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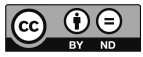

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The Nature of Support Provided to Gifted Primary School Students Is Based on the Teacher's Concept of Giftedness

Abstract

The aim of the research was to identify the type of support that teachers provide to gifted students in grades 4–6 of primary schools in Poland in relation to their concepts of giftedness. Teachers' understanding of the category of gifted students was analyzed: What do they find crucial in identifying gifted students? What areas of gifted students' development are most important to them? Are there differences in the strategies for supporting gifted students between teachers who have different concepts of giftedness and who teach different subjects? The research was conducted on a group of 188 teachers using the standardized 20-item Balanced Development of Gifted Students Questionnaire. It helped identify the scope of the teachers' activities in the cognitive, emotional/social, motivational, and creative spheres. It was shown that the dominant concept of giftedness among the surveyed teachers was cognitive and that their activities supporting gifted students were mainly aimed at mental development and knowledge acquisition. Support of the emotional/social sphere of gifted students was

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least frequently indicated by the respondents. There was consistency between the type of support provided and the teacher's preferred concept of giftedness. There were significant differences in the definition of giftedness and the related type of support between teachers of different subjects. The subject which they taught also significantly differentiated the number of students identified as gifted: The most gifted students were identified by the art teachers, while the least were identified by the math teachers. The results may serve as guidelines for developing teachers' competencies in working with gifted students by popularizing the concept of balanced development and making them aware of the links between beliefs about giftedness and the type of support provided.

Keywords: gifted student, intuitive concept of giftedness, balanced development, teacher's support

Introduction

Gifted students are often perceived as those who, because of their above-average potential, do not require special support from teachers (Carman, 2011; Geake & Gross, 2008). Schools rarely offer comprehensive support aimed at developing the student's potential, not only in the cognitive dimension (Knopik, 2019; Lewowicki, 1986). Moreover, in the Polish education system, no consistent definition of a gifted student or a model for their identification or psychological and pedagogical assistance has yet been developed (Limont, 2012). From the available publications, it can be concluded that teachers identify a gifted student mainly on the basis of their own beliefs and *intuitive* (implicit) knowledge (Cieślikowska & Limont, 2010; Lee, 1999; Moon & Brighton, 2008), rather than on the findings of researchers and specialists. In the Polish context, no research has been conducted so far on the relationship between teachers' definitions of giftedness and practices of supporting gifted students, especially in terms of their comprehensive development.

The aim of the article is to fill this gap and to explain (to some extent) the possible reasons for teachers' failure to recognize as gifted

approximately 30%–50% of the students who meet the psychological and pedagogical criteria for giftedness (Najwyższa Izba Kontroli, 2016). The study can also explain teachers' shortcomings in providing support that meets the educational and developmental needs of gifted students (Knopik, 2019).

Comprehensive support for gifted students: The idea of balanced development

The need to support gifted students with a view toward balancing their development has been present since the 1980s in Robert Sternberg's (1984) theory and its subsequent augmented versions (Sternberg, 2000; 2015; 2019). The indication to stimulate and develop successful and adaptive intelligence alongside general intelligence is a leading theme of his theory. Successful intelligence is an integrated set of abilities necessary for success in life, analyzed in a broader social and cultural context (Sternberg, 2015). *Analytical skills* are needed for the critical evaluation of ideas, abstract thinking, the analysis of the learning process itself, and problem-solving. *Creative abilities* are needed to generate ideas in new tasks and situations. *Practical skills* refer to the application of solutions and ideas with the aim of optimally adapting to the environment and convincing others of their value (Sternberg, 2019).

Therefore, in education, it seems necessary to support the development, assessment, and reward of all skills – not only analytical ones, but also creative and practical ones. Successful intelligence proposes a way to influence and support students toward balanced development and demonstrates the inadequacy of the current methods of measuring intelligence, being limited to conventional intelligence alone (see Sternberg, 2019).

In its expanded form, the triadic theory of intelligence has been supplemented with wisdom. In his Wisdom Intelligence Creativity Synthesized Theory (WICS), Sternberg (2009) argues that in order to solve complex problems, students need analytical abilities, creativity, and practical skills,

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as well as wisdom. Considering two dimensions – generality and depth – the researcher lists four types of wisdom: a) domain-general deep wisdom (deep reflection on many kinds of problems in different domains, or the wisdom of great thinkers); b) domain-general shallow wisdom (wisdom of life, such as from parents to children); c) domain-specific deep wisdom (deep knowledge and the ability to solve complex problems in one domain); and d) domain-specific shallow wisdom (superficial wisdom limited to one domain) (Sternberg, 2019).

