PSYCHOLOGY AND EDUCATION (2024) 61(9): 149-160
ISSN: 1553-6939

Using single-case design to develop social skills in children with autism spectrum disorder

Farouk Ghedjati[1], Faiza Mahleb[2], Adel Keraghel[3]

[1]Language and Knowledge Laboratory Development and Disorders, Faculty of Social Sciences, Abu Al-Qasim Saadallah University Algiers 02 (Algeria), E-mail: farouk.ghedjati@univ-alger2.dz
[2]Laboratory of Partnership and Investment in Small and Medium Enterprises in the Euro-Maghreb Space; Faculty of Sciences; Faculty of Economic, Commercial and Management Sciences; Ferhat Abbas University Setif 1 (Algeria), E-mail: faiza.mahleb@univ-setif.dz
[3]Laboratory of Marketing and Economic Studies and Research; Faculty of Economic, Commercial and Management Sciences; Ferhat Abbas University Setif 1 (Algeria), E-mail: adel.keraghel@univ-setif.dz

Received: 07/2024, Published: 09/2024

Abstract:

The current study is aimed to develop the social skills of autism spectrum children using the semi-experimental Single Subject Design. The study sample was chosen deliberately: one individual n = 1 with mild autism spectrum disorder taught in a special section attached to a primary school, and we used the social skills scale before applying the individual training program. By multiple measurements of the study variable according to sequenced periods of baseline stage A and treatment phase B and based on Visual Analysis of the data with the determination of the Percentage of Nonoverlapping Data PND, the percentage exceeding the median PEM and the Improvement rate difference IRD as well as the application of Mann-Whitney Tau U test. Accordingly, we have concluded that the individual training program is effective.

Keywords: autism spectrum disorder, Single Subject Design, Social skills.

1. Introduction:

Neurodevelopmental disorders are a group of conditions that begin early in the stages of development, usually characterized by developmental deficits and dysfunctions in brain processes that lead to poor personal, social, academic, or occupational performance. Developmental deficits range in specific impairments of control, learning, or function. Executive functions lead to deficiencies in social skills or intellectual abilities. Therefore, diagnosing the disorder requires the presence of symptoms and dysfunctions that fall within the developmental disorders that appear during the early stages of an individual's life, Such as Autism Spectrum Disorder (ASD), which refers to a group of neurodevelopmental conditions (American Psychological Association, 2022) that negatively affect various areas of life and prevent the achievement of psychological, emotional, linguistic, social, and academic development. Without a doubt, any disability In any of the aforementioned fields, it will inevitably affect the social aspect, and therefore we will seek in this study to shed light on the social skills of this group by designing a training program that is applied individually in an attempt and to highlight its role.

2. The problem of the study:

Since autism disorder was first described by Leo Kanner in 1943, the focus has been on the social behavior of children only, and because the diagnosis requires the presence of patterns of repetitive

