

## **Academic Adaptation of Autistic Children Under the Supervision of a Psychologist: A Clinical Study of Two Cases Using the Childhood Autism Rating Scale (CARS-ST-2)**

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### **Abstract:**

The study aimed to investigate the correlational relationship between children with autism and academic compatibility. The study began with the question, can children with autism achieve academic compatibility? The clinical approach was employed using the administration of the Autism Diagnostic Observation Schedule "ADOS-2" on two cases. The results were positive, indicating that children with autism can achieve academic compatibility through the implementation of effective therapeutic and educational programs by a qualified psychologist.

**Keywords:** academic adjustment, autism, psychological support, "CARS" scale, educational programs.

### **Introduction**

The care and attention given to children in any society reflect its concern for the future of that society as a whole. The progress and development of communities are measured by their commitment to children, their care, the study of their problems, and efforts to resolve them.

Therefore, numerous recent studies have focused on children with special needs, particularly children with autism, in recent years. In fact, most psychology journals abroad have dedicated specialized articles to this group of children. The global increase in the prevalence of this category of children has necessitated urgent and specialized research to understand treatment methods and the possibility of implementing an educational-therapeutic program to assist parents, supervisors, and teachers in modifying their behaviour and achieving the desired goal of social and academic compatibility.

However, achieving such compatibility will not be an easy task, especially for those who have become accustomed to relying on their parents for even the simplest behaviours. In order to achieve compatibility with various aspects of social life in general and academic appearance in particular, it requires the child's self-reliance, emotional detachment, and essential and crucial training in becoming independent.

As we know, autism spectrum disorder is a developmental disability that significantly affects verbal and non-verbal communication, as well as social interaction. The characteristic symptoms of autism become apparent before the age of three. This particular group of children has gained significant attention and care in recent times, given the challenges they face due to a general developmental impairment that impacts multiple aspects of their growth and leads to withdrawal and self-isolation. Autism is considered one of the most pervasive developmental disorders for children, negatively affecting their educational performance and integration into educational institutions. This results in a lack of academic compatibility, as confirmed by studies such as Mohammed Shawki Abdel-Moneim's 2004 study titled "The Effectiveness of an Individual Counseling Program for Developing Some Language Communication Skills in a Sample of Autistic Children," Abd El-

Mannan's 1997 study on "The Effectiveness of a Behavioral Training Program in Reducing the Severity of Symptoms in Children with Autism Spectrum Disorder," and Mohammed Al-Haznawi's 2010 study on "Barriers to Inclusion of Students with Autism Spectrum Disorders in General Education Schools."

It is well known that schools have a significant influence on shaping a student's personality throughout their years of education, during which they spend most of their time outside the family environment. The school aims to achieve educational compatibility, while the child's compatibility is also influenced by the nature of the family primarily. They seek reassurance, and poor family dialogue can affect and cause poor academic compatibility.

Good compatibility is a positive indicator and a strong motivator that drives students to excel academically. It fosters their desire to attend school and helps them establish harmonious relationships with their peers and teachers. Moreover, it makes the educational process enjoyable and engaging. Conversely, individuals with autism who struggle with poor compatibility experience psychological stress and express their psychological tensions in various ways, such as exhibiting hesitation, anxiety, aggressive play, self-centeredness, loss of self-confidence, school aversion, avoidance, behavioral disorders, and all these problems inevitably lead to a decline in academic achievement, which is the essence of the educational process.

The following question is posed in light of the preceding discussion:

- Can an autistic child achieve academic compatibility?

**- Research Hypothesis**

- Yes, an autistic child can achieve academic compatibility.

Accordingly, the study components are outlined as follows:

First - The Theoretical Aspect:

**1. Definition of Autism**

**1-1. Lexical Definition**

The term "autism" is derived from the Greek word "aut," meaning self or selfhood, and the suffix "-ism," meaning condition or state. The term as a whole can be translated as self-enclosure. This word suggests that these children often merge with or isolate themselves, showing little interest in the external world. A child with autism is described as being unable to establish social relationships, failing to use language for communication with others, having a strong desire for repetitive behaviors, being preoccupied with objects, and possessing good cognitive abilities. Individuals with autism exhibit repetitive and restrictive behavioral patterns, and these characteristics manifest before the age of three. (Osama Farouk Mustafa, Sayed Kamel El-Sharbini, 2011, p. 26).

**1-2. Terminologically**

Kanner defined it as a disorder that affects children in the early years of life. The disorder is characterized by an inability to establish meaningful social relationships, cognitive impairment, motivational deficits, impaired development of cognitive functions, difficulty understanding temporal and spatial concepts, severe language impairment and developmental delay, impaired imagination and resistance to environmental changes, and engaging in what is described as stereotyped play. (Iman Abbas Al-Khaffaf, 2015, p. 32).

