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The Evaluation of Gifted Students A Systematic Literature Review (SLR)

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Abstract

The identification of gifted students requires preparing and configuring special programs for their education and care, as well as developing standardized scales and tests for their evaluation. This review provides some insights on the current development of those methods and the next steps to be taken in research concerning the identification and evaluation of gifted students. Additionally, this study aims to inform specialists in the field about where evaluation is headed and the research gaps that may be explored in the future for this rare category of society.

This study systematically reviewed the literature to reveal how gifted students are identified and evaluated. This review followed the PRISMA framework (The Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Based on a set of inclusion and exclusion criteria, 20 articles were included in the review. The results indicate the importance of multiple sources of information in identifying and educating gifted students, National standardized (IQ-like) tests lack gender-fairness, especially when they are administered to young students as the sole means to determine whether they qualify for gifted programs, there should be more training programs and courses offered to teachers related to gifted children and their characteristics. This systematic review covers various scales, measures, sample types, and geographical contexts of those studies. Potential research avenues and other recommendations were then proposed such as: using the scales to investigate the gender gap in mathematics achievement and other suggestions.

Keywords: Evaluation, Gifted Students, SLR, PRISMA Framework

Introduction

The concepts of giftedness and gifted individuals have received sustained and growing global interest from scholars and professionals alike. Various theories, researchers, and scholars from diverse fields have discussed the subject. Varying opinions similarly have emerged in this field. The first official definition of giftedness came from the United States Department of Education: "students, children, and youth who illustrate high achievement capabilities in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities that are not typically available to fully develop their capabilities" (US Department of Education, 2015, p. 398).

Contemporary researchers have stressed the urgency for an accurate and clear definition of giftedness and for the careful and scientific development of its identification and measurement methods. These methods should enable the identification of various areas of talents of an individual to the broadest extent. Diverse methods, tools, and procedures should be used in the process of discovering and identifying the mentally gifted and talented. It is recommended to use different tests in the evaluation process, in addition to using a complementary measure (e.g., creativity) to create multi-criteria discovery methods that can more efficiently distinguish between students (Fernandez et al., 2017). For instance, (Subotnik et al., 2021) has proposed a comprehensive concept of talent development derived from research in psychological sciences and applicable to different fields, from academics and athletics to visual and performing arts. Current approaches to identifying giftedness suggest the combination of multiple sources of evidence (Acar et al., 2016).

This study systematically reviewed the measurement tools and methods that have been developed and implemented for the identification of gifted students. More specifically, it aims to identify the (1) aims, (2) measures, (3) sample types, and (4) geographical contexts of past research on gifted students, in addition to (5) identifying potential future research agenda. The findings provide novel information to researchers, practitioners, and policymakers about the measures and evaluation of gifted students and possible research opportunities in the field.

Materials and Methods

This systematic literature review (SLR) aims to identify the methods, tools, and measures used to identify and evaluate gifted students. This SLR followed the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework (Matthew et al., 2021).

Exclusion and Inclusion Criteria

To ensure that the selected articles fit the scope of the review, a set of inclusion and exclusion criteria were defined. These criteria were based on identified research gaps revealed through an extensive review of related literature. Table 1 details these criteria.

Table 1
Inclusion and exclusion criteria

Dimension	Inclusion criteria	Exclusion criteria
Scope	Related to gifted students and their evaluation methods	Unrelated to gifted students and their evaluation methods
Subject area	Social sciences, psychology, neuroscience, and arts and humanities	Excluding those subject areas
Language	English	Other languages
Time of publication	Last five years (2018-2022)	Before 2018

