

Constructing A Scale Based on Dramatic Representation of The Sociological and Psychological Skills of Students with Autism Spectrum Disorders and Verifying Its Psychometric Properties

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Abstract The current study aimed to construct a measure based on dramatization of the sociological and psychological skills of students with autism spectrum disorders, in light of the variables of gender and group (experimental and control), and to verify its psychometric characteristics. The sample of the study consisted of (50) male and female students with autism spectrum disorders who were selected in a simple random manner. The sample was distributed into two groups. The experimental group amounted to (25), and the control group amounted to (25). The results of the study showed that there were statistically significant differences at the significance level ($\alpha \leq 0.05$) in the students' performance on the immediate post-measurement in favor of the experimental group, and there were no statistically significant differences at the significance level ($\alpha \leq 0.05$) in the students' performance of the sociological and psychological skills between the two measurements; The immediate and post-deferred dimensions of the experimental group, which gives an indication of the effectiveness of the scale of the sociological skills of students with autism spectrum disorders, and the current study, based on several indicators extracted from the SPSS program, concluded that the scale of the current study was judged with honesty in data representation, as well as with a high level of stability.

Keywords: Sociological, Psychological Skills, Autism Spectrum Disorders, Data Analysis.

1. Introduction

Autism Spectrum Disorders (ASD) constitute one of the varied impairments characterized by a deficiency in the level of social and psychological behavior, such as difficulty transitioning from one activity to another and an intense focus on details. Moreover, there are unconventional reactions regarding emotions and sensations. The capabilities and needs of individuals with autism vary and can evolve over time. Some people with autism might lead independent lives, while others suffer from severe disabilities, requiring lifelong care and support. Autism often impacts education and job opportunities, thereby increasing the burden on their families to provide care and support.

Psychological and sociological skills play a significant role in reshaping the personalities of individuals with ASD. They also influence the overall psychological and social needs that make them inclined to respond to their surroundings in a way that enriches their psychological structure and fosters social tendencies. Therefore, students suffering from ASD might sometimes exhibit a delay in social and psychological maturity, coupled with difficulty benefiting from past experiences. This demonstrates a student's inability to manage tasks independently or bear responsibilities towards others. Consequently, a majority of students with ASD struggle to practice societal norms, traditions, and customs or build lasting personal or social relationships with peers, teachers, or family.

Such challenges significantly hinder the ability of these students to adapt to various social circumstances and situations. Additionally, there is a decrease in their interaction levels with the social environment, causing a loss of ability to benefit from educational experiences. Bouck (2011) indicated that children with ASD need more care, attention, and direct intervention, especially in social-sociological skills. This group is notably marked by a decline in both social interactive performance and adaptive behavior represented by sociological and practical adaptive skills.

This situation may indicate that the deficiencies and failures they suffer from due to ASD are linked to shortcomings in sociological skills.

Based on the above, sociological skills are essential to meet the basic social needs of daily life activities. Possessing an adequate degree of sociological skills, like communicating with others, forming and maintaining friendships, self-control, and adhering to school instructions and educational regulations, will undoubtedly enhance their learning opportunities. It will improve the level of sociological interaction in the prevailing educational situation, preventing frustration, conflict with peers, failure in managing their life matters, bullying, and poor interaction with others.

Several researchers have attempted to address the causes and outcomes arising from ASD and its relationship to students' sociological skills. They have proposed various measures, training programs, methods, and strategies, like the problem-solving strategy by Emcecen (2011) and the video modeling strategy by Ovecioglu (2013).

1.1 Study Problem and Questions

Most educational systems around the world aim to improve the degree to which students benefit from available educational opportunities. Additionally, these systems seek to achieve a high level of adaptability and interaction with the societal environment both within and outside the school. Therefore, global educational systems have focused on elevating socio-logical skills, seeing them as the primary guarantor of maximizing the benefits of available learning opportunities. They also ensure the achievement of social interaction among students in general, and students with Autism Spectrum Disorders (ASD) in particular. Upon observing this segment present in schools of education in the capital, the researcher noticed a lack of metrics that measure the socio-logical skills of students with ASD and their inadequacy. Schools accommodating these students often limit interventions to academic aspects only, neglecting aspects related to social development. Some studies, such as Aboud (2009), Al-Khatib (2010), and Al-Muqdad (2012), have highlighted this issue. Therefore, the current study seeks to construct a measure for socio-logical skills based on dramatic representation for students suffering from ASD, considering the variables of gender, group (experimental, control), and their interaction. This is to answer the following questions:

1. Does the performance of students suffering from ASD differ in the post-test for their socio-logical skills according to gender, group (experimental, control), and their interaction?
2. Are there statistically significant differences in the socio-logical skills of students with ASD between the immediate post-test and the delayed post-test in the experimental group?