> In the balance theory of wisdom, which is part of the WICS theory, wisdom is defined as the application of intelligence, creativity, and knowledge, as mediated by positive ethical values toward the achievement of a common good through a balance among the following: (a) intrapersonal, (b) interpersonal, and (c) extrapersonal interests, over the (a) short- and (b) long-term periods. (Sternberg et al., 2019, p. 10).

This means that stimulating and supporting a student toward balanced development should include not only interactions which shape and reward their analytical, creative, and practical abilities, but which also address wisdom in its broadest sense, understood as the ability to balance many of one's own interests and goals and reconciling them with the interests and goals of others, while remaining in harmony with the goals of the social and cultural environment, in the form of active assistance to the school or through volunteer work.

The idea of the balanced development of gifted students refers to classical psychological concepts of giftedness (Joseph Renzulli, Franz Mőnks, John Feldusen, Jane Piirto - see: Limont, 2012), which list – in addition to cognitive factors – personality properties and emotional/social components that regulate the process of updating the intellectual potential of a gifted person. In the Polish context, a synthesis of these components can be found in the GROW model, which is a description of four crucial activities supporting the development of gifted students in the school context: 1) social skills and teamwork, 2) emotional awareness

and resilience in difficulties, 3) care for passion in interests, and 4) a supportive social network (Knopik, 2019).

Teachers' concepts of giftedness

In the psychology of abilities, explicit (direct) and implicit (indirect) theories of giftedness have been distinguished (Heller et al., 2001; Sternberg & Zhang, 1995). Implicit theories are concepts and definitions proposed by experts and based on scientific findings. Implicit theories are naive, private, often colloquial constructs; they are firmly anchored in the minds of individuals and can have a significant impact on the educational practice and nomination strategies used by teachers in real-life situations, in which they assess their students' abilities (Sternberg & Zhang, 1995). Implicit concepts are related to culture and social scripts operating in the area of ability; therefore, it is important to expose different views of ability in their social and cultural context (Sternberg, 2007). Teachers' concepts influence which needs of gifted students are considered in the school environment and what gifted students are offered by their teachers (De Wet & Gubbins, 2011; Moon & Brighton, 2008; Schroth & Helfer, 2009).

A study among 384 German primary school teachers (Endepohls-Ulpe & Ruf, 2005) found that the dominant characteristic of gifted students was their above-average cognitive development. The respondents also indicated motivational characteristics, but social functioning, specific personality development, and asynchrony played minor roles. Researchers tend to emphasize the risks associated with such implicit concepts – overlooking gifted students with low motivation and an overly one-sided perception of supporting strategies – and to not take into account the social/personal sphere of the student at all.

An analysis of the descriptions of 563 high school students nominated by their teachers as gifted (Hernández-Torrano et al., 2013) showed that they were characterized by higher scores in their naturalistic and social intelligences, stress management, and verbal, mechanical, and spatial reasoning. That study also found significant differences in the gender

and age of the nominated students. The teachers showed a tendency to nominate more boys than girls as gifted in the cognitive domain: verbal and numerical reasoning. There was also a tendency to perceive younger students as having higher abilities than their older counterparts. This may have been due to a more complete view of younger students' functioning and perceiving their abilities as more separate from the core curriculum and achievement within individual subjects.

A study of 212 Finnish teachers (Laine et al., 2016) demonstrated the multidimensional nature of the perception of ability, relating to the cognitive, creative, and motivational domains. The same study also showed a dual approach to the developmental nature of ability: some of the subjects emphasized the static nature of ability, while others pointed to its dynamic structure. This finding is consistent with Dweck's (2006) observations, which indicated that growth-oriented teachers believe abilities to be malleable properties that can be changed through motivation and training. This indicates that abilities develop through learning and, as such, may have an egalitarian status (Matthews & Folsom, 2009). Teachers who are committed to treating abilities as immutable traits do not provide the opportunity to think about students' self-development. They would rather reassure them that their ability to intervene in the face of biological endowment is limited (Dweck, 2006).