Data Sources and Search Strategies

The search for articles was conducted in February 2023. It was limited to articles published in 2018–2022 and in the Scopus database, as it is the most common database for scholarly work. The keywords used in (TITLE-ABS-KEY) were (gifted OR talent OR giftedness OR talented) AND (rating OR scales OR tests OR measurements OR assessment OR evaluation) AND (student OR child OR pupils OR teenagers OR children OR youth OR adolescent OR boys OR girls). The search was also limited to four subject areas: (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "PSYC") OR LIMIT-TO (SUBJAREA, "ARTS") OR LIMIT-TO (SUBJAREA, "NEUR"). The phrase (LIMIT-TO (LANGUAGE, "English") was also used to limit the results to English articles. The following keywords were used to return more specific studies: (LIMIT-TO (EXACTKEYWORD, "Teaching") OR LIMIT-TO (EXACTKEYWORD, "Gifted Students") OR LIMIT-TO (EXACTKEYWORD, "Giftedness") OR LIMIT-TO (EXACTKEYWORD, "Gifted") OR LIMIT-TO (EXACTKEYWORD, "Talent Identification") OR LIMIT-TO (EXACTKEYWORD, "Gifted Children") OR LIMIT-TO (EXACTKEYWORD, "Talent") OR LIMIT-TO (EXACTKEYWORD, "Gifted Child") OR LIMIT-TO (EXACTKEYWORD, "Gifted Identification") OR LIMIT-TO (EXACTKEYWORD, "Child, Gifted") OR LIMIT-TO (EXACTKEYWORD, "Gifted And Talented") OR LIMIT-TO (EXACTKEYWORD, "Personality") OR LIMIT-TO (EXACTKEYWORD, "Intellectual Giftedness") OR LIMIT-TO (EXACTKEYWORD, "Gifted Student") OR LIMIT-TO (EXACTKEYWORD, "Aptitude") OR LIMIT-TO (EXACTKEYWORD, "Talented Students") OR LIMIT-TO (EXACTKEYWORD, "Gifted And Talented Students") OR LIMIT-TO (EXACTKEYWORD, "Talent Selection") OR LIMIT-TO (EXACTKEYWORD, "Cognitive Abilities") OR LIMIT-TO (EXACTKEYWORD, "Working Memory") OR LIMIT-TO (EXACTKEYWORD, "Gifted Education") OR LIMIT-TO (EXACTKEYWORD, "Students"). This literature search resulted in 493 articles, but 365 of them were unable to be retrieved or downloaded, leaving only 128 articles. Applying the inclusion criteria manually, the final qualified articles were 20. To accomplish the research objectives, the 20 papers were then reviewed and critically analyzed. Figure 1 summarizes the article screening procedure.

