International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.48047/intjecse/v15i2.105 ISSN: 1308-5581 Vol 15, Issue 02 2023

Cognitive Characteristics of the Gifted Child - The Algerian Child as a Model

Souad GUEDOUCHE
University of Algiers2-abou elkacemsaadellah, Algeria
laboratory of health psychology, prevention and quality of life
Email: Souad.guedouche@univ-alger2.dz

Received: 09/01/2023; Accepted: 13/04/2023; Published:05/05/2023

Abstract:
Through the current discussion of an aspect of the topic of giftedness in children, we aim to highlight its characteristics, both positive and negative, on the one hand, and to emphasize the necessity of early care for it on the other hand.
The child surpassing a certain level in a specific trait positively is beneficial for both the child and their surroundings, as it grants them the quality of distinction. This is the case for the gifted child. However, while giftedness makes the child unique, it may also bring challenges, as the gifted child needs someone who can effectively interact with them and nurture their talent. The environment of a gifted child can hinder their talent instead of developing it if the necessary conditions are not provided. This may lead to significant problems in their ability to adapt.
Keywords: Gifted child, giftedness, intelligence, thinking, cognitive characteristics.

Introduction:

Individuals, regardless of the extent of their similarities or differences from the general population, whether positive or negative, do not exhibit uniform distribution in the maturity of their cognitive, social, emotional, or interpersonal abilities, among others. By "maturity," we do not mean absolute growth, but rather its alignment with the developmental stage. Our focus now is on a group of children in the latency stage (6–12 years) who stand out from their peers due to a type of developmental superiority that classifies them as gifted or precocious children.

1 - Giftedness and Intelligence

The term "giftedness" (surdoué) refers to an individual, particularly a child, who exhibits intellectual abilities significantly above average, with an IQ exceeding 130 [3]. Here, we emphasize the role of rationalization in determining this threshold, as it is based on a statistical categorization of groups according to IQ scores. These scores reflect performance levels in

general intelligence tests, which, in turn, indicate the utilization of various cognitive abilities, whether verbal or performance-based.

Thus, while a high IQ, synonymous with giftedness, deviates positively (+30) from the mean IQ of 100 (as per Wechsler's scale), a low IQ, associated with intellectual disability, deviates negatively (-30) from the same mean, resulting in an IQ level of approximately 70 or less.

Furthermore, children with intellectual disabilities, in addition to having a low general IQ, experience deficits or deterioration in adaptive functioning, including communication, independence, home living, social skills, relationships with others, utilization of environmental resources, personal responsibility, and academic achievement. This description aligns with the American Psychiatric Association (2015).

By contrast, it is presumed that gifted children exhibit the opposite characteristics, consistent with their advanced cognitive abilities, enabling adaptive psychological and social functioning. But is this truly the case?

2 - Studies on Gifted Children

2.1 Adaptability of Gifted Children

An American study revealed that young gifted individuals often do not occupy top positions in society later in life, even if they attended special schools. Conversely, adults who are recognized as exceptional and achieve prestigious awards (e.g., Nobel Prizes) rarely have a background of being identified as "gifted." According to Bloch et al. (1999), this phenomenon is attributed to accelerated development at a specific stage rather than true giftedness.

Emotionally, while some gifted individuals seem to face no issues, others experience social isolation, leading to depression and academic failure (Bloch et al., 1999).

Elsa Benoit (2000) described gifted individuals as distinguished by a rich vocabulary from an early age, learning to read very early, often on their own, and showing interest in topics beyond their age group. They possess a love for learning, discovery, and creativity. However, she highlighted their challenges in academics, identifying giftedness as one of the causes of academic failure. This raises a crucial question: how can a highly capable child fail in a domain considered the primary arena for demonstrating their abilities (school)?

