



# Teaching Strategies and the Role of Creativity in Gifted Education: Perceptions of Students, Families, and Educational Professionals

Fernanda Hellen Ribeiro Piske , Kristina Henry Collins  and Tatiana de Cássia Nakano 

Volume 11, Number 1-2, 2023

URI: <https://id.erudit.org/iderudit/1115430ar>

DOI: <https://doi.org/10.7202/1115430ar>

[See table of contents](#)

Publisher(s)

International Centre for Innovation in Education/Lost Prizes International

ISSN

2291-7179 (print)

2563-6871 (digital)

[Explore this journal](#)

Cite this article

Ribeiro Piske, F., Henry Collins, K. & de Cássia Nakano, T. (2023). Teaching Strategies and the Role of Creativity in Gifted Education: Perceptions of Students, Families, and Educational Professionals. *International Journal for Talent Development and Creativity*, 11(1-2), 225–240.  
<https://doi.org/10.7202/1115430ar>

Article abstract

The role of creativity in teaching gifted children is essential for gifted students to develop their high abilities and creative potential. Teaching and fostering creativity and creative thinking within other academic domains can provide opportunities for excellence and achievement within students' talent development and interests. This manuscript aims to highlight research participants' perceptions of teaching strategies and the importance of creativity in the development of gifted students. These perceptions were captured utilizing a qualitative, casestudy design approach whereby the data was collected through semi-structured interviews and observations, and these data were analyzed through an exploratory analysis approach. Findings revealed that the perceptions of the selected participants (three gifted students, two mothers, five teachers, two principals, and one educator) are in line with the recommendations of experts in the field of creativity and giftedness. Implications for educators are discussed, including creating an environment that is responsive to the needs of gifted students and their creativity and cultivating a psychologically safe school space, that promotes the development of creative potential.

© Fernanda Hellen Ribeiro Piske, Kristina Henry Collins and Tatiana de Cássia Nakano, 2024



This document is protected by copyright law. Use of the services of Érudit (including reproduction) is subject to its terms and conditions, which can be viewed online.

<https://apropos.erudit.org/en/users/policy-on-use/>

érudit

This article is disseminated and preserved by Érudit.

Érudit is a non-profit inter-university consortium of the Université de Montréal, Université Laval, and the Université du Québec à Montréal. Its mission is to promote and disseminate research.

<https://www.erudit.org/en/>

# Teaching Strategies and the Role of Creativity in Gifted Education: Perceptions of Students, Families, and Educational Professionals

Fernanda Hellen Ribeiro Piske<sup>1</sup>; Kristina Henry Collins<sup>2</sup>

Tatiana de Cássia Nakano<sup>3</sup>

<sup>1</sup> Curitiba Municipal Education Department, Curitiba, Brazil

<sup>2</sup> Texas State University, San Marcos, United States

<sup>3</sup> Pontifical Catholic University of Campinas, Campinas, Brazil.

---

## Abstract

The role of creativity in teaching gifted children is essential for gifted students to develop their high abilities and creative potential. Teaching and fostering creativity and creative thinking within other academic domains can provide opportunities for excellence and achievement within students' talent development and interests. This manuscript aims to highlight research participants' perceptions of teaching strategies and the importance of creativity in the development of gifted students. These perceptions were captured utilizing a qualitative, case-study design approach whereby the data was collected through semi-structured interviews and observations, and these data were analyzed through an exploratory analysis approach. Findings revealed that the perceptions of the selected participants (three gifted students, two mothers, five teachers, two principals, and one educator) are in line with the recommendations of experts in the field of creativity and giftedness. Implications for educators are discussed, including creating an environment that is responsive to the needs of gifted students and their creativity and cultivating a psychologically safe school space, that promotes the development of creative potential.

**Keywords:** Gifted; creativity; talent development; teaching strategies.

## Introduction

From a historical context, many gifted and talented children remain unidentified and or underserved, preventing them from fully developing their high abilities and talents (Ford et al., 2018; Gagne & Gagnier, 2018; Kane & Silverman, 2014; Pfeiffer, 2015, 2016; Piske & Kane, 2020; Renzulli, 2003, 2016). A critical component of gifted programming is the services provided to gifted children.

The more comprehensive definitions (Kaufman & Sternberg, 2008) consider several domains beyond cognitive capacity in their components, including creativity, leadership, motivation, artistic and interpersonal skills, emotional processes, and variables associated with personality and social contexts. However, one of the most important challenges in this thematic is a disproportionately great emphasis on academic giftedness's cognitive facet. Consequently, other aspects, like cognitive ones, have been valued (Jones et al., 2016). Within this model, creativity has contributed, in a significant way, to the broader view of giftedness (Angela & Caterina, 2020; Kaufman et al., 2012; Lubart et al., 2019; Piske et al., 2016a; Sorrentino, 2019).

Creativity has been defined as the interaction between aptitude, process, and environment, through which an individual produces a product that is perceived, within a social context, as new and valuable (Plucker et al., 2018). It is considered a skill present in all people, at least as a potential, which can manifest itself at different levels and domains, being understood as a multidimensional

construct (Kaufman & Beghetto, 2009), being linked to better physical health, well-being, resilience, and motivation (Paik & Gozali, 2020).

A positive contribution of creativity to academic and social outcomes has been shown in the education context. In response, several countries have emphasized the development of students' creative potential in their education policies. Consequently, scholars, educators, and administrators must be capable of understanding, evaluating, and developing creativity in educational settings (Hernández-Torrano & Ibrayeva, 2020). The Partnership for 21st Century Skills (P21), the Organization for Economic Co-operation and Development (OECD), and Assessment and Teaching for 21st Century Skills (ATCS) have attempted to prepare students for the future, considering that creativity plays a significant role in individual 21st century skills (Arabaci & Baki, 2022).

In view of this characteristic's relevance for this phenomenon, it is noted that it has been included in several giftedness theoretical models. In Gagné's Differentiated Appropriation and Talent Model, creativity is understood as one of the domains of endowment or talent (Gagné, 2013), Sternberg's Triarchic Theory of Intelligence recognizes the existence of creative type intelligence (Kolligian & Sternberg, 1987; Sternberg, 2003, 2005), in Renzulli's Conception of the Three Rings, creativity is highlighted as one of the three main components (Renzulli, 2012, 2014). In this model, specifically, creativity represents a specific type of giftedness: creative-productive, which is associated with curiosity, problem-solving, and characteristics of creative thinking, oriented to a real problem (Pfeiffer, 2013).

The importance of the presence of creativity in the definitions of giftedness and, consequently, in the processes of identifying these behaviors, can be realized, and justified. Kaufman et al. (2012) state that creativity tests can contribute to a deeper understanding of the characteristics of gifted individuals, and should be included in general evaluation processes of this population. However, identifying students with creative giftedness continues to face many challenges. Among them, the still small number of institutions that include creativity in their definitions of giftedness, includes their evaluation processes (Ridgle et al., 2020).

To what extent does the program offer adequate services can be measured by the perception and satisfaction of its stakeholders. In this sense, this paper sought to investigate the perceptions of gifted students, the families and teachers of gifted students, principals/directors, and an educator. To clearly understand their perception of the services offered, the researcher considered questions regarding teaching strategies and the role of creativity in these gifted students' education.

