

**GIFTEDNESS BEYOND TALENT: FROM CREATIVE PRODUCTIVITY TO
NEURODEVELOPMENTAL FUNCTIONING**

 <https://doi.org/10.63330/aurumpub.057-002>

Vanessa Roda Pavani Mello¹

Abstract

This paper analyzes the historical, theoretical, and scientific evolution of the understanding of giftedness, discussing the transition from models centered on measurable intelligence and creative productivity to more comprehensive developmental and neuroscientific approaches. This is a theoretical bibliographical study based on a critical analysis of national and international specialized literature on high abilities/giftedness. The study aims to examine the main references that have influenced the construction of knowledge in the field, highlighting the contributions of Joseph Renzulli, Linda Silverman, and authors linked to the developmental perspective, as well as discussing the dialogues established with contemporary neuroscience. The methodology consisted of a review and comparative analysis of works, scientific articles, and classic and contemporary studies related to the identification, development, and functioning of gifted individuals. The results indicate that the progressive expansion of the field has allowed for overcoming restricted interpretations based exclusively on performance, visible creativity, or manifest talent, incorporating concepts such as developmental asynchrony, emotional intensity, twice-exceptionality, invisible suffering, and neurocognitive differences. It is concluded that giftedness constitutes a multidimensional phenomenon, the understanding of which requires integration between educational, psychological, developmental, and neuroscientific perspectives, contributing to more

¹ Postgraduate degree in neuroscience; in Institutional and Clinical Psychopedagogy with an emphasis on inclusion; in Institutional and Clinical Neuropsychopedagogy; and in Institutional Neuropsychopedagogy and Special Education from Uniminas. Postgraduate degree in Special Education with an emphasis on high abilities/giftedness from Faculdade São Luís. Degree in Pedagogy from UNIBF. Master's student in Neuroscience at the University of Orlando. Certified in "Introduction to Family Engagement in Education" by Harvard University. Bachelor of Laws from CESMAC/AL. Registered with the Brazilian Bar Association, OAB/AL no. 7.498
Lattes: <http://lattes.cnpq.br/5936336325789834>

comprehensive identification processes and to the construction of educational practices compatible with human diversity.

Keywords: Giftedness, High abilities, Neurodevelopment, Educational identification, Neuroscience.

INTRODUCTION

Few topics in the field of high abilities/giftedness generate as many conceptual disagreements as the very definition of the phenomenon. Over the last century, researchers from different areas of knowledge have sought to understand who gifted people are, how to identify them, and which characteristics distinguish them from the general population. As a result, multiple theories, explanatory models, and identification proposals have emerged, often constructed on the basis of distinct epistemological assumptions and guided by equally different objectives.

This theoretical diversity does not necessarily represent a weakness of the field. On the contrary, it reflects the complexity of a human phenomenon that involves cognitive, emotional, developmental, educational, social, and, more recently, neurobiological aspects. As has occurred in various areas of science, the understanding of giftedness has not remained static over time. New questions have generated new investigations, new methods have enabled new observations, and new evidence has led to broader ways of understanding the phenomenon.

Historically, the first attempts to understand giftedness focused primarily on the measurement of intelligence. For much of the twentieth century, the prevailing idea was that gifted individuals could be identified through psychometric tests and high scores on measures of intelligence. This perspective exerted enormous influence on education, psychology, and identification policies, contributing to the consolidation of a view of giftedness strongly associated with intellectual capacity measurable through the Intelligence Quotient (IQ).

However, as research advanced, it became evident that intelligence alone was not capable of explaining the full diversity observed among individuals considered gifted. New questions then emerged. Why did some people make extraordinary creative and productive contributions while others did not? Why did many individuals identified as gifted exhibit similar emotional, social, and developmental characteristics, regardless of their level of performance? Why did some students demonstrate exceptional talents, while others remained invisible despite presenting clear indicators of high cognitive abilities?

It was in this context that different lines of investigation emerged, among which the contributions of Joseph Renzulli and Linda Kreger Silverman stand out. Although they are frequently mentioned within the same field of study, both began from substantially different scientific questions. While Renzulli sought to understand the factors associated with the emergence of creative productivity and socially relevant achievements, Silverman sought to understand the psychological and developmental functioning of gifted people. This distinction, often neglected in contemporary debates, has profound implications for how giftedness is understood, identified, and addressed in the educational context.

In recent decades, the discussion has become even more complex with the advancement of fields such as neuropsychology, cognitive neuroscience, and studies on human development. Themes such as developmental asynchrony, emotional intensity, twice-exceptionality, invisible suffering, social masking, and neurocognitive differences have increasingly occupied space in the specialized literature. At the same time, neuroscientific research has begun to investigate possible biological correlates associated with high cognitive abilities, expanding the field of knowledge and reinforcing the need for a multidimensional approach.

The relevance of this discussion extends beyond the theoretical level. The models used to understand giftedness directly influence identification processes, the development of public policies, the organization of specialized educational services, and the developmental opportunities offered to students. In contexts in which giftedness is understood predominantly through observable performance, manifest talent, or creative productivity, individuals who present differentiated cognitive functioning but do not

demonstrate these characteristics in an evident manner may remain invisible to identification systems. Understanding the epistemological foundations of the main models therefore becomes a scientific, educational, and socially relevant issue.

In view of this scenario, the following question is defined as the research problem: how do the theoretical, methodological, and epistemological differences between models centered on creative productivity and developmental and neuroscientific approaches influence the contemporary understanding of giftedness and its processes of educational identification?

The general objective of this article is to analyze the historical and scientific evolution of the understanding of giftedness, with special attention to the contributions of Joseph Renzulli, Linda Silverman, authors from the developmental perspective, and contemporary studies in neuroscience. Its specific objectives are to examine the historical foundations of the psychometric era, discuss the Three-Ring Conception and its explanatory limits, analyze the developmental approach to giftedness, present convergent evidence from the specialized literature, distinguish talent, potential, and gifted functioning, and reflect on the educational, social, and scientific implications of these conceptions for the identification and support of students with high abilities/giftedness.

To this end, the study is characterized as theoretical research of a bibliographical nature, based on the critical analysis of classic and contemporary works on giftedness, education, human development, psychology, neuroscience, and educational inclusion. It seeks to demonstrate that the differences among the models examined do not arise merely from divergent conclusions, but mainly from the scientific questions that guided their investigations. In addition, it aims to show how the later development of the literature and advances in neuroscience have contributed to broadening the contemporary understanding of giftedness, enabling a more comprehensive view of a phenomenon that remains under continuous scientific construction.

METHODOLOGY

The present study is characterized as theoretical research of a bibliographical nature, with a qualitative approach and an exploratory-descriptive character. The investigation was conducted through the review and critical analysis of classic and contemporary works, scientific articles, book chapters, and academic publications recognized in the fields of high abilities/giftedness, developmental psychology, education, cognitive neuroscience, and educational inclusion.

