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# SCHOOL TALENT MENTORING: ANALYSIS OF NATIONAL AND INTERNATIONAL PUBLICATIONS

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**ABSTRACT**

There is evidence that mentors make a difference in the lives of talented / gifted students, the reason for the investigation of the theme and their national and international scientific production from 2000 to 2018. Among the databases investigated are Scientific Electronic Library Online (Scielo), Capes Theses / Dissertations, Academic Search Premier, Capes Journal Portal and Sage Journals. We found 59 studies, 24 nationals and 35 internationals. Qualitative studies stood out with emphasis on the exploratory approach. In the sample, teachers of elementary, middle and higher education stood out. Among the objectives, the researchers' interest in the process of teacher education through mentoring was highlighted. Mentoring strategies were also found to be effective for talented students, improving understanding of concepts such as mathematicians, for example, as well as psychosocial and career benefits. As for the instruments, international studies make use of the most specific and the widest variety of them. The theme is innovative, which justifies its investigation.

**Keywords**: human development; ability; gifted.

## Tutoría del Talento en la Escuela: Análisis de Publicaciones Nacionales e Internacionales

**RESUMEN**

Hay evidencias de que tutores hacen diferencia en la vida de estudiantes talentosos/superdotados, motivo de la investigación del tema y su producción científica nacional e internacional de 2000 a 2018. Entre las bases de datos investigadas están: *Scientific Electronic Library Online* (*Scielo)*, Banco de Tesis/Tesinas Capes, *Academic Search Premier*, Portal Periódicos Capes y *Sage Journals*. Se obtuvo 59 estudios, es decir, 24 nacionales y 35 internacionales. Sobresalieron los estudios cualitativos con énfasis en el abordaje exploratorio. En el muestreo, predominaron profesores de la Enseñanza Básica, Secundaria y Universitaria. Entre os objetivos, se destacó el interés de los investigadores por el proceso de formación de profesores por intermedio de la tutoría. Se percibió, aún, que estrategias de tutoría son eficaces para estudiantes talentosos, mejorando la comprensión de conceptos como los matemáticos, por ejemplo, además de beneficios psicosociales y de carrera. En lo que se refiere a os instrumentos, estudios internacionales hacen uso de los más específicos y más variedad de ellos. El tema es innovador, lo que justifica su investigación.

**Palabras clave**: desarrollo humano; aptitud; superdotados.

## Mentoria do Talento na Escola: Análise de Publicações Nacionais e Internacionais

**RESUMO**

Há evidências de que mentores fazem diferença na vida de estudantes talentosos/superdotados, motivo da investigação do tema e sua produção científica nacional e internacional de 2000 a 2018. Entre as bases de dados investigadas estão: *Scientific Electronic Library Online* (*Scielo)*, Banco de Teses/Dissertações Capes, *Academic Search Premier*, Portal Periódicos Capes e *Sage Journals*. Foram encontrados 59 estudos, sendo 24 nacionais e 35 internacionais. Sobressaíram-se estudos qualitativos com ênfase na abordagem exploratória. Na amostragem, destacaram-se professores do Ensino Fundamental, Médio e Superior. Entre os objetivos, destacou-se o interesse dos pesquisadores pelo processo de formação de professores por meio da mentoria. Percebeu-se, ainda, que estratégias de mentoria são eficazes para estudantes talentosos, melhorando a compreensão de conceitos como os matemáticos, por exemplo, além de benefícios psicossociais e de carreira. Quanto aos instrumentos, estudos internacionais fazem uso dos mais específicos e maior variedade deles. O tema é inovador, o que justifica sua investigação.