**2. Diagnosis of Autism Spectrum Disorder (ASD)** according to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5):

Psychologists and psychiatrists from the American Psychiatric Association reviewed the assessment criteria for individuals with developmental disorders. This fifth edition was published in May 2013

and included diagnostic criteria for Autism Spectrum Disorder and related diagnoses related to social communication disorder.

We now have one diagnosis, which is Autism Spectrum Disorder (ASD), encompassing four previously separate diagnoses: autism, Asperger's disorder, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified.

According to DSM-5, the diagnostic categories for Autism Spectrum Disorder (ASD) are as follows:

1. Classic Autism or Autistic Disorder.
2. Asperger's Disorder.
3. Childhood Disintegrative Disorder or Disintegrative Autism.
4. Pervasive Developmental Disorder Not Otherwise Specified.

Rett Syndrome, caused by a gene called MECP2, is excluded from these diagnostic categories. Among the recent classifications in DSM-5, a new category under research has been included, which is Social Communication Disorder (SCD). (Fatima Saida Nouasser, 2017-2018, p. 77)

**3. Types of Autism Spectrum Disorder (ASD) based on severity, as described by Mahmoud Wald Taleb, 2012:**

**A. Mild Type:** Approximately 25% of individuals with this mild form seek diagnosis in scientific clinics, which constitutes a significant number in society. If diagnosed early, this form shows good responsiveness and indicates therapeutic responses from the first year of intervention.

Characteristics include:

- Presence of language skills.
- Absence of peripheral vision impairment.
- Lack of severe disturbances.

Within this category, Asperger's syndrome falls under the classification of mild autism. It is considered a rare form of autism that is characterized by mild severity but with significant personality disturbances. It is also distinguished by certain positive characteristics, including:

- Possible social adaptation and potential for a successful professional future despite difficulties.
- Symptom cessation during evaluation and treatment processes.
- Absence or minimal presence of severe communication disorders.
- Absence of intellectual disabilities.
- However, other characteristics include motor impairments and normal language development.

Mild autism is identified using the Childhood Autism Rating Scale (CARS), with affected children scoring between 15 and 29.5 on the scale.

**B. Moderate Type:** This type falls between mild and severe autism. It is diagnosed through clinical assessment using various measures, especially the Childhood Autism Rating Scale (CARS), which provides a score allowing for classification within the moderate autism range. The score typically ranges from 30 to 37 on the CARS scale.

**C. Severe Type:** This category includes Rett syndrome, which primarily affects girls at a rate of 1 in 12,000 to 13,000 individuals. This form of autism is considered rare, and affected females tend to have a higher level of severity and often experience profound intellectual disability.

The symptoms of this type are mostly severe, and they are identified through their measurement on the Childhood Autism Rating Scale, where scores fall within the range of 37 to 60.

**4. Dealing with Autism:** There are various treatments that have been used with individuals with autism, including behavioral, dietary, and medical interventions. However, there is no consensus among professionals that any treatment has achieved 100% recovery for all individuals.

**5. School Adaptation:** It is an ongoing dynamic process implemented through procedures carried out by the student to achieve goals. The student is exposed to internal and external stimuli that generate motivational needs, which they strive to fulfill through interactive exchanges with various educational elements. This process aims to establish a balanced, effective, and productive interaction within the school environment, fostering positive relationships with peers and teachers. Academic achievement and a sense of happiness are important aspects of school adaptation. In today's era, school adaptation is considered one of the crucial forms of adaptation, given that individuals spend more than 20 years in educational settings. (Ibrahim Taibi, 2013, p. 214).

#### **6-1. Indicators of Good School Adaptation**

**A. Psychological Well-being:** This positive characteristic is evident in the absence of psychological distress, such as mental fatigue, depression, and lack of self-confidence, which can lead to cognitive disarray in adolescents. Mustafa Fahmi states, "An individual with good mental health is capable of facing obstacles and solving problems in a manner that satisfies both themselves and society. Therefore, one of the traits of an individual with good mental health is an increased ability to withstand stress and adversity."

**B. Competence in Work:** This refers to the individual's productive work energy and the utilization of their abilities, potential, and skills. Demonstrating signs of good mental health involves utilizing one's capabilities in school, which helps the teenager showcase their potential, leading to a sense of satisfaction, improved morale, and self-confidence. This enables them to achieve good school adaptation and academic success. Conversely, failure and frustration can lead to stress, disturbance, and psychological imbalance. Mustafa Fahmi also argues that "a lack of work competence is an indicator of the emergence of mental disorders in individuals, hindering their abilities to work. Internal tensions also have an impact, rendering the individual incapable of adapting to society." (Mohammed Mustafa Ahmed, 1994, pp. 9-41).

**C. Realistic Goals:** An individual with good mental health is one who sets foundations and goals that they strive to achieve with all their abilities. These goals should be suitable for their capabilities and potential. A person who does not set realistic goals that align with their abilities is prone to failure and its consequences.