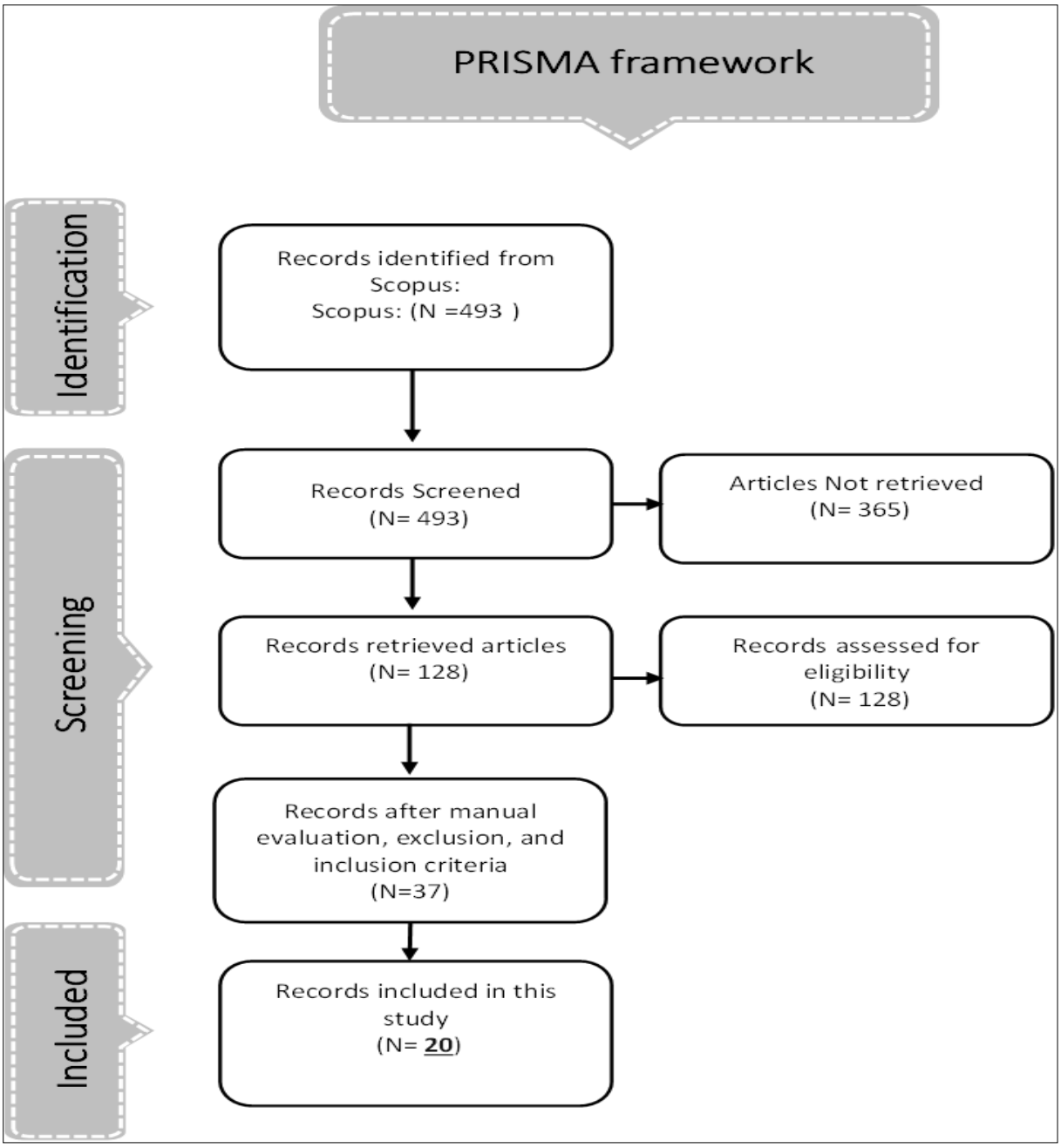

Figure 1. Article screening procedure

Results Aims

The reviewed studies varied in their aims. Most of them examined the different skills of students, such as their metacognitive thinking skills (Al-Gaseem et al (2020), science self-regulation skills Nacaroglu et al (2021), problem-solving skills Ewies et al (2021), and motor performance development of children with varying skill levels (Krombholz, 2018). Other studies attempted to show the psychometric properties of certain scales, including the Mathematical Competence Scale (MCS) Bellini et al (2019), a self-report scale to identify characteristics of giftedness Zaia et al (2018), The Bateria de Avaliação Intelectual e Criativa Infantil (BAICI) scale Wechsler et al (2022), and a parental rating scale for the identification of intellectually gifted preschoolers (Jabůrek et al., 2021).

There were also studies that aimed to identify the most suitable measurements for different abilities of gifted children, such as spatial ability Budakova et al (2021), cognitive ability and domain-specific self-concepts Papadopoulos (2021), social and perceptual abilities Tushnova (2020), and learning potential (Vogelaar et al., 2019). Other studies explored the creativity of students Sorrentino (2019); assessed the IQ and cognitive abilities of gifted children and compared them to their parents (Pezzuti et al., 2022); investigated the characteristics of gifted children Jawabreh et al (2022); and analyzed the production of cognitive executive functions (CEF) (Kilger & Blomberg, 2020)

A few studies analyzed the effects of ACE and ACTN3 gene variants among young sprinters, jumpers, and endurance athletes (Rosa et al., 2022). Another study investigated perfectionism among talented students (Alshurman et al., 2021). Dori et al (2018) examined the extent to which admissions of elementary school students to gifted programs based on standardized tests are gender-fair. Finally, de Sousa and Fleith (2021) compared the overexcitability of gifted students with academic and artistic talent and non-gifted students, as well as examining how their teachers perceived them (de Sousa & Fleith, 2021).

Measures

The measures and scales used by the studies to identify gifted students vary. Among the scales used by these studies, as listed in Table 1, are Motor Test Battery (Krombholz, 2018), Online Short Spatial Ability Battery (OSSAB) (Budakova et al., 2021), and Battery of Intellectual and Creative Evaluation – Children's Version (BAICI) (Wechsler et al., 2022). Three studies used scales that focus on the characteristics of gifted students (Zaia et al., 2018; Jawabreh et al., 2022; de Sousa & Fleith, 2021). Some studies used self-report measures, such as the Science Self-Regulation Scale (Nacaroglu et al., 2021); the Pictorial Scale for Perceived Competence and Social Acceptance and the Behavioral Academic Self-Esteem Scale (Papadopoulos, 2021); and the Big Three Perfectionism Scale and the Rosenberg Self-Esteem Scale (Alshurman et al., 2021).