**Palavras-chave**: desenvolvimento humano; aptidão; superdotados.

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## INTRODUCTION

The school normally works to educate most students. Consequently, for those who have special educational needs, such as high skills / giftedness, the professional care is rare, precarious, or non-existent (Freeman, 2001; Shaughnessy, 2005). The concept of "talent", used in this study, is related to high performance, superior mastery, mastery of skills and competences developed in a systematic way, at least in an action field. The preference for the term occurs due to its practical use and that better instigates the dialogue about the subject in the educational context. This term dispenses with the idea of elitism, that is, it does not privilege only students with superior performance, but includes at least 10% or more of the best in the most diverse areas of human activity, considering the same age group and activity (Gagné & Güenther, 2012).

Regarding the identification of talented students, Tourón, Peralta and Repáraz (1998) believe that recognizing the strengths of a specific talent is more valuable and useful than simply saying that a child is gifted. In the same direction, other authors believe that being talented is not enough, it is necessary to have an adequate teaching and learning context that enhances talent and creates favorable conditions for these students to become future leaders in their fields of interest (Zorman, Rachmel, & Barshan, 2016).

A second term that describes this population is "giftedness", which should be used with caution because of the risk of passing on the exaggerated and false idea of typical behavior only of people with very high potential, constituting a rare phenomenon (Gagné & Güenther, 2012). Giftedness, adopted by the Brazilian National Education Policy in conjunction with "high skills", refers to those who have high potential in an isolated or combined manner in the intellectual, academic, leadership, psychomotricity and arts areas, in addition to presenting great creativity, involvement in learning and performing tasks in areas of interest. Students with giftedness characteristics - or talented - are considered to have special educational needs (SEN), as they have specific individual traits that need unique monitoring (Brasil, 2008; Renzulli (2005). In this context, mentoring contributes so much for the understanding of the variables that integrate a promising educational context (Bisland, 2001) as it presents itself as one of the best ways to provide resources to students whose special needs are of high performance (Besnoy & McDaniel, 2016).

Mentoring is a type of support relationship on the part of a more experienced person who guides, directs and transfers knowledge and experience normally to a younger person (Besnoy & McDaniel, 2016; Shaughanessy, 2005; Zorman, Rachmel, & Bashan, 2016). In other words, it corresponds to the laws and guidelines of the National Special Education Policy from the Perspective of Inclusive Education, which aims to meet the special educational needs of talented students (Brazil, 2007) and contribute to the teaching-learning process, identification and development of the high intellectual and creative potential of these students. Furthermore, regular or traditional education fails to meet the demands of this population in the creation of resources, support networks with society, companies, successful professionals, laboratories and other environments that contribute a lot to the training of mentors (Freeman, 1998).

In the school environment, one of the most common and informal mentoring relationships is that of a teacher and a student, and that teacher has the role of identifying and modeling skills daily in order to encourage lifelong learning, and not just for the moment (Davalos & Haensly, 1997). In this way, the student obtains advice, direction, and assistance from their teacher mentors. Another type of mentoring relationship is that of an older student who guides a younger student. When pairing a younger student with a High School student, for example, or the High School student with the university student, the younger student will have a model for success. He sees the elder as someone with the same life history, a role model. Another benefit from this relationship is the elder's feeling of responsibility for the younger (Grybek, 1997; Wright & Borland, 1992).

It is important to keep in mind that, when the pairs are established, the mentoring strategies must be clear and structured according to the proposed objectives. These may include a reading program, provision of systematic *feedback* on the mentee's performance, the exercise of roles such as guidance when showing the path and obstacles of the journey in pursuit of goals, the role of counselor when discussing inappropriate behaviors, of a friend offering emotional support, in addition to the role of model as an example of values, attitudes and behavior patterns (Kram, 1985; Rhodes, 2002).

It is worth mentioning that not all people or professionals are good candidates to be mentors. Above all, the candidate for mentoring must have expertise in the field of interest of the talented / gifted mentee and be committed to the mentoring process. Since there is no specific mentor profile, the school must use a variety of resources and techniques - such as interviews and profiles - to choose the right mentors for its program. This is because it is necessary, above all, responsibility and willingness to share knowledge and assume multiple roles such as teacher, specialist, guide, counselor, friend and model (Clasen & Clasen, 1997; Dondero, 1997; Schatz, 1999).