**D. Self-Control and Responsibility:** The psychologically healthy student is one who exercises self-control over their emotions, desires, and actions. They are aware of the consequences of their behavior and can differentiate between achievable actions that they act upon and those they perceive as unattainable, which they leave aside. The student derives their ability to regulate and control their behavior from the evaluation of the resulting outcomes. A mentally healthy student considers themselves responsible for their actions and courageously accepts this responsibility. This is one of the general characteristics of an integrated personality.

**E. Social Relationships:** One of the indicators of good adaptation is the integration of the individual within a community and their contribution to the common good. "The relationship between the individual and others is characterized by connection and trust, allowing for interaction, social responsibility, and constructive cooperation. Furthermore, the individual is loved by others, and their affection towards them, as distancing oneself and being introverted indicate a lack of proper alignment." (Fawzi Mohamed Jibal, 2000, pp. 77-177).

**7- Dimensions of Academic Adaptation: Academic adaptation is a complex ability that depends on two fundamental dimensions:**

**A. Cognitive Dimension:** According to researcher Sabah Basir (1982), academic adaptation involves the student's compatibility with the school, its system, subjects, and curriculum. It also encompasses the student's inclination towards studying, adherence to the prevailing system, prescribed curricula, and their ability to independently direct their behavior and choose suitable study plans.

In summary, the cognitive dimension includes the student's compatibility with all aspects related to the academic side, such as subjects, courses, and study curricula.

**B. Social Dimension:** According to researcher Arkoff, academic adaptation is the process by which good relationships are established with the educational environment, including teachers and peers. Therefore, this dimension encompasses the proper relationship that should exist between the student and the essential components of their academic environment, such as teachers and classmates. (Dalila Bousfer, 2011, p. 76).

**Secondly: Practical Part:**

**1. The Adopted Methodology:** In our study, we relied on the clinical approach with a case study technique as the most effective research method to delve deeply into the individual's study and analyze it logically, understanding their psychological structure and personal capabilities from all aspects. Additionally, it is the most suitable methodology for the nature of our hypotheses and the subject of our studies, considering the uniqueness of the cases.

**2. Study Sample:** The study sample was selected randomly, and it consisted of two cases from two different cities in Algeria. The first case was selected from the capital city, Algiers, while the second case resided in the city of Ouargla. This selection aimed to examine the influence of cultural characteristics and social levels on the nature of the two cases.

**2-1. Characteristics of the Study Sample:**

It should be noted that our study focuses on the possibility of identifying autistic children through their academic adaptation and involves cases that exhibit the following characteristics:

- Each case suffers from Autism Spectrum Disorder.
- The age range of the cases is between 12 and 13 years.
- The selected cases were derived from a diagnostic scale for assessing childhood autism.
- The cases are characterized by a moderate socio-economic status.

**3- Study Tools:** We utilized a set of tools in our study:

**-3-1- Observation:** The researcher observes specific behavior through direct interaction with the individuals or objects under study. (Abdelmoumen Ali Maamar, 2008, pp. 226-228)

**-3-2- Interview:** This method is dedicated to in-depth exploration of a specific field or to verify the development of a previously known field. The researcher has prior knowledge of the subject and intends to elicit comprehensive responses from the interviewee, using their own words and unique style, to produce discourse about this particular aspect of the subject. (Dun, D., pp. 3-6).

**-3-3- Tests**

**Childhood Autism Rating Scale (CARS-2)**

The Childhood Autism Rating Scale (CARS) is a tool used to assess autistic characteristics in clinically experienced individuals through clinical observation. The scale is applied to children with an intelligence quotient (IQ) of 79 or lower or those who have difficulties in clear communication.

- **Instructions:** Directly after completing the evaluation of the case using the internal CARS-2-ST checklist, the results are then transferred to the correction form provided below.

**4- Presentation of Case Studies**

**4-1- Presentation of Case One**

Clinical Profile:

- Name: M
- Gender: Male
- Age: 12 years
- Grade: 3rd grade of primary school
- Father's occupation: Employee
- Mother's occupation: Homemaker
- Living conditions: Good

Pregnancy and Birth Conditions:

- Pregnancy conditions (Was the pregnancy normal?): Yes, the pregnancy was normal.
- Mother's attitude towards the pregnancy: Accepting of the pregnancy.
- Mother's illnesses and injuries during pregnancy: No autism-related conditions.
- Medications and treatments taken by the mother during pregnancy: None.
- Duration of pregnancy: 9 months.
- Birth process: Cesarean section.
- Child's development after birth:
  - Breastfeeding: Discontinued.
  - Walking: 1 year and 6 months.
  - Speech: 4 years old.
  - Teething: 12 months.
- Child's health:
  - Presence of disabilities or congenital diseases: None.
  - Toilet training: Mostly achieved at 4 years old.
  - Sensory integrity: All senses are intact.
  - Psychological and behavioral disorders: Crying, stubbornness, thumb-sucking.
- Academic and Intellectual Level:
  - General academic achievement level: Below average, 4.00.
  - Reading proficiency level: Weak.
  - Writing proficiency level: Average.
  - Math proficiency level: Weak.
- Language communication: Lack of pronoun acquisition.
- Social communication, friendships, and play:
  - No friends and only plays with classmates upon the teacher's instruction.
- Artistic and sports activities: Drawing.
- Mental ability level: Weak.
- Intelligence quotient (IQ) score on the "Binet" scale estimated at 72.