1.2 Significance of the Study

The current study hopes its findings will benefit:

- From a theoretical standpoint: It aims to add new knowledge in the field of Autism Spectrum Disorders and ways to enhance the socio-logical skills of students with these disorders. Additionally, it endeavors to introduce a scale with acceptable psychometric properties within the framework of the metrics used in this domain.
- From a practical standpoint: It aims to aid specialists in developing the socio-logical skills of students diagnosed with Autism Spectrum Disorders. This will help in their integration within the educational environment, elevating their social living standards, ensuring stability in the social system within the educational institution, and creating a secure atmosphere that contributes to building an attractive educational environment.

Terminology of the Study: The current study includes the following terms:

- Sociological skills: These are the performance and practices that an individual engages in to ensure the achievement of desired objectives on a personal and social level (Al-Bahr, 2019).
- Autism Spectrum Disorders: It is a condition related to brain development, affecting how a person perceives others and interacts with them socially, leading to challenges in social interaction and communication (Abd, 2018).

1.3. Boundaries of the Study: The study's boundaries include the following

- Human boundaries: Students diagnosed with Autism Spectrum Disorder.
- Temporal boundaries: The academic year (2021/2022).
- Spatial boundaries: Educational schools in the capital, Amman.

2. Theoretical Framework

This section will present an overview of the previously reviewed studies, both Arabic and foreign, arranged chronologically from the oldest to the most recent as follows:

Zhang (2011) conducted a study aimed at building sociological skills for individuals diagnosed with autism spectrum disorder (ASD). The intent was to enable them to establish safe, positive, and rewarding relationships, and to give them the opportunity to practice these skills in their surrounding environment and various life activities. As a result, this would elevate the chances of generalizing these newly acquired skills. The study sample consisted of 30 individuals with ASD. A developmental descriptive survey method was used. The study concluded that there is a need to focus on overall sociological skills, as they are the sole guarantee for building the personality of this category and integrating them into the societal construction and development process.

Lawrence (2011) carried out a study that aimed to demonstrate the relationship between dramatic play and the level of social and emotional development in children with autism. The sample of this study consisted of 15 children. The results revealed statistically significant differences between the genders, favoring females.

Zaib (Thieb) (2013) conducted a study to understand the psychometric properties of the second edition of the Syrian version of the Gilliam Autism Rating Scale (GARS-2). To achieve the study's objectives, the researcher translated the scale from English to Arabic and applied the translated version to 240 individuals: 176 with ASD, 31 with intellectual disabilities, and 33 typically developing students who were purposefully selected. The study results showed that the scale possesses content validity through its development procedures and the accuracy and reliability of the translation. It also has discriminative validity, as it can differentiate between the ASD category, those with intellectual disabilities, and typically developing individuals. The construct validity between the three sub-scales that constitute the overall scale was calculated using Pearson's correlation coefficient (ranging from 0.757 to 0.886). The consistency coefficient for the scale, using rater agreement (n=95), ranged from 0.829 to 0.906, and the internal consistency method ranged from 0.891 to 0.934. The study recommended conducting further research on the scale and working on its standardization in the Syrian environment.

A study by Arab (2013) aimed to test the effectiveness of a training program in developing sociological skills among a group of children with autism spectrum disorder in Riyadh. The study sample consisted of two groups chosen randomly and were divided equally (experimental and control); each group included 6 male and 6 female children with autism, with ages ranging between 6-10 years. To achieve the study's goals, the researcher developed a list of sociological skills for autistic children. The researcher also utilized a proposed program to enhance the social skills of autistic children. For the purpose of analyzing the study data, averages and standard deviations were calculated for the scores of both the experimental and control groups, in addition to a combined variance analysis (ANCOVA). The study results revealed statistically significant differences between the experimental and control groups in sociological skills attributable to the training program in favor of the experimental group. Additionally, there

were no statistically significant differences between the experimental and control groups in sociological skills attributed to the interaction between the training program and gender.