Three studies used measures and scales relating to the mathematical ability of students: the unidimensional MCS (Bellini et al., 2019) and test of analytical mathematical abilities, Amthauer's test of intelligence structure (TSI) and Krutetsky's giftedness identification scale (Tushnova, 2020). The remaining studies used various tests, including the Preschooler's Ability Rating Scale (PARS) (Jabůrek et al., 2021); Heppner's problem-solving inventory (Ewies et al., 2021); the Wechsler scale (Pezzuti et al., 2022); the cognitive executive functions (CEF) test (Kilger & Blomberg, 2020); the Szold standardised national test and case-based questionnaires for gifted students (Dori et al., 2018); Renzulli Creativity Subscale and William's Test of Divergent Thinking (Sorrentino, 2019); Raven's Standard Progressive Matrices and Dynamic Test of Analogical Reasoning (Vogelaar et al., 2019); and Omani Metacognitive Thinking Scale (Al-Gaseem et al., 2020). Table 1 shows the diversity of scales and tests used by those studies, depending on the sample, context, and the theoretical school to which the researchers belong. These results illustrate the numerous and broad approaches by which gifted students can be evaluated.

Table 2
Scales and measures used in the reviewed studies

N	Article	measures
1	(Krombholz, 2018)	Motor Test Battery
2	(Dori, Zohar, Fischer-Shachor, Kohan-Mass, & Carmi, 2018)	(a) the Szold standardised national test and (b) case-based questionnaires for gifted students
3	(Zaia, Nakano, & Peixoto, 2018)	Scale for Identification of Characteristics of Giftedness
4	(Sorrentino, 2019)	1-Renzulli's Creativity Subscale 2-William's Test of Divergent thinking
5	(Vogelaar, Sweijen, & Resing, 2019)	1-Raven's Standard Progressive Matrices 2-Dynamic Test of Analogical Reasoning
6	(Kilger & Blomberg, 2020)	Cognitive executive functions (CEF) test
7	(Bellini et al., 2019)	Unidimensional Mathematical Competence Scale (MCS) for primary school
8	(Tushnova, 2020)	1-Test of analytical mathematical abilities 2- Amthauer's Test of intelligence structure (TSI) 3-Krutetsky's giftedness identification scale
9	(Al-Gaseem, Bakkar, & Al-Zoubi, 2020)	Omani Metacognitive Thinking Scale
10	(Nacaroglu, Bektas, & Tüysüz, 2021)	Science Self-regulation Scale
11	(Papadopoulos, 2021)	1-Pictorial Scale for Perceived Competence and Social Acceptance 2-Behavioral Academic Self-Esteem Scale
12	(de Sousa & Fleith, 2021)	1-Participants characterization questionnaires 2-Overexcitability scale 3- Semi-structured interview script
13	(Budakova et al., 2021)	Online Short Spatial Ability Battery (OSSAB)
14	(Alshurman, Igdifan, & Abdullah, 2021)	Big Three Perfectionism Scale and Self-Esteem Scale to Rosenberg
15	(Jabůrek, Cígler, Portešová, & Ťápal, 2021)	the Preschooler's Ability Rating Scale (PARS)
16	(Ewies, Ahmad, & Hamzah, 2021)	Heppner's problem-solving inventory
17	(Rosa et al., 2022)	1-The PCR test 2-Phenotype assessment: Anthropometric measurement, vertical jump test, sprint test
18	(Jawabreh, Danju, & Salha, 2022)	Scale for Rating the Behavioural Characteristics of Gifted and Talented Students

N	Article	measures
19	(Wechsler et al., 2022)	Battery of Intellectual and Creative Evaluation – Children's Version (BAICI)
20	(Pezzuti, Farese, Dawe, & Lauriola, 2022)	Wechsler scale

Type of Sample

Most samples in the studies were students as shown in Figure 2: (Dori et al., 2018; Zaia et al., 2018; Vogelaar et al., 2019; Tushnova, 2020; Al-Gaseem et al., 2020; Nacaroglu et al., 2021; Alshurman et al., 2021; Ewies et al., 2021; Rosa et al., 2022; Wechsler et al., 2022; Pezzuti et al., 2022). Some studies included samples from among students and teachers (Sorrentino, 2019; de Sousa & Fleith, 2021). A study sampled 263 mothers and 90 children in the Czech Republic (Jabůrek et al., 2021). Another sampled 450 female pre-school teachers (Jawabreh et al., 2022).