**A- Summary of interviews**

Observation	Objective	Duration and place of study	Date of interview	Number of interviews
The acceptance of the specialist and the mother	Identify the case and consult the	1 hour at International	29-30/12/2020	With the specialist 01- and the child

of the subject by conducting this interview	specialist and the mother to conduct a study on the case	School		
Timing for the application of the scale	Note the situation within the department during the lesson and make an appointment with the teacher	Day 02 From 15:53 To 13:40	02-03/01/2021	the teacher 02-With and the child's note
We asked some questions and gave them reinforcement, but the situation is characterized by shyness and did not answer most of the questions	After the approval of the specialist, mother and teacher, we applied the scale with the child	-Day 03 from 10:15 to 10:55 at school	04/01/2021	the little girl03-With

**Summary of the first interview in a row: Date: 29-30/12/2020 (with the specialist and the child)**

M: is a 12-year-old child studying in the third grade of primary school. The father is employed, and the mother is a homemaker. M is the firstborn male within the family, and there is a close kinship relationship between the parents. They have a moderate living standard. The mother had a normal pregnancy without any illnesses or injuries. The pregnancy lasted for 9 months, but delivery was via cesarean section. After birth, M discontinued breastfeeding and started walking at around 1 year and 6 months. Speech development occurred at approximately 4 years of age. M does not exhibit any disabilities or congenital diseases, and all senses are intact. Significant progress in achieving cleanliness was observed by the age of 4. However, M started displaying psychological and behavioral disorders, including crying, stubbornness, thumb-sucking, and significant spinning behavior. Following the emergence of these symptoms, the mother sought the assistance of a psychological specialist.

On June 18<sup>th</sup>, 2014, I noticed symptoms of autism and other disorders in him, so I sent him to a pediatric specialist who confirmed his intellectual delay. After following up with a psychological specialist, she applied the diagnostic criteria of DSM-IV, which revealed symptoms of "autism," including a lack of eye contact and mood swings, such as inappropriate crying without a clear reason. Regarding his academic and intellectual level, his performance in reading and math is very weak, while his writing skills are average. His academic achievement level is below average. In terms of language communication, he lacks pronouns. In terms of social communication, he does not have friends and his social interactions are limited to classmates and the teacher. One of his favorite hobbies is drawing, and he pays great attention to detail in his artwork, approaching artistic precision.

On the date of December 2016, there was some improvement in his condition. Currently, he is integrated into the third grade class. He understands questions but has one problem with sentence structure. He may respond with a single word instead of a complete sentence or use that word in a different context, such as using "comb" instead of "hair." He sits quietly in the classroom and responds to the teacher's instructions. The specialist believes that such cases cannot be academically

aligned with typical children and should be integrated into specially adapted classes from the first to fourth grade, alongside regular children.

On December 30<sup>th</sup>, 2020, our meeting was divided into two parts. The first part was directed towards the specialist, while the second part involved both the specialist and the case to observe how the specialist interacts with the case and how the case responds. Throughout the meeting, we noticed that the specialist was very cooperative and answered all the questions addressed to her.

**Summary of the Second Interview: Date: (02-03/01/2021) - With the Teacher**

During our meeting with the teacher, we inquired about the case's academic performance. At the beginning of the year, the teacher was new, which made it difficult for the case to accept her until some time had passed. Eventually, the case started accepting the teacher. The child's mother did not openly inform the teacher about the child's illness; she only mentioned that the child had a delay. Later, the teacher discovered that the child was not like typical children, as they were calm, inattentive, and had difficulty comprehending the teacher's instructions. However, their spelling, writing, and drawing skills were good. The child easily became bored during lessons and became preoccupied with drawing. They struggled with mathematics and could answer direct questions, but found it challenging to solve problems that required cognitive effort. The teacher did not treat the child differently or use reinforcement techniques with them. The child could not handle pressure from anyone, especially newcomers. They were shy and would ask the teacher for school supplies, pretending to have forgotten them even though the supplies were in their bag, indicating a possessiveness trait.

**Summary of the Third Interview: Date: (04/01/2020) - With the Case**

This interview was conducted directly with the case after facing difficulties in convincing the mother to allow it. Eventually, she agreed after some time. During our observation of the case, we discovered that they exhibited random movements and had difficulty sitting still. They showed signs of boredom and initially responded to the specialist for about 15 minutes, but then became unresponsive and distracted by other things, before eventually returning to the specialist's instructions. The case displayed shyness and did not answer most of our questions, despite our attempts to provide reinforcement.