Priority was given to works that have exerted significant influence on the historical and scientific construction of knowledge about giftedness, including authors associated with the psychometric tradition, the Three-Ring Conception, the developmental perspective, and contemporary neuroscience. The theoretical corpus analyzed included studies by Joseph Renzulli, Linda Silverman, Leta Stetter Hollingworth, Kazimierz Dąbrowski, Michael Piechowski, James Webb, Susan Daniels, Deborah Ruf, Miraca Gross, Richard Haier, Rex Jung, David Lubinski, Camilla Benbow, and Paulo Freire, among other researchers widely recognized in national and international literature.

The selected materials were subjected to historical-comparative and epistemological analysis, seeking to identify the scientific problems that gave rise to the different conceptions of giftedness, their theoretical assumptions, their original objectives, and their implications for processes of identification and educational support. Recent neuroscientific studies with the potential to dialogue with developmental approaches were also considered, while respecting the methodological and interpretive limits specific to each area of knowledge.

RESULTS AND DISCUSSION

THE PSYCHOMETRIC ERA: WHEN GIFTEDNESS WAS MEASURED MAINLY BY IQ

To understand the relevance of Joseph Renzulli's contributions and, later, those of Linda Silverman, it is necessary to return to the origins of scientific research on giftedness. After all, no theory

emerges in isolation. Every scientific proposal is constructed in dialogue with the prevailing ideas of its time, whether to refine them or to challenge them.

For much of the twentieth century, the understanding of giftedness was strongly associated with the concept of measurable intelligence. The development of the first intelligence tests and the consolidation of psychometrics exerted a profound influence on the way researchers, educators, and educational systems began to identify individuals considered intellectually superior.

Although studies on individual differences had existed previously, it was the work of Alfred Binet and Théodore Simon, at the beginning of the twentieth century, that inaugurated a new stage in the scientific investigation of cognitive abilities. Initially designed to identify students who needed educational support, intelligence tests quickly began to be used also to identify individuals whose cognitive performance was significantly above average.

Subsequently, Lewis Terman, a professor at Stanford University, adapted and expanded the original instruments, giving rise to the Stanford-Binet Intelligence Scale. Based on his longitudinal studies with children who presented high IQ scores, a perspective was consolidated according to which giftedness could be understood primarily as a manifestation of high general intelligence.

The influence of this approach was enormous. For decades, the identification of gifted students was strongly linked to cut-off points on psychometric tests. In many contexts, having an IQ significantly above average became practically synonymous with being considered gifted.

This perspective brought important contributions to the development of the field. Psychometric tests enabled the systematic identification of individuals with high cognitive abilities, contributed to recognizing the existence of significant intellectual differences among individuals, and favored the emergence of educational programs aimed at students with high abilities.

However, as studies advanced, important questions began to arise.

Did intelligence as measured by tests fully explain the phenomenon of giftedness?

Would it be possible to understand the complexity of human development solely through psychometric scores?

Why did individuals with similar levels of intelligence present such different academic, professional, creative, and personal trajectories?

These questions began to reveal a fundamental limitation of exclusively psychometric models. Although they were capable of measuring certain aspects of cognitive functioning, they did not adequately explain phenomena related to creativity, motivation, leadership, scientific production, innovation, social adaptation, emotional development, and personal achievement.

At the same time, some researchers began to observe characteristics that seemed to transcend the results of intelligence tests. Highly able children demonstrated unusual developmental patterns, intense interests, differentiated forms of learning, and emotional experiences that could not be fully understood only through psychometric indicators.

Among these researchers, Leta Stetter Hollingworth stands out, frequently considered one of the pioneers of modern research on giftedness. In her studies with exceptionally intelligent children, Hollingworth observed phenomena that decades later would once again occupy a central position in the specialized literature, including difficulties in social adjustment, uneven development across different areas of life, and challenges related to belonging and to being understood by the school environment.

Although psychometrics remained the main reference for the identification of giftedness, signs were beginning to emerge that the phenomenon was more complex than initially imagined.

It was in this scenario that, from the 1960s and 1970s onward, new questions began to gain ground in the scientific field. Rather than asking only who possessed high intelligence, some researchers began to investigate why certain people produced creative and socially relevant contributions while others did not. Others began to question how gifted people developed throughout life and which psychological characteristics seemed to accompany them regardless of their observable performance.

It is within this historical context that the contributions of Joseph Renzulli and Linda Silverman would later emerge—authors who would significantly broaden the boundaries of the debate on giftedness and influence generations of researchers, educators, and professionals in the field.

THE SCIENTIFIC PROBLEM THAT LED RENZULLI TO THE THREE-RING CONCEPTION

Contrary to what is often assumed, Joseph Renzulli did not begin his research by attempting to answer the question “what is giftedness?” Nor was he seeking to formulate a theory about the psychological or neurobiological nature of gifted people. His scientific interest arose from a different problem, directly related to the limitations of the predominant models of his time.

During the 1960s and 1970s, the identification of giftedness was strongly linked to intelligence tests. In many educational contexts, students considered gifted were those who presented significantly high scores on psychometric assessments. Although this model made it possible to identify individuals with high cognitive abilities, it did not seem to adequately explain a phenomenon that drew the attention of many researchers.

If high intelligence were sufficient to explain exceptional human achievement, why did not all highly intelligent individuals produce significant creative, scientific, artistic, or social contributions? Likewise, why did some people recognized for their creativity, leadership, or capacity for innovation not always appear among those with the highest scores on intelligence tests?

It was from this concern that Renzulli began to review extensively the literature related to creativity, leadership, innovation, scientific productivity, academic achievement, and exceptional performance. His objective was to identify which characteristics appeared recurrently among individuals recognized for relevant contributions in different areas of knowledge and human activity.

The result of this work was published in 1978 in the article *What Makes Giftedness? Reexamining a Definition*, considered one of the most influential texts in the history of gifted education.

The very title of the publication reveals the nature of his proposal. Renzulli was not claiming to discover an essence of giftedness or to propose a definitive definition of the phenomenon. What he sought was to reexamine the definitions then in existence and to broaden the debate beyond the limits imposed by exclusively psychometric models.

Based on his theoretical review, he concluded that individuals capable of producing outstanding creative and productive achievements often seemed to present the interaction of three fundamental characteristics: above-average ability, creativity, and task commitment.

This formulation gave rise to what later became known as the Three-Ring Conception of Giftedness.

It is important to note that each of these elements had a specific meaning within Renzulli's proposal.

Above-average ability was not necessarily restricted to an exceptionally high IQ. The author recognized both general abilities and specific aptitudes in certain domains of knowledge.

Creativity referred to the capacity to produce original ideas, establish unusual connections, formulate innovative solutions, and approach problems from differentiated perspectives.

Task commitment concerned the persistence, motivation, invested energy, dedication, and involvement required to transform potential into concrete achievement.

According to Renzulli, it would be the interaction among these three factors that favored the emergence of what he called gifted behavior.

This point deserves special attention.