We know that the creativity development is critical in a child's education (Amabile, 2018; Besancon & Lubart, 2008; Plucker et al., 2018; Renzulli, 2003; Renzulli & Reis, 2017; Robinson, 2013). Many scholars also consider creativity an essential aspect in the education of gifted students (Amabile, 2018; Kane, 2016; Kane & Silverman, 2014; Plucker et al., 2018). We also know some creativity characteristics, related to personality traits such as nonconformity, questioning attitude, curiosity, divergence from the traditional, breaking of rules, willingness to take risks, and persistence (McCrae, 1987; Runco, 1993) can be perceived negatively by teachers and peers in the academic classroom setting (Collins, 2020; Collins et al. 2020; Gross, 2014, 2016; Peterson, 2014; Piechowski, 2014). As a result, it is common that the gifted students who show these creative characteristics can be viewed as problem students for teachers.

Gifted experts have long proclaimed that adequate and appropriate gifted programming and services includes innovative teaching that instills curiosity and desire to learn as well as fosters creativity (Clark, 2002; Csikszentmihalyi, 1996, 1998, 1999, 2007; Renzulli, 2003; Torrance, 1984; Thompson & Pfeiffer, 2020; Winebrenner, 2001). Fostering creativity should be intrinsically related to the way teachers prepare their curriculum, their teaching strategies, and what experiential learning opportunities they provide their students. However, there remain teachers who not only are limited to standardized teaching, but who also have difficulties determining and nurturing the giftedness of their

students (Kane, 2018; Pfeiffer, 2016; Winebrenner, 2001). These behaviors can inhibit the development of the gifted students' creativity, leaving them feeling bored and frustrated.

Best practices for gifted educational professionals suggest that teaching and talent development of these students must consider the culture, strengths and their interests (Collins & Kendricks, 2021; Ford et al., 2018, 2021; National Association for Gifted Children [NAGC], 2019). In this way, the learning process can allow students to make meaning and deep connections with the content. Moreover, Torrance (1962) warned cultural discontinuity in learning also inhibits creativity, which negatively impacts academic development. At a minimum, beginner and advanced gifted educator professionals must have a thorough knowledge and skillset to differentiate activities, nurture self-awareness, autonomy, and global perspective (NAGC, 2019). Khan et al. (2019) proported that teaching strategies should encompass modalities that address their students' preferred learning styles such as visual, auditory, and kinesthetic with provocative multimedia, creative speech and explanations, besides experiential activities. These strategies can pique gifted students' curiosity, instigate their desire to learn, attract their attention, and generate an extensive repertoire in the search and deepening of knowledge. Class activities must be linked to students' educational needs and must be meaningful according to their abilities. Teaching based on self-knowledge and knowledge of reality and the world will certainly expand both teachers and students' specific and general skills.

Meaningful and innovative teaching is based on the principle of adapting educational practices to students' abilities. Many gifted education specialists point out that there are several behaviors of gifted students that can signal their lack of interest in the teaching offered (Clark, 2002; Gross, 2014, 2016; Kane, 2016, 2018; Peterson, 2014; Pfeiffer, 2016; Piechowski, 2014; Piske, 2020; Piske et al., 2020a; Piske & Stoltz, 2021; Winebrenner, 2001). The following Table provides a synthesis of some of the behaviors that gifted students may exhibit as a result of non-responsive and inappropriate education, as highlighted in their research:

**Table 1:** Reported Research of Gifted Student Behavior and Learner Outcomes of Students Who Lack Interest in Teaching Strategies/ Curriculum in School.

Student Behavior	Learning Outcomes
Students feel like they already know about a specific topic, skill, or concept and do not feel the need for practice as part of talent development	Unfinished work; under-developed, varied interests; inability to narrow interest, topics.
Students become insensitive to teachers and others' attitudes and perceptions, increasing their feeling of need to self-learn and perfectionism	Perfectionists' traits cultivate a fear of failure, unfinished work, procrastination, or failure to perform school tasks; students are less likely to take academic risks.
Students may question the suitability of classroom activities for their needs even though they will work diligently and well on high-interest topics	To carry out a task without much dedication.
Students suffer from boredom or the feeling that classroom work is too easy or below your expectations.	Behavioral problems, disengagement, and lack of focus/ or distracted focus.
Students exhibit heightened sensitivity about various everyday situations.	Emotional outbursts or periods of gifted abstinence.
Unsuccessful group work can generate negative feelings for students, compelling them to feel responsible for group's work.	Preference to perform tasks alone and further inhibiting social and group dynamic skill development; student ideas misinterpreted or not appreciated by the group.

These are just some situations that create difficulties for gifted students in their personal development and interpersonal relationships during their school life. For this reason, gifted education professionals and other stakeholders must reflect on their work, researching, and always looking for new teaching strategies to serve the gifted students in more creatively and engaging ways.

## **The benefits of nurturing creativity**

Considered as a differential (Lins & Miyata, 2008), creativity has aroused the interest of the scientific community in recent decades (Nakano, 2018), especially with regard to its development. In general, creative development programs are based on the hypothesis that this skill encompasses a set of skills that can be learned or developed through teaching and practice (Sánchez et al., 2002).

These principles can be applied to giftedness. Gifted students can experience frustration daily during classes when they are underserved, which can lead to a lack of interest in attending school. Much of the time at school, students learn in rote ways, which can trigger boredom and disengagement that can further social isolation and other social and emotional difficulties (Piske & Stoltz, 2021). These are instances when creativity and creative thinking become even more important in the teaching-learning process, especially for gifted students who are thirsty for new knowledge and willing to take academic risks as part of their talent development and maximize their potential. Teaching-learning strategies need to be linked to innovative teaching that gives gifted students the opportunity to be autonomous, use creativity and imagination, and explore topics in their areas of interest (Plucker et al., 2018; Renzulli, 2016).

According to Vantassel-Baska (2016), creative potential requires a harmonious confluence of variables to support its development. In practical life applications, this phenomenon can be linked to finding those activities that help us focus, help us learn, and help us develop our humanity and potential. Realizing and maximizing creative potential, it seems, can help in many ways when approached with an attitude of commitment, curiosity, and affection (Vantassel-Baska et al., 2009). Based on these benefits, this paper aimed to understand the perception of gifted students, families, and educational professionals about:

- (1) teaching strategies employed in gifted education and programming;
- (2) the value and importance of creativity in the development of gifted students; and,
- (3) the role of creativity skill development in teaching strategies designed to develop gifted students within gifted education.

## **Method**

This researcher sought to investigate the perceptions of gifted students, their families, their teachers, school's principals/directors, and an educator regarding teaching strategies and the role of creativity in gifted students' education. The research was conducted in stages: (1) the approval of the research by the Municipal Secretary of a Brazilian municipality, (2) the invitation to supplied school contacts, (3) the researcher's visit to the school/field to present the project, (4) the meeting with the participants to present the research and sign the consent terms, (5) the data collected, (6) reported findings and analysis of the data.

