16-Q14	0.632
	Min	Q14-Q13	0.235
Subject teachers	Max	Q16-Q14	0.583
	Min	Q16-Q13	0.493
Teacher assistants	Max	Q16-Q13	0.476
	Min	Q14-Q13	0.336
Other	Max	Q16-Q13	0.818
	Min	Q14-Q13	0.492

The highest correlation for primary school teachers and subject teachers were observed between their ability to support the personal development of learners with SEN to meet their full potential, and their competence in using differentiated instruction to ensure individualised learning. For teacher assistants and other categories of professionals, the strongest correlations were found between the ability to support the personal development of learners with SEN and the ability to apply Universal Design for Learning (UDL) principles.

The lowest correlation among primary school teachers was between competence in use of differentiated instruction to individualise teaching and the ability to implement UDL strategies. This may again reflect a limited understanding of alignment between different components of effective IE, specifically the connection between teaching strategies and principles of universal design.

5.4 Implementation of teaching practices

General trends in educators' implementation of inclusion are presented in Table 7.

Table 7: General definitions of IC in the Ukrainian academic literature.

Category	%
Continuous and active implementation (Fully agree)	53–64
Partial implementation or partial understanding of the process (Partially agree)	25–30
Uncertainty (Unsure)	3–5
Barriers to implementation or lack of experience (disagree/lack relevant skills)	2–6

The summary of answers indicates that approximately 60% of educators reported being systematically involved in the IE process, stating that they participated in the development of Individual Education Plans (IEPs), collaborated with specialists, adapted materials, and communicated with parents. Teachers demonstrated the highest levels of confidence in areas such as monitoring student development, creating a supportive learning environment, and collaborating with multidisciplinary teams. Nearly 30% of respondents reported partial involvement, while 5% were unable to clearly define their role. Additionally, a group of 6% of educators reported not participating in these processes at all.

The findings also indicate that the effectiveness of inclusive educational practices depends not only on teachers' individual competence, but also on the institutional organization of interdisciplinary support. The functions and responsibilities of inclusive support teams remain insufficiently formalized, which may limit coordination, accountability, and consistency of pedagogical assistance. Strengthening collaboration structures through clearer institutional guidelines, mentoring mechanisms, and systematic professional support could improve the implementation of inclusive practices at the school level.

The correlations identified using Pearson's r coefficient, along with the corresponding values for different respondent categories, are presented in Table 8.

Table 8: Correlation between the responses in each respondent category in Block 4

Respondent	Max/Min	Questions	Pearson's correlation coefficient r
Primary school teachers	Max	Q20-Q17	0.759
	Min	Q21-Q19	0.176
Subject teachers	Max	Q18-Q17	0.810
	Min	Q23-Q22	0.440
Teacher assistants	Max	Q21-Q20	0.632

	Min	Q23-Q18	0.163
Other	Max	Q19-Q18	0.902
	Min	Q21-Q17	0.466

Across all respondent categories, the highest correlations were identified in different areas. The strongest correlation was observed among the group classified as "other", between the ability to formulate measurable goals for learners with SEN and the ability to formulate relevant goals that address various areas of development.

The lowest correlation was found in the group of teacher assistants, between the ability to develop individualised/modified assessment criteria and evaluate the learning outcomes of learners with SEN based on adapted subject curricula, and the ability to formulate relevant goals for learners with SEN across multiple developmental domains. This result may indicate that teacher assistants do not yet fully master developing meaningful goals for learners with SEN based on the assessments, even though this is a core component of their role.

5.5 Continuous professional development

The summary of responses to the questions in Blocks 5–6 indicate that most educators reported having a positive attitude toward inclusion and were willing to adapt their teaching practices. However, only a portion of respondents felt confident in their professional training—particularly in terms of knowledge about the developmental and educational needs of learners with SEN (Table 9).

Table 9: Reported level of confidence in assessments, interaction with specialists, and application of teaching methods for learners with SEN (in %).