One of the aspects most frequently ignored in contemporary interpretations of the theory is that Renzulli predominantly used the expression gifted behavior rather than gifted person.

The distinction is not merely semantic.

While the expression gifted person refers to the idea of a relatively stable characteristic of the individual, the expression gifted behavior emphasizes the observable manifestation of certain behaviors associated with productive creativity.

In other words, the central focus of the theory was not necessarily the gifted person as the object of investigation, but rather the behaviors that emerge when certain cognitive, creative, and motivational conditions come together.

This difference helps explain why the Three-Ring Conception exerted such a significant influence in the educational field. Its potential lay not in the identification of students, but in the construction of strategies capable of stimulating the emergence of these behaviors.

The graphic representation of the theory became one of its best-known elements. Through a Venn diagram composed of three overlapping circles, Renzulli illustrated the interaction among above-average ability, creativity, and task commitment. At the intersection of these three sets, he placed what he called gifted behavior.

However, it is important to understand its epistemological nature.

The model did not result from a neurological, genetic, or neurobiological discovery of giftedness. Nor did it empirically demonstrate that these three factors constituted the totality of the phenomenon. It was a theoretical construction developed from the observation of characteristics frequently found in highly achieving individuals.

This distinction is fundamental for understanding both the relevance and the limits of the proposal.

The strength of the theory lay in broadening the debate beyond IQ and offering an educational model capable of guiding practices of enrichment and talent development.

At the same time, its emphasis on the observable manifestation of productive creativity would raise, in the following decades, new questions that would ultimately lead researchers down different paths. After all, what happened to highly able individuals who did not demonstrate visible creativity? What about those who presented emotional suffering, school demotivation, adaptation difficulties, or

associated conditions that interfered with the expression of their potential? Would they remain outside the understanding of giftedness?

These questions did not invalidate Renzulli's contribution. On the contrary, they showed that his proposal had broadened the debate sufficiently to allow new scientific questions to emerge. And it is precisely at this point that the history of giftedness begins to move closer to the contributions of authors such as Linda Silverman, who would go on to investigate not only what gifted people produce, but how they function.

The Three-Ring Diagram: Scope, utility, and explanatory limits

The Three-Ring Conception also became widely known through its graphic representation. Renzulli presents his conception by means of three overlapping circles: above-average ability, creativity, and task commitment. In the zone of intersection among these three elements lies what the author calls gifted behavior, that is, gifted conduct or behavior associated with giftedness..

At first glance, the image appears simple. However, its interpretation requires care.

The three-ring model is visually presented as a Venn-type diagram because it works with interconnected circles and an area of intersection. However, it should not be treated as a mathematical Venn diagram in the strict sense. In a Venn diagram properly speaking, closed geometric forms represent sets, exclusive areas indicate elements belonging only to one group, and the intersection zone indicates elements common to the crossed sets.

In Renzulli's case, the circles do not gather individuals classified into independent categories. They represent three clusters of human characteristics which, when interacting, may favor the emergence of creative and productive behaviors. Therefore, the intersection should not be read as mathematical proof of the existence of giftedness, but as a conceptual representation of the interaction among variables associated with creative productivity.

This detail is decisive.

The image does not state that the gifted person exists only when above-average ability, creativity, and task commitment appear simultaneously and visibly. What the model seeks to demonstrate is that certain gifted behaviors tend to emerge when these three dimensions combine in favorable contexts of development and expression.

Renzulli's later text, entitled *The Three-Ring Conception of Giftedness: A Developmental Model for Promoting Creative Productivity*, reinforces this interpretation by situating his proposal within the field of educational practices of identification and programming. The author states that definitions of giftedness have direct implications for identification procedures and for the educational services offered to students, emphasizing that his conception was developed as a theoretical basis for enrichment programs and the development of creative productivity.

This point is very important in order to avoid an absolutized reading of the theory.

Renzulli was not proposing a neurobiological, genetic, or clinical marker of giftedness. He was constructing an operational conception aimed at guiding school practices, especially in the field of curricular enrichment, talent development, and creative productivity.

This is why the model had an enormous impact on education. It offered an alternative to models centered exclusively on IQ and allowed schools to consider creativity, engagement, interest, and production as relevant dimensions in supporting students with high potential.

One unforeseen effect of the broad educational dissemination of the model was the interpretation of its components as mandatory criteria for recognizing giftedness. In some contexts, visible creativity, productivity, and high task commitment began to function as requirements for identification, although this was not the purpose originally proposed by the author.

However, this same educational strength reveals its explanatory limit.

A model developed to stimulate and identify creative and productive behaviors does not necessarily explain the entire subjective, emotional, developmental, and neuropsychological experience of the gifted person. It may be extremely useful for thinking about curricular enrichment, but insufficient for

understanding phenomena such as developmental asynchrony, twice-exceptionality, invisible suffering, social masking, emotional intensity, or difficulties in school adaptation.

This distinction prevents two misconceptions.

The first would be to unfairly disqualify Renzulli, as if his theory had no relevance. It did, and continues to have, historical and educational importance.

The second would be to transform his conception into a total definition of giftedness. This use exceeds the original scope of the model and may produce serious practical consequences, especially when the demonstration of visible creativity, productivity, or commitment to school tasks is required in order to recognize the existence of giftedness.

A depressed gifted student may not show high task commitment.

A gifted child may have difficulty sustaining attention in repetitive activities, although presenting advanced thinking and intense intellectual curiosity.

A gifted autistic student may express creativity in a non-conventional manner, without corresponding to the pattern expected by the school.

A child subjected to years of understimulation may appear uninterested when, in fact, they are intellectually mismatched with the environment.

In these cases, the absence of visible gifted behavior does not eliminate the possibility of giftedness. It merely reveals that the potential may not be encountering adequate conditions for expression.

For this reason, the more careful contemporary reading of the Three-Ring Conception does not consist of discarding it, but of situating it properly. It is a relevant model for understanding the emergence of creative-productive behaviors and for guiding practices of educational enrichment. However, it should not be used as an exclusive instrument of identification, nor as a comprehensive explanation of giftedness as complex human functioning.

The very evolution of the debate suggests that Renzulli's theory should be understood within its scope: talent development, creative productivity, curricular enrichment, and the identification of gifted behaviors. When the objective becomes understanding the gifted person in their cognitive, emotional, developmental, and neuropsychological complexity, it becomes necessary to turn to other theoretical and empirical contributions, such as those developed by Linda Silverman and by authors of the developmental perspective.

FROM CREATIVE PRODUCTIVITY TO HUMAN DEVELOPMENT: THE EMERGENCE OF NEW SCIENTIFIC QUESTIONS

The influence of the Three-Ring Conception on gifted education was profound and remains visible to this day. By broadening the debate beyond IQ, Renzulli contributed to the inclusion of creativity, motivation, and achievement potential in processes of identification and talent development. This is a historically relevant contribution, especially because it challenged the exclusively psychometric view prevailing at the time.