Giftedness may lead to failure through a process described by Benoit as follows:

When a gifted child is placed in a classroom with varying abilities and subjected to a teaching style that sometimes relies on repetition, combined with a teacher’s inability to meet the child’s intellectual appetite, the child may become bored, lose curiosity, and develop a disinterest in learning. Additionally, teachers often struggle to manage the unique demands of the gifted child while addressing the needs of the rest of the class.

Due to insufficient time and resources, the gifted child may fail to thrive because the pace of their learning does not align with the pace of instruction. When the child loses interest in learning, they may experience failure, which can be difficult for them to comprehend, leading to the development of a negative self-image.

Some studies have shown that gifted children are more prone to depression, with early adolescents among them having higher suicide rates compared to other groups (Elsa Benoit, 2000).

2.2 Thinking of the Gifted Child

A study by J. Siaud-Facchin (2004) revealed an important aspect of giftedness, specifically related to a distinct cognitive functioning characterized by a unique thinking pattern. Through clinical examination of the cognitive and emotional processes of gifted children, the study identified particularities in their mental functioning that explain the academic challenges faced by these children, who are considered at risk both academically and psychologically due to the following:

1. Their unique way of organizing thoughts;
2. Their distinctive thinking pattern;
3. Their problem-solving approaches;
4. The emotional undertone influencing every cognitive action.

Siaud-Facchin's clinical observations led to the conclusion that children with exceptional intelligence do not differ quantitatively in intelligence compared to other children but rather think qualitatively in a fundamentally different manner.

The gifted child does not answer questions the same way their classmates do or responds differently because they interpret the question in a manner unlike others. For instance, when asked what causes iron to rust, the child might say, "I don't know." If probed further about what they don't know, they may respond, "I don't know the nature of the chemical processes that lead to oxidation." In this case, the child does not realize that the required answer is "oxidation," as they assume this is a self-evident fact known to everyone (Siaud-Facchin, 2004).

Another characteristic of gifted children is their mathematical thinking, often described as intuitive ("mathematical intuition"). They produce correct results for mathematical operations without being able to explain the steps they took to solve the problem. Their cognitive processing is spontaneous, where information is interconnected and activated at a subconscious level. This process happens so quickly that it cannot be mentally represented, yet the result is accurate.

Gifted children often see no need to justify their answers, but such approaches are not acceptable in academic settings, where explanations of problem-solving methods are always required. This often leads to the loss of valuable points.

According to Siaud-Facchin (2004), the thinking of gifted children is also characterized by divergence; it is networked, where each idea generates branches of new ideas, and each branched idea, in turn, produces new associations. This branching process continues, creating highly complex activity or activation as it involves multiple networks operating simultaneously in parallel. Gifted children handle a vast range of rapidly flowing information and data, activating multiple relationships connected to prior knowledge and experiences. This dynamic fosters creativity, originality, and genius ideas.

While such networked cognitive processing is the foundation for "discoveries," "inventions," and "new theories," it is less effective in academic settings, which require a gradual, linear thinking process: one piece of information at each step. This is the hallmark of average children. Furthermore, the tree-like organization of thought that distinguishes gifted children does not allow them to isolate the critical information necessary for the correct answer. For them, the primary information is loaded with additional data integrated to activate the network, making their processing complex.

From a quantitative perspective, this complexity is evident. Qualitatively, gifted children prefer simultaneous processing of information (branching) over sequential processing (linear). They focus on the general characteristics of stimuli, prioritizing their meaning, and process schemas according to a visuospatial pattern (associated with the specialization of the brain's right hemisphere). Their thinking is synthetic and integrative, contrasting with the analytical approach often required in academic environments.

In the context of academic work, schools tend to stimulate the functions of the brain's left hemisphere, which are associated with language, logical thinking, mathematical reasoning, and written expression. These require effective investment and management of analytical and sequential functions. However, when gifted children prefer to utilize the brain's right hemisphere—particularly for simultaneous processing—in routine school tasks saturated with sequential processes, this preference, according to Siaud-Facchin (2012), can become a real obstacle to achieving academic efficiency.