The research project was filed and approved by the Head of the Municipal Secretary of Education office and the person in charge of the Coordination for Assistance to Special Needs. After authorization to start the research, invitational contact by telephone was made with the schools that the person in charge of Coordination had listed for Assistance to Special Needs. The management team from School A and School B accepted the invitation to participate. The researcher then provided appropriate authorization documents and informed the principals of the research data collection procedures. They signed all documents in agreement. Oral explanation and written consent forms for all school volunteers were provided and signed their agreement to participate.

### ***Participant Selection process***

The goal for the research was to include a group of individuals that were representative of critical gifted stakeholders – gifted students, teachers of gifted students, family members of gifted students, administrators of schools with gifted programs, and educators. Invitations to participate and the research was carried out in the public school system of a municipality in the Brazilian state of Paraná. The families and all of the teachers of gifted students were invited to participate in this research, but not all had the time available. Those meeting the criteria of gifted stakeholder responded and volunteered to participate based on availability for the set interview dates; these same volunteers were observed performing duties and/or participation in gifted related programming tasks. Volunteers were represented from two schools in the district (pseudonyms, School A and School B).

### ***Participants***

Participants from School A included one gifted student, one mother, four teachers, one educator, and one principal/director. Participants for School B included two gifted students, one mother, one teacher and one principal/director for a total of 13 participants. When introducing the participants, care was taken to preserve their anonymity by modifying their names so that none of them were identified, in accordance with Brazilian ethical research principles (Brazilian Health National Council, 2012).

**Table 2:** Participant's Profiles

<b>Participant</b>	<b>School A</b>	<b>School B</b>
<b>The Gifted Student(S)</b>	Geraldo – 9 years old, 5th grader, identified giftedness in the academic area.	Valmir and Renato – both 10 years old, 5th graders, identified giftedness in the academic area.
<b>Gifted Students' Mothers</b>	Lúcia – Geraldo's mother, 29 years old, married, has completed high school	Luíza – the mother of Renato; 28 years old, has a college degree.
<b>Teachers Of Gifted Students</b>	Teacher Augusto – 35 years old Teacher Marcela – 27 years old Teacher Ana – 29 years old Teacher Márcia – 33 years (all have a higher education degree in Pedagogy)	Teacher Eva – teaches Renato; 28 years old, have worked in the municipal education system for over 10 years.
<b>Educator</b>	Neide – 37 years, more than 5 years working in School A	
<b>Principal(S)/ Director(S)</b>	Director Joelma – 42 years old, more than 5 years working in School A	Director Aurélia – 35 years old, have worked in the municipal education system for over 10 years.

It is important to note that all teachers who participated in this research will be able to teach gifted students in regular classrooms in the future, including students who took part in this study, even if they have no training in the area of giftedness. For this reason, it is essential to know the perception of these teachers related to teaching strategies for these students.

### ***Instrument***

The first author for this article conducted an investigation that included an interview and observations of select participants. A qualitative and research approach was employed using semi-structured interviews (see Appendix; Pharm & Pharm, 2021) and observations as data collection instruments from a total of 13 participants. This method allowed the researcher to highlight the subjective nature of perceptions when teachers are attending to the gifted child, their feelings and emotions, and their expectation in their own learning process.

Considering that semi-structured interviews allow a more spontaneous method in which the researcher asks some predetermined questions but also allow for other questions that do not necessarily have to be planned in advance as follow-up to further understand the participant's point of view (Creswel, 2009), seven predetermined open-ended questions was asked. The questions focused on the perception of curriculum and teaching strategies in the general development of gifted students,

the definition and role of creativity in the development of gifted students in a school setting, and the relationship between teaching strategies and creativity skill development of gifted students.

### ***Procedures***

Thirty-minute interviews and observations were conducted in one of the participating student's classrooms at Schools A and B. Observations were made in the same setting and date as the interviews aimed to observe the interactions of gifted children at school with their teachers and peers. Observations of the teacher and student behavior in the classroom were conducted to infer the attitudes of gifted children as a response to their interest in the curriculum and their reception to the teaching strategies offered.

Each research instrument sought to investigate teaching strategies aimed at these children and the importance of creativity during the teaching-learning process. The open-ended questions from the survey yielded open responses from research participant to allow for an exploratory approach to analyze the data and report the finding.

### ***Data analysis***

After data collection, a thorough and repeated reading of all the material collected was carried out for the categorical realization of the results based on content analysis proposed by Bardin (2011), a useful tool for interpreting the perceptions of social actors (Amado, 2017).

For the analysis, the participants' experiences and contexts were considered. According to Weiner (2011) and Minayo (2013), it is important to realize how the participants contribute meaning to the elements of their context. In this research, the elements highlighted were: (1) teaching strategies and (2) the development of gifted students' creativity. In this sense, there was an analytical and systematic path, to make objectification based on opinions, beliefs, values, representations, relationships, and human and social actions possible from the perspective of actors in intersubjectivity (Minayo, 2013; Weiner, 2011).

The students' responses to teaching strategies (e.g., activities that address the needs and interests of the gifted children), and their perceptions about the definition and importance of creativity during the teaching-learning process of gifted students (e.g., the creative benefits for gifted education) were carried out after reading the collected data. In the analysis of this study, the answers obtained based on the responses of the participants from Schools A and B in the interviews and the observations were compared.

## **Research findings**

The results of this research pointed to the participants' dissatisfaction, feelings of discontent, and the need for advances in gifted education. It is important to note that there were some questions that some participants chose not to answer, even though they were explained in detail by the researcher in case of questioning or doubt. Any discomfort was avoided, preserving a climate of harmony and respect.

### ***Participants' perceptions about teaching strategies in the teaching-learning process***

As for teaching strategies in the gifted learning process, participants, in general, believe that teaching mediation reflects the student's development in a meaningful way by preparing activities that address the needs and interests of this child. The strategies mentioned are quite varied and were grouped in three main points: (1) materials, (2) respect to student needs and learning styles, and (3) specific activities to be offered during the class. The first group of responses highlighted some materials that could facilitate the learning process and to keep the students motivated:

"Hardware and software, Informatics, robotics" (student Renato, School B).

"Some strategies would be: projects, robotics, deepening in mathematics, Portuguese, geography, history, arts etc." (student Valmir, School B).

“More targeted classes would be needed in your area of giftedness with specific materials, increasingly stimulating your skills” (Teacher Marcela, School A).

The literature review indicated that principles of problematized teaching, professional games, simulations, group dynamics, and other innovations are increasingly being applied in different contexts in which creativity can be stimulated and developed considering its cultural expressions (Nakano & Wechsler, 2020). The use of these techniques, regardless of the program and its structure, has been emphasized as responsible for significant changes in attitude in participants in relation to the process of appropriating and producing knowledge, resulting in a greater sense of personal involvement and, therefore, a greater sense of creativity and motivation.

In this sense, it is important to consider that a necessary condition for the students’ creative development involves the practice of creative teaching by the teacher, based on the use of varied and new procedures that are aimed at facilitating the students’ learning and its meaningful meaning, and the use of multiple teaching strategies (Sierra et al., 2015).

Especially if we consider that not all children learn the same way, and that they have different abilities and skills. A second group of answers is based on this idea and represents the importance of respecting the specific needs and students’ learning styles:

“After identifying the skills, I believe that the strengths should be analyzed and work on them persistently, for greater development of the child. There must be room and specific studies, very well-prepared teachers would also contribute a lot in the formation of the gifted student” (Luíza, mother of a gifted student, school B).