In another study by Al-Sayed (2015), the research aimed to verify the effectiveness of a modeling-based program in developing some sociological skills in children with autism spectrum disorder in Taif. The study group consisted of 8 female children with autism, with ages ranging between 8-11 years. The study sample was divided equally into four girls in the experimental group and four girls in the control group. The experimental group members were trained through 26 individual sessions, and the training program was implemented over 60 days. The sociological skills scale was applied directly after the training and then again three weeks later as a follow-up measure. The results indicated improvement in some sociological skills, namely emotional expression, emotional regulation, social expression, social sensitivity, and social regulation, which were trained on directly post-training and during the follow-up measure.

Abd (2018) conducted a study aimed at explaining and interpreting the behavioral manifestations of autism spectrum disorder in light of recent directions. The study's sample comprised all individuals in the community of teachers in special education centers in the West Bank, totaling 62 persons. A behavioral characteristics scale was used in the current study. The results revealed the most common manifestations among children, which are verbal communication disorders, with an arithmetic mean of 1.3, which is higher than the median of 5.2. The second rank was represented by non-verbal communication disorders with an arithmetic mean of 2.9. The third rank was occupied by four manifestations: imitation, adaptation to change, fear and nervousness, and body use. The findings concluded that a deficiency in interpreting these behavioral manifestations might lead to a decline in the level of services and therapeutic programs provided. The study recommends enhancing specialists' knowledge and skills regarding the behavioral manifestations of this disorder.

Hammado and Jalti (2018) carried out a study aiming to identify the impact of a proposed training program to improve social communication skills in children diagnosed with autism spectrum disorder. To achieve the study's objectives, the proposed program was applied to a sample of children with autism, chosen intentionally due to the availability of experimental conditions. The study sample consisted of six children, five males and one female. To ensure the program's effectiveness, the researchers' social communication skills scale was applied to the study sample, before and after the program's implementation, to identify the changes in the research group. The study's results indicated the effectiveness of the proposed training program on the study sample after its application, in favor of the post-application.

Al-Bakar and Al-Zarikat (2018) conducted a study aimed at revealing the effectiveness of a play-based training program in developing social skills for children with autism spectrum disorder. The effectiveness of the training program was measured by the degree of development of cognitive skills using a scale prepared by the researcher. The study sample consisted of 30 children with autism spectrum disorder, ranging in age from 6-12 years, divided into two groups: experimental and control, each comprising 15 children. For the study's objectives, the research tools were designed and their validity and reliability were verified. The results showed statistically significant differences attributed to the group effect, with the differences favoring the experimental group. The results also indicated no statistically significant differences attributed to the severity of the disorder, where the F value reached 720.0 and a significance level of 508.0. The findings also revealed no statistically significant differences between the mean scores of the experimental group in post-application and follow-up on the social skills scale for children with autism spectrum disorder, attributed to the continuity of the training program effect, with a T value of 122.2 and a significance level of 052.0.

Jaber (2018) carried out a study aiming to verify the validity and reliability indications of an autism spectrum disorder scale among a sample of Saudi children. 150 children, enrolled in intellectual education centers and schools in the provinces of Al-Ahsa, Riyadh, and Jeddah, participated in the study. The results revealed the availability of face validity and factor construct validity, and high reliability scores for the scale using Cronbach's alpha coefficient and the split-half method. The study recommended using the scale in the study community and deriving related local standards.

Sherif (2020) conducted a study aiming to verify the psychometric properties of the Childhood Autism Rating Scale in the Algerian environment. A confirmatory factor analysis was constructed for the Childhood Autism Rating Scale to identify elements, the strength of their relationships, and their impact on autism spectrum disorder. Based on several indicators derived from the SPSS program and the MOS program, the study concluded that the Childhood Autism Rating Scale is valid in representing the data and has a high level of reliability.