and restricted interests or repetitive behavioral activity, in addition to impairments in social interaction and communication, such as deficits in eye contact and responding to social interactions, verbal and non-verbal communication. Joint attention, use and interpretation of facial expressions and gestures. (Marjorie H., Russell, & Mandy Rispoli, 2018), In the latest update to the Diagnostic Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), there were many important changes, including the merging of the categories of impairment in communication and social interaction into one category known as deficit in social communication. Two different diagnoses were developed to diagnose autism spectrum disorder, which includes symptoms of restricted and repetitive behaviors. In addition to a deficit in social communication, a distinction must be made between pragmatic social communication disorder, which is characterized only by a weakness in social communication (Brukner Wertman, Nathaniel, & Ofer, 2016), While most children with autism spectrum show occasional behaviors of making comments that are inappropriate for the general context of the event, we mentioned previously that a deficit in social skills is observed in this group at an early age, and it is increasingly the case that they do not undergo training programs that develop and develop their skills in communication and social interaction, which leads to Ultimately, it leads to the emergence of many psychological and behavioral disorders, especially in adulthood, such as anxiety, depression, and social isolation (Bellini & Hopf, 2007), This is why they need services provided to people with special needs, such as programs and activities adapted to develop the behavioral, emotional, linguistic, social, and academic levels. This is what the results of many studies have shown, according to a study conducted by Sawalhi (2020) on six children with mild autism spectrum students studying in regular departments. They underwent a proposed program to develop some social skills, improve them with regard to meaningful social exchange, request or avoid social participation, and how to avoid inappropriate social behavior, These results are similar to those reached by a study by Bashat and Yahyaoui (2021) regarding the impact of academic integration on the acquisition of social skills on seventy children with autism spectrum of both sexes, divided into two groups between academically integrated and non-academically integrated at the level of regular integration schools and centers. Psycho-pedagogical and the positive role of academic integration was reached for the study sample in acquiring social skills. The study by Al-Kanji, Pereira, and Paula (2022), which used video self-modeling or social stories, resulted in promising results in improving the social skills of six highly functional students with autism spectrum disorder at the Autism Academy. Jordanian, All participants in the experimental group achieved significant improvement in the post-test of social skills for autism in both the areas of value-based treatment and social participation skills. There is an increase in research on interventions based on employing modern technology with autism spectrum disorders, according to a study conducted by Rashid and Boutgan (2019) in Regarding the effectiveness of the therapeutic program in developing social and communication skills for autistic children in middle childhood, assessments and care tools that rely on virtual reality are considered to have a positive impact on people with autism, which was achieved through the use of a computer-based strategy by adopting video and story. Scripting and self-monitoring on a group of children with autism spectrum disorder (Heckman, Town, Cummings, & Bellini, 2014), This indicates that social skills training is an effective strategy to reduce social vulnerability that focuses on achieving social adaptation appropriate to aspects of daily life. (Sawalhi, 2020) Most of the studies that were presented previously were conducted on a number of individuals who were divided into a control and experimental group, which is known as Group Experimental Designs. Then the effectiveness of the

proposed program was compared using the values of the arithmetic averages of the individuals' performance for the two groups, then verifying the statistical significance and extracting the effect size. At best, However, relying on the values of arithmetic averages and group performance can provide misleading information because the latter is affected by the extreme values of individuals with very low or very high scores, and thus it is not possible to determine the degree of contribution of the proposed program for each individual individually, and therefore the need to conduct research on a single individual appears. Only especially in studies that aim to analyze the applied behavior of children on the autism spectrum because they enable us to determine the relationship of cause and effect very effectively, which is known as single-case experimental designs (Abu Allam, 2011), According to Al-Khatib, these designs are based on "collecting specific data about the behavior of a specific individual and not a group of individuals as in collective experimental research."

(Group Experimental Designs) The main reason behind behavior analysts' tendency toward experimental research designs on a single individual is their belief in the importance of collecting multiple data on the individual's behavior and not data on the average performance of a group of individuals (Alberto & Troutman). This trend among behavior analysts reflects a scientific approach based on replicating the effect. To clarify functional relationships (Functional Relationships) between the programs they implement (independent variables) and the targeted behaviors (dependent variables), Then it becomes clear that behavior changes every time a behavior analysis program is implemented. The results are said to support the existence of a functional relationship between the two (i.e., the program is the cause and the change in behavior is the result)." (Al-Khatib, 2017, p. 229), most people tend to It is believed that it is analogous to case studies, but this is not true. Single-case designs empirically investigate the effect of a proposed treatment, while case studies provide an in-depth description of an individual or group of people (Christensen, Johnson, & Turner, 2015). Single-case designs belong to ideographic approaches. Idiographic, which studies everything related to a single case, A brief look at the history of experimental psychology reveals that psychological research actually began with the intensive study of a single organism, with the work of Wundt (1902), Ebbinghaus (1913), Watson (1920) and Pavlov (1928), Henry Alexander Murray (1928). 1938), Skinner (1953), Jean Piaget, Shapiro, Paul Broca, and cases of aphasia were all conducted on a single individual. It is clear from the above that all research conducted throughout the long history of psychology was conducted on a single case, which reflects its scientific value. (Maamria, 2019), From this perspective, single-case designs can be used when the goal is to judge the performance of a specific individual while dealing with social skills as an individual phenomenon determined by the individual's interaction with the environment. This is why our current study came to develop social skills among one sample of children on the autism spectrum using a single-case design. Single Subject Design Therefore, we pose the question as follows:

What is the effectiveness of the proposed training program in developing social skills among a sample of children on the autism spectrum (N=1)?