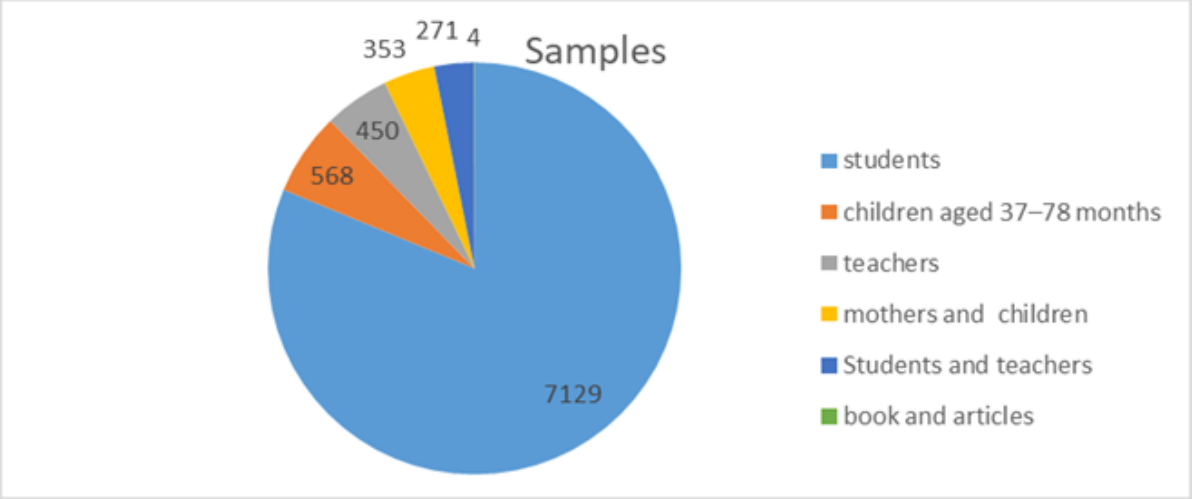

Figure 2. Type of sample

Two studies had large samples (Figure 3); the first was 2935 fourth-grade students in Switzerland (Bellini et al., 2019), and the second 1479 schoolchildren who demonstrates high achievement in science, arts, or sports (Budakova et al., 2021). Two studies examined children as their sample: 108 gifted children aged 5–6 years (Papadopoulos, 2021), and children aged 37–78 months (Krombholz, 2018). Only one study examined a non-human sample, specifically one popular science book and three research articles (Kilger & Blomberg, 2020).