Summary of Previous Studies and the Position of the Current Study Among Them:

Previous studies were instrumental in understanding the appropriate methodology, statistical processes, and providing a theoretical framework for the subjects and variables of the study. They were also valuable in constructing the study tool, especially the research by Hamadou and Jalti (2018), and the study by Abd (2018).

The current study aligns with previous ones in highlighting the importance of sociological skills for children with autism spectrum disorder. It reviews how to develop programs and strategies aimed at enhancing the social interaction process for this group and attempts to integrate them into society. The current research mirrors previous studies, particularly the work of Abd (2018) and Al-Bakar and Al-Zarikat (2018), in terms of the study community. However, it distinguishes itself by focusing on constructing a scale for sociological skills based on dramatic representation.

3. Methods and Procedures

Experimental and quasi-experimental methods are widely used in educational and psychological research due to their ability to determine the impact of a specific intervention or program. The quasi-experimental method was adopted in this study due to the unique characteristics of students with autism spectrum disorders participating in the research. Also, this group of students does not form a representative sample according to the normal distribution curve.

3.1. Study Sample

The current study involved 50 students (both male and female) with autism spectrum disorders from educational schools in the capital city of Amman. The students were randomly divided into two groups:

1. Experimental Group: This group consisted of 25 students (both male and female) who received instruction in social skills using dramatic representation.
2. Control Group: This group also comprised 25 students (both male and female) who were taught social skills using traditional methods. Table No. (1) displays the distribution of study participants based on the group and gender.

Table No. (1) Distribution of study participants based on the group and gender

Group	Males	Females	Total
Experimental	13	12	25
Control	13	12	25
Total	26	24	50

Study Tools: To achieve the objectives of the study, a tool was developed in the form of a scale based on dramatic representation. Below is a description of the study tool:

This scale was constructed based on the dramatic representation, which aids in measuring the sociological skills of students with autism spectrum disorders attending schools of the Ministry of Education in the capital, Amman. The development of this scale was based on educational literature and a review of previous studies such as the study by Abd (2018) and the study by Al-Sayed (2015). The scale consists of three educational activities. Each activity includes a general objective, specific objectives, and methods that aim to develop the sociological skills of students with autism spectrum disorders. These activities are:

1. Birthday Party
2. Trip to the Park
3. Visiting a Patient.

The scale is based on three fundamental dimensions, which are:

A. The Scenario

Three scenarios have been prepared according to specific scenes in the aforementioned educational activities. Care has been taken to ensure that these scenarios contain sociological skills and forms of interaction with a variety of situations and surrounding conditions. This is done so that the student is transferred within an atmosphere similar to the nature of the interactions available in surrounding situations. These scenarios were broken down into small tasks and within short sentences to ensure the student's understanding and comprehension, and consequently their performance.

B. Illustrated Stories

These stories narrate the events of the scenarios in a sequential manner. Overall, they consist of three stories, with an average of one story per topic. These stories assist the student in understanding the events of the story, ensuring a state of interaction and immersion with the presented stories and encouraging them to embody and act out the characters of the story.

C. Puppets

Puppets were used that represent familiar characters to the students, such as a cat, rabbit, and horse, where the scenario is presented through them. The puppets were displayed with the help of the teachers to create an interactive atmosphere for the students and enable them to move these puppets and try to enact the set scenario.

The scale was developed by referring to the theoretical literature and some previous studies such as the study by Abd (2018), the study by Hamadou and Jalti (2018), the study by Al-Sayed (2015), and the study by Arab (2013), in order to achieve the study's objectives and answer its questions. Students' behaviors were observed by the teacher according to the educational activities included in the scale. Then, a mark was given to each student on the tool, such that a student receives a mark of (5) if they consistently exhibit the behavior, a mark of (4) if they often exhibit the behavior, a mark of (3) if they occasionally exhibit the behavior, a mark of (2) if they rarely exhibit the behavior, and a mark of (1) if they never exhibit the behavior.