However, in various educational systems, the practical application of this conception ultimately shifted the focus from understanding the gifted person to observing productive behaviors and visible performances. When manifest creativity, differentiated production, and task commitment came to be interpreted as indispensable requirements for recognition, many students with high cognitive potential, but without evident expression of these attributes, remained invisible to formal identification processes.

Among these students are learners who are demotivated, masked, twice-exceptional, emotionally overwhelmed, or situated in contexts that hinder the manifestation of their talents.

This limitation began to motivate new investigations aimed not only at the observation of creative productivity, but also at understanding the psychological and developmental functioning of gifted people, a theme that would be deepened by authors of the developmental perspective.

As the field advanced, new questions began to emerge. Although the Three-Ring model explained important aspects of creative productivity, it did not fully respond to phenomena observed by professionals who worked directly with gifted people in clinical, family, and educational contexts.

As the field advanced, researchers began to question why intellectually advanced individuals often presented emotional suffering, low school productivity, difficulties in social adaptation, persistent feelings of inadequacy, and other characteristics that could not be fully explained by models centered on creative achievement.

These observations began to indicate that there might be an important difference between studying what a person produces and studying how that person functions.

This shift in perspective represents a significant epistemological transformation.

While part of the earlier literature sought to understand the factors associated with creative achievement and the production of socially relevant contributions, a growing group of researchers began to investigate aspects related to the psychological, emotional, cognitive, and social development of gifted people.

The focus progressively shifted from productivity to functioning.

Instead of asking only who produces extraordinary results, some researchers began to ask how individuals who present significantly differentiated intellectual functioning develop.

This movement did not arise as a rejection of previous contributions.

In reality, it represented the expansion of a scientific field that was beginning to recognize the existence of phenomena that could not be explained exclusively by performance indicators.

Everyday experience showed that many gifted people remained invisible.

Many presented school difficulties, masking strategies, emotional suffering, or associated conditions that made it difficult to recognize their advanced cognitive abilities.

These observations contributed to the emergence of a new generation of studies concerned not only with what the person accomplishes, but also with how they perceive the world, process information, experience emotions, and interact with the environment.

It is in this context that researchers such as Linda Silverman, Michael Piechowski, James Webb, Susan Daniels, Deborah Ruf, and Miraca Gross gain prominence.

Although they present distinct approaches, these authors share a fundamental characteristic: they seek to understand giftedness as a complex human phenomenon involving cognitive, emotional, developmental, and relational aspects.

From this new set of investigations, concepts such as developmental asynchrony, emotional intensity, overexcitabilities, uneven development, socioemotional vulnerability, masking, and twice-exceptionality began to occupy a central position in the specialized literature.

The focus was no longer exclusively on the question “what does this person produce?” but came to include an equally important question:

“How does this person function?”

This change did not eliminate the importance of creativity, motivation, or productive achievement. However, it significantly broadened the field of investigation, making it possible to understand that giftedness may exist independently of the immediate presence of extraordinary performance, public accomplishments, or socially recognized productions.

It was in this scenario that Linda Silverman began one of the most influential contributions in contemporary literature on giftedness.

LINDA SILVERMAN AND THE CONSTRUCTION OF A DEVELOPMENTAL PERSPECTIVE ON GIFTEDNESS

While Joseph Renzulli sought to understand the factors associated with the emergence of creative productivity and socially relevant achievements, Linda Kreger Silverman followed a substantially

different investigative path. Her interest was not centered on the identification of highly productive individuals, but on understanding the psychological and developmental functioning of gifted people.

Over decades of work at the Gifted Development Center, Silverman assessed thousands of children, adolescents, and adults, gathering a broad set of clinical, educational, and developmental observations. Unlike models guided by the observation of performance, her investigations focused on identifying recurring characteristics present in gifted individuals regardless of the manifestation of visible talents or exceptional achievements.

Based on these observations, Silverman began to describe patterns related to emotional intensity, heightened sensitivity, depth of thought, rapid learning, the search for meaning, difficulties in social adaptation, and developmental asynchrony. These phenomena appeared recurrently in different individuals and contexts, suggesting the existence of characteristics associated with the very functioning of the gifted person.

This perspective was progressively consolidated in scientific articles, book chapters, clinical research, and reference works, among which *Counseling the Gifted and Talented* (1993) and *Giftedness 101* (2013) stand out. Rather than proposing a single theory or a closed model, Silverman contributed to the construction of a developmental understanding of giftedness, centered on the way the individual perceives, learns, feels, and develops throughout life.

One of her most influential contributions was her participation in consolidating the definition proposed by the Columbus Group, according to which giftedness constitutes a form of asynchronous development. This conception describes individuals whose advanced cognitive abilities interact with high levels of emotional intensity and differentiated internal experiences, producing developmental patterns distinct from those observed in the general population.

The Columbus Group's definition became a milestone in contemporary literature by shifting the understanding of giftedness from the field of abilities alone to the field of human development, significantly influencing later research on asynchrony, emotional intensity, and twice-exceptionality.

The notion of asynchrony became particularly relevant because it made it possible to understand why many gifted individuals present significant advances in certain areas and, simultaneously, challenges in others. From this perspective, giftedness ceases to be understood exclusively as a matter of performance or intellectual capacity and begins to be analyzed as a phenomenon related to human development in its complexity.

This shift in focus produced significant impacts on contemporary literature. By redirecting attention to cognitive, emotional, and developmental functioning, Silverman's perspective contributed to broadening the understanding of phenomena such as emotional intensity, invisible suffering, difficulties with belonging, the masking of characteristics, and twice-exceptionality—themes that have increasingly occupied space in research on giftedness in recent decades.

Although it did not arise in opposition to Renzulli's contributions, the developmental approach responded to a different scientific question. While the Three-Ring Conception sought to understand the emergence of creative productivity, Silverman sought to understand the developmental experience of the gifted person. This epistemological distinction helps explain why both authors arrived at different conclusions and why their contributions can be understood as complementary, even though they are guided by distinct objectives.

The developmental perspective significantly expanded the field of investigation of giftedness and contributed to consolidating approaches centered on human development, subjective experience, and specific educational needs. This expansion would pave the way for the later convergence among developmental psychology, inclusive education, and neuroscience, discussed in the following sections.

In this study, functioning refers to the set of cognitive, emotional, developmental, and neuropsychological characteristics that influence the way the individual perceives, processes information, learns, interprets experiences, and interacts with the environment.

CONVERGENT EVIDENCE IN CONTEMPORARY LITERATURE

One of the most consistent ways to evaluate the robustness of a scientific hypothesis is to verify whether different researchers, using distinct methods and working in diverse contexts, observe similar phenomena. In the field of giftedness, this aspect is especially relevant, since the contemporary understanding of the phenomenon is not based exclusively on the production of a single author, but on a growing body of evidence from psychology, education, neuropsychology, and studies on human development.