Answer	Assessments	Interaction with specialists	Teaching methods
Fully agree	60.9	56.2	60.3
Partially agree	25.4	24.5	28.7
Partially disagree	4.2	4.4	2.7
Fully disagree	1.1	2.5	1.5
Unsure	6.3	7.6	5.1
Don't know/lack relevant skills	2.1	4.7	1.7

Over 60% of respondents expressed confidence in the effectiveness of their inclusive practices and their ability to assess the academic achievements of learners with SEN. At the same time, a significant gap was identified in interagency collaboration: only

56% fully agreed that they engage with specialists outside the school setting, while 12% of respondents indicated that they did not understand the use or need for such collaboration.

Table 10: Correlation between the responses in each respondent category in Block 5-6

Respondent	Max/Min	Questions	Pearson's correlation coefficient r
Primary school teachers	Max	Q26-Q25	0.886
	Min	Q30-Q25	0.156
Subject teachers	Max	Q26-Q25	0.918
	Min	Q30-Q26	0.379
Teacher assistants	Max	Q26-Q25	0.781
	Min	Q28-Q25	0.133
Other	Max	Q26-Q25	0.967
	Min	Q30-Q28	0.474

Across all respondent categories, the strongest correlations were found between the ability to reflect on one's own teaching practice and the awareness of professional development needs, as well as the ability to plan for that training. The weakest correlation was identified among teacher assistants, between their ability to interact with professionals who work with learners with SEN outside the educational establishment, and their awareness of the need for their own professional development along with their ability to plan for it.

5.6 General Trends Based on Survey Results

Primary school teachers (35%) reported confidence, a positive attitude toward inclusion, and an adequate level of preparedness. Subject teachers (45%) more frequently reported difficulties in adapting teaching materials and expressed the need for training in teaching methods. Other specialists (20%) emphasised the importance of team-based collaboration and specialised training sessions. All groups expressed a strong need for regular professional development (80%) and improvement of teaching materials and resources (70%).

Trends by years of teaching experience were reported as follows: up to 5: greater acceptance of new methods and materials (65%); 5–15: the need for additional teaching support and regular training (70%); over 15: difficulty in adapting to innovations in inclusion and the need for practical support (75%). All groups emphasised the importance of improved resource provision and psychological support (up to 80%).

Women (85%) showed greater readiness to implement IE, highlighting importance of psychological support and the need for further training and resources. Men (15%) more often emphasised a lack of teaching methods and materials but placed less emphasis on psychological support.

Positive trends identified in the analysis included: readiness of educators to implement inclusive practices (72%), high levels of motivation for continued learning (65%); positive attitudes toward supporting learners with SEN (68%). Negative trends included: insufficient material and technical infrastructure (78%), lack of high-quality teaching support (70%), limited practical knowledge and skills (63%), emotional burnout and stress among educators (56%).

The average respondent scores on the SDS (fully disagree; partially disagree; unsure; partially agree; fully agree; don't know/lack relevant skills) (Osgood at al. 1967) are presented in Table 11.

Table 11: Average score of respondents' answers on the SDS.

Parameter	Average score	Teacher assistants	Primary school teachers	Subject teachers
Block I	4.29	4.38	4.39	4.16
Block II	4.34	4.44	4.46	4.21
Block III	4.22	4.31	4.36	4.11
Block IV	4.18	4.25	4.32	4.08
Block V-VI	4.22	4.28	4.28	4.13

We conclude that all respondents generally rated their experience and ability to work with learners with SEN at a high level, expressing confidence in their knowledge and strategies to address challenges and needs of these learners. Overall, the mean score on the SDS was 4.27 (on a scale of 0 to 5), indicating a high level of perceived competence.

Despite these relatively high scores on the SDS and the strong and statistically significant Pearson correlation coefficients ($p \leq 0.01$) across key indicators, we conducted an additional analysis of open-ended responses included in the questionnaire. This qualitative data provided important insights and helped to identify or further specify potential gaps in the development of inclusive competencies.