3.2. Validity and Reliability of the Scale

To ensure the validity of the scale, content validity was applied. The preliminary form was presented to ten experts specialized in measurement and evaluation. They were asked to express their opinion regarding the items of the study tool in terms of phrasing and their appropriateness for the domain they were placed in, either by agreeing to them, modifying their formulation, or deleting them for irrelevance. Their feedback related to modifications, deletions, and additions was taken into account.

To verify the reliability of the scale, the internal consistency coefficient was used according to the Cronbach Alpha equation to determine the scale's reliability based on the domains. Table (2) shows the reliability coefficients of the scale:

Table (2): Cronbach's Alpha reliability coefficients for the scale

No.	Domain	Cronbach's Alpha
1	Birthday Party	0.98
2	Trip to the Park	0.95
3	Visit to a Patient	0.92

It is evident from Table (2) that the reliability coefficients for the scale are acceptable.

3.3. Procedures of the Study

The execution of the current study went through the following phases:

1. **Scale Preparation:** A scale based on dramatic representation was developed and presented to expert judges to ensure its validity and its appropriateness for application in the current study.
2. **Sample Selection:** The study sample (participating students) was chosen based on selection criteria such as the degree of autism spectrum disorders, not having participated in previous similar studies, and obtaining consent from the students' guardians for their participation in the current study.
3. **Teacher Selection and Training:** Four teachers were chosen to work with each subgroup of students in the experimental group. They were introduced to the scale, its objectives, and were trained on how to apply it using a guidance manual. This training included how to observe and record the sociological skills of the participating students using the study tools. Two teachers were tasked with presenting tasks to the students, training them, and encouraging their participation, while the other two cooperated in monitoring the students and directing their attention to the presentation.
4. **Implementation of the Scale Sessions:** Sessions of the scale were conducted, and students' performance was observed and recorded using the study tool - the scale.
5. **Post-test Application:** A post-test was applied after completing the scale sessions.
6. **Training Break:** There was a break in training for a period of six weeks.
7. **Follow-up Test Application:** After the break, the scale was applied as a follow-up test. Afterward, data was collected and processed statistically.

Mechanism of Applying the Scale: The scale was implemented according to the following mechanism:

1. **The First Session - Introduction:** In this session, the students were prepared for the activity. The focus was on preparing the students and giving them an idea of what they will be doing during the upcoming sessions. With the assistance of two teachers, the researcher introduced the objectives and expectations of the activity. Meanwhile, the other two teachers monitored the students and maintained their attention throughout the session.
2. **Picture Presentation Session:** A session was dedicated to presenting a set of images that depict the story's theme. The story was narrated in a manner that was engaging for the students. Questions related to the images and the story were posed to the students, with emphasis on encouraging and reinforcing their responses.
3. **Drama Scene Session:** In this session, a dramatic scene was displayed using puppets. Here, students were encouraged to play the roles of the puppets. They were asked various questions related to the roles they assumed.
4. **Role Assignment Sessions:** Two sessions were devoted to distributing roles among the students in the group. They were trained on how to play these roles with the help of two teachers. Observations were made on their performances and behaviors.

All these sessions revolved around the educational activities that formed the scale – which is the subject of the study. The activities included: a birthday party, a trip to the park, and a visit to a sick person.

4. STUDY RESULTS AND DISCUSSION

- The results related to the answer to the first question, which reads: "Does the performance of students with Autism Spectrum Disorders differ on the immediate post-test concerning their psychomotor skills according to gender, group (experimental and control), and the interaction between them?"

To answer this question, the mean and standard deviations for the pre-test and immediate post-test were calculated, according to the variables of group, gender, and the interaction between them. Table (3) illustrates this:

Table (3): Mean and standard deviations of students' psychomotor skills performance according to the group and gender variables on the pre-test and immediate post-test:

Group	Gender	Pre-test Mean	Pre-test Standard Deviation	Post-test Mean	Post-test Standard Deviation	Adjusted Mean	Number
Experimental Group	Male	2.00	.310	3.56	.274	.072	25
	Female	1.99	.206	3.58	.340	.069	25
	Total	2.00	.278	3.57	.285	.091	50
Control Group	Male	1.98	.185	2.24	.301	.087	25
	Female	2.16	.150	2.33	.223	.079	25
	Total	2.07	.187	2.23	.271	.089	50
Overall	Male	1.99	.260	3.03	.752	.062	25
	Female	2.07	.199	2.86	.635	.063	25
	Total	2.3	.241	2.96	.637	.071	50