“We know that each student has a better learning style, some are more visual, others are more auditory. Thus, teaching strategies should be as varied as possible. These students should be encouraged to contribute to classes through their experiments, research, and discoveries” (Teacher Eva, school B).

“It is necessary to know the student well, his characteristics and needs to develop an action plan specific to him. I believe that exchange activities and relationship dynamics, as many gifted children have difficulties in relate to their peers” (Teacher Ana, school A).

“In addition to regular education, each specific student will benefit from a methodology or strategy depending on the need and area of giftedness. Strategies that address a greater number of sensory channels facilitate the learning of all students” (Educator Neide, school A).

“In resource rooms, students receive specific assistance according to the area of prominence, but in a regular room, teachers explore all areas of knowledge with activities that span all learning styles, offering something more in the case of students with high skills” (Principal Joelma, school A).

Another group of responses involved some activities that can stimulate students’ skills. In this group, we can observe a sizeable diversity of suggestions, involving, for example, some strategies like challenging strategies, brainstorming, individual activities or stimulus for specific skills, like reasoning, problem solving, and logical reasoning. Interestingly, two suggestions involved aspects more related to intelligence than creativity (reasoning or logical reasoning). This is a common myth, that considers giftedness only as a presence of a high intelligence, and do not consider other possibilities.

“I believe that looking for challenging strategies, especially in areas where this student has greater ability” (Principal Aurélia, school B).

“Activities where the child can expose his ideas without limits, without direction, where he can create without worrying whether he is in the context or whether it is correct or wrong” (Lúcia, mother of student Geraldo, school A).



“I believe that activities that arouse the child's interest and creativity should be offered. Activities that require reasoning and reflections about problem situations” (Teacher Márcia, school A).

“I find important activities more focused on logical reasoning, which require a lot of thinking. More advanced individual activities for students with special needs” (Teacher Augusto, school A).

Several creative training programs have been developed in the educational context, making use of techniques and materials aimed at facilitating creative expression in the classroom. According to Gonçalves and Fleith (2015), in this context, the creative development presents as the main objective, the development of creative skills of teachers and students, the discussion of concepts related to creativity, the process of raising awareness of the elements present in the school environment, the knowledge about barriers that hinder the development and expression of creativity, as well as the presentation of creative problem solving techniques.

### ***Participants' perceptions about the importance of creativity in the teaching of gifted students***

Regarding the definition and importance of creativity in the education of gifted children, the participants adopted several concepts to define it. From the understanding of the interviewees, this attribute can be related to an intrinsic skill, imagination, specific ability, creation, innovation, invention, the expression of “divergent” thinking, among other issues. The following are examples of the interviewees' reports:

“Creativity is using your skills to create and innovate. All of this must be considered when we work with gifted students, as they often present very creative resolutions for different situations” (Teacher Marcela, school A).

“Creativity is the differentiated ability to solve challenging situations. Creativity is of paramount importance in the education of gifted people, because only then will it be possible to develop quality work and with the perspective of achieving the best results” (Teacher Ana, school A).

“Creativity is the expression of thoughts, it needs a lot of encouragement, materials for the composition of ideas, information about different techniques, opportunities to expose your thoughts. Letting any student create his ideas is to allow him to grow as a being in formation. The students gifted people need opportunities to demonstrate their creativity” (Principal Joelma, school A).

“I think the limit of creativity is imagination. It is important for the future of the gifted child” (Student Valmir, school B).

“It is the capacity for creation, imagination of something innovative. Another way of seeing the world. Usually, the gifted are very creative and need space in the school environment to expose all their creativity” (Teacher Eva, school B).

“Creativity is the ability to overcome challenges, to create strategies to overcome obstacles. This attribute is fundamental for the development not only of students with high skills, but of all students” (Principal Aurélia, school B).

All participants recognized the importance of the attribute in the education of gifted people that emphasizes that creativity generates the motivation to learn, freedom of expression, the skills to innovate, the autonomy to invent what is imagined, and overcoming the obstacles imposed by teaching in a standardized way.

“Creativity is related to activities where the child can expose his ideas without limits, without direction. Where he can create without worrying whether he is in the context or whether it is correct or wrong” (Lúcia, mother of student Geraldo, school A).

“It is creating activities, whether concrete or abstract, that benefit and arouse the interest of the gifted student. It is important to motivate him to always seek information more and more, in his field of knowledge” (Teacher Augusto, school A).

“Creativity is within everyone. It is up to the environment in which the person is and the experiences lived for him to be awakened. It is essential that creativity is awakened in education, including gifted ones” (Teacher Márcia, school A).

“I believe that the teacher who takes care of gifted children needs creativity to meet the student's needs. In addition, he needs to facilitate and stimulate the student's creativity. Creativity is the ability to create and innovate, to do differently what already exists and to create new things” (Educator Neide, school A).

“Creativity is when you see one thing and start to imagine another. It means a lot. Without creativity, there would be practically no gifted” (Student Renato, school B).

“It is to develop easily, to solve clearly. Demonstration of ease to perform tasks. It is necessary to work intensively to develop this creativity, bringing extremely positive results to the goals of the gifted student” (Luíza, mother of student Renato, school B).

As we can see, stimulating the student to practice behaviors associated with creativity, such as proposing new ideas, stimulating self-confidence and courage to try the new, valuing and recognizing original and alternative ideas for solving problems, are behaviors cited by Miranda et al. (2015) as pedagogical skills that the educator must present. Therefore, the value of creativity is recognized by teachers.

It is important to emphasize that the techniques and creative activities, by themselves, do not have direct effects on students without the involvement and commitment of the teacher who is considered a key part of the process (Ferrando et al., 2015). It is this professional who will make possible the adaptations in the methodology used in the classroom, as well as its adequacy. In addition to the development of creativity in students, it is also necessary to train teachers in relation to a series of competencies related to the construct, so that these professionals have knowledge about the tools that help in the recognition and development of creativity, in itself and in others - its students (Miranda et al., 2015).

## Discussion

According to the National Association for Gifted Children (NAGC, 2020), a world reference in gifted education, strategies for teaching the gifted should include a good curriculum and instructions for these students because it is practically impossible to develop the talent of a highly capable student with a bland curriculum and instruction. Like all students, talented students need rich learning experiences. That is, they need learning experiences organized by the main concepts and principles of a discipline, and not only by facts.

It is important to create teaching strategies that meet the individual needs of gifted students. Highly capable students often learn more quickly than others of their age. As a result, they typically need a faster pace of instruction than many of their same-age and same-grade peers. The activities offered to these students must necessarily be linked to their area(s) of interest. These strategies should propose a higher degree of difficulty than for many students their age. That is, a higher degree of difficulty requires more skills - more refined skills - applied to a higher level of sophistication.

Strategies for teaching gifted children require the full support from the teacher at all times. Gifted students succeed without much effort and learn more easily. Therefore, when a teacher presents a challenging task, students may feel threatened. As a result of this bias, it can be seen that students probably did not learn to study hard, take risks and make an effort. It is therefore up to the teacher of gifted students to understand this situation and, invite, persuade, and insist on risk, but in a way that supports the success and that motivates students.