–**Table (01):** represents the results of the first case after applying the scale

Item	Answer Number
Relationships with people .1	
There is a simple form of unusual behavior in relationships with others.	2
Imitation .2	
The child has a simple form of imitation deficiency	2
Emotional Response .3	
The child has a simple form of deficiencies in emotional responses	2
Physical response .4	
The child has moderate physical response deficiencies	3

Use of objects (adaptive functional use) .5	
The child has the appropriate response in attention and use of toys and various things	1
Adaptability to change .6	
The child has a slight deficiency in adapting to change	2
Visual Response .7	
The child has moderate deficiencies in visual responses	3
Auditory Responses .8	
The child has a slight lack of auditory responses	2
Smell, touch, and taste responses .9	
Use and normal response sensations: taste, smell and touch.	1
Fears and nervousness .10	
Minor level of symptoms of anxiety and nervousness	2
Verbal communication .11	
Normal level of language communication, appropriate to age and situation	1
Non-verbal communication .12	
Minor level of nonverbal communication deficiencies	2
Activity Level .13	
Normal level of motor activity, appropriate for age and circumstances	1
Level and stability of mental responses .14	
Minor level of intellectual impairment	2
General impression .15	
Minor level of autism symptoms	2

**-Table (2)** shows the sum of the scale and shows the severity of the disorder (evaluation result)- (total points coupled with age and diagnostic classification)

Severe symptoms of autism Severe symptoms of autism spectrum disorder	Simple to moderate symptoms of autism Mild-to-Moderate symptoms of autism spectrum disorder	There are no autistic or very limited symptoms Minimal-to-No symptoms of autism spectrum disorder	diagnosis
	33.5Degree		Total grade of the child

**Analysis of the results:**

From the table, it is evident that the case exhibits a moderate level of autism. By filling in the scale, we inferred that the majority of responses indicated atypical and mildly impaired behavior. For instance, in terms of the level indicating deficits in visual communication, we found that this case differs from typical cases in terms of not accepting others and displaying changes in routines. On

the other hand, we observed that the level of activity is abnormal, either excessive or excessively lethargic, and is specific to the individual. The most significant aspect of our study is understanding the cognitive responses, as this case exhibits delays in cognitive skills and language. Based on this, we conclude that the case suffers from mild autism.

Qualitative analysis of the case through a semi-structured interview with the specialist and the teacher: The content of the interview with the specialist affirmed that the case did not suffer from any birth-related disorders but experienced postnatal disturbances. The specialist views the case as something manageable, and she reassures that she will do everything in her power to treat the case and potentially achieve independence. For the purpose of our study, we asked her some questions about the skills that the case should learn and whether she provides him with a suitable environment and follows a therapeutic program with him. Her response was "yes," as she applies therapeutic programs for him in several sessions, and she sees some improvement in the case. However, he still experiences some disturbances. Nevertheless, she acknowledges his intelligence as he engages in drawings and assembling models similar to what typically developing children do. This gives her a glimmer of hope that the case can integrate socially and potentially succeed academically, making it not an impossible task.

The teacher also perceives that Case (M) has shown improvement compared to previous years after following a therapeutic program administered by the specialist. However, the teacher notes that there is a delay in the cognitive abilities of the case, and his medical condition negatively affects his academic performance. He does not progress at the same level as the other typical children studying with him. Therefore, the teacher believes it would be advisable for him to transition to specialized classrooms with a program designed and implemented by professionals who can facilitate his academic integration. These programs have proven beneficial for many individuals with special needs, including those with autism.

### **Overall Conclusion for the case**

Through the application of research tools, following the case, gathering information, administering the scale, conducting a semi-structured interview with the specialist, teacher, and observing the behaviors of the case, it becomes evident that the case exhibits motivation towards using pictures and drawing certain shapes. However, there are weaknesses in perception, attention, visual and linguistic communication. Nevertheless, the opinion of the psychologist affirms that Case (M) has the potential to improve and can achieve academic integration.

### **Case Presentation - Second Case**

- Clinical Profile of the Second Case:

- Name: A.
- Gender: Female.
- Age: 13 years.
- Grade: Fourth grade.
- Father's Occupation: Employee.
- Mother's Occupation: Homemaker.
- Standard of Living: Good.

### **Pregnancy and Birth Conditions:**

- Pregnancy Conditions (Was the pregnancy normal?): Dehydration during the final months.

- Birth Process: Difficult labor, negligence from hospital staff, oxygen deprivation during birth.
- Child's Health Condition after Birth: Weak, anemic, recurring high fever, under the care of a general practitioner.

**Child's Development after Birth**

- Breastfeeding: Poor breastfeeding.
- Walking: Good.
- Speech: Complete absence of language.

