US-China Education Review A, August 2025, Vol. 15, No. 8, 533-552
doi: 10.17265/2161-623X/2025.08.001

Primary Teachers' Knowledge and Experiences of Working With Gifted Pupils

Renata Michalak
Adam Mickiewicz University, Poznan, Poland

The article presents selected research results showing the knowledge and experiences of Polish primary teachers in their educational work with gifted pupils. The research mainly sought answers to the following questions: What knowledge do teachers have of the needs and difficulties that gifted pupils may experience? What programs, forms, and methods do they know to support the development of gifted pupils? Which methods and forms of working with gifted pupils do they prefer? What difficulties and successes do they experience in working with the gifted pupil? What needs do they have in working with the gifted pupil? The empirical data showed that teachers' knowledge about giftedness and working with gifted children is low. Many errors related to inadequate work with and care of gifted pupils are probably due to most teachers' inaccurate definitions of the terms "giftedness" and "gifted pupil". The results of the knowledge survey showed that most teachers conceptualize giftedness in a one-sided and stereotypical way. Many need to be made aware of programs for working with gifted pupils. In Polish schools, the youngest pupils displaying giftedness are neglected and do not receive adequate support from teachers, as shown by the results of the survey of teachers' experiences. A predominantly didascalocentric approach characterizes the preferred forms and methods of organizing the education of gifted pupils. The individualization of work with gifted children is reduced to giving them more tasks rather than responding to their individualized needs. Teachers report a need for improvement in working with gifted pupils, and many rate their knowledge in this area low or very low. The research undertaken is essential as it reveals the directions of desirable changes in early childhood education teachers' training and in-service training programs and the forms of support for them in their professional practice.

Keywords: gifted pupil, ability, early childhood education, teacher, knowledge, experience

Introduction

Undertaking reflection and research on gifted students in primary education is important for several reasons. Firstly, the remarkable flourishing of research on children in recent decades has made it possible to recognize that this is a critical period for the development of many basic human abilities, and that adulthood in many respects is a product of the experiences and changes that occur in childhood and are crucial for development and what a person achieves at subsequent stages (Gopnik, Meltzoff, & Kuhl, 2004; Kuhl & Meltzoff, 2013). Secondly, the childhood stage is a period of particular sensitivity of the brain to a certain type of stimuli and, at the same time, a greater sensitivity of the brain to injury and neglect from environmental factors. During the critical period, the brain shows an increased readiness for a certain type of experiences that shape its architecture (Boleyn-

Renata Michalak, Ph.D., Professor, Faculty of Educational Studies, Adam Mickiewicz University, Poznan, Poland.

Fitzgerald, 2010; Borkowska, 2011; Kuhl, 2010). Thirdly, the development of ability and the educational success of the gifted child is conditioned by factors that come under conscious control and is the result of supporting and stimulating his or her development from early years (Barbier, Donche, Verschueren, 2019; Nisbett, 2010). According to R. E. Nisbett (2010), who cites a number of studies, it is modifiable and controllable factors, such as the social environment, rather than the innate genetic code, that are responsible for the development of ability. Fourthly, the teacher plays a great role in the development of children's abilities, since at this stage of development he or she represents for children, on the one hand, a behavioral model and a significant person and, on the other hand, his or her competence determines the quality of the environment for the development of their abilities. The teacher's way of functioning is the object of imitation by the children, since his/her attitudes and those of the pupils must be considered as connected vessels. The teacher's attitude towards gifted children, who are often perceived as different, therefore determines the attitude of their peers. This means that the more often students observe their teacher's positive attitude towards children with special educational needs, the more likely they themselves will behave similarly (Pyżalski, 2019). Furthermore, the way in which pupils' ability development is supported is crucial. Neglecting the development of a pupil's abilities at the beginning of their manifestation has very detrimental consequences, as all spheres of a pupil's functioning are usually affected (Subotnik, Olszewski-Kubilius, & Worrell, 2011). Fifthly, the younger school age, due to the dynamic development of the sensory and emotional spheres, is particularly conducive to the spontaneous emergence of various abilities. These are sometimes unevenly developed in children. There are huge individual differences between them. However, it is already possible to observe general talents, recognized as potentials, as well as special abilities: mathematical, linguistic, natural, technical, artistic, creative, and artistic (Cross & Coleman 2005). Children, therefore, need competent teachers who are able to diagnose children's potential and plan appropriate support for their differentiated needs, so as not to extinguish pupils' abilities or contribute to difficulties in functioning.

This view of childhood changes the perspective on how to think about, understand, and value the potential of the learner and creates new tasks (not only) for education. Adequate attention to the development of the pupil, especially when he or she is still at the beginning of formal education, is of great, not to say decisive importance for his or her future functioning. The quality, therefore, of a child's developmental environment can, to a greater or lesser extent, stimulate his or her potential and thus translate into the quality of his or her future life and this in all spheres (Kuhl & Meltzoff, 2013; Fields, 2012; Nisbett, 2010).

Therefore, the value of educational work with a student who manifests giftedness at the childhood stage cannot be overestimated. The quality of support he or she receives at that time determines to a significant extent the dynamics and direction of his or her giftedness. The school, and above all the teachers, have an enormous task here.

Literature Review

Educational work with a gifted pupil is not an easy challenge for every teacher and can be a source of many difficulties in their professional functioning. Currently in Poland the issue of educational work with a gifted child is gaining exceptional importance due to the pursuit of inclusion of all pupils. Teachers from Poland are much more opposed to educating gifted students in special classes or schools than respondents from Slovakia, Ukraine, Belarus, Bulgaria, and Romania (Giza, 2023). Teachers play a key role in this (Giza, 2020; Madalińska-Michalak,

2018). Especially in primary schools, inclusive education can be a challenge for teachers. Classes usually consist of a large group of students who are heterogeneous in terms of their learning abilities, knowledge, and skills. All these students have their own educational needs (Little, 2018; Madalińska-Michalak, 2018).