3. Study hypothesis:

The proposed program is effective in developing social skills among a sample of children on the autism spectrum, N=1.

4. Objectives of the study:

Verifying the effectiveness of the proposed program in developing social skills among a sample of children on the autism spectrum.

- Determine the degree to which the proposed program contributes to the development of social skills among a sample of children on the autism spectrum.
- Determine the clinical significance of the proposed program in developing social skills among a sample of children on the autism spectrum.

5. Importance of the study:

In this study, we seek to shed light on the social skills of children on the autism spectrum and their importance in achieving balance at the psychological, behavioral, linguistic, and social levels, and try to nurture and develop them by conducting single-case research by designing individual programs that take into account their actual abilities and individual differences.

6. Procedural definition of study terms:

1.6 Autism Spectrum Disorder:

A neurodevelopmental disorder that appears in the study sample in the form of a deficit in communication abilities and social interaction, with the presence of stereotypical repetitive behaviors at times.

2.6 Social Skills:

The set of socially acceptable behaviors intended to be developed among the study sample (one individual) of children with autism using the proposed training program and measured by the Scott Billini 2006 Social Skills Scale adapted by Sawalhi Salahuddin in 2020 for the same purpose.

3.6 Single Subject Design:

It is one of the experimental designs that aims to conduct research on one individual to determine the effect of the independent variable represented by the proposed training program on the dependent variable social skills among the study sample (one individual) of children with autism.

7. Study methodology:

Because the goal is to develop social skills among people with autism spectrum (one individual) and to test the causal relationships between the variables under study based on the independent variable (the proposed training program) and the dependent variable (social skills). Therefore, the ideal approach is quasi-experimental according to the Single Subject Design, and it can be Using this core to discover cause and effect relationships with great effectiveness because it is most appropriate for studying variables related to modifying the behavior of individuals with autism spectrum is used when it is difficult to obtain a sample of individuals who are homogeneous among themselves in behavioral characteristics.

8. Study sample:

We intentionally selected one individual, namely Child B. Adam, 8 years old, has a low score of autism spectrum disorder (F84.0) on the Cars2 scale, and based on the DSM-5, the severity of the disorder is classified as Level 1 (needs support) without accompanying intellectual and linguistic impairment that is not accompanied by a known medical or genetic condition, environmental factor, or other disorder. In neurological, mental or behavioral development.

9. Limitations of the study:

This study was conducted at the primary level of Khababa Abdel Wahab, located in the Al-Akhwa Jamili neighborhood “Al-Shimno” in the state of Setif, Algeria. It contains 4 special sections for children with mild autism spectrum disorder. The study was conducted in the period extending from March 1, 2022, until May 28.

10. Limitations of the study:

It is represented by the social skills scale for children on the autism spectrum, designed by Scott Bilini and adapted by Sawalhi Salah El-Din in 2020 to the Algerian environment. It provides a comprehensive measurement of the social performance of children on the autism spectrum and adults. It is used as a planning tool and helps determine the degree of deficit in social skills and measure the extent of progress during... The treatment contains 49 items that are coded through grades from (1 to 4). The validity of the internal consistency was verified by first calculating the correlation matrix between the statements and the total score of the scale.

10.1 Internal consistency validity of the social skills scale:

The correlation coefficient values for the items (statements) with the total score of the scale (social skills) ranged between 0.16 and 0.75, which is statistically significant at a significance level of 0.01, and this indicates that the scale has internal consistency.