**Child's Health**

- Presence of Disabilities, Impairments, or Congenital Conditions: No disabilities or congenital conditions.
- Toilet Training: Delayed toilet training until the age of 5 and a half.
- Sensory Integrity: All senses are intact.
- Psychological and Behavioral Disorders: (Crying, stubbornness, emotional outbursts, low responsiveness)

**Academic and Cognitive Level**

- General Academic Achievement: Poor, scoring 4.00 in the fourth grade.
- Reading, Writing, and Math Skills: Excellent in writing, weak in reading and math.
- Language Communication: Has a linguistic repertoire but is non-communicative.
- Social Communication, Friendships, and Play: Does not have friends and does not engage in play with others.
- Artistic and Sports Activities for the Child: Drawing.
- Level of Cognitive Abilities in the Child: Weak.
- Estimated Intelligence Quotient (IQ) on the "Binet" Scale is 75.

**A. Presentation of the summary of the interviews for the second case**

Note	Objective	Duration and place of study	Date of interviews	Number of interviews
Acceptance of the specialist and the mother to conduct the interview	Identify the case and consult the specialist and the mother to conduct the study	13:00to 15:00 at school	19/03/2020	-01 with the specialist
Acceptance to apply the scale	Note the case and ask some questions to the specialist	09:30to 11:40 at school	23/03/2020	02-with parameter
We asked questions and provided reinforcement in order to reassure the situation and answer all	After the approval of the specialist, mother and teacher, we applied the scale with the	11:40to 12:07 at school	25/03/2020	Status 03-With

questions	case			
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**- First Interview (March 19, 2020) - (With the Psychologist):**

- A: A 14-year-old girl studying in the fourth grade in the state of Ouargla. Her parents are alive, and she is the second among her siblings. They live in favorable social conditions. The mother experienced psychological problems during pregnancy and suffered from dehydration during the last months of pregnancy. The birth was difficult, with poor reception at the hospital due to delayed medical attention and absence of oxygen for the fetus. However, the child was born without complications. After birth, she suffered from anemia, high fever, and physical weakness, and she is under the care of a general practitioner. Her growth is not satisfactory, and she has weak breastfeeding.

- Over the course of two and a half years, the mother noticed peculiarities in her daughter's condition, complete absence of language, and delayed development. She consulted a doctor who referred her to a specialist in autism.

- On January 13, 2010, the mother contacted the psychologist, who conducted an assessment using the Autism Rating Scale and the DSM-4 diagnostic criteria, confirming that she has autism.

After more than a year of follow-up and observation, she still exhibits psychological and behavioral disorders (crying, stubbornness, intense emotional reactions, low responsiveness). She has a linguistic repertoire but is non-communicative, using only formal Arabic language automatically. She either repeats memorized phrases appropriately or provides limited automatic responses such as "thank you" and "goodbye." She displays mood swings, sometimes refusing communication attempts but eventually responding according to her own preferences.

On January 20, 2020, after several sessions, there was improvement in her condition, with a decrease in problematic behaviors. She is now integrated into the fourth grade of primary school but still faces some difficulties. Regarding her academic and cognitive level, she has weaknesses in reading and math, while her writing skills are excellent. One of her favorite activities is drawing.

**Second Interview: Date: (March 23, 2020) - (With the Teacher)**

This interview marked the first meeting between the teacher and us, as well as our observation of the student during the lesson. The teacher was very cooperative and welcomed us. She pointed out the student, who appeared shy and unresponsive to her surroundings. The teacher began the Arabic language lesson, and during the class, we noticed that the student paid attention to the lesson and stood up without permission. She seemed preoccupied with things outside the lesson but followed the teacher's instructions when asked to sit down. When the teacher posed a question, the student participated and provided correct answers, demonstrating her understanding of what the teacher was saying. The teacher would then encourage her and ask her classmates to applaud, which increased her confidence.

However, she struggles with reading difficulties, spelling, and has challenges with math calculations. She understands direct questions with the teacher's assistance, but she cannot comprehend questions that require significant mental effort. Even though the teacher simplifies the question as much as possible, the student refuses to try to understand it, displaying stubbornness. Regarding her social communication, she only interacts with the teacher and does not have any friends. The teacher perceives her academic performance as weak.

**Third Interview: Date: (March 25, 2020) - (With the Student)**

After obtaining the teacher's approval, we approached the student for our interview. Initially, she did not accept the meeting and expressed her disapproval through vocalizations. It took some convincing from the teacher for her to agree to the meeting. At first, she was resistant, but after several attempts, she finally accepted our presence. We asked her about her name, and she responded with her first and last name. We tried to approach her to provide reassurance and offered her some reinforcement. Afterward, she began to respond to us.

We asked her to draw, and we provided her with drawing materials. She started drawing a picture of her school. She exhibited random movements and excessive motor activity. When we directed a question to her, she displayed facial movements indicating her non-acceptance of the question and refusal to answer it.