In countries where mentoring is part of the student

training process, the work with those who are talented is not always within educational institutions. Sometimes it takes place in a university library accompanied by a university professor, in a laboratory accompanied by a supervisor (Subotnik, 1988).

Children and teenagers who attend summer camps, organized especially for gifted people in countries like the USA, for example, often identify with mentors who end up becoming invaluable references in their lives (Durden & Tangherlini, 1993) and they are often accompanied by school or family in order to protect in the mentoring process. It is perceived, therefore, that the impact of the mentor's action can go beyond the school, it is still found in extension and updating programs, training and transmission of oral knowledge from generation to generation, learning and active participation (Delors, 1996; Perrenoud , 1999).

The origin of the concept "mentoring" is found in Ancient Greece, in the 8th century BC, in Homer's masterpiece "Odyssey, the adventures of Ulysses" (Homer, 1960). In it, Ulysses, king of Ithaca, leaves home to fight in the Trojan War and leaves his wife Penelope and his son Telemachus. To his friend Mentor he entrusts his son's education. Mentor becomes your teacher, but also a friend, advisor, and protector by contributing to his education and introducing him to the adult world (Grassinger, Porath, & Ziegler, 2010). The narrative had such an impact on the nobility of the time, that they began to seek "mentors" to assist in the education of their children (Bellodi, 2003).

The concept of mentor has been confused with others, such as preceptor, supervisor, tutor, and coach, sometimes causing confusion and requiring its specification (Botti & Rego, 2008). For Bragotto (2005), however, regardless of the proximity of meanings, no expression is sufficient to express its real meaning. Currently and as it has already been introduced, mentoring refers to the relationship between two or more people, usually one more experienced, which provides guidance, training, teaching, role modeling, contact sharing, networking and support in a selected field (Besnoy & McDaniel, 2016). The term appears in dictionaries and in the perception of different authors with a great variability of synonyms. Only Crisp and Cruz (2009) found more than 500 of them in their literature review study, including terms such as protector, attentive, responsible for the physical, social, spiritual, and intellectual development of the youngest, master, guide, etc.

The concept of mentoring also comprises two major functions: psychosocial and the function of professional or career guidance. Psychosocial is related to building relationships that transmit trust, intimacy, and a significant interpersonal relationship, which tends to improve the self-learning, self-efficiency, and self-efficacy of those involved. In other words, these are elements of the relationship that enhance the sense of competence, personal responsibility, clarity of identity and effectiveness in the performance of any activity. These are eminently behavioral aspects. The career or professional orientation function concerns aspects of the relationship that guarantee the learning of the roles that the subject assumes or will assume professionally and that prepares the mentee for academic and professional progress (Ragins & Kram, 2007; Noe, 1988).

There are several types of mentoring relationship. There is a formal or informal formalized and systematized relationship, one by one, group, mixed, voluntary, mandatory, predetermined or determined, live or virtual, *on-line* and *peer-mentoring*. There are also dyad relationships, very personal between a professional mentor and the apprentice, and even *e-mentoring* (remotely using the internet), without a personal relationship, offered by lay people, not pedagogically trained, but that allows communication among participants in convenience and in different time zones (Ragins & Kram, 2007).

It is perceived that mentoring can offer talented / gifted students opportunities that meet their instructional needs, improvement-oriented learning with ample possibilities for practice and direct *feedback* (Grassinger et al., 2010). Furthermore, it promotes challenges, maturity, academic rigor, exploration of future careers and satisfaction with the possibility of applying the acquired knowledge (Templin, 1999). The mentor versus mentee relationship also contributes to the interaction of talented students with significant adults, and / or specialists in the most diverse areas through face-to-face service (Cakir & Kocabas, 2016).