This difficulty is compounded by the lack of ready-made, universal, and standardised patterns of educational activities that can be easily applied in the process of creating conditions for maximising the potential of all students with special educational needs, including gifted students. Furthermore, research shows that most teachers in Poland do not feel qualified enough to work with gifted students, despite being fully qualified teachers (Dyrda, 2013; Michalak, 2022a). In their teacher training, the attention paid to knowledge and specific pedagogical and didactic skills related to gifted education is very limited and often not mandatory (Michalak, 2022a). Teachers therefore feel that they lack the knowledge, skills, and understanding to teach gifted students effectively (Giza, 2023). The acquisition of knowledge about teaching gifted students is usually done through in-service training. Teacher training institutions that offer continuous professional development in gifted education are marginal (Dyrda, 2013; Fechner-Sędzicka, 2013). On the other hand, professional development that meets teachers' level of knowledge and skills could improve teachers' knowledge and skills regarding gifted students and their educational needs (Desimone & Garet, 2015; Little & Housand, 2011). Professional development that meets teachers' needs could, in turn, lead to improved education for gifted students (Thurlings & Den Brok, 2017).

Undoubtedly, a major role in the process of supporting the development of gifted students is played by well-trained teachers who are aware of children's individual needs and developmental mechanisms (Dyrda, 2013; Limont, 2010). This is because giftedness, despite being a complex and ambiguous phenomenon, is subject to the process of improvement and developmental support (Drost-Rudnicka, 2015; Fechner-Sędzicka, 2013; Mönks, 2008; Sternberg & Grigorenko, 2011).

Difficulties of Gifted Pupils' Functioning at School and Their Basic Sources

Knowledge of the needs and difficulties that gifted pupils may experience is a fundamental prerequisite for a teacher's effective education. Gifted pupils may experience difficulties stemming from complex causes, though they result mainly from the failure of teachers and the school system to meet the specific educational needs of gifted pupils. For gifted students (and not only them) to be successful at school, they need to be motivated to learn and socially accepted. Gifted students need to be recognized and supported by teachers in order to fully develop their potential talent (De Boer, Minnaert, & Kamphof, 2013). If the educational needs of gifted students are not met, their well-being may be affected. They may develop social-emotional difficulties (Mathijssen, Minnaert, & Kamphof, 2018), underachieve (Dare & Nowicki, 2019; Dixson et al., 2020; White, Graham, & Blaas, 2018) or even drop out of (mainstream) education (Hansen & Toso, 2007).

Attributes typical of a gifted child may help him or her function actively and satisfactorily as a learner in some situations, but may cause difficulties in others. These difficulties may result from a lack of synchrony in the rate of development of emotional, intellectual, psychomotor, or linguistic abilities in students who are gifted in one area (Peterson, 2015; Robinson, 1996). Identifying a student only through the prism of his or her specific, often narrow, giftedness is therefore detrimental to the student, as he or she does not receive developmentally appropriate support, which becomes the cause of his or her many difficulties in fulfilling the role of a student (Dyrda, 2007; Mönks, 2008; Wojnarowska, 2014).

For example, cognitively gifted students, who are clearly accelerated in their intellectual development, may be significantly developmentally behind their peers emotionally and socially. As research shows, they are more prone to the occurrence of existential depression (Fiedler, 1999; Gross, 2002; Limont, 2013). They manifest stronger emotions when they are unable to achieve a set goal, which creates emotional tension for them, which in turn can turn into frustration that disrupts their psychosocial functioning. In addition, they are more idealistic about the world than their peers, and their heightened emotional sensitivity affects the way they experience moral issues (Mróz, 2013). They do not hesitate to draw the attention of others when their knowledge contradicts their experiences.

As M. M. Piechowski (2013) points out, what is normal and natural for gifted students may be considered bizarre and unnatural by peers and teachers. As a result, gifted pupils often experience a lack of understanding and their behaviour is sometimes perceived as disruptive, disobedient, troublesome, malicious, or disruptive. This social disadvantage of the gifted pupil is mainly due to the failure of teachers to diagnose the child's potential at the beginning of education and to monitor its development. Teachers do not pay due attention either to the abilities manifested by the pupil or to the competences of the less developed ones. They neglect them or treat them as an obstacle to the standard process of competence development (Berman, Schultz, & Weber, 2012). They often leave the child alone or even punish them for deviating from the norm, thereby extinguishing their courage, curiosity, passion, creativity, and sense of agency and freedom. They then fail to stimulate students' development, which leads to the extinction of their enthusiasm and motivation and the achievement of results that do not match their abilities (Dąbrowska, et al., 2013; Renzulli, 2012; Sękowski & Łubianka, 2015).

Unusual ideas, behaviours, and solutions can also lead to group conflicts (Dzierzgowska, 2012; Salcher, 2009; Subotnik et al., 2011). Peers isolate and reject gifted children, condemning them to loneliness and functioning on the fringes of class life. "Loneliness at a distance" is a common term for the situation of gifted and talented children. Their rapid development distances them from their peers. Sometimes they lack friends, and their talent provokes jealousy. The danger of experiencing loneliness in a child's psychological development is associated with experiencing negative emotions and suppressing them in oneself, which can lead to emotional immaturity, the appearance of neurotic and character disorders, as well as psychosomatic diseases (Pufal-Struzik, 2017; Worobiej, 2011).

Dislike, pressure from peers may also lead a gifted student to deliberately diminish his or her own successes and achievements in order to earn their acceptance. The overall motivation to learn and the willingness to engage in risky behaviours will then decrease.