In this context, it is noteworthy that various researchers, over decades, have begun to describe recurring characteristics in gifted people that are not limited to academic performance or the manifestation of visible talents. Although they use distinct theoretical frameworks, many of these authors have identified patterns related to developmental asynchrony, emotional intensity, heightened sensitivity, complex thinking, difficulties with belonging, and specific educational needs.

The studies of Leta Stetter Hollingworth are among the first to indicate that children with high intellectual abilities frequently present challenges that go beyond the academic field. In investigating exceptionally advanced children, the author observed difficulties in social adjustment, significant differences in interests compared to same-age peers, and educational needs incompatible with conventional curricula. Her research helped demonstrate that accelerated intellectual development does not always occur homogeneously across all areas of a child's life.

Decades later, research conducted by Miraca Gross reinforced these observations by demonstrating that highly advanced students may experience feelings of isolation, incomprehension, and inadequacy when they remain in educational environments unable to keep pace with their learning rate. Her longitudinal studies showed that measures such as acceleration and curricular flexibility can favor not only the academic development but also the socioemotional adjustment of these students.

Another important set of contributions concerns the understanding of the emotional intensity frequently observed in gifted people. In this field, the works of Kazimierz Dąbrowski, Michael

Piechowski, and Susan Daniels stand out. Although their approaches present conceptual differences, all contributed to consolidating the understanding that many gifted people experience emotions, interests, concerns, and internal experiences in a particularly intense manner. The so-called overexcitabilities described by Dąbrowski, later developed in greater depth by Piechowski and Daniels, began to offer a theoretical framework for understanding phenomena frequently reported by gifted individuals, including heightened emotional sensitivity, intense intellectual curiosity, rich imagination, and strong involvement with existential, ethical, or social issues.

In parallel, researchers such as James Webb and Deborah Ruf drew attention to a phenomenon that would become central in contemporary literature: the invisibility of giftedness. Their studies demonstrated that many gifted people remain unidentified throughout much of their lives, especially when they present associated conditions, emotional difficulties, or characteristics that do not correspond to stereotypes traditionally linked to high performance. This discussion became particularly relevant with the advancement of research on twice-exceptionality, showing that high cognitive abilities can coexist with neurodevelopmental disorders, specific learning difficulties, or other conditions that hinder the visible manifestation of potential.

Perhaps the most significant aspect of these contributions is not the absolute identity among their conclusions, but the convergence observed across different lines of research. Despite using distinct methodologies and investigating varied populations, these authors identified similar phenomena related to uneven development, emotional intensity, difficulties in social adaptation, invisible suffering, and the need for differentiated educational responses.

This convergence has great scientific relevance because it broadens the understanding of giftedness beyond observable manifestations of performance. These findings reinforce the existence of recurring characteristics already described in the developmental literature and demonstrate the progressive convergence among different lines of investigation on giftedness.

Longitudinal studies conducted by David Lubinski and Camilla Benbow followed individuals with high cognitive abilities for decades, demonstrating that early intellectual differences can significantly influence academic, scientific, professional, and creative trajectories throughout life. These findings reinforce the relevance of early identification and of offering educational opportunities compatible with the specific needs of this population.

It is precisely this broadening of the scientific perspective that prepares the ground for discussions about talent, potential, and manifestation.

TALENT, POTENTIAL, AND THE MANIFESTATION OF GIFTEDNESS

One of the most recurrent issues in the literature on giftedness concerns the relationship among potential, talent, performance, and achievement. Although these concepts frequently appear associated, they are not equivalent and cannot be used as synonyms.

Historically, part of the identification processes focused on the observation of visible manifestations of potential, such as high academic performance, exceptional creativity, leadership, differentiated productions, or socially recognized achievements. This perspective contributed significantly to the development of educational programs aimed at enrichment and the promotion of talents. However, it also brought an important challenge: the tendency to confuse the manifestation of potential with the very existence of potential.

From a conceptual standpoint, talent can be understood as an observable expression of abilities developed in a given area. Talent manifests itself through performances, productions, competencies, or achievements that stand out in relation to the reference group. Giftedness, in turn, refers to differentiated cognitive and developmental functioning, which may favor the emergence of talents but is not limited to them.

This distinction becomes particularly relevant because the development of talent depends on multiple factors. High cognitive abilities may favor the rapid acquisition of knowledge, the understanding

of complex concepts, and the efficient resolution of problems. However, the transformation of this potential into observable performance also involves educational opportunities, family support, socioeconomic conditions, learning experiences, motivation, mental health, social belonging, and access to contexts that enable the development of existing abilities.

In this sense, talent and giftedness are not equivalent phenomena. Although many gifted people develop expressive talents throughout life, not every gifted person will have the opportunity to manifest them in an evident manner. Likewise, the presence of talent does not constitute sufficient evidence to characterize giftedness, since high performance may result from intensive training, deliberate practice, prolonged dedication, cultural factors, or specific opportunities for development.

The absence of manifestation does not equate to the absence of potential. The visible expression of human abilities depends on factors that transcend the individual's cognitive characteristics. Among them are the available educational opportunities, the quality of learning experiences, the family context, emotional support, and the existence of favorable conditions for development.

This distinction becomes particularly evident in situations of twice-exceptionality and school understimulation. In the first case, high cognitive abilities may coexist with conditions such as autism, attention-deficit/hyperactivity disorder, dyslexia, dyscalculia, or other neurodevelopmental differences, producing complex profiles that hinder identification based exclusively on observable performance. In the second, the absence of challenges compatible with the student's level of functioning may generate demotivation, disengagement, apparently low achievement, and progressive reduction in the expression of potential.

Under these circumstances, the central issue ceases to be the simple observation of manifest talent and comes to involve the analysis of the conditions that favor or limit its expression. The contemporary identification of giftedness requires recognizing that performance, productivity, and achievement constitute possible manifestations of potential, but not its only form of expression nor its condition of existence.

This understanding is supported by different contemporary authors who describe giftedness as a multidimensional phenomenon involving cognitive, emotional, developmental, and contextual aspects. From this perspective, identification should not seek exclusively individuals who already demonstrate exceptional achievements, but also those whose functioning reveals specific educational needs resulting from significantly advanced abilities.

While developed talent tends to be easily recognized through observable indicators of performance, unmanifested potential requires broader assessment processes capable of considering development, context, cognitive functioning, and specific educational needs.

The data analyzed throughout this study indicate that talent, performance, and productivity should not be confused with the very existence of giftedness. Talent may constitute one possible manifestation of giftedness, but not its definition. Likewise, the absence of exceptional performance does not authorize the conclusion that high abilities are absent. Giftedness refers to differentiated cognitive and developmental functioning whose manifestation depends on the interaction among biological, emotional, educational, social, and environmental factors. Thus, potential and manifestation constitute related but not equivalent dimensions. This distinction is fundamental for understanding phenomena widely discussed in contemporary literature, such as the invisibility of giftedness, twice-exceptionality, the masking of characteristics, and the underidentification of students with specific educational needs. For this reason, the differentiation among functioning, potential, and manifestation will be adopted as an interpretive reference for the discussions presented in the subsequent sections of this work.