The definition attributed to creativity by participants is in line with the most current research (Csikszentmihalyi, 1996, 1998, 1999, 2007; Kettler et al., 2018; Piske & Stoltz, 2021; Plucker et al., 2018; Renzulli, 2016; Sternberg, 2016; Thompson & Pfeiffer, 2020). All of these researchers recognize that creativity provides several benefits for the education of gifted students, among them: (1) intrinsic motivation, (2) autonomy, (3) divergent thinking, (4) freedom of expression, and (5) the courage to face new challenges. To foster creativity in the classroom, new and current suggestions by Thompson and Pfeiffer (2020) are listed below:

- Cultivate a psychologically safe space and create a rewarding environment for unusual questions, answers, and creations. In addition, try to limit formal and rigorous assessment procedures to purely creative activities.
- Ensure that the physical space of the classroom is safe, comfortable, interesting, and stimulating. Consider outdoor activities.
- Emphasize freedom during exercises focused on the imagination, allowing students to daydream, play, move, and determine their own design parameters, hoping to develop their passion for specific activities.
- Protect and prioritize time for creativity in the classroom. Perhaps even more important, think of ways to incorporate creativity-creating strategies into the curriculum and lesson plans.
- Make expectations of creativity explicit. Students do not always understand when and to what extent it is desirable to use their imagination.
- Explain about innovation-based work. Students need to understand that true achievement often stems from prolonged effort, in addition to trial and error.
- Provide many examples and models of artistic and creative works. Do not forget to include yourself as an excellent and accessible model of creative attitudes and products.
- Incorporate well-designed group work to help students develop ideas collectively. Successful groups usually have guidance and monitoring from a teacher and involve some sort of individual processing time.

It is up to the teacher to adapt the school space and classes according to the needs of the gifted students. This requires creative and engaging work where the teacher can promote activities that arouse students' curiosity and willingness to learn. For this, it is important for the teacher to ask questions in the classroom and determine the teacher's areas of interest. The teacher can then prepare and deepen their knowledge through courses, and training and specializations according to the educational needs of gifted children.

Kane (2016) highlighted important characteristics from the literature about effective teachers of gifted students. These characteristics can be categorized in terms of the following: (1) personal and social issues, (2) the issue of teaching strategies, (3) and the intellectual-cognitive issue. According to Kane, the personal/social characteristic of the gifted teacher is important so that they can: (1) identify and know the cognitive, social, and emotional needs of the gifted, (2) possess a sense of humor, (3) be excited, and (4) be culturally responsive.

As for teaching strategies and approaches, the gifted teacher needs to: (1) have skills to differentiate the curriculum for gifted students, (2) employ strategies that encourage higher-level thinking, (3) encourage students to be independent learners, (4) provide student-centered learning opportunities, (5) create a learning environment that does not threaten different ideas, and (6) be well organized.

The intellectual-cognitive characteristic of the teacher who works with gifted people must have in-depth knowledge of the subject of interest to their students. These teachers must: (1) have broad interests, usually literary and cultural, (2) preferably have above average intelligence, (3) be a lifelong learner and think creatively, and (4) possess excellent communication skills.

By enabling a conducive, encouraging, and favorable environment for creative expression, teachers could, as a consequence, expand this capacity in educational context and the results that can be associated: competence in seeing problems from different perspectives, generation of creative

solutions to the new problems to be faced, the presentation of resources to take advantage of it (including creative problem solving techniques and awareness of the factors that can inhibit creativity), the increase in the quantity and quality of creative ideas (Nakano & Wechsler, 2018). The results, when comparing students who took part in creativity programs and the control group, show greater motivation, improved academic and work performance, and the ability to generalize skills for different purposes and contexts than the giftedness group (Torrance & Myers, 1976; Treffinger, 2004).

## Conclusion

The perceptions of the participants in this research revealed that the teaching strategies necessary for the training of gifted students promotes the development of creativity. According to the participants in this study, teaching strategies are essential for the development of creativity among gifted students. As part of the student-centered learning approach, the student is active participant and is given opportunities to learn in a variety of ways and according to his or her interests, through independent and collaborative work. In the digital age, activities involving a variety of technologies can be used to enhance the learning experience for students, such as project-based learning, robotics, project-based learning, games, computer programming, research and challenges, and these playful and artistic activities must also be included in the teaching of these children. A flexible curriculum can also allow for innovative and creative teaching that does not follow a fixed curriculum.

It is important that teaching strategies make it possible to develop the creativity of gifted students. According to Thompson and Pfeiffer (2020), the teaching team can create an environment that is responsive to the needs of gifted students and their creativity, cultivating a psychologically safe school space, free from reprimands and barriers that prevent the development of creative potential.

The teacher should create a rewarding environment of unusual questions, answers, and creations. The teacher should limit formal and rigorous assessment procedures to creative activities, ensuring that the physical space of the classroom is safe, comfortable, interesting, and stimulating. The teacher should also incorporate well-planned group work to help gifted students develop ideas with your peers. This means that the success of student groups requires guidance and support from a teacher who will give them collective and individual support whenever needed.

The knowledge about teacher strategies and the role of creativity in gifted education, among many actors, can be helpful in promoting creativity among gifted students as well as recognizing their creative potential as gifted individuals. Schools must make it clear that creativity is not limited to creative areas such as arts classes. Potential must be developed at several levels, including individual (as a skill set and motivation), school factors (quality of teaching, curriculum adaptation, classroom climate), and school environment (peer relationships and extracurricular activities). Early investment and targeted interventions will result in positive outcomes for creativity. Open-ended questions, groupwork, variety of ideas, appropriate challenges, brainstorming, imagination, flexibility, positive feedback in an environment that offers opportunities, support, and resources to promote creativity can be examples of strategies for stimulating creativity.

---

## References

- Amabile, T. M. (2018). Creativity and the labor of love. In R. J. Sternberg & J. C. Kaufman (Eds.), *The nature of human creativity* (pp. 1-15). Cambridge University Press.
- Amado, J. (2017). *Manual de investigação qualitativa em Educação* [Handbook of qualitative research in education] (3rd ed.). Universidade de Coimbra. <https://doi.org/10.14195/978-989-26-1390-1>.
- Angela, F. R., & Caterina, B. (2020). Creativity, emotional intelligence and coping style in intellectually gifted adults. *Current Psychology*, 41(3), 1191-1197. <https://doi.org/10.1007/s12144-020-00651-1>
- Arabaci, D., & Baki, A. (2023). An analysis of the gifted and non-gifted students' creativity within the context of problem-posing activity. *Journal of Pedagogic Research*, 7(1), 25-52. <https://doi.org/10.33902/JPR.202317633>.
- Bardin, L. (2011). *Análise de conteúdo* [Content analysis]. Edições 70.
- Besançon, M., & Lubart, T. (2008). Individual differences in the development of creative competencies in school children. *Learning and Individual Differences*, 18(4), 381-389.