As can be seen from the cited research, it may be assumed that the definitions of a gifted learner held by teachers will determine the type of support the teachers provide. It is worth remembering that gifted students' education should take place within a broader teaching paradigm that includes four elements (Dai & Chen, 2014): a) different views of giftedness (what); b) purposes of gifted education (why); c) those who are supported and based on what information (who), and d) which educational strategies are chosen (how). They interact with each other in following the order: what – why – who – how.

The study reported in the paper attempted to establish the implicit, naive definitions of gifted students held by their teachers and analyzed the relationship between these definitions and the type and goals of support provided to gifted students by teachers of different school subjects.

Method

Research questions. Based on the literature review, the study sought answers to the following questions:

Q1: How do teachers define the category of "gifted student"? What do they think is crucial to identifying a gifted student?
Q2: How do teachers with a particular definition of "gifted student" support the development of their talented learners? Are there differences in strategies for supporting gifted students between teachers with different concepts of giftedness?
Q3: Are there differences in the perceptions of giftedness and support for gifted students between teachers of different subjects?

Study subjects. The study was conducted between November 2019 and March 2020 among 188 primary school teachers (123 women and 65 men) of grades 4–6. The respondents originated from 57 schools (36 urban and 21 rural). The choice of this stage of education results from the key role the teacher plays in identifying the abilities, talents, and interests of students. It was related to the stage of transition from integrated to subject-specific education in the Polish education system. The average professional experience of the respondents was 13 years (M=13.4; SD=7.34). The teachers represented different fields of education (Table 1).

Table 1: Number of teachers by school subject

School subject taught	n	%
Polish language	44	23.4
Foreign languages	33	17.6
Mathematics	59	31.4
Science	27	14.4
Art and music	25	13.3

Source: Own study

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Measures and procedure. The data were collected in both written form (n=103) and electronic form (n=85); the procedure was chosen by the respondents according to their preferences. Two tools were used in the study.

1. *The Balanced Development of the Gifted Student Questionnaire* (Knopik, 2018), composed of 20 items, was used to measure teachers' activity in the 1) cognitive, 2) creative, 3) motivational, and 4) emotional/social spheres. The items referred to specific activities of the teacher. The respondent was asked to recall their activities in each of the four dimensions and to indicate the frequency with which they applied them in work with gifted students (Likert scale from 3 [very often] to 0 [never]). The possible score in the tool ranges from 0 to 15 points.
2. *The Personalized Survey* includes questions about gender, seniority, subject taught, current number of students identified as gifted, monthly average time spent supporting a gifted student, and personal definition of a gifted student – provided in the answers to two questions: "Who do you think a gifted student is?" "What is the most important characteristic(s) that determines giftedness?"

Table 2: Balanced Development of Gifted Students Questionnaire

Dimension	Number of items	Characteristics of the dimension	Internal consistency of the scale (Cronbach's alpha)
Cognition	5	• Above-average general cognitive abilities manifested by quickly mastering the curriculum and having knowledge that exceeds the curriculum • Demonstrating reasoning and problem-solving that is characteristic of older students and working very quickly	0.93
Creativity	5	• Originality of thinking, non-standard solutions compared to their peers' ideas, a high tolerance for cognitive risk, and an openness to new problems	0.89
Motivation	5	• Striving for in-depth understanding of an issue (cognitive curiosity), interest in selected issues that imply independent work and a striving for development in a specific area, hard work, and high self-motivation	0.85
Emotion and social areas	5	• Understanding and controlling their emotions, maintaining constructive social relationships, having a sense of belonging to a group, efficient coping with failure and social evaluation	0.91

Source: Own study

Data analysis and results

On the basis of the teachers' descriptions of gifted students, five types of definitions were identified. They were oriented around the following dominant features of the student: a) intelligence; b) creativity; c) achievement; d) ambition and passion (fascinated by problems); and e) withdrawal (emotionally hypersensitive or alienated). The procedure of type extraction was carried out by competent judges in four stages:

1. *Preliminary ordering* of respondents' statements into a typology of eight categories by three competent judges
2. *Re-analysis* of the statements within the types and reduction of categories: the category "having many ideas" was included in the category "creativity," the categories "ambition" and "passion" were combined based on the recognition that the respondents' statements indicated a common motivational factor, and emotional and social difficulties were combined under the common type "withdrawal"
3. *Verification of typology*, wherein competent judges (four psychologists, different from the first stage) read short empirical definitions of gifted students (Table 3) and made independent classifications of each statement into one of five types
4. *Final analysis* of the differentiated assessments and classification into the types based on the consensus scores obtained through discussion

Table 3: Types and distributions of teachers' definitions of a gifted student

Implicit empirical definition	n	%
Intelligence: A fast learner with no difficulty in learning new skills, very good memory, high concentration and divided attention	64	34.0
Creativity: A student who is an original thinker, pushes boundaries, provocative, has many ideas, and executes them effectively	39	20.7
Achievements: A student who wins awards in competitions and has above-average performance	33	17.6

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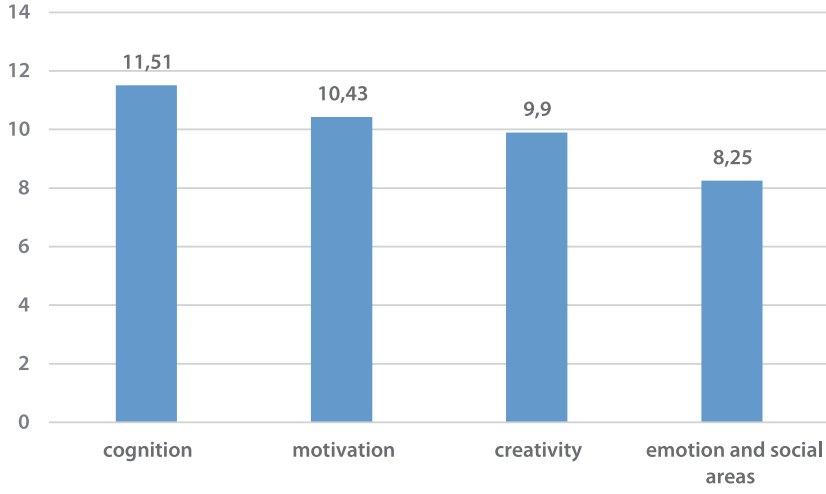
Implicit empirical definition	n	%
Ambition and Passion: A student who is highly motivated to grow and develop, a hard worker, a perfectionist, consumed by an interesting area or specific problem.	30	16.0
Withdrawal: A closed-in student for whom the world of knowledge and learning is more important than their immediate environment; one who has difficulty with social relationships, is emotionally vulnerable, hypersensitive	22	11.7

Source: Own study

Table 3 shows that the dominant definition of a gifted student was cognitive, while the respondents least frequently indicated emotional/social difficulties as the domain of gifted students. It can be concluded from the support that the respondents direct to gifted students (Fig. 1) that the main activity involves teachers supporting the development of the cognitive sphere and much less often targeting the emotional/social sphere.

Figure 1: Frequency of support for gifted students in different spheres of their development



Source: Own study

The teachers' definitions of a gifted student were contrasted with the support they directed toward such students (Table 4).

Table 4: Compliance of the type of support with the type of definition

Definition/Area		Cognition	Motivation	Creativity	Emotion	Compliance of the support with the definition
Cognition	M	12.71	9.09	8.52	7.33	YES
	N	64	64	64	64	
	SD	1.70	1.49	1.73	2.01	
Ambition and Passion	M	10.03	13.10	9.60	9.07	YES
	N	30	30	30	30	
	SD	0.93	1.42	1.52	1.62	
Achievements	M	12.40	10.39	8.45	7.61	YES
	N	33	33	33	33	
	SD	1.46	1.62	2.37	2.16	
Creativity	M	10.03	10.77	13.97	9.62	YES
	N	39	39	39	39	
	SD	1.61	1.18	1.18	0.78	
Withdrawal	M	11.32	10.09	9.31	8.36	NO, cognitive activities dominate
	N	22	22	22	22	
	SD	2.01	0.97	1.86	1.18	

Source: Own study

The non-parametric Kruskal–Wallis H test confirmed the statistical significance of the observed differences (Table 5). In most of the groups selected by the teachers' definition of a gifted student, there was consistency in the dominant support activities and the characteristics of gifted students. This was not the case, however, for the group with the definition "a gifted student is a withdrawn student"; like the rest of the respondents, this group was the least likely to support the emotional/social development of a gifted student. The teachers in the "ambition/passion" and "creative student" groups used emotional support more often than the "withdrawn student" group.