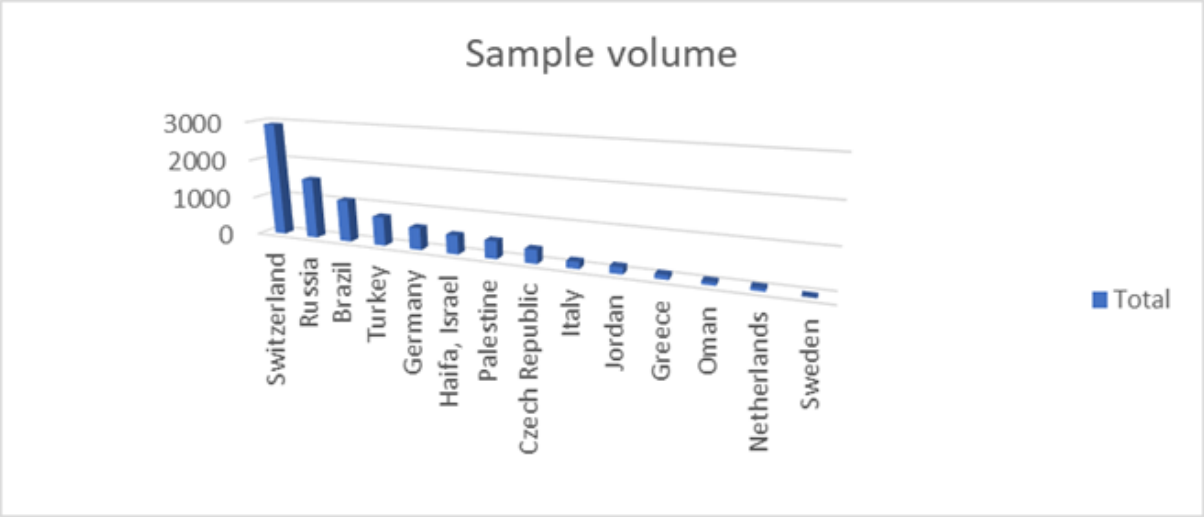

Figure 3. sample volume

Geographical Locations

The studies were diverse geographically as shown in Figure 4; they were not concentrated in a certain geographical context. Brazil was the most represented with four articles (20% of total studies): (Zaia et al., 2018), (de Sousa & Fleith, 2021), (Rosa et al., 2022), and (Wechsler et al., 2022) carried out their studies and published in Brazil. Two studies were undertaken in Italy (Sorrentino, 2019), (Pezzuti et al., 2022), Jordan (Alshurman et al., 2021), (Ewies et al., 2021), and Russia (Tushnova, 2020), 13]. The remaining ten articles were carried out in ten different countries: Germany (Krombholz, 2018), Israel (Dori et al., 2018), the Netherlands (Vogelaar et al., 2019), Sweden (Kilger & Blomberg, 2020), Switzerland (Bellini et al., 2019), Oman (Al-Gaseem et al., 2020). Turkey (Nacaroglu et al., 2021), Greece, Papadopoulos (2021), Czech Republic Jabůrek et al (2021), and Palestine (Jawabreh et al., 2022).

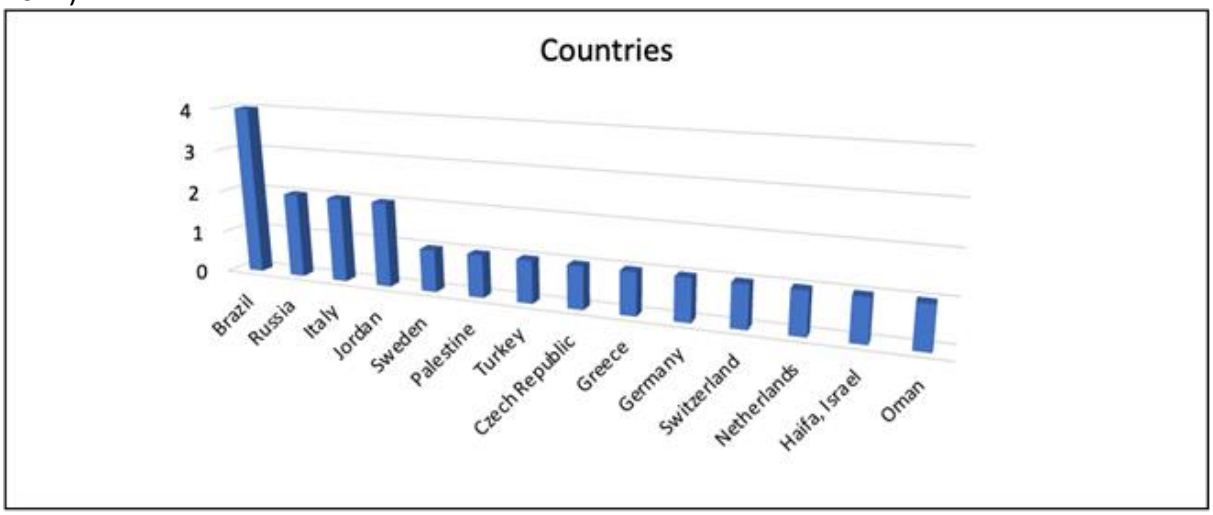

Figure 4. Geographical locations

Recommendations for Future Researchers

Given the small number of children who could be identified as “motor talented”, further studies with more cases and over a longer period are recommended to validate the results (Krombholz, 2018). A gender-fair research tool should be developed to analyze higher-order

thinking skills for gifted elementary school students ((Dori et al., 2018). It is recommended to use the self-report measure in conjunction with other methods of evaluation (Zaia et al., 2018). Those involved in education and promotion of the development and growth of new generations need information about the different aspects of the child and with different tools, through a plurality of approaches and observation points (Sorrentino, 2019).

There is urgency to consider the sub-dimensions of mathematical competence (Bellini et al., 2019). It is recommended to include a module on the development of social intelligence in the gifted programs (Tushnova, 2020). Developing metacognitive abilities can enable the gifted students to think more systematically Al-Gaseem et al (2020), It is necessary to implement self-reflective learning practices in formal and informal learning environment Nacaroglu et al (2021), Professionals working with young, gifted children should be able to recognize early signs of giftedness and create developmentally appropriate environment that support the different strengths of students Papadopoulos (2021), There should be more training programs and courses offered to teachers related to gifted children and their characteristics. This study can be expanded by using a sample other than teachers, such as gifted children and their parents, to inform the appropriate strategies that can improve the environment of gifted children (Jawabreh et al., 2022).