Table (3) shows statistically significant differences at the significance level ($\alpha \leq 0.05$) in the mean performance of students with Autism Spectrum Disorders for psychomotor skills on the immediate post-test. The overall mean for the experimental group on the post-test was (3.57), while the overall mean for the control group was (2.23). To identify these differences, a 2-way ANCOVA was applied, and Table (4) shows this:

Table (4) Results of the application of the 2-way ANCOVA to detect the differences in performance of students with Autism Spectrum Disorders according to group, gender variables, and their interaction on the immediate post-test:

Variable	Sum of Squares	Degrees of Freedom	Mean of Squares	F Value	Statistical Significance
Pre-test Covariate	1.28	4	1.26	29.54	.000
Group	15.7	1	15.73	361.00	.000
Gender	.006	1	.006	.137	.713
Group \times Gender	.006	1	.006	.149	.702
Error Degree	1.52	1	.044		
Total	371.6	1			
Adjusted Total	18.9	35			

Table(4) shows the presence of statistically significant differences at the significance level ($\alpha \leq 0.05$) in the performance of students with Autism Spectrum Disorders in psychomotor skills on the post-test according to the group variable ($F = 361.00$, $a=0.000$) in favor of the experimental group. The researcher attributes this to the effectiveness of the scale used in the current study, which is based on dramatic representation. It has led to the development of psychomotor skills of the students in the experimental group, making them more vibrant and interactive. It included multiple and diverse educational activities that could arouse their abilities and skills and stimulate them. In addition to placing them in social situations similar to the natural environment, this helps them understand the roles around them in the social environment and allows them to build constructive positive relationships. Dramatic representation includes elements that intrigue and attract the student and present the educational material passionately. This result is consistent with the findings of the study by Arab (2018) and the study by Al-Bakar and Al-Zariqat (2018).

It also shows the absence of statistically significant differences at the significance level ($\alpha \leq 0.05$) in the performance of students with Autism Spectrum Disorders in psychomotor skills according to the gender variable ($F= 0.137$, $a=0.713$). The value of (F) did not reach the statistical significance level. Similarly, there are no statistically

significant differences at the significance level ($\alpha \leq 0.05$) in the interaction between the group and gender on the post-test ($F=0.149$, $a= 0.702$). This may be because both genders were exposed to similar situations during the execution of the scale. Alternatively, it may be attributed to the quality level of the steps in applying the scale to the students, where the details of behaviors in both genders were followed, resulting in the same outcome. This result is consistent with the findings of the study by Sharif (2020). However, it differs from the findings of the study by Zhang (2011).

Results related to answering the second question, which is: Are there statistically significant differences in the psychomotor skills of students who suffer from Autism Spectrum Disorders between the immediate post-test and the delayed post-test in the experimental group?

To answer this question, the effect of the delayed post-test in the experimental group was calculated by applying the Paired samples T Test. Table (5) illustrates this:

Table (5): Results of the paired sample test to detect differences between the immediate post-test and the delayed post-test in the experimental group:

Group	Test	Mean	Standard Deviation	T Value	Statistical Significance
Experimental	Immediate Post-test	3.76	0.40	0.307	0.762
	Delayed Post-test	3.74	0.35		

Table (5) shows the absence of statistically significant differences at the significance level ($\alpha \leq 0.05$) between the immediate and delayed post-test for the experimental group, where the value of $t=0.307$ with a statistical significance of 0.762. This indicates the continued effect of the program on the performance of the study participants six weeks after the program's implementation without a decrease in their psychomotor skills level. This might be attributed to the overlap of the scale components regarding its methods and activities before and after the program's implementation. This result agrees with the study of Arab (2018) and the study of Jamadu and Jalati (2018).

Recommendations

In light of the current study's findings, the following recommendations can be made:

- Activate the use of the scale based on dramatic representation for psychomotor skills in students with Autism Spectrum Disorders.
- Work on introducing other scales based on various dramatic methods and techniques available in different educational situations.

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