In this context, it is worth mentioning that empirical studies by Garland and Zigler (1999), Nail and Zigler (1997), Neihart and team (2002), Richards and team (2003), and Shechtman and Silektor (2012), cited by Lo et al. (2019) showed that the majority of students traditionally identified as gifted are well adjusted and have fewer social-emotional problems compared to their peers, despite the fact that social-emotional problems tend to affect children with high cognitive functioning.

Reduced motivation to learn and develop one's own abilities can also result from the organization of the educational process itself, i.e., excessive teacher control and the need to follow the student's lead, routine educational activities, directive teaching methods, marginalization of the student's independent activity, waiting for a correct answer or the use of schemes and standardized rules. Schematic management of the educational

process leads to cognitive and social exclusion of students who show non-standard patterns of thinking and acting. It prevents an original approach to problems and disrupts the individual development of a gifted student (Michalak, 2022b).

The source of difficulties in cognitive, social, and motor functioning of the gifted student is also the restriction of educational work to the walls of the classroom, a curriculum, core curriculum, or textbook (Klyuchko, Lyablina, & Gavrilova, 2013). Research clearly shows that outdoor education supports the cognitive, socio-emotional, and motor functioning of students with special educational needs (Kuo & Taylor, 2004; Maller, 2009; Keniger, Gaston, Irvine, & Fuller, 2013; Gustafsson, Kentt ä, & Hassm én, 2011).

Pupils' lack of exposure to diverse learning environments exacerbates their difficulties in meeting school challenges and inhibits the development of their talents. This view is supported by the concept of social inclusion, which treats giftedness in relational and transactional terms. The quality of the context in which the learning process takes place can more or less support pupils' development (Lo et al., 2019).

The non-standard functioning of gifted students in the school environment, resulting from the specific, albeit natural, needs and mechanisms of their development, can lead to a lack of social acceptance and to the extinction of their motivation to learn. This dire situation can be prevented by the intervention of a teacher who is sensitive to the pupil's individual development path and who has the key competencies to create a rich environment for his or her active learning.

An Educational Environment That Supports the Development of the Gifted Learner

A prerequisite for success in any field, as already emphasized, is motivation and social acceptance. Based on the assumptions of SDT (Self-Determination Theory, also known as SDT, developed by E. L. Deci and R. M. Ryan), it can be said that a supportive social environment can significantly increase the level of motivation of a gifted child, mainly by organising conditions that allow the satisfaction of his/her three natural needs: autonomy, sense of competence, and relatedness to others. In this respect, certain fundamental and necessary factors for the motivation of gifted children can be distinguished. In the context of these factors, an important task of the teacher (adult) supporting the growth of the gifted pupil's motivation is to provide opportunities for the pupil's active involvement through multisensory experience, exploration, experience, and verification of his or her personal understanding of the world. The child's subjective, active, and uninhibited development, innovative and creative approach to responsibility, cognitive independence, critical view of reality, independence of thought and action, sense of agency and realization of autonomous goals, desires and needs, as well as the undertaking of tasks of a team nature requiring cooperation and bonding, are the main features of education that foster increased motivation, not only of the gifted pupil. Authentic developmental change occurs only when the student is genuinely engaged multilaterally (behaviourally and psychologically) and adequately supported in changing internal mental structures (Michalak, 2013).

A student's motivation to develop his or her skills can be externally controlled according to the assumptions of Self-Determination Theory (Deci & Ryan, 2000). The strength of the influence of the external environment depends on its quality, which can weaken or strengthen it. An environment that is conducive to the satisfaction of the student's natural needs is also an environment that enhances the student's motivation.

Such an environment, as R. Grabinger notes, is a complex system of specific learning strategies and techniques. The author refers to it as a rich environment for active learning (REAL), the aim of which is to engage

all learners in dynamic, authentic, and generative learning activities. These activities allow students to take control and responsibility for the whole learning process, leading to the development of their potential and the satisfaction of their natural needs. Grabinger argues that this is only possible if the learner and his or her development are at the center of the learning process, rather than a standardized programme, and if each learner has the opportunity to act freely, to negotiate, to test his or her own ideas, and is constantly encouraged and stimulated to do so (Grabinger, 1996).

The creation of an active learning environment is promoted by programmes that are flexible and adapted to the individual needs of all students, based on pluralism, multiplicity and diversity of objectives, learning methods and forms, tasks, didactic means, time and place of work, methods and tools for student assessment, as shown by the results of studies by, among others, de Oliveiry, Capellini, and Rodrigues (2020); Robertson and Pfeiffer (2016); Yu and Jen (2020). Particularly fruitful here is the use of methods that are investigative in nature and require collaboration and multilateral engagement, such as: experiment, interview, project, storyline, debate, drama, field game, etc. (Michalak, 2013).

The model described above for creating a learning environment that promotes the involvement of every student fits into a concept that interprets giftedness in terms of inclusion. Here, giftedness is understood as a transaction, a complex interaction between the learner and the learning context (Lo & Porah, 2017). It is assumed that giftedness is a function of the learner's context, personal characteristics, and individual development. In this conception, the system for making sense of giftedness is process-based rather than person-based and focuses on learning pathways to excellence for all students, not just those identified as gifted (Ziegler & Stoeger, 2017). Every student has the opportunity to become "gifted" if the right context is created for them. An optimal learning environment is based on creating a stimulating learning context that provides opportunities for each student to discover and nurture their unique abilities, strengths, and interests. The teacher's role is to create the material, social, and intellectual conditions that provoke causal actions, such as evoking self-awareness and cultivating personal goals in students. Here, the teacher becomes a catalyst who helps students realise opportunities for action within the learning context by eliciting their motivation and agency (Lo et al., 2019). This concept is supported by practices based on a number of theories, including Gibson's theory of affordances (Gibson, 2000), Gardner's theory of multiple intelligences (Gardner, 2006), Sternberg's theory of success intelligence (Sternberg, 1996), Feuerstein's theory of mediated learning (Feuerstein, Rand, Huffman, & Miller, 1980), Vygotsky's theory of development (Vygotski, 1978), Deci and Ryan's theory of self-determination (2000), and many others.