- Brazilian National Council of Health. *Resolução n. 466 de 12 de dezembro de 2012* [Resolution no. 466 of December 12, 2012]. <https://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf>.
- Clark, B. (2002). *Growing up gifted: Developing the potential of children at home and at school* (6th ed.). Prentice Hall.
- Collins, K. H. (2020). Gifted and bullied: Understanding the institutionalized victimization of identified, unidentified, and underserved gifted students [manuscript accepted]. In F. H. R. Piske & K. H. Collins (Eds.), *Bullying in gifted education*. IAP.
- Collins, K. H. & Kendricks, T. (2021). Fostering cultural capital for recruitment and retention: A holistic approach to serving gifted, Black students in gifted education. In J. Castellano & K. Chandler (Eds.), *Identifying and serving diverse gifted learners: Meeting the needs of special populations in gifted education* (pp. 250-266). Prufrock Press.
- Collins, K. H., Price, E., Hanson, L., & Neaves, D. (2020). Consequences of stereotype threat & imposter syndrome in STEM: The journey from STEM-professional to STEM-educator for four women of color. *Taboo: The Journal of Culture and Education*, 19(4), 161-180.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.
- Csikszentmihalyi, M. (1996). *Creativity*. Harper Collins.
- Csikszentmihalyi, M. (1998). *Creatividade: el fluir y la psicología del descubrimiento y la invención*. Paidós.
- Csikszentmihalyi, M. (1999). Implications of a systems perspective for the study of creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 313-335). Cambridge University Press.
- Csikszentmihalyi, M. (2007). *Aprender a fluir*. Kairós.
- Ferrando, M., Soto, G., Prieto, L., Sáinz, M., & Ferrándiz, C. (2015). Synthetic-creative intelligence and psychometric intelligence: analysis of the threshold theory and creative process. *Turkish Journal of Giftedness and Education*, 6(2), 88-98.
- Ford, D. Y., Grantham, T. C., & Collins, K. H. (2018). Giftedness, racial identity, and social-emotional learning: Challenges and recommendations for culturally responsive practice. In F. H. R. Piske, T. Stoltz, C. Costa-Lobo, A. Rocha & E. Vázquez-Justo (Eds.), *Educação de Superdotados e Talentosos – Emoção e Criatividade* (pp. 87-102). Juruá.
- Ford, D. Y., Collins, K. H., Grantham, T., & Moore III, J. L. (2021). Equity-based gifted and talented education to increase the recruitment and retention of underrepresented students. In D. Ambrose & R. Sternberg (Eds.), *Conceptions of giftedness and talent* (pp. 141-161). Palgrave-Macmillan. [https://doi.org/10.1007/978-3-030-56869-6\\_9](https://doi.org/10.1007/978-3-030-56869-6_9)
- Gagné, F. (201). The DMGT: changes within, beneath, and beyond. *Talent Development & Excellence*, 5(1), 5-19. <https://d-nb.info/1045250104/34#page=9>.
- Gagné, F., & Gagnier, N. (2018). The socio-affective and academic impact of early entrance to school. In F. H. R. Piske, T. Stoltz, C. Costa-Lobo & E. Vázquez-Justo (Eds.), *Educação de superdotados e talentosos: emoção e criatividade*. (17-44). Curitiba: Juruá.
- Gonçalves, F. C., & Fleith, D. S. (2015). Proposta de intervenção de estímulo à criatividade no contexto escolar e familiar [Proposal for an intervention to stimulate creativity in the school and family context]. In S. M. Wechsler (Org.), *Criatividade: aplicações práticas em contextos educacionais* (pp. 181-210). Vetor.
- Gross, M. U. M. (2014). Issues in the social-emotional development of intellectually gifted children. In F. H. R. Piske, J. M. Machado, S. Bahia, & T. Stoltz (Eds.), *Altas habilidades/Superdotação (AH/SD): Criatividade e emoção*. (85-96). Juruá.
- Gross, M. U. M. (2016). Developing programs for gifted and talented students. In F. H. R. Piske, T. Stoltz, J. M. Machado, & S. Bahia (Eds.), *Altas habilidades/Superdotação (AH/SD) e Criatividade: Identificação e Atendimento*. (61-75). Juruá.
- Hernández-Torrano, D., & Ibrayeva, L. (2020). Creativity and education: a bibliometric mapping of the research literature (1975-2019). *Thinking Skills and Creativity*, 35, e100625. <https://doi.org/10.1016/j.tsc.2019.100625>
- Jones, D. E., Greenberg, M., & Crowley, M. (2016). How Children's Social Behaviors Relate to Success in Adulthood. *The WERA Educational Journal*, 8(2), 27-33.
- Kane, M. (2016). Gifted learning communities: Effective teachers at work. In F. H. R. Piske, T. Stoltz, J. M. Machado, & S. Bahia (Eds.), *Altas habilidades/Superdotação (AH/SD) e Criatividade: Identificação e Atendimento*. (77-93). Juruá.
- Kane, M. (2018). Supporting the affective needs of creatively children at home and at school. In F. H. R. Piske, T. Stoltz, C. Costa-Lobo, & E. Vázquez-Justo. (Eds.), *Educação de superdotados e talentosos: emoção e criatividade*. (63-74). Curitiba: Juruá.
- Kane, M., & Silverman, L. K. (2014). Fostering Well-Being in Gifted Children: Preparing for an Uncertain Future. In F. H. R. Piske, J. M. Machado, S. Bahia, & T. Stoltz (Orgs.), *Altas habilidades/Superdotação (AH/SD): Criatividade e emoção*. (67-83). Juruá.