10.2 Validity of the factor analysis of the social skills scale:

The condition of sample adequacy and the susceptibility of the correlation matrix to factor analysis was verified. The results showed that all MSA values are greater than 0.50, as their values ranged between 0.81 and 0.97, while the value of sample size adequacy KMO is equal to 0.92, which is greater than 0.50 and statistically significant. The value is also The absolute value of the correlation matrix is Déterminant = 1.084E-018, which is greater than 0.00001, which means that the matrix has the minimum number of correlations, which means that it is possible to conduct factor analysis, and the value of the Bartlett test is equal to 0.0001, Factor analysis was applied using the principle axes method and using the latent root criterion, whose value ranged between 5.33 and 39.9, which is greater than 1 for the factors, and the percentage of the total explained variance ranged from 54.62. This was followed by an orthogonal rotation using the Equamax method, and thus three axes were obtained. The rotation dimension is: Meaningful social exchange contains 27 items, Social participation request or obligation contains 13 items, Harmful social behaviors contains 9 items.

10.3 Reliability of the Social Skills Scale:

The stability of the study tool was verified by calculating the Cronbach's alpha coefficient for the three axes

Table 1: (Cronbach's alpha reliability coefficients for the axes of the social skills scale)

Interviewer **The first axis is meaningful social exchange**	**Cronbach's alpha**	**Number of items**
The first axis is meaningful social exchange	0.96	27
The second axis: the request or obligation for social participation The third axis: harmful social behaviors	0.90	13
The third axis: harmful social behaviors	0.85	9

Source: (Sawalhi, 2020)

It is clear from the results of the table that the value of the reliability coefficient for the axis of meaningful social exchange, request and avoidance of participation, and the axis of harmful social behaviors is equal to 0.96, 0.90, and 0.85, respectively, which are high values for the reliability coefficient, and therefore we can say that the study tool has stability.

10.4 Limitations of the study:

We observed and measured the target behavior before the experimental treatment, which was represented by the deficit in social skills, continuously for a sufficient period of time until the behavior stabilized stably. This stage is called the Baseline (A) Baseline. Then we exposed the study sample to the experimental treatment with the aim of developing social skills. This stage is called Treatment (B) Then monitor and measure the behavior continuously during the treatment stage until the rate of occurrence of the targeted behavior stabilizes.

11. Definition of the individual training program:

It is a training program that aims to develop the social skills of the study sample, which is individually designed to suit the capabilities of the study sample after reviewing previous studies in this field, similar to the study (Ghazal, 2007). It includes the following axes: The first axis (training in basic skills) and includes the skill of visual communication. Attendance and attention, following simple instructions. The duration of each session is 30 minutes, six sessions over the course of the first and second week. The second axis (learning social etiquette), which includes the skill of knocking on the door, shaking hands, and signaling goodbye. The duration of each session is 35 minutes. Six sessions over the third and fourth week, the third axis (participation in social situations), It includes the skill of knocking on the door, shaking hands, and signaling goodbye. The duration of one session is 35 minutes, with six sessions over the course of the third and fourth week. The third axis (participation in social situations) includes the skill of interacting with other people, waiting for turn, interacting with... Peers, generalizing social skills in multiple environments. The duration of each session is 40 minutes, with twelve sessions starting from the fifth week to the eighth week.

12. Presentation of the study results:

In this item, we present the results of the N=1 study sample on the social skills scale collected during the baseline phase A and treatment phase B during 12 weeks.

Table 2: (Results of the study sample on the social skills scale for the baseline phase A and treatment phase B)

	treatment phase B							**Baseline phase A**			
week	12	11	10	9	8	7	6	4	3	2	1
results	171	175	170	169	173	172	171	109	80	102	101

Source: Prepared by researchers

The values 101, 102, 80, and 109 represent the results of the baseline phase A, which extends from weeks 1 through weeks 4, and 171, 172, 173, 169, 170, 160, 175, and 171 represent the results of the treatment phase B, extending from weeks 6 to 12.

12.1 Descriptive statistics Social skills results for the two baseline phases of treatment:

In this element, we present the results of the study sample on the level of social skills for the baseline stage and the treatment stage through the arithmetic mean, median, and standard deviation.