Summing up the above considerations, it should be noted that Polish teachers have many difficulties in working with gifted students and rarely create an environment conducive to their all-round development, which leads to a general discouragement of students in deepening their knowledge, enriching their skills, developing their abilities and, consequently, to a lack of achievement (Dyrda, 2007; Limont & Cieślikowska, 2005; Michalak, 2022b).

The research shows that 80% of the teachers surveyed admit to experiencing difficulties when working with a cognitively gifted student, and almost 50% of them experience these difficulties almost every day. Almost a quarter of the respondents admit that the difficulties are caused by insufficient competence to work with a gifted student. The vast majority of teachers surveyed emphasised their lack of academic preparation for working with gifted students, as academic training at the masters and postgraduate level is overwhelmingly focused on working

with students with different types of dysfunction. Teachers would expect some form of support in this area through the organisation of various workshops (Michalak, 2022b).

The findings of the present study could be used to develop more effective professional development activities that match teachers' knowledge, skills, and professional development needs.

Method and Data Source

The main goal of this project was to identify the knowledge and experiences of early childhood education teachers concerning educational work with gifted students. This study attempted to shed more light on the field of gifted education by answering the following research question:

Research question: How do primary school teachers perceive their knowledge and experiences in the education of gifted students?

Due to the diagnostic nature of the research, a diagnostic survey method and survey technique were used. As Apanowicz (2000, p. 126) notes, surveys involve written answers to questions that construct a conscious, logical, consistent, and coherent set of questions to solve a specific research problem. Therefore, an original survey questionnaire was developed containing mainly open-ended and semi-open-ended questions, with a cafeteria of answers to choose from and the possibility of providing a self-response. The questionnaire was uploaded to an online platform, and a request was made to PC OMEP member teachers to disseminate it to early childhood education teachers. Due to the small number of participants in the online survey, the questionnaire in the form of a hard copy was delivered to willing primary education teachers during a conference held at the University of Lodz in November 2023 (organized by the A. Mickiewicz University in Poznan, the University of Lodz, and the Polish Dalton Association and concerning freedom in education). A total of 461 returns of completed questionnaires were obtained.

Participants

The study involved 447 early childhood education teachers (Grades 1-3). The respondents who completed the questionnaire were 100% female. The study group included teachers who varied in seniority, location, and type of school. The teachers worked in schools located in a metropolitan area (99/22.1%), a city (176/39.4%), a municipal village (98/21.9%), and a rural area (74/16.6%). Respondents worked in schools located in seven provinces: Wielkopolskie (116/25.9%), Warmińsko-Mazurskie (38/8.5%), Mazowieckie (108/24.2%), Świętokrzyskie (39/8.7%), Pomorskie (44/9.8%), Małopolskie (35/7.8%), Łódzkie (67/15%). Respondents' length of service ranged from five to 27 years. The survey was conducted from March to November 2023.

Data Analysis Method

The database and statistical tests were performed using Statistica 9.1 computer software (StatSoft, Poland). The content analysis method (Krzystek, 2018; Miles & Huberman, 1994) was applied to the data collected through open-ended questions by structuring and ordering the respondents' statements. After a list of the most frequent thematic threads was compiled, an attempt to interpret their shared meaning was undertaken.

Ethical Considerations

The research was conducted with a high degree of ethical guidelines of the Declaration of Helsinki and methodological rigor, ensuring that the findings are both reliable and valuable for the field of education. The recruitment of teachers for this study was meticulously aligned with three fundamental principles: voluntary participation, recruitment congruent with the study's aims and methods by established inclusion and exclusion

criteria, and a selection process devoid of discrimination. Accordingly, three critical criteria were rigorously observed: informed consent, voluntary participation, and confidentiality; the study was designed to ensure no risk of harm to the participants.

Results

The following section presents the results of a comprehensive survey conducted to assess primary education teachers' understanding and strategies for working with gifted pupils.

Primary Education Teachers' Knowledge of Gifted Pupils and Ways of Working With Them

Proceeding to the survey of respondents' knowledge of the gifted pupil and working with him, teachers were asked to rate their knowledge of the gifted student's needs and ways of working with him on a five-point scale. The data showed that 268 (60%) respondents rated their knowledge of gifted student needs on average; 138 (31%) rated their knowledge as high, 21 (4.6%) as very high, and 20 (4.4%) as low. None of the respondents rated their knowledge in this area very low. On the other hand, the distribution of respondents' answers regarding the assessment of their knowledge of how to work with gifted students is as follows: 45 (10.1%) respondents rated it very low; 293 (65.5%) low; 94 (21%) average; and 15 (3.4%) respondents good. No one among the respondents rated their knowledge of ways to work with gifted pupils at the maximum.

The Image of the Gifted Student in the Light of the Knowledge of Early Childhood Education Teachers

The surveyed early childhood education teachers constructed the concept of a gifted pupil.

There are many different definitions of a gifted student in the literature. Adopting a certain one certainly affects how a teacher works. According to I. Garcia-Martinez, Gutiérrez Cáceres, Luque de la Rosa, and León (2021), the most widely accepted definition was provided by Renzulli, who believes that gifted students are those who possess three sets of characteristics, with equal emphasis on each: above-average intellectual ability, high level of engagement in tasks, high level of creativity. The study of knowledge about gifted students began by instructing respondents to choose from the proposed five or to provide their definition of the term gifted pupil. No teacher surveyed formulated their definition. The most significant number of choices received the definition: "A gifted pupil is a person who manifests a high level of general ability (intelligence) or has a certain special ability in the sphere of mental activity" (32.2%). On the other hand, the least number of choices was given to the definition that "a gifted pupil is a student with special educational needs" (4.5%). The detailed distribution of responses is illustrated in Table 1.