Moreover, in the framework of right-hemisphere activation, emotions play a significant role. Consequently, gifted children tend to form emotional attachments to their teachers and establish a relationship of appreciation that is significantly linked to their academic performance (Siaud-Facchin, 2012).

At this point, we can recognize the distinctive nature of a gifted child's thinking and how it differs from that of their peers. This often does not align with what is required in school, exposing the child to frequent criticism from teachers and, perhaps, even humiliations that could suppress their unique way of thinking and diminish its effectiveness, without enabling them to adopt the thinking methods of others.

Therefore, it is crucial to respect the diversity and complementarity of thinking systems, allowing them to operate in parallel, rather than imposing a single universal learning model. Recognizing and respecting the unique thinking patterns of gifted children paves the way for their academic adaptation and success.

3 - Commentary on Study Results

There is a significant agreement among the study results: on the one hand, ordinary children may later hold prestigious positions in society, similar to gifted children. On the other hand, many gifted children do not succeed in their later lives. This can be explained as follows:

1. If a gifted child fails, starting with academic failure, it is because of their distinct thinking style, which was not understood. This lack of understanding leads to a decline in their morale and self-confidence, leaving failure as a consequence. Here, we see the impact of negative reinforcement on their unique abilities and a lack of adaptation.
2. If an ordinary child achieves outstanding success, it is because abilities, while they may face discouragement, can also receive encouragement and development. This also demonstrates that success factors are not solely linked to intellectual abilities.
3. However, some gifted children shine later in life, showing that their abilities may endure over time and not decline.
4. From these three cases, it can be understood that success factors are not solely tied to ability but rather to how it is utilized. The process of utilizing intelligence involves the whole personality, including its social and cultural dimensions, physical development, and particularly emotional interaction.

4 - Observations from Field Experience:

Our experience in the fields of clinical psychological practice, school psychological clinics, and academic research, within research teams over many years, has provided opportunities to interact with primary school children. From time to time, this interaction has revealed exceptional (gifted) children, distinguished not only by their intellectual abilities but also by their individuality across various dimensions, making it difficult to fit them into a single mold.

4.1 Classification of Talents:

4.1.1 Classification by Ability:

In terms of ability, when talent is equated with intelligence, it is essential to distinguish between general intelligence, which corresponds to "general" giftedness, and specific intelligence, which corresponds to "specific" giftedness. Additionally, a third category emerges where talent diverges from both general intelligence and specific ability. This category is characterized by a distinctive approach to thinking, problem-solving, and engaging with topics. This unique approach does not adhere to conventional processing rules; instead, it enables faster problem-solving through more

simplified methods. By reducing the steps and time required, the process becomes more efficient. For instance, some children solve mathematical problems accurately, reaching the same results as others but using methods entirely their own.

4.1.1.1 Specific Giftedness

Children with specific giftedness are characterized by the accelerated development of one particular ability, surpassing the growth of other abilities. This results in a developmental disharmony (DésharmonieÉvolutive), where the rapid growth of one ability does not occur at the expense of others. For instance, the development of written language skills can lead to the cultivation of writing as an art, the growth of rhythmic abilities can foster musical talent, or the enhancement of compositional skills can pave the way for architectural design, among other examples.

4.1.1.2 General Giftedness

Children with general giftedness exhibit rapid and advanced development of most, if not all, of their abilities. They display skills that far exceed the level of their average peers and are thus highly capable of succeeding in any field they choose. This group represents truly gifted individuals.

One of the remarkable features of general giftedness is the extraordinary ability to process a network of information, reflecting both intellectual richness and peak performance. Such children possess the following:

1. A highly capable processing system (thinking);
2. A vast and rapidly activated storage system (memory);
3. Advanced performance skills enabling significant achievement;
4. A learning-oriented mindset, with a strong thirst and passion for knowledge. This often leads them to disregard information they deem unimportant, which frequently has a social dimension.
5. If the child manages to integrate all aspects into their interests, they may experience slight or significant delays but can reach a level of genius with a high degree of psychological and social adaptability.