Table 3: (Descriptive statistics social skills scores for baseline phase A and treatment phase B)

treatment phase B	Baseline phase A	treatment phase B
arithmetic mean	98.00	170.13
Mediator	101.50	171.00
standard deviation	12.51	4.48

Source: Prepared by researchers

It is clear from the results of the table that the value of the arithmetic mean for the baseline stage is equal to MA = 98.00, the value of the median is equal to 101.50 MéA, and the value of the standard deviation SdA = 12.51. It also appears that the value of the arithmetic mean for the treatment line stage is equal to MB = 170.3, the value of the median is equal to 171.00 MéB, and the value Standard deviation of the treatment stage SdB=4.48.

13. Presentation of the study results:

The study hypothesis was validated, which states that the proposed program is effective in developing social skills among a sample of children on the autism spectrum.

13.1 Descriptive statistics Social skills results for the two baseline phases of treatment:

The size of the treatment effect that can be detected using graphical analysis is a matter of debate. Alan Kazdin suggested in 1982 that visual analysis is a conservative approach to data analysis that allows only strong treatment effects to be identified in the data because it leads to fewer Type I errors. about therapeutic effects when none actually exist (Kromrey & Foster-johnson, 1996), The results of Figure 2 show that the number of time intervals during the baseline for social skills

ranged between 80 and 109 degrees, with an arithmetic mean of MA = 98.00. When the treatment was implemented, the number of time intervals increased for the weeks in which the study sample was trained (N = 1) in social skills, with an arithmetic mean of = 170.13. MB during periods ranging between 160 and 175, which means improvement in social skills after training, starting from the fifth week until reaching the twelfth week.

13.2 Calculate the Percentage Of Nonoverlapping (PND) and the Percentage Of Nonoverlapping (PEM)

A score of 109 represents the highest measurement point in the baseline phase (A) and corresponds to week 4. We calculated the number of scores for the treatment phase (B) data that exceed the value set for the baseline phase (A) such that the measurements extending from weeks 5 to 12 are greater than The degree specified for this is that there are 8 values that exceed stage (A), and by dividing the value obtained by the number of observations in stage (B), we obtain %100=100*8/8 = PND, which is a very high percentage and equals the value of %100=100*8/ 8 = PEM because it exceeds the median value of 101, which means that the training program is very effective.

13. 3 Improvement Rate Difference (IRD)

It is determined by the data that was improved in the baseline phase, which is A: 0/4 = 0%, and the number of data that was improved in the treatment phase, which is 100% = 8. B: 8, so IRD = 100%-0% = 100%. This means that The rate of improvement is in favor of the treatment phase.

13.4 Mann-Whitney Tau U test

It is a method to measure the non-overlap of data between the baseline phase (A) and the treatment phase (B). It is considered a non-parametric technique. Tau-U is derived from the Kendall correlation coefficient for ranks and the Mann-Whitney U test for groups, and because it has a statistical power ranging from 91% to 95%. % if the data agree with the parametric assumptions, When data are mismatched (common in single-case research), the power of Tau-U can exceed parametric techniques by up to 115%. It is well suited for small data sets and therefore has the value of statistical significance

p-value and confidence intervals (Parker, Vannest, Davis, & Sauber, 2011)

Table 4: (Results of the Tau U statistical test for comparison of data trend overlap between baseline phase A and treatment phase B)

P Value	Value of Z	the value of T and Manny Whitney	pairs	The number of negative-positive signals	Interferences
0,496	0,679	0,33	6	2	**Baseline vs baseline**
0,901	-0,123	-0,03	28	-1	**Processing vs Processing**
0,496	0,679	0,33	6	2	**Baseline vs treatment**