Table 1

Definition of a Gifted Pupil by Teachers

Definition	N	%
A gifted pupil is a student with special educational needs.	20	4.5
A gifted child is a pupil with special ability in some area, e.g.: mathematics, music, physics etc.	31	6.9
A gifted child is distinguished by certain characteristics (e.g.: good memory, logical and analytical thinking, creative) and the way he/she functions in society compared to others.	114	25.5
A gifted child is a person who manifests a high level of general ability (intelligence) or has a specific special ability in the sphere of mental activity.	144	32.2
A gifted pupil shows an above-average level of psycho-physical development and is characterized by cognitive curiosity and a high level of motivation.	138	30.9

Note. N = 447.

Characteristics of Gifted Pupils by Teachers

Next, respondents were asked about the characteristics of gifted pupils. The surveyed teachers were asked to choose attributes from those given or list their own. As the results showed, no person surveyed did not enrich the set of characteristics of gifted pupils. Among all possible answers, the highest number of choices gained the characteristics of a gifted student, such as: "Gifted student masters new material faster than peers" (62.2%), "Has above-average talents" (56.7%), and "Curious about the world" (45.6%). On the other hand, the lowest number of choices received responses: "Cooperates well in a group" (0%), "Closed-minded" (7.8%), "Low self-esteem" (7.8%), and "Has difficulty cooperating in a group" (6.7%).

Table 2

Characteristics of Gifted Pupils by Teachers

Characteristics	N	%
Has above average aptitude	253	56.6
Has a high sense of self-worth	45	10.1
Has a low sense of values	35	7.8
Strongly concentrates on the activity, task at hand	186	41.6
Masters new material faster than other peers	278	62.2
Completes tasks to the end	84	18.8
Has interests focused on a specific area	99	22.1
Plays more often with older students than with peers	74	16.6
Is curious about the world	206	46.1
Is bored	19	4.3
Is willing to express his/her own opinions	69	15.4
Is closed-minded	35	7.8
Cooperates well in a group	0	00.0
Has difficulty cooperating in a group	30	6.7
Is creative, creative	74	16.6
Other, which ones? ...	0	00.0

Note. N = 447.

Knowledge of Surveyed Teachers About the Needs of Gifted Pupils

Most surveyed teachers, 92.2%, believe that gifted pupils possess special educational needs. Respondents were asked to indicate the needs of gifted students they knew. The question was multiple choice. According to the teachers' knowledge, gifted pupils have special educational needs, which are mainly related to the organization of the educational process and concern the teacher's competence. The needs with the highest number of indications are represented by the need for a rich and varied learning environment (69.1%), the need for continuous broadening and deepening of learning content (55.7%), and the need for creative teachers in differentiated teaching methods (53.5%). On the other hand, the needs with the lowest number of choices are the need for movement (12.8%), the need for motivation to perform (20.8%), and the need for teacher support and care (23.3%).

Table 3

Teachers' Knowledge of the Needs of Gifted Children

Needs	N	%
More attention from the teacher	156	34.9
Faster pace of teaching	166	37.1
High methodical attractiveness	265	59.3
Continuous broadening and deepening of teaching content	249	55.7
Individual teaching	176	39.4
Creative teacher's ways of working	239	53.5
Diversified offer of additional activities	156	34.9
Contact with peers	135	30.2
Developing one's passions related to e.g., sports, music, art	156	34.9
Friendly atmosphere for learning	161	36.0
Understanding and acceptance from peers and adults	166	37.1
Physical exercise	57	12.8
A rich and varied learning environment	309	69.1
Motivation to perform	93	20.8
Special support and care from the teacher	104	23.3
Other, which? ...	0	00.0

Note. N = 447.

Respondent's Knowledge of the Difficulties That Gifted Pupils May Experience

Understanding the potential difficulties that gifted students may experience in the realities of school is crucial to planning an effective process for their support. The literature indicates that gifted students have the most difficulties in emotional and social functioning (Adelson, 2007; Dzierzgowska, 2012; Mönks, 2008; Salcher, 2009). They have difficulty forming peer relationships and cooperating in a group. As a result, they experience loneliness and peer rejection, which in the case of a child is extremely detrimental, especially to their psychological functioning and development. Satisfying the need for acceptance and social belonging is a prerequisite for the construction of an adequate individual and a social identity by the pupil. Knowledge in this area enables teachers to take preventive measures and intervene if the pupil's functioning and development are at risk.

The data obtained from the survey of teachers through an open-ended question show that their knowledge of the difficulties that gifted pupils may experience relates to the sphere of emotional, social, and cognitive functioning. The most common responses were: boredom with content and teaching methods (68.5%); difficulty working in a group (61.1%); difficulty communicating with peers (51%); unsatisfied cognitive curiosity (51%). The detailed responses of the respondents are presented in Table 4.

Table 4

Teachers' Knowledge of the Difficulties of Gifted Pupils

The difficulties	N	%
Problems with communication, communicating with peers	228	51.0
Problems with concentration of attention	104	23.3
Problems with cooperation in a group	273	61.1
Sense of otherness, difference	184	41.2

Table 4 to be continued

Problems with self-esteem	134	30.0
Emotional hyperactivity, e.g., tantrums, aggression	95	21.3
Sensory hypersensitivity, e.g., to noise, touch, restless behaviour in lessons	67	15.0
Problem dealing with difficult situations, new situations	98	21.9
Boredom with content and teaching methods	306	68.5
Unsatisfied curiosity	228	51.0
Underachievement, underachievement syndrome	134	30.0
Lack of parental understanding and support	65	14.5
Lack of adequate support, including methodical and substantive support, from teachers	131	29.3

Note. N = 447.