**B- Presentation of the results of the Autism Assessment Scale "CARS-2".**

**Table: (1)** represents the results of the second case after applying the scale

Item	Answer Number
<b>Relationships with people .1</b>	
There is a simple form of unusual behavior in relationships with others.	2
<b>Imitation .2</b>	
The child has a simple form of imitation deficiency	2
<b>Emotional Response .3</b>	
The child has an appropriate emotional response compatible with age and attitude	1
<b>Physical response .4</b>	
The child has a slight physical response deficiency	2
<b>Use of objects (adaptive functional use) .5</b>	
The child has a moderate deficiency in attention and use of games and various things	2
<b>Adaptability to change .6</b>	
The child has a moderate deficiency in adapting to change	2
<b>Visual Response .7</b>	
The child has moderate deficiencies in visual responses	3
<b>Auditory Responses .8</b>	
The child has moderate deficiencies in auditory responses	1
<b>Smell, touch, and taste responses .9</b>	
Moderate impairment in use and/or response sensations: taste, smell and touch	3
<b>Fears and nervousness .10</b>	
Moderate level of symptoms of anxiety and nervousness	1
<b>Verbal communication .11</b>	
Normal level of language communication, appropriate	1

to age and situation	
<b>Non-verbal communication .12</b>	
Moderate level of nonverbal communication deficiencies	2
<b>Activity Level .13</b>	
Moderate level of inactivity deficiencies	4
<b>Level and stability of mental responses .14</b>	
Moderate level of intellectual insufficiency	3
<b>General impression .15</b>	
Moderate level of autism symptoms	1

**-Table (2)** shows the sum of the scale and shows the severity of the disorder (evaluation result)- (total points coupled with age and diagnostic classification)

Severe symptoms of autism Severe symptoms of autism spectrum disorder	Simple to moderate symptoms of autism Mild-to-Moderate symptoms of autism spectrum disorder	No autistic or very limited symptoms Minimal-to-No symptoms of autism spectrum disorder	diagnosis
	33.5		Total grade of the child

**- Analysis of Results for Case Study 2:**

Through our review of the table and obtaining a score of 33.5, which falls within the range of 28-34.5, we infer that the case exhibits moderate abnormal and unsocial behaviors indicative of mild autism according to the scale. For instance, in terms of interaction and social relationships, it is evident that this case displays a lack of emotional responsiveness and exaggerated emotional reactions such as outbursts of screaming and laughter.

Furthermore, in terms of verbal and language communication abilities, the case predominantly engages in repetitive and stereotypical linguistic expressions. There is difficulty in utilizing non-verbal language and gestures, as well as struggles in acquiring pronouns. The case also demonstrates certain behavioral patterns, including anger outbursts, insistence on routines, and resistance to change. As for the ability to imitate and mimic, it is rarely observed.

Moreover, the case inhibits the display of certain cognitive and mental abilities; however, she exhibits contradictory and disturbed attention and concentration. Notably, she possesses exceptional skills in drawing and writing.

**Qualitative Analysis of the Case through Semi-Structured Interview with the Specialist and Teacher**

During our interview with the specialist, the mother and the case were present. We asked the mother a series of questions, and based on her responses, it became evident that she had experienced challenging days during pregnancy and childbirth. Prior to giving birth, she faced difficult family circumstances, in addition to the prolonged absence of the father. During the delivery, the mother faced negligence from the hospital staff, as it was a complicated birth. Furthermore, the case suffers from health issues.

The specialist confirmed that after closely monitoring the case, it was identified that she had several disorders. However, with long-term follow-up and therapeutic programs, her condition has shown improvement, thanks to the dedicated efforts of the mother. The mother had a strong desire for her daughter's recovery and went to great lengths to ensure improvement. She diligently followed all the instructions and techniques provided by the specialist.

Currently, the case is integrated into the third grade of primary school. The specialist believes that she can academically and socially adapt, especially given her interaction with regular classmates, which contributes to her progress and reduces the disruptive behaviors she experiences.

However, the case's teacher does not follow a specific teaching method for her, although she receives individualized treatment. The teacher encounters difficulties in dealing with her, despite the fact that she is undergoing therapeutic interventions with the specialist. Although there has been improvement, her medical condition negatively affects her academic performance. The teacher believes it would be advisable for her to initially be integrated into specialized classrooms and later transitioned to regular classrooms, alongside other typical children.

After tracking the case, gathering sufficient information, and conducting the scale assessment and semi-structured interviews with the mother, specialist, and teacher, it has become evident that the case has cognitive and intellectual impairments, as well as deficits in attention and perception. However, it is noteworthy that she is capable of academic adaptation.

### **General Conclusion of the Cases**

Through our review of the two cases, we have found that the mother plays a significant role in the recovery of her children. Additionally, the psychological programs provided by the specialist have shown improvement by enabling these children to acquire certain skills that aid in their integration with their peers. Both Case 1 and Case 2, who previously struggled with autism spectrum disorder, exhibited some improvement in certain skills after the implementation of these programs, as indicated by a reduction in the severity of their autism. This demonstrates the effectiveness of these programs in assisting parents, teachers, and supervisors in the inclusion process.