For Berger (1990) and Gagné (2004), the exposure of a talented / gifted student to a mentor willing to share values and personal experiences, specific interests, time and skills is one of the most valuable experiences that this population can obtain. Many of these students like everything and they are good in many areas, but they can have problems with career planning if they fail to set priorities or long-term goals. Thus, when mentoring is properly structured, the relationship benefits the mentee, but also the mentor, providing both with encouragement, inspiration, new *insights,* and other personal rewards. In other words, opportunities are opened for young scholars to examine aspects of the integration of professional and personal life. Such experiences are crucial for deciding about choosing a career in each field of activity.

The talent / giftedness mentoring is still valid for specific populations, such as students from disadvantaged backgrounds (Hicks & Ranis, 2001) and

students with learning challenges (Shevitz, Weinfeld, & Jeweler, 2003). These usually need different encouragement and more concrete directions so that they can navigate in unfamiliar environments (Ming Liu & Waller, 2018). Girls, teenage women, and talented women constitute another specific population group whose mentoring is necessary. Among them, there are those who have feelings of isolation and marginalization in academic environments, or they are neglected, left out or behind the scenes where informal conversations are crucial in directing ideas, nominations and / or obtaining mandates. In this sense, it is necessary to guide talented girls in the process of developing their potential in terms of life achievement and satisfaction.

Thus, mentoring and its programs are opportunities to show society and public policy makers the ways to add value in the face of real growth opportunities for students (Subotnik, Olszewski-Kubilius, & Worrell, 2018). In this sense, it is important to recognize and stimulate learning in the classroom aimed at expanding a concept that values responsibility, team spirit, ethics, respect, citizenship and educational practices that develop curiosity, creative capacity, socialization and logical reasoning of the student, among other aspects. Therefore, students must be immersed in genuine situations in which they become responsible for producing specific results (Alencar & Fleith, 2001; Maia-Pinto & Fleith, 2002).

Given this brief review of the theme of mentoring talented students in the regular educational context, it was possible to realize that there are numerous ways of applying this methodology. The school, in the role of its managers, should not sacrifice meeting the educational needs of its talented / gifted students while it depends solely on the commitment of those responsible for the applicability of laws and guidelines already established by the National Special Education Policy in the Perspective of Inclusive Education( Brazil, 2008). Furthermore, it should not be just dependent on the establishment of Núcleos de Atividades de Altas Habilidades/Superdotação (NAAH / S)[1] in the vicinity of your school, as there is usually only one in each state, under the management of the Special Education Secretariat of the Ministry of Education. This situation justifies the regular school - in the role of its principals, teachers and other educational agents, in addition to the community - to take the initiative to provide conditions to identify the talented / gifted student in order to offer him/her the necessary assistance. (Hill, Corbett, & Rose, 2010; Kerr & Gahm, 2018).

It is noticed that it is possible for the school, in agreement and partnership with all its professionals, from the definition and formation of the profile of a mentor, to work with the population of talented / gifted students. The mentor could be the class teacher himself, or teachers of higher education levels, older students, professionals from the most diverse areas related to the specific interests of these students, hired specialists and even members of the community willing to share their knowledge. The mentors would work in partnership with the conducting teachers in order to provide more and better attend to the special educational needs of these students in the school environment, such as in the library, in the laboratory, in the study room, or even in the classrooms that they are empty at certain times, in addition to, as already mentioned, rooms with multifunctional facilities.

Currently, the goals of talent development point to the emergence of a new paradigm that challenges educators to assume the role of catalysts of the student's potential, to contribute to their better development (Oliveira, 2010). In this context, teacher training to identify talent / giftedness is one of the most important and consistent resources for occupying an extremely relevant position in relation to the recognition of high skills (Araújo, 2011; Wechsler & Souza, 2011).