Teachers' Knowledge of Strategies, Methods, Forms, and Programs for the Education of Gifted Pupils

Assuming that knowledge of strategies, methods, forms, and programs of education determines the educational success of the teacher with gifted pupils to a large extent, this was also made the subject of the study. Accordingly, an attempt was made to recognize their knowledge regarding strategies, methods, forms, and programs for educating gifted pupils. The study showed that only 14 teachers could list their strategies for working with gifted pupils. Eight of them mentioned the following strategies: associative and practical. Four surveyed research strategies and two valorization strategies, based on emotional-artistic activity. On the other hand, almost half of the respondents, i.e., 49.4%, mentioned when asked about the strategies they know for educating gifted pupils' individual teaching, and slightly less, i.e., 44.3% respondents, tutoring. The survey of respondents' knowledge of methods of working with gifted students through an open-ended question shows that they are commonly familiar with methods characteristic of the associative strategy, such as chat, lecture, discussion, and storytelling. These methods were mentioned by nearly 90% of the respondents.

On the other hand, the answers to the question with a cafeteria of answers for multiple choice show that all respondents are familiar with chatting, lecture, and working with a book (100%); followed by slightly fewer: construction and art, and music works (97.8%); significantly fewer respondents declared: brainstorming (56.6%) and educational project (54.8%). The fewest respondents indicated: simulation (2.5%), storyline (3.1%), and drama (10.5%). In the instructions for the question about methods, respondents were asked to indicate the methods they were familiar with to the extent that they would use them in their work with gifted pupils. The data presented in Table 5 show that associative methods are commonly known to the respondents, while research methods are the least familiar.

Table 5

Teachers' Knowledge of Methods of Working With Gifted Pupils

Methods	N	%
Talk, lecture	447	100
Project	245	54.8
Drama	47	10.5
Storyline	14	3.1
Simulation	11	2.5
Discussion, debate	368	82.3
Experiment	86	19.2

Table 5 to be continued

Didactic games	167	37.4
Brainstorming	253	56.6
Conceptmapping	134	30.0
Outdoor games	93	20.8
Storytelling	447	100
Working with a book	447	100
Observation, measurement	308	68.9
Drama	47	10.5
Construction, artwork and music	437	97.8
Impressionistic, e.g. visits to museums, theatre	398	89.0

Note. N = 447.

When asked whether respondents knew of any specific programs for educating gifted students, only 236 answered in the affirmative. On the other hand, only 108 of them, or 24.2% of the total number of respondents, mentioned programs they were familiar with. These include Kangaroo Mathematics; Odyssey of the Mind; Wars and Sawa; Such as Mozart, APROGEN Alternative Program for the Education of Gifted Students; zDolny Ślązak; Mazovian Talents; Diament; Zdolni; Order and Adventure, K. Szmidt's Creative Lessons and General Development Training for Gifted Children, from the primary school by I. Tokarska. As for the respondents' knowledge of the forms of work with gifted pupils, almost 90% declared that they were familiar with individual work; significantly fewer respondents (57.9%) pointed to frontal work, that is, with the whole team and worked with a small group (36%).

Primary Education Teachers' Experiences of Working With Gifted Pupils

The investigation of teachers' experiences of educational work with gifted pupils consisted of analyzing respondents' answers to open-ended and semi-open-ended questions that dealt with various issues, which allowed for an in-depth description of the primary variable. Consideration was given to the preferred methods and forms of working with gifted pupils, the needs and difficulties experienced by the gifted pupils with whom the respondents work, the difficulties and successes experienced by teachers, and the needs for working with gifted pupils.

The survey of teachers' experiences began with a question about the types of gifted pupils with whom the surveyed teachers most often work. The questions were semi-open and multiple-choice. The respondents marked or added the kinds of talents that most often occur in the pupils they work with. The highest number of choices were mathematical talents 298 (66.7%), musical talents 243 (54.4%), language talents 198 (44.3%), art/painting 198 (44.3%), motor/sports 184 (41.2%), and technical talents 99 (22.1%). Significantly fewer respondents indicated acting talents 30 (6.7%), social talents 25 (5.6%), and culinary talents 10 (2.2%).

Methods and Forms of Work With Gifted Students Preferred by Surveyed Teachers

The vast majority of the surveyed 318 (71.1%) declared that they base their work with gifted pupils on an individual approach, assigning them additional or more complex tasks during class. Only 34 (7.6% of the total number of respondents) of the respondents give pupils a choice of the type of task and the way of completing it. None of the respondents leave it up to the student to choose where and when to perform the task. Respondents are least likely to use group forms in their work with gifted students. Only 134 (30%) of the respondents declared

this form. The frontal form, working simultaneously with the whole team, is preferred by 233 (52.1%) of the respondents. As for the preferred methods of working with gifted students, the respondents could list max. Three methods they use most often. The data show that the most significant number of surveyed teachers reach for didactic games 233 (52.1%), demonstrations 129 (28.9%), and educational projects 121 (27.1%). The least number of teachers declared that among the preferred methods of working with gifted pupils are storyline 9 (2%), debate 15 (3.4%), and drama 20 (4.5%). Respondents were also asked to indicate the sources they most often draw inspiration and knowledge about ways to work with gifted pupils. Most teachers indicated Internet 261 (58.4%), books 253 (56.6%), and scientific articles 209 (46.7%). Right behind them were webinars 203 (45.4%). The fewest teachers declared: videos 20 (4.5%), community forums 119 (26,6%), and specialized courses 104 (23.3%).