These responses were included in Block 2: Collaboration with educational stakeholders; Block 3: Ensuring a safe and healthy learning environment; and Blocks 5–6: Continuous professional development.

The identified categories of difficulties can be summarised as follows: difficulties in interpersonal interaction — with parents of learners with SEN, the learners themselves, colleagues within the educational establishments, as well as specialists outside the establishment; professional helplessness when working with learners who have complex developmental characteristics; challenges related to resource provision, primarily human resources, and teaching materials.

6. Discussion

The purpose of this study was to investigate Ukrainian educators' self-reported beliefs, attitudes, knowledge, and practices concerning IE. Based on the results from the questionnaire, respondents rated their level of training as high. We identified a notable discrepancy between three sets of data: (a) educators' self-assessment based on their answers, (b) statistical analysis of the results, (c) educators' answers to the open-ended questions.

The discrepancy between answers to open and closed-ended questions was particularly evident in teamwork and collaboration. In the analysis of the data from closed-ended questions, in all four respondent categories the highest correlation was found between teachers' ability to collaborate with colleagues, their capacity to jointly determine required material adaptation and curriculum modification. At the same time, in their responses to open-ended questions, both general education teachers and support specialists reported that there was insufficient collaboration within the teaching staff. In addition, respondents pointed to a lack of coordination from school administration and insufficient cooperation with parents of learners with SEN.

The absence of genuine partnership remains representative of situation in many Ukrainian educational establishments. From a methodological perspective, research has demonstrated that thorough planning, joint decision-making, and a coordinated approach among team members around the child can produce synergy that significantly increases the team's effectiveness in developing quality education (Martynchuk et al. 2020). One of structured frameworks of teacher competencies highlights essential components of inclusive teaching practices as collaboration with specialists and school administration, cooperation with typically developing peers, being a positive influence on the learner's life outside of school, implementing home visits, providing parental support, and fostering family engagement (Deniz and İlik 2021). Understanding this systemic approach can help teachers broaden their perspective on learners with SEN.

In responses to closed-ended questions teachers self-reported that they were highly able to create environments that support learners' socioemotional development. However, among primary school teachers, the lowest correlation was found between the ability to identify necessary adaptations and modifications according to learners' individual needs and skills required to create a respectful, psychologically safe, and non-discriminatory classroom environment.

In their responses to open-ended questions, educators acknowledged challenges in managing learners with behavioural and emotional difficulties, as well as reporting low learner motivation. These responses suggest a lack of sufficient capacity among teachers to engage learners with SEN. This gap in IC among Ukrainian educators is a critical area for reflection. According to international studies, promoting learner motivation and a sense of belonging to the group, for example, through shared activities, is a key indicator of a positive learning environment (OECD 2023), one that fosters wellbeing, meaningful interactions, and relationships that enhance a sense of purpose in life (Isola et al., 2017).

Analysis of closed-ended questions pointed to teachers' ability to formulate relevant and measurable goals for learners with SEN and monitor progress. The lowest scores were recorded among teacher assistants, particularly in their ability to design

individual assessment criteria, set relevant goals, and evaluate learning outcomes. In their responses to open-ended questions, teachers highlighted their difficulties in assessing learners with SEN and prioritising learning objectives. This area of practice is of particular importance, as the ability to formulate goals and sequence the steps required to teach them is directly related to learners with SEN outcomes.

Teacher's ability to cope with complex tasks in inclusive environments will depend on their professional qualification in fields of inclusion and special education (Hanssen et al. 2025). However, while acknowledging the importance of training in IE, we argue that core indicator of positive change in education of learners with SEN in Ukraine today lies in values and attitudes of teachers. This attitude has been termed "new conceptual thinking" by academics (Zagona et al.2017), a term used to describe an educator's capacity to recognise personal and social significance of their own professional actions on outcomes of learners with SEN and to take responsibility for their impact on these outcomes. In our view, it is only with this mindset that the implementation of what has been referred to as the "double demand of inclusive pedagogy" (Mäkihonko et al., 2024) becomes possible, when teachers must consider both individual needs and inclusion of all learners.