It is clear from the results of the table that the value of t and Manny-Whitney for the comparison between the baseline versus the baseline TAU = 0.33, and the value of Z = 0.697, which is not statistically significant with a significance value of p = 0.496 > 0.05, which means that there is no discrepancy in the baseline, and it appears from the results of the table that The value of Mann-Whitney's tau for comparing the treatment phase vs. the treatment phase - TAU = -0.03. It also equals the value of Z = -0.123, which is not statistically significant with a significance value of p = 0.901 > 0.05, which means that there is no discrepancy in the treatment. Considering the value of Mann-Whitney's tau for comparing the baseline A vs. The treatment stage, TAU=1, is also equal to the value of Z=0.697, which is statistically significant with a significance value of p=0.006<0.05, which means that there is a discrepancy between the baseline and the treatment stage. From what was reviewed previously, we can accept the hypothesis of the study, which means that the educational training program is effective in Developing social skills among a study sample of N=1 children on the autism spectrum.

14. Discuss and explain the study hypothesis

The results of testing the study hypothesis, which stipulates the effectiveness of the individual training program in developing social skills among children on the autism spectrum, N=1, show that the study sample achieved high results on the social skills scale during the treatment phase, starting from the fifth week to the eleventh week, with stability recorded. Over time, he acquired the initial skills such as visual communication, the skill of attendance and attention, and following instructions quickly, as he had previously learned them through following individual support classes, Before he underwent the program set by us, and as skills that must be mastered before applying any program, he was able to achieve the general set goals, which are learning social etiquette such as knocking on the door, shaking hands, signaling goodbye, participating in social situations by interacting with other people and waiting for the turn. , interacting with peers, generalizing social skills in multiple settings. Personal characteristics such as gender, age, degree and severity of the autism spectrum, and level of linguistic development are factors related to the individual's competence in terms of social skills. Accordingly, the results obtained have clinical significance, Which means

effectiveness at the individual level. Thus, we conclude that children on the autism spectrum can learn social skills if they are trained individually or collectively in them, and this is confirmed by the results of the current study, along with the findings of the study (Rashid and Boutgan, 2019), (Sawalhi, 2020), and the study (Bashat and Yahyaoui, 2021) and
(Alkinj, Pereira, & Paula, 2022) The improvement can be explained by the fact that the majority of training programs are behavioral in nature because they rely on behavioral methods that the individual learns and acquires through social interaction from the environment through conditional learning that is enhanced by competencies that can be easily observed and measured in the form of specific models of behavior. The learner is based on creating relationships and social interaction so that the individual is able to influence others and get his needs met, In the same regard, the individual program contributed to the development of cognitive abilities such as the ability to understand, process, and social perception because responses do not occur automatically, but rather we are given access to a series of cognitive processes that take place through sequential stages to employ information with diverse situations. Therefore, it is assumed that the deficiency in social skills is merely Attainment of environmental factors. Thus, it becomes clear that social skills are a behavioral, cognitive, and social process that requires the individual to be able to communicate and understand verbal and non-verbal behavior, Since the individual training program is based on observation, imitation and learning by modeling, according to social learning theory, the individual is a social being who lives within groups of individuals with whom he interacts, influences them and is influenced by them. The study sample was able to observe the behaviours, habits and tendencies of other individuals and then reproduce what was learned through observation. The behavior of peers, parents, siblings, schoolmates who serve as a role model leads to the repetition of similar behaviors. The difference between social learning theory and behavioral theory is that observational learning includes a selective aspect, Exposure to the behavioral patterns displayed by models does not necessarily mean imitating it.
(Muwafaq, 2017) The individual program was also applied at the level of the special department integrated into a public school, which allows for the generalization of the skills learned with peers on the autism spectrum and with ordinary children in a small social environment.

15. Conclusion:

Although children with various degrees and levels of autism spectrum disorder make them isolated in the first place, which makes them unable to communicate and interact socially and display some restricted behaviors, And a lack of mental abilities that affects their skills in assuming responsibility, self-care, and social interaction, not to mention their suffering from a deficiency in joint attention and the development of the theory of mind, which makes the field of research fertile. It opens the doors for researchers to study the various direct and indirect variables related to this, and to establish this, the effectiveness of applying various programs that It aims to develop the skill of verbal and non-verbal communication, and social communication is relative and varies from one case to another. The interpretation stage does not enable you to determine the degree of contribution at the individual level. Therefore, it is necessary to move away from programs that are applied

collectively and move more to programs that are applied individually because of the implications they provide. Clinical.