In view of the objective of this study, which refers to the search and analysis of scientific production both nationally and internationally about mentoring talent, a "State of the Art" or "State of Knowledge" research was carried out, defined as having a bibliographic character whose purpose is map certain academic productions in different fields of knowledge (Severino, 1986). To this end, the study sought to present the following analysis results: year of publication, sample, objectives and conclusion, instruments, types of study and source of publication, which will be analyzed below.

## METHOD

A literature review was carried out in theoretical and empirical studies about the theme of talent mentoring and the following electronic databases of periodical, theses and dissertations were consulted: Thesis Bank of *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Capes e Portal Periódicos Capes*; *Supporting Advanced and Gifted Education - SAGE; Scientific Electronic Library Online - SciELO; Education Resources Information Center - ERIC;* multidisciplinary database - *Academic Search Primier* and the data platform that includes studies in the health area ProQuest. Of these bases, three stood out: The Bank of Dissertations / Theses-Capes, with 17 studies, SCIELO, with 15 studies, and SAGE Journals, with 13 studies.

Considering the need to filter the number of articles from the terms indicated, studies between the years 2000 and 2018 were prioritized. As for the descriptive terms in English, the following were used: *mentor, mentoring, mentorship, talented, gifted, high*

[1] High Ability / Giftedness Activity Centers.

*ability, Education, High School and High Education* in the most diverse combinations and facing a specific or advanced search. In Portuguese, the following terms were prioritized: *mentoria, mentoria do potencial, mentoria de estudantes talentosos, mentoria na educação, mentoria na escola, talento, altas habilidades, superdotação, Educação, Ensino Fundamental, Médio e Superior*, and the following types of research were defined: qualitative and quantitative.

After several phases and delimitations, the semifinal phase resulted in 169 articles, 127 of which were international and 42 nationals. After a careful reading of these texts, 59 studies remained, including articles, theses, and dissertations, 35 of which were international and 24 nationals. These were selected for combining the academic context (Kindergarten, Elementary, High School and Higher Education) and the study of talent mentoring among hundreds of others who referred to the theme but did not meet the demanded requirements.

It is also noteworthy that there were no studies about the mentoring of talented or gifted students in Brazil, but only mentoring in the general educational context, contrary to international studies, which all refer to the theme. Another aspect to consider is that, even among Brazilian databases, descriptors in English were used. The reason was the perception that some Brazilian researchers prefer these terms, as is the case of the study by Martins and Bellodi (2016), "*Mentoring: uma vivência de humanização e desenvolvimento no curso médico*"[2], or the study by Bellodi, Chebabo, Abensur and Martins (2011), "*Mentoring: ir ou não ir, eis a questão: um estudo qualitativo*"[3].

**Publication Year and Samples**

This information refers to the length of the publication period of the localized studies. In the years 2010, 2011 and 2016, four national studies were found in each. Among international studies, 2014 stands out with six studies, followed by the years 2000, 2010 and 2011 with four studies each. As for the samples of the national studies described in Table 1, 12 references were found to teachers of Basic Education (Kindergarten, Elementary I, II and High School) and university, followed by nine studies involving university students, especially from medical courses. As for international samples, they are better distributed. The most recent ones referred to talented students from Elementary and High School, to non-talented students from High School, to mentor teachers, teachers from Elementary, High School and university students. The remaining samples include teachers and students of language courses, writers influenced by mentors and analysis of publications and reports about mentoring, among others. Among the studies about the subject, Mira and Romanowski (2016) stands out.

[2] *Mentoring: an experience of humanization and development in the medical course*.