The findings should also be interpreted in the context of the ongoing war in Ukraine, which has significantly affected educational systems, teaching conditions, and psychological well-being of educators and learners. Wartime disruptions, internal displacement, emotional exhaustion, and unstable educational environments may influence both the development and implementation of inclusive competence in schools. Although these variables were not directly measured in the present study, their potential impact should be considered in interpreting the findings. Future research could incorporate wartime-related educational and psychosocial factors to provide a more comprehensive understanding of inclusive education practices in crisis conditions.

7. Conclusion

This study enabled an in-depth analysis of current state of IC among educators in Ukraine, professionals who play a key role in the education of learners with SEN. Our findings revealed certain gaps in the pedagogical and methodological support for IE. Even at theoretical level, teacher competence in inclusive classrooms is often perceived primarily as a set of specific knowledge, skills, and abilities. However, truly comprehensive IC must also include personal values, motivation and interest in inclusive practice, the ability to collaborate effectively in a team, and sensitivity to developmental pathways of learners with SEN.

The results of the study confirm that the development of inclusive competence of teachers is a multidimensional process that is directly related to the achievement of several sustainable development goals. Ensuring quality education, reducing inequality, supporting the mental well-being of students, strengthening the institutional capacity of the education system, and developing partnerships appear as interconnected components of a single process of educational transformation. Inclusive education in this context acts not only as a pedagogical practice, but also as a strategic tool for sustainable development, contributing to the formation of a just, resilient, and socially cohesive society.

In response to identified needs of Ukrainian educators and guided by international frameworks, we intend to develop a professional development curriculum that adopts a systemic and practice-oriented approach. We believe the most appropriate format for such a programme would be a matrix structure aligned with key dimensions proposed by the European Agency for Special Needs and IE, namely: valuing learner diversity, supporting all learners, working with others, and engaging in personal and professional development (European Agency for Special Needs and IE 2022). Each of these areas would be explored through the structural components of competence: attitudes and beliefs, knowledge and understanding, and skills and practical abilities.

The study suggests that future CPD models should integrate not only competence development, but also institutional coordination strategies, mentoring systems, and interdisciplinary collaboration mechanisms supporting inclusive school environments.

We believe this curriculum will represent a high-quality model of professional development, enabling teachers to acquire and further develop the competencies necessary for effective implementation of IE in diverse classroom settings.

At the same time, the long-term effectiveness of continuous professional development programs in inclusive education requires further longitudinal investigation. Future research should examine whether sustained professional training contributes to measurable improvements in learner participation, interdisciplinary teacher collaboration, instructional adaptability, and the overall effectiveness of inclusive classroom environments. Such evidence would strengthen the empirical foundation for designing sustainable CPD models aligned with the objectives of SDG 4 and inclusive educational transformation.

8. Limitations

Questions regarding possible limitations are related to the reliability of teachers' responses, which could be affected by: the effect of social desirability (attempt to meet expectations, because conceptually Ukrainian teachers know that being tolerant of people with special needs and supporting them is a requirement of a civilized state); possible underestimation of their skills in supporting individuals with SEN by subject teachers and teaching assistants, lack of experience in relying on their decisions regarding adaptation/modification of the environment and teaching materials, and orientation to requirements of educational institution administration. In the future, this limitation can be overcome by increasing the IC of not only primary school teachers, but also subject teachers and assistants when they have a clear understanding of their area of responsibility and the requirements for professional support for people with SEN.

It is also possible to recognize limitations associated with self-assessment, since teachers' perception of their own competence is personal perception and may not reflect a sufficiently objective reality. However, it was important in our study to find out subjective view of teachers on their own IC and, mainly through open-ended questions, to find out their perceived needs for professional development.

9. Disclosure Statement

The use of artificial intelligence tools (ChatGPT, OpenAI, 2023) was limited exclusively to supporting the formulation of preliminary analytical insights. No personal or confidential data were entered into the AI system. The authors bear full responsibility for the content and scholarly accuracy of the final manuscript.

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