- Kaufman, S. B., & Sternberg, R. J. (2008). Conceptions of giftedness. In S. Pfeiffer (Ed.), *Handbook of giftedness in children: Psycho-educational theory, research and best practices* (pp. 71-91). Springer.
- Kaufman, J. C., Plucker, J. A., & Russell, C. M. (2012). Identifying and Assessing Creativity as a Component of Giftedness. *Journal of Psychoeducational Assessment*, 30(1), 60-73.  
<http://doi.org/10.1177/0734282911428196>.
- Khan, S. A., Arif, M. H., & Yousuf, M. I. (2019). A study of relationship between learning preferences and academic achievement. *Bulletin of Education and Research*, 41(1), 17-32.
- Kettler, T., Lamb, K. N., & Mullet, D. R. (2018). *Developing creativity in the classroom: Learning and innovation for 21st-century schools*. Prufrock Press.
- Kolligian, J., & Sternberg, R. J. (1987). Intelligence, Information Processing and Specific Learning Disabilities: A Triarchic Synthesis. *Journal of Learning Disabilities*, 20(1), 8-17.  
<http://doi.org/10.1177/002221948702000103>.
- Lins, J. S. C., & Miyata, E. S. (2008). Avaliando a aprendizagem de criatividade em uma oficina pedagógica [Assessing creativity learning in a pedagogical workshop]. *Ensaio: Avaliação de Políticas Públicas Educacionais*, 16(60), 455-468.
- Lubart, T., Barbot, B., & Besançon, M. (2019). Creative Potential: assessment issues and the EPoc Battery/Potential creative: temas de evaluación y batería EPoc. *Studies in Psychology*, 40(3), 540-562.  
<https://doi.org/10.1080/02109395.2019.1656462>
- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, 52(6), 1.258-1.265. <https://doi.org/10.1037/0022-3514.52.6.1258>
- Minayo, M. C. S. (2013). *O desafio do conhecimento: Pesquisa qualitativa em saúde*. Hucitec.
- Miranda, L. C., Antunes, A. P., & Almeida, L. S. (2015). Enriquecimento criativo para sobredotados: programas Odisseia e Mais [Creative enrichment for the gifted: Odyssey and Mais programs]. In M. F. Morais, L.C. de Miranda, & S. M. Wechsler (Orgs.), *Criatividade: aplicações práticas em contextos internacionais* (pp. 211-228). Vetor.
- Nakano, T. C. (2018). Recent considerations on creativity assessment methods. In J. C. Panagos-Corzo & M. A. P. Vargas (Eds.), *Challenges in creativity & psychology for the XXI century* (pp. 31-42). Universidad de Guadalajara & UDLAP.
- Nakano, T. C., & Wechsler, S. M. (2018). Creativity and innovation: skills for the 21<sup>st</sup> century. *Estudos de Psicologia (Campinas)*, 35(3), 237-246. <http://dx.doi.org/10.1590/1982-02752018000300002>
- Nakano, T. C., & Wechsler, S. M. (2020). Regional creativity: cultural expressions in South America. In M. A. Runco & S. R. Pritzner (Eds.), *Encyclopedia of Creativity* (pp. 419-422), 3<sup>rd</sup> ed. v. 2. Elsevier.
- National Association for Gifted Children (2019). *2019 Pre-K-Grade 12 gifted programming standards*. <https://www.nagc.org/sites/default/files/standards/Intro%202019%20Programming%20Standards%281%29.pdf>
- National Association for Gifted Children (2020). *What it means to teach gifted learners well*. <https://www.nagc.org/resources-publications/gifted-education-practices/what-it-means-teach-gifted-learners-well>
- Oliveira, K. S., Nakano, T. C., & Wechsler, S. M. (2016). Criatividade e saúde mental: uma revisão da produção científica na última década [Creativity and mental health: a review of scientific production in the last decade]. *Temas em Psicologia*, 24(4), 1493-1506. <http://doi.org/10.9788/TP2016.4-16>.
- Paik, S. J., & Gozali, C. (2020). Nurturing creativity and productive giftedness in high-ability students. In F. H. R. Piske, T. Stoltz, A. Rocha, & C. Costa-Lobo (Eds.), *Socio-emotional development and creativity for gifted students* (pp. 179-210). Coimbra University Press.
- Pérez, S. G. P. B., & Freitas, S. N. (2011). Encaminhamentos pedagógicos com alunos com altas habilidades/superdotação na educação básica: o cenário brasileiro [Pedagogical referrals with students with giftedness in basic education: the Brazilian scenario]. *Educar em Revista*, 41, 109-124.
- Peterson, J. (2014). Paying attention to the whole gifted child: Why, when, and how to focus on social and emotional development. In F. H. R. Piske, J. M. Machado, S. Bahia, & T. Stoltz (Orgs.), *Altas habilidades/Superdotação (AH/SD): Criatividade e emoção*. (45-65). Curitiba: Juruá.
- Pfeiffer, S. I. (2013). *Serving the Gifted: Evidence-Based Clinical and Psychoeducational Practice*. Routledge.
- Pfeiffer, S. I. (2015). *Essentials of gifted assessment*. Wiley.
- Pfeiffer, S. I. (2016). Leading edge perspectives on gifted assessment. In F. H. R. Piske, T. Stoltz, M. J. Machado, & S. Bahia (Orgs.), *Altas habilidades/Superdotação (AH/SD) e Criatividade: Identificação e Atendimento*. (95-122). Juruá.
- Pharm, O. A. A., & Pharm, N. L. O. (2021). Research and scholarly methods: semi-structured interviews. *Journal of the American College of Clinical Pharmacy*, 4(10), 1257-1367.  
<http://doi.org/10.1002/jac5.1441>.

- Piechowski, M. M. (2014). Identity. In F. H. R. Piske, J. M. Machado, S. Bahia, & T. Stoltz (Orgs.), *Altas habilidades/Superdotação (AH/SD): Criatividade e emoção*. (97-113). Juruá.
- Piske, F. H. R. (2020). The importance of socio-emotional development of gifted students. In F. H. R. Piske, T. Stoltz, A. Rocha, & C. Costa-Lobo (Eds.), *Socio-Emotional Development and Creativity of Gifted Students*. (57-74). Imprensa da Universidade de Coimbra.
- Piske, F. H. R. & Kane, M. (2020). Socio-emotional development of gifted students: Educational implications. In F. H. R. Piske, T. Stoltz, E. Guérios, D. Camargo, A. Rocha, & C. Costa-Lobo (Eds.), *Superdotados e Talentosos: Educação, Emoção, Criatividade e Potencialidades*. (195-206). Juruá.
- Piske, F. H. R. & Stoltz, T. (2021). Meeting the socio-emotional dimension of gifted students based on Vygotsky. *Culture & Psychology*, 27(3), 473-497. <https://doi.org/10.1177/1354067X20936929>.
- Piske, F. H. R., Stoltz, T., Rocha, A., & Costa-Lobo, C. (2020). *Socio-emotional development and creativity of gifted students*. Imprensa da Universidade de Coimbra.
- Piske, F. H. R., Stoltz, T., Vestena, C. L. B., Freitas, S. P., Valentim, B. F. B., Oliveira, C. S., Barby, A. A. O. M., & Machado, C. L. (2016). Barriers to Creativity, Identification and Inclusion of Gifted Student. *Creative Education*, 7, 1899-1905. <http://doi.org/10.4236/ce.2016.714192>.
- Plucker, J. A., Guo, J., & Makel, M. C. (2018). Creativity. In S. I. Pfeiffer (Ed.), *Handbook of giftedness in children: Psychoeducational theory, research, and best practices* (2nd ed., pp. 81-99). Springer.
- Renzulli, J. S. (2003). A conception of giftedness and its relationship to the development of social capital. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (3rd ed., pp. 75-87). Allyn & Bacon.
- Renzulli, J. S. (2016). Developing creativity across all areas of the curriculum. In R. A. Beghetto & J. C. Kaufman (Eds.), *Nurturing creativity in the classroom* (pp. 23-44). Cambridge University Press.
- Renzulli, J. S. (2012). Reexamining the role of gifted education and talent development for the 21st Century: A four-part theoretical approach. *Gifted Child Quarterly*, 56(3), 150-159. <http://doi.org/10.1177/0016986212444901>.
- Renzulli, J. S. (2014). A concepção de superdotação no modelo dos três anéis: Um modelo de desenvolvimento para a promoção da produtividade criativa [The conception of giftedness in the three rings model: A development model for promoting creative productivity]. In A. M. R. Virgolim & E. C. Konkiewitz (Orgs.), *Altas Habilidades/Superdotação, Inteligência e Criatividade* (pp.219-264). Papirus Editora.
- Ridgley, L.M., Rubenstein, L.D., & Finch, W.H. (2020). Issues and opportunities when using rating scales to identify creatively gifted students: Applying an IRT approach. *Gifted and Talented International*. <https://doi.org/10.1080/15332276.2020.1722041>
- Robinson, E. (Ed.) (2013). *Exceptional creativity in science and technology. Individuals, institutions, and innovations*. Templeton Press.
- Runco, M. A. (1993). Divergent thinking, creativity, and giftedness. *Gifted Child Quarterly*, 37(1), 16-22. <https://doi.org/10.1177/001698629303700103>
- Sánchez, M. D. P., Martínez, O. L., García, M. R. B., Renzulli, J., & Costa, J. L. C. (2002). Evaluación de un programa de desarrollo de la creatividad [Evaluación de un programa de desarrollo de la creatividad.]. *Psicothema*, 14, 410-414. <https://www.psicothema.com/pdf/741.pdf>.
- Sierra, M. D. V., Escobedo, P. S., Cuervo, A. A. V., & Rosal, A. B. (2015). Estratégias e programas para o desenvolvimento da criatividade nas escolas do México [Strategies and programs for developing creativity in schools in Mexico]. In M. F. Morais, L. C. Miranda, & S. M. Wechsler (Orgs.), *Criatividade: aplicações práticas em contextos internacionais* (pp. 257-268). Vetor.
- Silverman, L. (2000). *Characteristics of giftedness scale*. Gifted Development Center. Retrieved from [www.gifteddevelopment.com/Articles/Characteristics.Scale.htm](http://www.gifteddevelopment.com/Articles/Characteristics.Scale.htm).
- Sorrentino, C. (2019). Creativity Assessment in School: Reflection from a Middle School Italian Study on Giftedness. *Universal Journal of Educational Research*, 7(2), 556-562. <https://doi.org/10.13189/ujer.2019.070228>
- Sternberg, R. J. (2003). *Wisdom, Intelligence, and Creativity Synthesized*. Cambridge University Press.
- Sternberg, R. J. (2005). The WICS Model of Giftedness. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of Giftedness* (pp. 327-342). Cambridge University Press.
- Sternberg, R. J. (2016). Teaching for creativity. In R. A. Beghetto & J. C. Kaufman (Eds.), *Nurturing creativity in the classroom* (pp. 355-380). Cambridge University Press.
- Thompson, T. L., & Pfeiffer, S. I. (2020). Lighting the spark: How teachers and schools can promote gifted student creativity. In F. H. R. Piske, T. Stoltz, E. Guérios, D. Camargo, A. Rocha, & C. Costa-Lobo (Eds.), *Superdotados e Talentosos: Educação, Emoção, Criatividade e Potencialidades*. (55- 70). Curitiba: Juruá.
- Torrance, E. P. (1962). Cultural discontinuities and the development of originality of thinking. *Exceptional Children*, 29(1), 2-13.