Teachers' Experience of the Needs of Gifted Pupils

The experiences of the surveyed teachers regarding the needs of the gifted pupils they work with were examined through an open-ended question. Most teachers revealed that gifted children: "get bored quickly and, as a result, it is necessary to provide them with new tasks constantly". The analysis of the responses shows that most teachers need to meet the needs of gifted pupils in terms of more attractive tasks 248 (55.5%), giving gifted students special attention and interest 184 (41.2%), faster pace of work 184 (41.2%), building good relationships with peers 143 (32%), understanding and social acceptance 94 (21%), good working atmosphere, without anxiety and stress 85 (19%), motivation to work 81 (18%), and movement 40 (8.9%).

Difficulties and Needs Experienced by Surveyed Teachers in Working With Gifted Pupils

Difficulties experienced by teachers in working with gifted pupils were examined using an open-ended question. Respondents were asked to list all the difficulties they experienced when working with gifted pupils. Data analysis showed that the respondents experienced a wide variety of difficulties. Most of them listed the following: difficulties related to the lack of sufficient time to devote to gifted pupils 308 (68.9%), lack of support from parents, low willingness to cooperate on their part 198 (44.3%), lack of ready-made, universal, and standardized patterns of educational activities 189 (42.3%), lack of sufficient competence to work with gifted students 188 (42%), lack of appropriate teaching aids to work with gifted students 139 (31.1%), little experience 139 (31.1%), lack of support from external institutions 80 (17.9%). Respondents were asked about their needs and what would improve their work with gifted pupils in this research context. The results of the survey show that most teachers need further training and improvement of their competencies 263 (58.8%), freedom of action and independence of action 258 (57.7%), support from other teachers, specialists who have more experience in working with gifted pupils 221 (49.4%), good cooperation with parents 204 (45.6%), appreciation 198 (44.3%), as well as a sense of effectiveness in working with gifted children 99 (22.1%) and a sense of satisfaction with the activities undertaken 80 (17.9%).

Success Experienced by Teachers in Working With Gifted Pupils

The subject of the study was also the experience of success by teachers in working with gifted pupils. In the question: Do the respondents experience success in educational work with gifted students?", the vast majority, i.e., 348 (77.8%), marked the answer "it is difficult to say". 80 (17.9%) respondents gave the affirmative answer to this question. Respondents were asked to list their successes in working with gifted pupils in this connection. Only 64 respondents answered. They included winning or high results in competitions, Olympiads (at the provincial and national level), high-grade point averages of students, increased self-confidence in the child, and

broadening of horizons and skills by pupils participating in competitions. For some teachers, the success was also that the child showed commitment and enthusiasm for work, showed initiative to act, and willingly cooperated with the teacher.

Discussion

The research presented here concerned Polish primary education teachers' current knowledge and experiences in working with gifted pupils. An additional objective of the research was to discuss the difficulties and needs of teachers in this regard to outline the thematic scope of their professional professionalization.

Teachers' Knowledge

Recognizing teachers' knowledge is essential, as it is the foundation of their professional competence, which affects their behavior in the classroom and determines pupil performance (Berman et al., 2012; Kunter et al., 2013). Empirical data have shown that most Polish early childhood education teachers characterize giftedness and the gifted pupil stereotypically, mainly through high intelligence and well-developed cognitive functions. Gifted children are not identified with qualities associated with functioning well in society. The data also show that teachers have many misconceptions, especially regarding gifted pupils and their mental and emotional well-being. Teachers view gifted pupils as more emotionally unstable, sensitive, and bored than other students. Many teachers in the sample believed that gifted pupils have many social and emotional problems. More than half of the teachers believed that gifted pupils have difficulty cooperating in groups and communicating with peers, are characterized by a sense of difference and otherness, have problems with self-esteem, and are characterized by emotional hyperactivity. To teachers' knowledge, gifted pupils have special educational needs, which are mainly related to the organization of the educational process and concern the teacher's competence. Nearly 70% of respondents indicated that gifted pupils need a rich and varied learning environment, and more than half need continuous expansion and deepening of learning content and a creative teacher in ways of working. It is worth noting that most teachers rate their knowledge of students' needs as average and only 4.6% as very good. The surveyed teachers rate their knowledge of ways to work with gifted pupils even worse. The vast majority assess it as low or very low. The study results of this aspect show that teachers need to become more familiar with strategies for working with gifted pupils. Less than half of the respondents included individual teaching and tutoring among these strategies. The survey of respondents' knowledge of methods of working with gifted pupils shows that they are commonly familiar with methods characteristic of the associative strategy, such as chat, lecture, discussion, and storytelling. These transmissive methods perpetuate the student's cognitive passivity, causing boredom and decreased motivation. There are many methodological materials on the market for working with gifted pupils.

Meanwhile, just over half of the respondents admitted to being familiar with special programs aimed at gifted pupils. The competitions they are most familiar with are those related to specific subjects, i.e., mathematics or polonies. They are immediately followed by programs related to supporting the development of artistic talents and programs of local scope. As for the respondents' knowledge of the forms of work with gifted pupils, almost 90% declared that they were familiar with individual work, significantly fewer respondents indicated frontal work, i.e., with the whole team, and the least with small group work.

Teachers' Experiences

The results regarding early childhood education teachers' experiences working with gifted pupils showed a generally not very positive picture. Respondents most often encounter gifted pupils in their work in particular

school subjects, such as mathematics, Polish, foreign languages, and artistic subjects, such as art and music. These are talents that are relatively easy to discover and notice. In contrast, they do not point to socially gifted children who, for example, display leadership abilities, have high visual skills, are creative, are highly engaged in a task, etc.