NEUROSCIENCE AND GIFTEDNESS: CONVERGENCES WITH THE DEVELOPMENTAL PERSPECTIVE

For much of the twentieth century, giftedness was studied predominantly in the fields of psychology, education, and psychometrics. Researchers sought to understand cognitive differences, learning patterns, and developmental characteristics through psychological tests, clinical observations,

and educational studies. With the advancement of cognitive neuroscience, especially from the final decades of the twentieth century onward, it became possible also to investigate the neurobiological correlates associated with high cognitive abilities.

This advance does not mean that giftedness has become identifiable through brain imaging examinations. More precisely, it means that neuroimaging studies have begun to demonstrate associations among high intelligence, neural connectivity, cerebral metabolism, cortical development, and the functional organization of brain networks. Although such findings do not constitute diagnostic instruments, they have contributed to broadening the scientific understanding of the phenomenon and have enabled the establishment of relevant dialogues with the developmental literature.

Among the most influential contributions is the work of Richard Haier, whose research investigated the neural bases of individual differences in cognitive performance. One of the best-known concepts in this line of investigation is neural efficiency. Studies using positron emission tomography (PET) observed that individuals with higher intellectual performance could present lower glucose consumption in certain brain regions while performing cognitive tasks, suggesting more efficient information processing. These results challenged the intuitive idea that superior intelligence would necessarily correspond to greater cerebral effort. In certain situations, more efficient brains appear to achieve better results while using fewer metabolic resources.

The neural efficiency hypothesis should not be interpreted simplistically. Brain performance varies according to the complexity of the task, the individual's familiarity with the problem, and the specific characteristics of the context. Even so, these studies offer a plausible explanation for a phenomenon frequently described by families and educators: the speed with which some children understand content, establish complex relationships, and solve problems that require high levels of abstraction.

Another important contribution emerged from studies on cortical development. Shaw and collaborators demonstrated that intelligence is not related only to static measures of brain volume or cortical thickness. Their findings suggest that individuals with greater intellectual capacity present

differentiated trajectories of brain maturation, characterized by specific patterns of cortical development and reorganization throughout childhood and adolescence. These results reinforce the idea that high intelligence is associated with dynamic developmental processes, and not only with fixed anatomical characteristics.

Research on gray matter and brain organization has also contributed to broadening the understanding of individual cognitive differences. Although there is no single brain structure responsible for giftedness, studies indicate that certain regions associated with abstract reasoning, planning, problem solving, and information integration may present structural and functional differences in individuals with high intellectual performance. More important than the existence of a specific area seems to be the way different brain regions interact with one another.

In this context, the Parieto-Frontal Integration Theory (P-FIT), proposed by Jung and Haier, stands out. According to this perspective, intelligence emerges from the coordinated interaction among multiple brain regions distributed mainly across the frontal and parietal lobes. Rather than locating intelligence in a single structure, the model suggests that high cognitive performance results from the capacity of different neural systems to integrate information efficiently. This conception reinforces the idea that intelligence constitutes a complex phenomenon, dependent on communication among brain networks and not merely on the isolated functioning of certain areas.

Despite the advances observed, there remains no scientific consensus regarding the existence of a specific neurobiological marker of giftedness. Part of the literature emphasizes structural and functional differences observed in population studies, while other researchers highlight the heterogeneity of findings and the methodological limits inherent in neuroimaging research.

Another particularly relevant field of investigation involves studies on brain connectivity. Recent research indicates that high cognitive differences may be associated with the quality of communication among brain regions, the integrity of white matter, and the functional organization of neural networks. These findings are especially interesting because they dialogue with descriptions frequently found in the

developmental literature, according to which many gifted people demonstrate a high capacity to establish relationships among apparently disconnected ideas, integrate information from different areas of knowledge, and produce complex forms of reasoning.

The emotional dimension has also received increasing attention from neuroscience. Although there is still no evidence capable of identifying a specific neurobiological signature of giftedness, several studies investigate the role of structures related to emotional processing, such as the amygdala, the hippocampus, and regions of the prefrontal cortex. Some findings suggest differences in the way certain individuals process emotional, sensory, and social stimuli. These results do not authorize the claim that gifted people necessarily have larger or more active amygdalae. However, they offer promising avenues for understanding phenomena described for decades by authors such as Dąbrowski, Piechowski, and Silverman, especially those related to emotional intensity, heightened sensitivity, and the depth of subjective experiences.

It is at this point that neuroscience begins to dialogue more directly with the developmental perspective on giftedness. The rapprochement between these areas should not be understood as a definitive validation of any specific theory. However, it is striking that various phenomena clinically observed by developmental researchers have begun to find partial correspondences in studies on brain functioning.

The developmental literature frequently describes gifted people as individuals who learn quickly, present complex thinking, demonstrate intense intellectual curiosity, experience emotions deeply, and may manifest asynchrony among different areas of development. Neuroscience, in turn, identifies differences related to neural efficiency, brain connectivity, energy metabolism, cortical maturation, and the functional integration of cognitive networks. Although these fields use distinct methods and investigate different dimensions of the phenomenon, both point to the existence of differentiated forms of functioning that cannot be reduced exclusively to observable performance.

Developmental asynchrony constitutes an important example of this convergence. Silverman and the Columbus Group defined giftedness as a process of asynchronous development, in which advanced cognitive abilities coexist with different rhythms of emotional, social, or motor maturation. Neuroscience does not directly confirm this definition, but it demonstrates that brain development occurs heterogeneously, with different systems maturing at their own rhythms. This finding makes the existence of non-linear developmental trajectories biologically plausible and helps explain why individuals who are highly advanced in certain domains may present significant challenges in others.

Despite the advances observed, it is important to recognize the current limits of scientific knowledge. To date, there is no neuroimaging examination capable of identifying giftedness individually with clinical or educational validity. Neither in Brazil nor abroad are there diagnostic protocols based on magnetic resonance imaging, tomography, PET, or any other neuroimaging technique that make it possible to determine objectively whether a person is or is not gifted. Existing studies make it possible to understand differences between groups, formulate hypotheses, and expand knowledge about the mechanisms involved, but they do not replace psychological, neuropsychological, educational, or developmental assessments.

The main contribution of neuroscience to the field of giftedness does not lie in offering a definitive biological marker, but in reinforcing the understanding that high cognitive differences have observable neurobiological bases. This finding strengthens the understanding of giftedness as a multidimensional phenomenon involving cognition, emotion, development, environment, and the functioning of the central nervous system.

From this perspective, the convergence between neuroscience and the developmental approach contributes to a broader understanding of giftedness. Both suggest that the difference lies not only in what the individual produces, but also in the way they learn, perceive, feel, process information, and develop throughout life. This broadening of perspective represents one of the most significant advances in

contemporary literature and reinforces the need for models of identification and educational support capable of encompassing the complexity of the gifted experience.