4.1.2 Classification of Talents Based on Personal Composition

Beyond the level of ability, gifted individuals differ in terms of:

1. Emotional makeup (e.g., fearful, anxious, depressive, jealous, etc.);
2. Personality traits (e.g., dependency/independence, introversion/extroversion, impulsivity/restraint, etc.);
3. Thinking styles (e.g., rational/mythical, structured/spontaneous, realistic/idealistic, etc.).

As a result, their outcomes vary, influenced by the support they receive, which includes care, understanding, guidance, and encouragement.

Despite their substantial structural and functional cognitive potential, all skills risk stagnation if they are not developed. This stagnation often occurs in environments lacking stimulation. Conversely, in enriched environments, these skills can reach their maximum potential.

4.2 Awareness of Ability

Recognizing and identifying a child as gifted fosters their awareness of their abilities, a critical step in helping them affirm, "I can" and "I know." This awareness is then reinforced by external support to establish the foundation for their capability to learn and comprehend with ease. Gifted children absorb information and knowledge voraciously; however, in the absence of a structured cognitive framework, they may lack awareness of metacognitive processes (métacognitives)failing to understand how they acted, how they act, or how they should act.

Metacognitive processes enable the following three key elements across three stages:

1. Awareness of a problem's existence;
2. Preparation or anticipation of strategies to activate and adjust;
3. Achieving results and monitoring them, aiming for an understanding of the underlying mental processes of thought to construct logic and response strategies.

These processes facilitate moving away from impulsive thinking by identifying and refining the mechanisms underlying intellectual activity.

The absence of awareness of ability, knowledge, or both can lead to consequences that negatively impact the future of that ability, disrupting adaptability. If a child's abilities are not properly guided toward achieving success, they may backfire, causing difficulties or failure. Awareness of one's abilities fosters self-confidence, while awareness of one's knowledge enhances resources and capabilities. Thus, there is a strong connection between knowledge awareness, self-esteem, and academic success.

On another, more critical note, when a child's exceptional abilities captivate their surroundings and are solely leveraged for academic excellence, other aspects, particularly emotional ones, may be overlooked or neglected. Whether highly intelligent or less so, the child still feels fear like their peers, has perceptions that may align or differ from societal norms, and possesses motivations, instincts, and values cultivated from an early age.

If these aspects are ignored, even to a small extent, the child's personality development may be adversely affected, resulting in developmental disharmony and lack of compatibility. This often happens when the focus is placed solely on IQ while disregarding other facets of the child's personality.

Conclusion

If giftedness is the opposite of intellectual disability, and if children with intellectual disabilities are provided with special care and rehabilitative institutions, the same must be done for gifted children. This is crucial for their educational, pedagogical, and mental health needs. It is equally important for researchers interested in gifted individuals, as it allows them to study various dimensions of their personalities, leading to a deeper understanding of gifted children and, consequently, better support for their development.

References

1. American Psychiatric Association (2015). DSM-5R Diagnostic Criteria, coordinated translation by Crocq M-A and Guelfi J-D. Paris: Ed. Masson.
2. Benoit, E. (2000). The Causes of Academic Failure. Retrieved from: http://perso.clubinternet.fr/aflande/psycho/defaillancepere.htm, pp. 1-8.
3. Bloch, H., & al. (1999). Grand Dictionary of Psychology. Paris: Ed. Larousse-Bordas.
4. Siaud-Facchin, J. (2004). Understanding the Learning Difficulties of Gifted Children: A Unique Intellectual Functioning?.Neuropsychiatrie de l'Enfance et de l'Adolescence, 52, pp. 142-147.
5. Siaud-Facchin, J. (2012). The Gifted Child: Helping Them Grow, Helping Them Succeed. Paris: Ed. Odile Jacob.