[3] *Mentoring: to go or not to go, that is the question: a qualitative study.*

**Table 1.** Participants in National and International studies on Talent Mentoring.

| Itens | N | I |
|---|---|---|
| Elementary Students | - | 3 |
| Mentoring Teachers (Specialists) | - | 4 |
| T / G Development Program Students / Teachers | - | 2 |
| Elementary, High School and University Teachers | 12 | 4 |
| Talented Students (ES and HS) | - | 5 |
| Non-Talented High School Students | - | 5 |
| Archived interview records | 1 | 2 |
| Language school Students / Teachers | 1 | 1 |
| University students | 9 | 4 |
| Black Students | - | 1 |
| Adults T / G; Volunteers | - | 1 |
| T / G Students in mathematics (ES and HS) | - | 3 |
| Writers "as mentors" | 1 | |
| **Total** | **24** | **35** |

Source: Prepared by the authors. N - National Studies; I - International Studies; T / G - Talented / Gifted or Talent / Giftedness; ES - Elementary School; HS - High School.

**Objectives and Conclusions**

According to Table 2, some of the objectives of national studies include the investigation of studies that refer to the process of teacher training, understanding of students' adherence to mentoring programs and the interest in seeking the participants' perception of the lived experience as mentees, analysis of the profile of the mentors and identification of the characteristics of teachers that go beyond the teaching profession. Two studies that exemplify these aspects are those of Migliorança (2010) and Ribeiro et al. (2013). As for the objectives of international studies, the majority proposes: to report experiences of High School and College students as mentors of talented students in Kindergarten and Elementary School; verify the opinion of these students about Mentoring Programs; verify if mentoring practices contribute to the development of psychological capital; and understand student adherence to a Mentoring Program.

Among the conclusions of national studies, which analyze the process of teacher training through mentoring at the beginning of their careers, many expressions were found related to anxiety, anguish, insecurity, despair and lack of support on the part of the school. On the other hand, the teacher-mentor is seen as someone who has knowledge, experience, availability, interpersonal relationships, motivation and leadership, and there is also reference to the fact that there is a shortage of Mentoring Programs aimed to the teacher. Conclusions from international studies include, among other things, benefits of mentoring, research skills, professional competence, and linear increase in psychological capital given to mentoring. In addition, it was found that studies show the following: some talented students do not feel mentored; others are not ready or do not want a mentor. In general, however, studies conclude that there are psychosocial and career benefits, in addition to the positive influence of a significant adult.

**Instruments**

As listed in Table 3, there are instruments or techniques that are repeated both in national and international studies. They are interviews, questionnaires, narratives, and diaries online. Numerous studies use more than one instrument, which is why the quantity is greater than the number of studies. International studies make use of more specific instruments for the assessment of talented students, as well as a greater variety of them.

**Types and Publication Sources**

No national articles of an experimental nature (quantitative or qualitative) were found at the level of Elementary Education and which discussed the theme of talent mentoring. In this context, there is a reasonable number of studies of a bibliographic nature, a characteristic not considered for selection. Thus, from the studies found, nine dissertations and five theses were selected from the database "Bank of Dissertations and Theses (Capes) that relate to mentoring in the Brazilian educational context. Therefore, in general, regarding the type of studies, the qualitative ones stood out in the 1st place, and in the 2nd, quantitative / qualitative.

As for international publication sources, it was noticed that the theme is of special interest in the areas of education and psychology. Despite this variability, sources were highlighted, such as*: Journal for the Education of the gifted*, with six publications, and *Roeper Review*, with five. Two other sources of publication were seen as promising in the research of the theme: *Journal of Advanced Academics and Thinking Skills and creativity - Elsevier.* The largest number of sources of national publications is in the Bank of Dissertations and Theses Capes, with a total of 14, with emphasis on the universities Federal University of São Carlos (UFSCAR), in São Paulo, and the Faculty of Boa Viagem, Recife. In other words, many studies in mentoring related to education have not been published in articles for a larger group of researchers. Most of articles that have been published found in sources such as: Revista de Psicologia; Revista de Educação e Pesquisa; Revista Interface Botucatu (online); Revista Brasileira de Educação Médica; Reflexão e Ação e Comunicação and Saúde e Educação.