The vast majority of respondents declared that they base their work with gifted pupils on an individualized approach, assigning students additional tasks or increasing the difficulty of tasks. An individualized approach to the educational process involves differentiation and pluralism of all elements of the educational process. In turn, the research shows that teachers work traditionally and do not leave it up to the students to choose either the place or the time of the task. They also do not differentiate the student's grading system. The least frequent use of group work forms in working with gifted pupils is considered to be very effective (Jamison, Forston, & Stanton-Chapman, 2012; Knopik, 2019). More than half of the respondents prefer the frontal form, that is, working simultaneously with the entire class team, ranked among the least effective. The data show that most of the surveyed teachers use activation methods based on student involvement in their work with gifted pupils. However, it is a pity that few of them use methods based on research activities and valorization based on emotional experiences, which not only create conditions for creative, imaginative activities but foster the development of independence and involvement, which determine the development of abilities. The results of the surveyed teachers' experience of the needs of the gifted pupils they work with show that children need a large number of attractive tasks and a fast learning pace, but also special attention and interest, as well as building good relationships with their peers. Not surprisingly, most respondents experience difficulties related to the need for sufficient time and ready-made, universal, and standardized patterns of educational activities. Respondents also need more sufficient competence to work with gifted pupils. As for the needs of teachers, most of those surveyed indicated the need for further training and improvement of their competencies, freedom of action and independence in taking actions, and support from other teachers and specialists who have more experience working with gifted pupils. Despite experiencing difficulties, the teachers surveyed are also successful in their work with gifted pupils, and they read the students' successes as their own. They include high results in competitions and olympiads and increased motivation to work. According to a study by Giza (2016), teachers are convinced that the quality of work with gifted pupils depends more on their experience than their knowledge. Inadequate and often inadequate knowledge gained from studies can mean practice gaps in knowledge of giftedness, hence the acceptance of a more significant role for experience in working with gifted students. This corresponds with teachers' expectations for in-service training, mainly concerned with methodological solutions, i.e., methodological patterns that are useful in practice.

Conclusion

The chosen research design and method addressed particular research objectives and questions. Therefore, the research conclusions were correlated with the questions, and the results were important for the theory and practice of educating teachers and gifted students. Moreover, the proprietary tools enriched the strategy of examining teachers' experiences. The research results presented here illustrate the need for teachers to be properly prepared to work with gifted pupils. Many of the mistakes and pitfalls associated with inadequate work with and care of gifted pupils stem from the inaccurate definitions of the terms "giftedness" and "gifted student" by most teachers. The results of the knowledge survey showed that most teachers conceptualize giftedness in a one-sided and stereotypical way. These errors are also related to the failure to include proper contexts for developing

abilities and talents, inadequate expectations, and time pressure. Efforts are therefore needed to prepare teachers better to work with gifted pupils. It would also be valuable to develop a systemic offer of in-service training for teachers working with gifted students in the form of cyclical or continuous training courses, workshops, and postgraduate studies, which would not only enable teachers to gain knowledge in the field of working with gifted pupils but would also equip teachers with the skills and competencies necessary for daily and systematic didactic and educational activities undertaken with gifted children (Dyrda, 2012). Exercise schools, understood as mutual learning communities where more experienced teachers share their workshops with less experienced ones, can also play an important role in teacher improvement (Michalak, 2022a). An important mechanism for motivating teachers to improve themselves is to confront their misconceptions and develop an awareness of the need for in-service training in giftedness.

In the context of the study's results, teachers primarily need knowledge and skills in recognizing the needs of students and adapting ways of working to their individualized needs. The scope of professional professionalization of teachers should include both theoretical and procedural knowledge. A balance of theoretical and practical information makes teacher training more effective. In addition, focusing on adapting practices to the unique schooling situations of gifted children can make these activities more effective. Given the great variety of needs of gifted students, teachers should refrain from using standardized programs and forms of assistance. Therefore, developing teachers' skills in designing and implementing integrated curricula with the special needs of gifted children seems necessary (Gierczyk, 2016; Martin-Lobo, Pradas Montilla, & Navarro Asencio, 2018; Yoon et al., 2020). In addition, teacher training should emphasize the development of skills to design programs that take into account psychosocial factors, particularly the educational and organizational resources specific to each individual that promote the psycho-emotional balance of pupils (Garc á-Perales & Almeida, 2019; De Oliveira et al., 2020; Robertson & Pfeiffer, 2016). It is, therefore, advisable to develop the diagnostic competence of teachers to identify the characteristics and needs of gifted children (Doobay, Foley-Nicpon, Ali, & Assouline, 2014) and, in particular, the ability to conduct a psycho-educational assessment process. This is especially important for children who manifest imbalances in developing individual personality spheres. In the training of teachers, attention should also be paid to the ability to read legal documents, both laws and executive acts, to skillfully use the opportunities indicated in them to determine a plan of action that meets the needs of a particular student.

The standard and guiding principles used in educational work with a gifted pupil, namely (1) faster, (2) more, and (3) more difficult, should give way to the fundamental principle of individualization, which flows from the belief in the individual needs of students, the course of their development, and thus the need to seek individual solutions and teaching strategies. Thus, developing original curricula or lesson designs is a fundamental task in the work of every teacher (Michalak, 2022b).

Limitation

This study has some limitations that should be listed and discussed. Firstly, the study's findings were limited to data collected from a self-reported questionnaire mainly based on female teachers' perceptions. Second, the research focuses exclusively on primary education teachers in Poland, limiting its scope. Thirdly, the respondents were exclusively female teachers, failing to reflect the broader gender diversity within the teaching profession. For these reasons, the generalizability of the study is limited, and further research is required to replicate this finding in other societies and cultures (Robertson, 2013).

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