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Table 5: Frequency and statistical indicators of types of support from teachers, by their definitions of a gifted student

Statistics	Cognition	Motivation	Creativity	Emotion
Kruskal–Wallis H	74.016	84.840	95.440	42.916
df	4	4	4	4
p	p<0.001	p<0.001	p<0.001	p<0.001

Source: Own study

It was also analyzed whether there were differences in the number of gifted students identified according to the definition. Table 6 shows that teachers who defined a gifted student as a creative student indicated the most gifted students, while teachers with a cognitive definition of giftedness indicated the fewest students. These differences were found to be statistically significant (p<0.001, Kruskal–Wallis H=69.06).

Table 6: Number of gifted students identified by the respondents, by definition of gifted students

Type of definition	Number of gifted students identified
Cognition	4.54
Ambition and Passion	6.50
Achievements	5.52
Creativity	12.72
Withdrawal	7.09

Source: Own study

Subsequent analysis took into account the school subject which the teacher taught. Table 7 shows that depending on their subject area, teachers characterized gifted students differently: Teachers of mathematics, foreign languages, and science more often followed the cognitive definition, while teachers of Polish language, the visual arts, and music held

the creative definition. Interestingly, none of the teachers of visual arts and music found students' cognitive characteristics to be crucial in defining them as gifted, while none of the teachers of mathematics took creativity into account. The teachers of foreign languages and science did not select the emotional and social difficulties of gifted students as part of their definition of giftedness.

Table 7: Frequency of definition types of a gifted student, by school subject taught

		DEFINITION OF A GIFTED STUDENT				
		Cognition	Ambition and Passion	Achievments	Creativity	Withdrawal
Polish language	n	7	5	1	16	15
	%	15.9%	11.4%	2.3%	36.4%	34.1%
Foreign languages	n	15	9	3	6	0
	%	45.5%	27.3%	9.1%	18.2%	0.0%
Mathematics	n	29	7	22	0	1
	%	49.2%	11.9%	37.3%	0.0%	1.7%
Science	n	13	6	6	2	0
	%	48.1%	22.2%	22.2%	7.4%	0.0%
Art and music	n	0	3	1	15	6
	%	0.0%	12.0%	4.0%	60.0%	24.0%

Source: Own study

The differences in the numbers of gifted students identified by teachers of different subjects were also examined (Table 8). Art and music teachers identified the most gifted students, while mathematics teachers indicated the fewest. The observed differences were statistically significant ($p<0.001$, Kruskal–Wallis $H=87.35$).

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Table 8: Numbers of gifted students identified by teachers, by school subject taught

School subject taught	M	SD
Polish language	8.20	4.11
Foreign languages	9.27	4.30
Mathematics	3.81	1.85
Science	4.41	2.11
Art and music	12.36	4.65

Source: Own study

The support offered to gifted students was also analyzed for each group of teachers according to the school subject which they taught (Table 9).

Table 9: Support provided to gifted students, by school subject taught

School subject taught	Cognition	Motivation	Creativity	Emotion	Kendall's W	p
Polish language	10.52	10.57	11.05	8.73	0.284	<0.001
Foreign languages	11.48	11.27	10.18	9.27	0.363	<0.001
Mathematics	12.49	9.47	7.81	6.76	0654	<0.001
Science	11.85	10.74	9.81	7.96	0.534	<0.001
Art and music	10.60	10.96	12.56	9.88	0.287	<0.001

Source: Own study

Statistically significant differences were identified at the group level for type of support. It was consistent with the intergroup analysis comparing the intensities of activities in each sphere (Table 10).

Table 10: Intensity and statistical indicators of support for gifted students, by school subject taught

	Cognition	Motivation	Creativity	Emotion
Kruskal–Wallis H	32.014	26.100	61.069	63.519
df	4	4	4	4
p	p<0.001	p<0.001	p<0.001	p<0.001

Source: Own study

Particular disproportions in the extent of support provided were noted among the mathematics teachers, who focused on the cognitive sphere of gifted students while neglecting the emotional sphere. In the remaining groups, the differences mainly concerned this sphere, which was supported the least. Among the visual arts and music teachers, the predominance of supporting the creativity of gifted students was noted, a finding which was consistent with the sphere of artistic subjects.