## FINAL CONSIDERATIONS

The survey of research about the mentoring of talented students demonstrated the need to consider a wide variety of terms to arrive at the two final constructs, namely, "mentoring" and "talent", or even "giftedness". It was possible to understand that this theme is more present in English literature compared to Brasilian. The presence of mentoring and non-mentoring of talent in the educational context is present not only in Elementary and High School, but extends to other levels and areas, with an emphasis even on English and medical courses. In education, there is an emphasis on teacher education in early career. Regarding the absence of national psychological instruments, standardized and validated for the use of school psychologists in the identification of this population, the perception of Güenther (2003) is reflected when stating that teachers are neither instructed nor instrumentalized to work with this population. However, when properly prepared, they are effective in the appointments made. This lack of instruments makes it difficult to establish a culture of service to the student population that stands out for their potential, thus missing opportunities to work on

**Table 2.** Areas, Objectives, and Conclusions from National and International studies.

| Areas | Objetives | Conclusions | N | I |
|---|---|---|---|---|
| E-Mentoring; DVC | Investigate the role of e-mentoring; Desktop Videoconferencing (DVC) technology and on-line MP between teachers and T / G | Interaction space with T / G; motivation and perseverance in individual and group tasks; positive DVC interventions; | 4 | 3 |
| Mentoring and creativity | Analyze mentoring strategies for teaching creative thinking; investigate the mentors' beliefs and influence on creative students; | Mentoring strategies are effective for T / G and Non T / G; there are teachers' and mothers' beliefs about creativity; | | 3 |
| Mentoring talented minorities | Make a commitment to scientific research through MP for ethnic minority T / G; accompanying minorities in the development of social, racial and gender mathematical identity; | Enrichment programs have an impact among minorities; there are internal challenges that black teenagers sought to successfully negotiate inside and outside school | | 2 |
| Effect of mentoring programs in T / G | Investigate the educational provision for T / G students in mathematics; examine impact of M3 Project and mentoring curriculum; to verify the effects of mentoring programs on the academic performance of T / G students; | Acquisition of knowledge when participating in the MP; positive / negative aspects in programs; significant understanding of mathematical concepts; no effect on academic performance; | | 7 |
| Performance of girls in the STEM areas | Check if MPs help to improve girls' low performance in STEM areas; test course units of the M3 Project for T / G students; build mathematical confidence; analyze parents' perception of mathematical talent; | Significant gains in MP participants; these increase confidence and competence in mathematics; there was no significant effect on academic performance and self-efficacy; | | 5 |
| Summer Mentoring Program | Examine experiences of adolescent T / G who attend summer university MP; perceptions of themselves and their relationships with mentors; | Increase in research skills and professional competence; positive mentoring relationships (time / accessibility ); | | 2 |
| Training leaders through mentoring | Cultivate leaders in various areas through MP; investigate the knowledge of school counselors about T / G; | There is a desire to reestablish a relationship between teacher and disciple; it can occur to transform and be transformed; | | 5 |
| Review | Review bibliography of MP in universities; analyze interview records of T / G students who participated in MP; | Positive MP experience; methodological weaknesses that make it difficult to reach solid conclusions about the effectiveness of MP; | 1 | 1 |
| Mentoring of writers | Investigate the profile of mentors and their influence on literary production | Professional competence, technical knowledge, creativity, ethical values, satisfaction; | 1 | |
| Mentoring and teacher training | Analyze the training process in early career; investigate the contribution of mentoring practice; define MP objectives and methodological guidelines; analyze contributions from mentors in the teaching insertion process; Identify influence of PM on teacher education; | Mentors with knowledge, but without evidence of identity with T / G; beginning of career characterized by insecurity and lack of support; better prepared teacher-mentor; better interpersonal relationships; few MPs for teachers; | 11 | |
| Mentoring for students of different levels | Report experiences of students from HS and HE as mentors of T / G from K and ES; check T / G opinion about MP with the university; analyze whether mentoring practices contribute to the psychological development of the T / G student; understand student adherence to a MP**.** | More research skills; positive mentor relationships; there are T / G who do not feel mentored; there are those who do not want to be mentee; psychosocial / career benefits; better psychological capital; influence of significant adults. | 1 | |
| **Total** | | | **18** | **28** |

Source: Prepared by the authors: N - National Studies; I - International Studies; T / S - Talented / Gifted; EI - Kindergarten -ES - Elementary School; HS - High School; HE - Higher Education; M3 Project – Mentoring Mathematical Minds; MP – Mentoring Program; STEM – Science, Technology, Engineering and Mathematics.