WHY THIS DISCUSSION MATTERS FOR IDENTIFICATION AND FOR THE SCHOOL

The discussion of theoretical models of giftedness is not limited to the academic field. The conceptions adopted by researchers, professionals, and educational systems directly influence identification processes, the organization of support services, the formulation of public policies, and the developmental opportunities offered to students.

The way giftedness is defined determines who will be recognized, who will have access to specialized assessments, and which students will receive educational responses compatible with their needs. For this reason, the epistemological differences discussed throughout this work produce concrete consequences in the lives of children, adolescents, and adults.

When giftedness is understood predominantly through indicators of productivity, exceptional performance, or visible talents, identification processes tend to privilege students who have already succeeded in transforming potential into observable results. Although these students should be identified and supported, this approach presents important limitations. As discussed previously, performance and giftedness are not equivalent concepts. The manifestation of potential depends on the interaction among biological, emotional, educational, social, and environmental factors, which is why many gifted individuals remain outside formal identification processes.

This reality becomes particularly evident among twice-exceptional students, masked students, or those subjected to contexts of school understimulation. In these situations, significantly advanced cognitive abilities may coexist with learning difficulties, neurodevelopmental conditions, emotional suffering, or environmental barriers that hinder the expression of potential. As a consequence, differentiated functioning may remain invisible to assessment systems centered exclusively on observable performance.

For this reason, the choice of theoretical framework directly influences pedagogical practice. Models centered predominantly on productivity tend to identify productive students. Models centered exclusively on performance tend to recognize those who already present superior results. In contrast, developmental approaches seek to understand the student in their totality, considering aspects related to cognitive functioning, learning pace, depth of thought, emotional intensity, developmental asynchrony, and the specific educational needs resulting from these characteristics.

This change has relevant implications for teacher education. Many education professionals still associate giftedness with constant academic excellence, exemplary behavior, or generalized ease in learning. This understanding contributes to processes of underidentification and reinforces the mistaken perception that gifted students do not require specialized educational support.

Contemporary literature points precisely in the opposite direction. Gifted students may require curricular enrichment, content compacting, acceleration, pedagogical flexibility, interest-based grouping, socioemotional monitoring, and individualized educational planning. These measures do not constitute privileges, but educational responses compatible with specific needs arising from differentiated forms of development and learning.

From this perspective, identification ceases to be understood as the recognition of merit and comes to be understood as an instrument for guaranteeing educational rights. The objective is not to reward students who already demonstrate high performance, but to ensure that individuals with specific needs resulting from high abilities receive adequate opportunities for their integral development.

This understanding also has relevance for the formulation of public policies. Educational systems that adopt excessively restrictive criteria tend to produce artificial identification rates, contributing to the underreporting of the gifted population and to the limitation of specialized services. As a consequence, many students remain without institutional recognition, without adequate support, and without access to the resources necessary for the full development of their potential.

For this reason, contemporary literature advocates identification processes based on multiple sources of information, including psychological or neuropsychological assessments, pedagogical observations, developmental history, family reports, student productions, in-depth interests, and analysis of the environmental conditions that favor or hinder the expression of potential. No single instrument is capable of capturing the full complexity of the phenomenon.

The contemporary understanding of giftedness requires recognizing that different developmental trajectories may lead to different forms of manifestation. Not all students will present the same characteristics, nor will they express their abilities in the same way or at the same moment in life. This diversity requires models of identification and support broad enough to encompass the complexity of the phenomenon.

In this context, the central question ceases to be “who deserves to be recognized as gifted?” and becomes “which students present specific educational needs arising from differentiated cognitive, emotional, and developmental functioning?” This shift moves the discussion from the field of merit to the field of rights and brings the contemporary understanding of giftedness closer to the principles of inclusive education, equity, and integral human development.

PAULO FREIRE AND THE PEDAGOGY OF SINGULARITY

Although Paulo Freire did not develop a specific theory on giftedness, various elements of his work offer relevant contributions to the contemporary understanding of the educational needs of students with high abilities. His influence has crossed Brazilian borders and achieved international recognition, making him one of the most cited references in the field of critical education and humanist pedagogy.

At the center of his proposal lies the understanding that the student should not be treated as a mere passive recipient of information, but as an active subject of the educational process. In opposition to what he called banking education, Freire advocated a pedagogical practice based on dialogue, autonomy, the construction of knowledge, and the recognition of human singularity.

Although these ideas were formulated in contexts distinct from the discussion on giftedness, they dialogue directly with challenges frequently observed in the education of students with high abilities. Many of these students present an accelerated pace of learning, intense intellectual curiosity, a need for conceptual depth, and interest in topics that go beyond the limits of the traditional curriculum. When subjected to excessively standardized practices, they may experience disengagement, demotivation, and a progressive reduction of interest in learning.

From this perspective, Freire's contribution lies not in the definition of giftedness, but in the understanding that effective educational processes require the recognition of individual differences. The valuing of the student's experience, respect for their interests, the construction of meaningful formative pathways, and the rejection of excessively homogeneous models bring his proposal close to contemporary principles of inclusive education.

This approximation becomes especially relevant when considered in light of the discussions presented in this study. If the developmental literature demonstrates that giftedness may involve differentiated forms of learning, thinking, sensitivity, and development, Freirean pedagogy contributes by defending that education should begin from the concrete subject and their real needs, rather than from standardized models applied indistinctly to all students.

In this sense, Freire's reflection offers a complementary contribution to the psychological, developmental, and neuroscientific approaches discussed throughout this work. While these areas help us understand how gifted people learn, feel, and develop, Freirean pedagogy reinforces the need to construct educational practices capable of welcoming this human diversity.

The contemporary relevance of this perspective resides precisely in its defense of an education committed to singularity, equity, and integral development. From this viewpoint, recognizing gifted students does not mean assigning privileges or distinctions of merit, but ensuring that legitimate developmental differences are considered in the construction of educational opportunities compatible with their needs.

Thus, although Paulo Freire did not write about giftedness, his defense of an education centered on the student, on dialogue, and on respect for differences offers important foundations for an educational understanding that recognizes the diversity of ways of learning and developing. This perspective converges with the contemporary understanding that the purpose of identification is not to select the best, but to guarantee that each student receives adequate conditions to fully develop their potential.

CONCLUSION

The present study aimed to analyze the historical and scientific evolution of the understanding of giftedness by examining the contributions of different theoretical frameworks that have influenced the construction of knowledge in the field, with special attention to the proposals of Joseph Renzulli, Linda Silverman, authors of the developmental perspective, and contemporary research in neuroscience. It began from the understanding that the way giftedness is defined is not merely a conceptual issue, but directly influences identification processes, educational practices, and students' access to the services and resources intended to address their specific needs.

The analysis conducted demonstrated that different conceptions of giftedness did not emerge to answer the same scientific question. While Renzulli sought to understand the factors associated with the emergence of creative productivity and socially relevant achievements, Silverman and other authors of the developmental perspective directed their attention to the cognitive, emotional, and developmental functioning of gifted people. This distinction proved fundamental for understanding why apparently related models lead to distinct interpretations of the phenomenon.