Discussion

The results of the study revealed that teachers had an implicit definition of a "gifted student" which was based mainly on an assessment of cognitive abilities and that this definition was crucial in them identifying gifted students. The dominance of cognitive concepts of giftedness and the reduced role of non-cognitive factors in teachers' concept of giftedness is contrary to previous scientific evidence (see Sternberg, 2015). At the same time, it has been still presented as a kind of stereotype implying into pedagogical practices (Ledzińska, 2009). This is due to the recognition of the intelligence quotient as a general measure of "above average" and the best predictor of achievement (Lo et al., 2019). Focusing on the intellectual aspect may eliminate from the ranks of gifted students those who do not manifest such high achievements in knowledge, due to motivational difficulties, despite their high potential (Endepohls-Ulpe & Ruf, 2005; Rimm, 2001).

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These regularities highlight the low level of contemporary scientific knowledge of teachers regarding giftedness. This topic is not a separate component in pedagogical curricula and there is inadequate support in the form of postgraduate studies and training. The study conducted by the Institute for Education Research (Instytut Badań Edukacyjnych, 2021) found that less than 1% of the surveyed schools had trained their staff in this area. This might result in implicit concepts not being confronted with explicit ones, since there is no platform for such confrontation (Lee, 1999).

The extent of support provided to gifted students remained consistent with the implicit definitions of giftedness held by the teachers. This applied to all respondents except those who preferred the concept of a gifted student based on disengagement and specific emotional/social problems. Emotional support was provided by the respondents the least among all types of supporting activities. It is likely that tasks related to the formation of emotional competence are still overlooked in the teaching practice in Polish schools (Brzezińska, 2013) and are thus moved to the background, despite the indications that they are needed. Thus, these results show that a key step in changing the methodological strategies used by teachers for gifted students is to work in the area of theory of ability. Promoting the concept of balanced development of abilities, therefore, could potentially have a positive impact on teaching practices that take into account a balanced ratio between the four types of support identified in the questionnaire (none of the definition sub-groups identified such balanced proportions).

The analysis revealed significant differences in strategies for supporting gifted students among teachers with different concepts of giftedness. The teachers who based their definition on creativity placed the least importance on supporting the cognitive sphere, whereas the other groups of respondents focused more on developing creativity and emotional/social resources. The most similar support strategies were used by the teachers in the sub-groups for "achievement" and "cognition," showing that achievement itself can be interpreted at the primary school stage mainly through cognitive criteria (Cieślikowska & Limont, 2010; Dweck, 2006). The teachers did not sufficiently recognize the role of emotional/social components

in developing a student's achievement and adaptability, pointing to analytical intelligence as being far more important than creative and practical intelligence (Sternberg, 2019).

However, this finding did not apply equally to teachers of all school subjects. Teachers of mathematics and science most often preferred a definition of giftedness related to cognition and achievement, which entailed support in the cognitive and motivational domains. Strategies aimed at enhancing creativity and emotional/social competences were used much less frequently, practiced by teachers of art, music, and languages. This may have been a consequence of the stereotype that is persistent in Poland and relates to the methodology of the humanities and the sciences, which clearly distinguishes between a) divergent problems, which require creativity (the humanities), and b) convergent problems (the sciences), which practically neglect the creativity component and work in the emotional sphere (Knopik & Oszwa, 2022; Pieronkiewicz, 2020).

At the same time, the teachers of mathematics and science identified decidedly more gifted students than the other respondents, which was probably indicative of the more elite criteria they adopt when identifying gifted students. A strong orientation toward knowledge and correlated achievement was the main determinant in this group of respondents. This approach results in the teachers paying no attention to students who underachieve due to emotional difficulties (Rimm, 2001; Sękowski, 2000).

As a follow-up to this study, it is worth expanding the group of respondents to include secondary school teachers. Their concepts of giftedness and related strategies for supporting gifted students may influence future educational and career choices. Thus, describing teachers' definitions of giftedness along with their methodological implications may provide a starting point for faculty to self-reflect and work on their general beliefs about the nature of giftedness and their teaching strategies (Mazzoli Smith & Campbell, 2016) in order to foster an environment that catalyzes the development of a gifted student's potential (Lo et al., 2019).

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