It is recommended to evaluate the relationship of overexcitabilities with the learning process, focusing on activities that stimulate critical thinking, multiple possibilities of problem solving, inquiries, and creative ideas (de Sousa & Fleith, 2021).

Teachers should focus on developing problem-solving skills. The researchers recommend designing specialized training programs that can help teachers to improve their problem-solving ability. Parents can also participate in specialized programs to develop their twenty-first century and problem-solving skills (Ewies et al., 2021).

The ability to measure CEF among young people in sports will change talent development globally. It is even more important to find player with the right cognitive profile from the start (Kilger & Blomberg, 2020). During sprint events, the rate of force development is influenced by multiple factors, such as muscle fiber types, synchronization of motor units, and tendon stiffness. Thus, the use of tests with isokinetic (single-joint), jumps, and sprints (multi-joint) can better reveal the genotype–phenotype relationships (Rosa et al., 2022).

Different results may emerge by identifying giftedness using different or alternative criteria beyond traditional psychometric methods (Pezzuti et al., 2022). There are some limitations to generalize the results, such as the small sample and the research methodology. More research is required to take into account other determinants and examine other psychological variables that are influenced by perfectionism, such as motivation, schizophrenia, and psychological satisfaction (Alshurman et al., 2021).

Discussion

Evaluation is an important procedure in the education of gifted students, as it not only enables the identification of their needs but also monitors their progress and growth. The methods used by researchers in diagnosing and discovering gifted students vary. This review provides some insights on the current development of those methods and the next steps to be taken in research concerning the identification and evaluation of gifted students. The results of this review can inform specialists in the field about where evaluation is headed and the research gaps that may be explored in future work.

The studies employed diverse models and frameworks. The results suggest the effectiveness of the employed gifted assessment tools and tests in discovering the qualities and skills that characterize gifted students at some of the age stages that they pass through; in identifying the perceptions and evaluations of the groups surrounding them, which are based on their care; and in focusing on the differences between the genders of the gifted. The results suggest the importance of multiple source of information in identifying and educating gifted students. There appears to be no difference between the evaluations of teachers (Sorrentino, 2019), while parental ratings are, in general, based more on children's verbal abilities than their nonverbal abilities (Jabůrek et al., 2021), A study found that children's IQ is positively related to that of their mothers, whereas intellectual abilities, especially working memory and processing speed, are maintained and presumably passed on from one generation to the next (Pezzuti et al., 2022).

Findings related to skills indicate that the concept of a general talent is more favourable than specific talent or non-talent, as well as the importance of family or environment—at least for motor skills in preschool (Krombholz, 2018). Talented Science Education Students (TSESs) have a high level of Metacognitive Thinking Skills (MTSs) (Nacaroglu et al., 2021). The self-regulation skills of gifted students increase along with age, while those of non-gifted students decrease (Nacaroglu et al., 2021).

The current national standardised (IQ-like) tests lack gender-fairness, especially when administered to young students as the sole means for identifying their eligibility for gifted programs (Dori et al., 2018). Between-gender differences are also found in the Mathematical Competence Scale (MCS) (Bellini et al., 2019). Additionally, there are gender differences in global self-esteem and perceived physical competence in favor of boys, whereas perceived maternal acceptance is in favor of girls (Papadopoulos, 2021). Mathematical generalization ability and practical mathematical thinking have more relationships with social and perceptual properties (Tushnova, 2020).

With regards to the identification of motor gifted children, the findings demonstrate how the test results are translated into abilities in sporting practices and how the CEF tests are legitimized as central to identifying young talent and as prerequisites for sporting success, when they actually are not (Kilger & Blomberg, 2020). Assessing genetic variants could be used as an auxiliary way to predict a favorable profile for the identification of young talents in track and field (Rosa et al., 2022).

Dynamically tested children improve more than those in the control condition (Vogelaar et al., 2019). There is also a relationship between giftedness and overexcitabilities. The results show that the instruments should be used to evaluate this construct in the process of identifying talent, as well as in the construction of more effective educational and family practices (de Sousa & Fleith, 2021). There is a negative correlation between perfectionism and self-esteem among gifted students (Alshurman et al., 2021). There are many positive perceptions regarding the characteristics of gifted children (Jawabreh et al., 2022). The OSSAB can be used for talent identification, educational assessment, and support (Budakova et al., 2021). Two-third of gifted students are below the acceptable level in terms of problem-solving ability, while the others are within the acceptable level (Ewies et al., 2021), The BAICI has psychometric qualities that can be used in the psychological assessment of children (Wechsler et al., 2022).