**Table 3.** Types of Instruments in National and International Studies.

| Nationals | | Internationals | | | |
|---|---|---|---|---|---|
| **Types** | **N** | **Types** | **N** | **Types** | **N** |
| On-line/ Field Diaries | 1 | Questionnaries | 7 | Files and database | 3 |
| Questionnaries | 9 | Mathematical confidence and skills | 1 | Multiple Intelligences Assessment Technique) | 1 |
| Interviews | 6 | The National Mentoring Program; | 1 | Raven, Standard Progressive Matrices Test | 1 |
| Descriptive model of self-knowledge | 1 | Interviews | 10 | Mathematically promising English language learners | 1 |
| Recordings | 1 | School report | 1 | Desktop Videoconferencing (DVC) | 1 |
| Document analysis | 2 | On-line diaries; correspondence; dialogues | 6 | Project Support to Affirm Rising Talent (START) | 1 |
| On-line Narratives | 4 | Torrance Test of Creative Thinking (TTCT) | 3 | CLUE Project; Mentor Log | 1 |
| Mentors' Training Program - * UFSCar | 3 | The School's English Proficiency Test | 1 | GO-GIRL Program | 1 |
| MP participant reports | 2 | Motivated Strategies for Learning Questionnaire | 1 | Youth-Mentor Relation-ship Quality Inventory | 1 |
| Teachers' nominations | 1 | M 3 Mentoring/Math/Min | 1 | WISC | 1 |
| Videos | 1 | Self-efficacy Perception Profile for Adolescents | 2 | Observation / narrative / systematic notes; | 1 |
| | | Non-verbal skill test (Naglieri) | 1 | Classroom Instructional Practices Scale | 1 |
| | | Profile for Adolescents (SPPA) | 2 | Classroom performance | 1 |
| | | Iowa Test of Basic Skills | 4 | Mentoring Curriculum | 1 |
| | | Test and Response Evaluation | 1 | Family Outreach Program | 1 |
| | | Mathematics Scales for Rating the Behavioral Charactistics of Superior Students | 1 | Research Skills Questionnaire (RSQ | 1 |
| **Total** | **31** | | | | **61** |

Source: Prepared by the authors. MP - Mentoring Program. *Universidade Federal de São Carlos.

special potentials that would even benefit the nation itself.

As for the limitations of this study, it is necessary to report - especially about international databases - the difficulty of accessing them. In many cases, access was only allowed in the institutions themselves, or even paying for the article. Thus, there were limitations in the search for data due to the difficulty of retrieving the journals, that is, the data presented here are more related to the researchers' possibilities of access to studies than a quantity existing in the search period. It is also important to consider the fact that many scientific journals have only started to integrate electronic databases more recently. Therefore, the fact that only electronic databases have been consulted needs to be considered.

As an initial hypothesis, the possibility of finding few studies on mentoring in Brazil was considered. This hypothesis, however, would be true if only articles are considered. In the search for dissertations and theses, both in the bases already researched and in the digital libraries of each university, the impression of "few" is dissipated, that is, despite realizing that this is not a common theme in the national context, some significant studies for the area exist, but they only need to "get out" of dissertations and theses and come to a field of greater visibility. In this perspective, among the suggestions for future studies, a specific, comprehensive and detailed survey about what has been studied in the Master and Doctorate programs in Brazil should be included.

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