- Torrance, E. P. (1984). The role of creativity in identification of the gifted and talented. *Gifted Child Quarterly*, 28, 153-156.
- Torrance, E. P., & Myers, R. E. (1976). *La enseñanza creativa* [Creative teaching]. Madrid: Santillana.
- Treffinger, D. J. (2004). Creativity and giftedness. In D. J. Treffinger (Ed.), *Creativity and giftedness* (pp. 87-96). Crowin.
- VanTassel-Baska, J., Bracken, B., Feng, A., & Brown, E. (2009). A longitudinal study of reading comprehension and reasoning ability of students in elementary Title I schools. **Journal for the Education of the Gifted**, 33, 7-37.
- Vantassel-Baska J. (2016) Creativity and Innovation: the twin pillars of accomplishment in the 21<sup>st</sup> century. In Ambrose D., Sternberg R. J. (Eds.), *Giftedness and Talent in the 21st Century: Advances in Creativity and Giftedness* (pp. 221-233). Sense Publishers. [https://doi.org/10.1007/978-94-6300-503-6\\_13](https://doi.org/10.1007/978-94-6300-503-6_13)
- Weiner, B. J., Amick, H. R., Lund, J. L., Lee, S. D., & Hoff, T. J. (2011). Use of qualitative methods in published health services and management research: A 10-year review. *Medical Care Research and Review*, 68(1), 3-33. <http://doi.org/10.1177/1077558710372810>.
- Winebrenner, S. (2001). *Teaching gifted kids in the regular classroom: Strategies and techniques every teacher can use to meet the academic needs of the gifted and talented, revised, expanded, and updated edition*. Free Spirit Publishing.

---

## Appendix

### Interview Protocol

- (1) Does teacher mediation help to promote creativity in gifted education? In what ways?
  - (2) What teaching strategies does a teacher need to offer in the education of gifted students?
  - (3) Does the current curriculum available also for gifted students have an influence on the education of these children?
  - (4) Could you define what creativity is?
  - (5) Is creativity important in the education of gifted students?
  - (6) Is creativity related to teaching strategies?
  - (7) How could teachers develop creativity in the study of gifted students?
-



## About the Authors

**Fernanda Hellen Ribeiro Piske, Ed.D.** earned a Doctor of Education degree from the Federal University of Paraná (UFPR) in Cognition, Learning and Human Development along with a Master of Education and Bachelor of Arts in Pedagogy from the Federal University of Paraná. She completed postgraduate studies in Special Education and Inclusive Education from the UNINTER International University Centre. She also holds a Higher Technology Education Degree in Foreign Trade from the Curitiba International Technology Faculty. Dr. Ribeiro Piske is a member of the UFPR Creativity and Giftedness Research Group. She is a researcher, author and editor of books on themes relating to Creativity, Giftedness, Autism, Twice-exceptionality, Affectivity, Socio-emotional Development, Bullying, Teacher Training and Human Rights. Dr. <https://orcid.org/0000-0002-1516-6455>.

**e-Mail:** [ferhellenrp@gmail.com](mailto:ferhellenrp@gmail.com).

**Kristina Henry Collins, Ph.D.** is the core Talent Development faculty at Texas State University. She earned her Ph.D. in educational psychology and Ed.S. in gifted and creative education from the University of Georgia. Dr. Collins currently serves as President for Supporting Emotional Needs of the Gifted (SENG) and member-at-large for the NAGC board of directors, and advisory board member for Texas Gifted Education Family Network (GEFN). Her research foci include multicultural gifted education; culturally responsive STEM identity and talent development. Dr. Collins is the proud recipient of the 2020 NAGC Special Population Early Career Award, the 2020 Bridges 2e Education “Person to Watch” Award, and Georgia Association of Gifted Children’s 2011 Mary Frasier Equity and Excellence Award presented for her work in advancing educational opportunities for under-represented students in gifted education. <https://orcid.org/0000-0001-8983-0104>.

**e-Mail:** [Kristina.henry.collins@gmail.com](mailto:Kristina.henry.collins@gmail.com)

**Tatiana de Cássia Nakano** is a professor in the post-graduation program in Psychology at Pontifical University Catholic of Campinas. Dr. de Cassia Nakano is the President of the Brazilian Association of Creativity and Innovation (2014-2017). She has been a visiting scholar at University of California – Berkeley. She works mainly in the area of Psychological Assessment, Creativity, Giftedness, Intelligence, Socioemotional Skills and Positive Psychology. <https://orcid.org/0000-0002-5720-8940>.

**e-Mail:** [tatiananakano@hotmail.com](mailto:tatiananakano@hotmail.com)