16. Reference list:

1. Maamriya, Bashir. (2019). Single-case research methodology and experimental designs for researchers, therapists, and psychological counselors. Arab Psychological Sciences Network, pages 1-19. Retrieved
2. fromhttp://www.arabpsynet.com/Documents/DocMaamriaSingleSubjectResearch.pdf
3. Al-Khatib, Jamal Muhammad. (2017). Applied Behavior Analysis (Volume I). Amman: Dar Al Shorouk for Publishing and Distribution.
4. Rashid, Hamid, and Boutgan, Muhammad Al-Tahir. (01 01, 2019). How effective is a therapeutic program in developing social and communication skills for autistic children in middle childhood? Academy for Social and Human Studies, 1, pp. 83-96.
5. Abu Allam, Raja Mahmoud. (2011). Research methods in psychological and behavioral sciences. Egypt: Universities Publishing House.
6. Sawalhi, Saladin. (2020). The effectiveness of an educational training program for developing social skills among children on the autism spectrum studying in regular classes. [Published doctoral thesis, University of Batna 1].
7. Mowafa karoum. (2017). The factorial structure of the social skills test and its relationship to some personal variables. [Unpublished doctoral dissertation]. University of Oran2.
8. Ghazal, Magdy Fathi. (2007). The effectiveness of a training program in developing social skills among a sample of autistic children in the city of Amman [Master's thesis, University of Jordan]. System base for university dissertations.
9. Bashata, Mounir and Yahyaoui, Abdel Karim. (2021). The effect of academic integration on the acquisition of social skills in an autistic child: a comparative study between academically integrated and non-academically integrated autistic children in some states of Algeria. Academy for Social and Human Studies, pp. 2019-206.
10. Alkinj, I., Pereira, A., & Paula, C. (2022). The effects of an educational program based on modeling and social stories on improvements in the social skills of students with autism. Heliyon, 8. doi.org/10.1016/j.heliyon.2022.e09289
11. American Psychological Association. (2022). Publication Manual of the American Psychological Association. APA.
12. Bellini, S., & Hopf, A. (2007). The Development of the Autism Social Skills Profile: A Preliminary Analysis of Psychometric Properties. Focus on Autism and Other Developmental Disabilities, 22(2), 80-87. doi.org/10.1177/108835760702200208O
13. Brukner Wertman, Y., Nathaniel , L., & Ofer , G. (2016, 05 28). Social (Pragmatic) Communication Disorder and Its Relation to the Autism Spectrum: Dilemmas Arising From the DSM-5 Classification. J Autism Dev Disord, pp. 2821-2829. doi:10.1007/s10803-016-2814-5
14. Christensen, L. B., Johnson, B. R., & Turner, L. A. (2015). Research Methods, Design, and Analysis, Global Edition (12th ed.). Pearson Education.
15. Heckman, A. R., Town, B., Cummings, J. A., & Bellini, S. (2014). Predicting Interventionists' Intention to Use Video Self-Modeling: An Investigation of the Intervention

Technology Acceptance Model. Journal of Special Education Technology, 29(1), pp. 35-49. doi:10.1177/016264341402900103

16. Kromrey, J. D., & Foster-johnson, L. (1996, 07 01). Determining the Efficacy of Intervention: The Use of Effect Sizes for Data Analysis in Single-Subject Research. The Journal of Experimental Education, 65(0022-09731), 73-93. doi:10.1080/00220973.1996.9943464

17. Marjorie H., C., Russell, L., & Mandy Rispoli. (2018). Play and Social Skills for Children with Autism Spectrum Disorder. Springer Cham. doi.org/10.1007/978-3-319-72500-0

18. Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). Combining nonoverlap and trend for single-case research: Tau-U. Behavior therapy, 42(0005-7894), 284-299. doi:10.1016/j.beth.2010.08.006