### **Analysis and Discussion of Study Results**

- Answering the Research Question:

We began with the research question: "Can children with autism spectrum disorder academically adapt?" We assumed that it is possible for children with autism spectrum disorder to adapt academically, and that academic adaptation can be achieved through skills, performance, games, participation, learning responsiveness, and skill development.

By conducting the Autism Rating Scale (CARS) assessment, we found that all the study cases experienced "mild" autism, which indicates improvement for most of the cases involved in the study.

Through the semi-structured interviews, we directly interacted with the cases, observed them firsthand, and derived results from these interviews. The findings showed that all the cases responded well to treatment and showed potential for improvement through regular follow-up with the psychological specialist.

Accordingly, it becomes clear that the hypothesis we formulated has been confirmed through the study results on the two cases. The observation of their behaviors and skill development, along with

the opinions of parents, teachers, supervisors, and psychological specialists, further support this confirmation.

### **Analysis of Supervisors and Teachers' Opinions on Inclusion Programs**

Referring to previous studies that addressed the topic of "children with autism," it has become clear to us that therapeutic interventions utilizing inclusion have a significant impact on improving and acquiring skills for children. Among those studies is the research conducted by James Bell (1996), which aimed to elucidate the effect of therapeutic interventions using typically developing peers on enhancing social interactions in children with autism. The study included eight children diagnosed with the disorder who were later integrated with typically developing children of the same age group.

The program included the development of communication skills, imaginative play, social skills, and the results showed improvement in communication skills, social skills, imaginative play, and academic skills for seven of the sample individuals. This indicates that the program achieved effectiveness in developing certain skills through inclusion with peers.

A study conducted by Ismail Mohammad Badr (1997) aimed to assess the effectiveness of therapy in daily life in improving the conditions of children with autism. This program is based on five fundamental principles, which include group-oriented learning, teaching of routine activities, learning through imitation, and an approach focusing on music and physical (motor) games. The study included four male children with autism, ranging in age from 5 to 8 years. The primary tool used in the study was the behavioral checklist for children with autism, which was divided into four dimensions representing language disorders and behavioral patterns in the emotional, social, language, and stereotypical behavior aspects.

The study found that the therapy program in daily life was effective in improving the conditions of children with autism. By implementing the five principles, the program contributed to the improvement of these children's conditions and enabled them to become independent and self-reliant.

These studies, which are closely related to our research, highlight the effectiveness of therapeutic programs in improving the condition of children with autism, as demonstrated by James Bell's study emphasizing the importance of integrating these children with their peers. Ismail Mohammad Badr's study aimed to improve the conditions of individuals with autism through a therapeutic program. Therefore, it is imperative for institutions and centers that provide care and rehabilitation for these children to offer early intervention programs, allowing this group to be academically integrated with their typically developing peers.

Through our research, we have found that teachers and supervisors who work with children with autism tend to follow traditional therapy programs that involve activities, pictures, and imitation. However, there are more advanced programs available, such as the LOVAAS program and the TEACCH program. The opinions of teachers and psychologists regarding these children's integration with their peers are generally positive. They believe that these children can achieve social and academic integration through the facilitation provided by therapeutic programs.

In addition, supervisors at autism care centers have an optimistic view of the future of this group. They see children with autism as individuals with normal intelligence who can become independent

and self-reliant, and can socially and academically adapt. To achieve this, it is necessary to have specialized professionals in this field who are trained in modern methods and advanced programs. From this perspective, it becomes evident that the concept of inclusion and therapeutic programs form the foundation for the improvement of these children and their social and academic adaptation. Visual thinking plays a crucial role, where the use of images instead of language is favored. Images serve as their primary language, while words are their secondary language. Learning names, for example, is easier than learning verbs, as they can form a mental image of the name, whereas the same does not apply to verbs. Furthermore, encouraging and developing their talents, such as drawing, art, and computers, is important. Children with autism often focus intensely on specific interests and resist letting go of them, such as playing with trains. Utilizing these interests for educational purposes, such as reading a book about trains and solving mathematical problems related to them, can be an effective approach. The use of clear visual methods to teach concepts like numbers is also beneficial, employing illustrated and visual techniques.

### **Conclusion**

In this study, the topic of children with autism and their relationship with academic integration was addressed from a qualitative perspective, taking into consideration the theoretical aspect. The research sample consisted of two individuals diagnosed with autism, aged between 12 and 13 years. The study was conducted using a clinical approach, specifically the case study technique, which is suitable for the nature of the subject. The research methodology relied on observation networks, semi-directed interviews, and the Childhood Autism Rating Scale (CARS). After a detailed examination of the cases and conducting interviews with the individuals' mothers while simultaneously observing the behaviours and interactions with parents and specialists involved in their care, the following results were deduced: academic integration can be achieved by equipping this group with a set of skills, such as computer literacy, numeracy, and colour recognition, among others. The study confirms that children with autism can be academically integrated, but it requires ongoing support from professionals and parents, thus validating the hypothesis that academic compatibility can be established for children with autism.

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