The results of the review showed that the Three-Ring Conception represented an important historical advance by broadening the debate beyond measurable intelligence, incorporating creativity and task commitment into the field of high abilities. However, they also indicated that the exclusive use of models centered on the visible manifestation of potential may contribute to the invisibility of students

who present gifted functioning but do not demonstrate productivity, talent, or exceptional performance in an evident manner.

The developmental literature analyzed revealed significant convergence among different researchers in the description of characteristics such as developmental asynchrony, emotional intensity, heightened sensitivity, complex thinking, invisible suffering, difficulties with belonging, and specific educational needs. These findings broaden the understanding of giftedness beyond observable production, making it possible to recognize the existence of profiles frequently neglected by traditional identification systems, including twice-exceptional students, masked individuals, and people identified only in adulthood.

The analysis of the contributions of neuroscience demonstrated that recent research has been identifying differences related to neural efficiency, brain connectivity, cortical development, cerebral metabolism, and the organization of cognitive networks. Although such evidence does not authorize the use of neuroimaging as a diagnostic instrument for giftedness, it reinforces the understanding that high cognitive differences have observable neurobiological bases compatible with part of the phenomena previously described by the developmental literature.

Another relevant aspect evidenced by the study concerns the distinction between giftedness and talent. The results indicate that talent may constitute a possible manifestation of giftedness, but not its definition. Likewise, the existence of talent is not a sufficient condition to characterize giftedness. This differentiation proves particularly important in order to prevent identification from being restricted only to those who have already managed to transform potential into visible performance, excluding individuals who have not yet had adequate opportunities to develop their abilities.

The discussion also made it possible to show that the choice of a theoretical model produces concrete consequences for education. Educational systems that understand giftedness exclusively through productivity tend to recognize only a portion of students who present differentiated educational needs. In contrast, approaches that consider functioning, development, and diversity of manifestations broaden the

possibilities of identification and favor educational responses more compatible with the singularity of the subjects.

In this context, Paulo Freire's contributions reinforce the importance of an education committed to recognizing human diversity and valuing the singularity of each student. Although he did not develop specific studies on giftedness, his conception of education centered on the subject offers important elements for reflecting on pedagogical practices capable of welcoming different ways of learning, thinking, and developing.

It is concluded, therefore, that the scientific evolution of the understanding of giftedness should not be interpreted as the replacement of one theory by another, but as the progressive expansion of knowledge. The different models analyzed contributed to answering distinct scientific problems and, when understood within their original contexts, offer complementary contributions to the understanding of the phenomenon. Contemporary literature points toward a multidimensional conception of giftedness, involving cognitive, emotional, developmental, educational, and neurobiological aspects, incompatible with reductions based exclusively on performance, talent, or productivity.

Finally, it is suggested that future research should deepen the interfaces among neuroscience, human development, and education, especially with regard to twice-exceptionality, masking processes, and strategies for identifying students who remain invisible to traditional models. The expansion of this field of knowledge may contribute to more comprehensive identification models, fairer educational practices, and responses compatible with the complexity of the gifted experience.

This study presents limitations inherent to theoretical bibliographical research, especially due to the impossibility of empirically testing the hypotheses discussed. In addition, neuroscientific evidence related to giftedness remains under development and still does not permit definitive conclusions about specific biological mechanisms associated with the phenomenon.

REFERENCES

- BENBOW, Camilla P.; LUBINSKI, David. **Intellectual talent: psychometric and social issues**. Baltimore: Johns Hopkins University Press, 2006.
- DĄBROWSKI, Kazimierz. **Positive disintegration**. Boston: Little, Brown and Company, 1964.
- DANIELS, Susan; PIECHOWSKI, Michael M. **Living with intensity: understanding the sensitivity, excitability, and emotional development of gifted children, adolescents, and adults**. Scottsdale: Great Potential Press, 2009.
- FREIRE, Paulo. **Pedagogia da autonomia: saberes necessários à prática educativa**. [Pedagogy of autonomy: knowledge necessary for educational practice] 68. ed. Rio de Janeiro: Paz e Terra, 2021.
- FREIRE, Paulo. **Pedagogia do oprimido**. [Pedagogy of the oppressed] 77. ed. Rio de Janeiro: Paz e Terra, 2023.
- GROSS, Miraca U. M. **Exceptionally gifted children**. 2. ed. London: RoutledgeFalmer, 2004.
- HAIER, Richard J. **The neuroscience of intelligence**. Cambridge: Cambridge University Press, 2017.
- HOLLINGWORTH, Leta S. **Children above 180 IQ: Stanford-Binet origin and development**. Yonkers-on-Hudson: World Book Company, 1942.
- JUNG, Rex E.; HAIER, Richard J. The Parieto-Frontal Integration Theory (P-FIT) of intelligence: converging neuroimaging evidence. **Behavioral and Brain Sciences**, Cambridge, v. 30, n. 2, p. 135–154, 2007.
- LUBINSKI, David. From Terman to today: a century of findings on intellectual precocity. **Review of Educational Research**, Washington, v. 86, n. 4, p. 900–944, 2016.
- NEUBAUER, Aljoscha C.; FINK, Andreas. Intelligence and neural efficiency. **Neuroscience & Biobehavioral Reviews**, Oxford, v. 33, n. 7, p. 1004–1023, 2009.
- PIECHOWSKI, Michael M. **Mellow out, they say. If I only could: intensities and sensitivities of the young and bright**. Madison: Yunasa Books, 2006.

RENZULLI, Joseph S. What makes giftedness? Reexamining a definition. **Phi Delta Kappan**,
Bloomington, v. 60, n. 3, p. 180–184, 261, 1978.

RENZULLI, Joseph S.; REIS, Sally M. **The Schoolwide Enrichment Model: a how-to guide for
educational excellence**. 3. ed. Waco: Prufrock Press, 2014.

RENZULLI, Joseph S. **The Three-Ring Conception of Giftedness: A Developmental Model for
Promoting Creative Productivity**. In: STERNBERG, Robert J.; DAVIDSON, Janet E. (org.).
Conceptions of Giftedness. 2. ed. New York: Cambridge University Press, 2005. p. 246-279.

RUF, Deborah L. **5 levels of gifted: school issues and educational options**. Scottsdale: Great Potential
Press, 2005.

SHAW, Philip et al. Intellectual ability and cortical development in children and adolescents. **Nature**,
London, v. 440, n. 7084, p. 676–679, 2006.

SILVERMAN, Linda K. **Counseling the gifted and talented**. Denver: Love Publishing Company, 1993.

SILVERMAN, Linda K. **Giftedness 101**. New York: Springer Publishing Company, 2013.

WEBB, James T. et al. **Misdiagnosis and dual diagnoses of gifted children and adults: ADHD,
bipolar, OCD, Asperger's, depression, and other disorders**. 2. ed. Scottsdale: Great Potential
Press, 2016.