Type of Sample

Only one study was conducted on a non-human sample, specifically a book and three articles. The reviewed studies mostly used students, gifted and non-gifted, of different school grades as their sample. Other samples included teachers and parents, more prominently mothers. Almost all of the studies were cross-sectional; only one study was longitudinal, involving children aged 37–78 months. Therefore, no firm conclusion, on a longer-term, could be drawn from the other studies. This provides a methodological and knowledge gap which can be explored by future research.

Geographical Contexts

These studies were mostly conducted in Brazil, Russia, Italy, and Jordan. It appears that the infrastructure of these nations has allowed for the extensive implementation of such research. This lowers the concern for the lack of or inaccessible gifted research in those countries. However, Africa remains underexplored relative to other locations, for instance Brazil, and should thus be the subject of focus of scholars.

Future Directions

This SLR has reviewed the scales, sample types, and geographical contexts of research on gifted student identification and evaluation. Based on the review, therefore, the following recommendations are proposed. There is a need for distinguishing between the identification and the development and fostering of talent (Vogelaar et al., 2019). Future work should focus on exploring the relationship between metacognitive thinking and creativity or critical thinking, as well as the differences in MTSs (Al-Gaseem et al., 2020). The case-based questionnaire can be extended to include additional higher-order thinking skills, such as synthesis and creativity (Dori et al., 2018).

Scholars should direct a critical gaze towards neuroscientific truth-claims and critically review taken-for-granted facts in the area of sports in general and in talent selection in particular (Kilger & Blomberg, 2020). Future work may consider using the innovative scale to investigate the gender gap in mathematics achievement and gender differences in assessment skills (Bellini et al., 2019). More qualitative and mixed studies are needed to investigate the reasons for between-gender differences in students' self-regulation skills (Nacaroglu et al., 2021).

Specialized programs should be developed to improve gifted students' abilities in solving problems. Future work may also investigate other variables that may influence the development of problem-solving skills, such as family's economic level, number of family members, birth order of the gifted student, and age (Ewies et al., 2021). Scholars should develop and validate a rating scale focusing solely on early school-oriented behaviors, such as early reading and mathematical skills (Jabůrek et al., 2021). The procedure for expert evaluation of mathematical giftedness should be improved, and a psychological and pedagogical support program for mathematically gifted students should be created and tested (Tushnova, 2020). Future work may investigate how the patterns of overexcitabilities in gifted individuals affect their interpersonal relationships in school, family, and work contexts (de Sousa & Fleith, 2021).

More participants should be involved to generate more accurate and generalized findings. Samples from different regions should be included (Jawabreh et al., 2022; Wechsler et al., 2022; Pezzuti et al., 2022). The dynamic test should be computerized (Vogelaar et al., 2019).

There is a need to explore whether and how enjoyment may be related to the test validity (Budakova et al., 2021). The instrument should be used on minority groups, such as individuals with dual exceptionality (Zaia et al., 2018).

Limitation

This study has examined 20 studies with different contexts and sample types and has provided recommendations for further work. However, it has been limited by a few obstacles, among which is that the reviewed studies were only retrieved from the Scopus database. A large number of studies had to be excluded because they could not be retrieved or downloaded. As a result, only 20 studies were included in this review. This small sample may thus influence the conclusions of this review.

Conclusions

The evaluation of gifted students, in the field of education, has received much attention in recent years. As the public's awareness of online education increases, so does the need for more information on the field's most recent progress, prospective research avenues, and current information gaps. This SLR has reviewed 20 studies. The methods, scales, measures, types of sample, and geographical contexts of those studies have been critically analyzed. Several recommendations have been proposed based on the conclusions. More qualitative and mixed studies are needed to explain why there are differences in skills by gender. The case-based questionnaire can be extended to include additional higher-order thinking skills. Specialized programs should be developed to improve gifted students' abilities in solving problems. The procedure for expert evaluation of mathematical giftedness should be improved. A psychological and pedagogical support program for mathematically gifted students should also be created and tested. Scholars may investigate how the patterns of overexcitabilities in gifted individuals influence their interpersonal relationships. The dynamic test should be computerized. The instrument should be administered to minority groups, such as individuals with dual exceptionality.

Future work can investigate other variables that may infleunce the development of the problem-solving skills of gifted students, A rating scale focusing solely on early school-oriented behaviors. More participants should be included to provide more accurate and generalized findings. Samples from different regions should also be included.

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