

Social Skills Competence in ASD Children: A Review of Assessment Instruments

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Abstract—Lack of social competence is the biggest hurdle faced by children with Autism Spectrum Disorder (ASD). Early intervention to develop social competence is thus essential. However, assessing social competence is a great challenge as social competence is a context-dependent construct and thus, an instrument suited to one context may not be suited to another. The context can be related but not limited to the definition of social skills competence construct, instrument users, children age groups, locations of application (home or school) and severity of the disorder. In this study, five aspects of social competence were of interest namely, cognitive, social interaction, social communication, social emotion and social behavior. These aspects were of interest as they are the focus of a bigger research on ASD children. This paper provides a systematic review of available instruments for assessing social skills competence of ASD children as part of a study to develop a valid instrument to be used in a particular context. Eighty instruments for assessment of ASD children were initially identified but only ten instruments were selected for further review as their focus was found to be related to the identified aspects of social competence. Each construct from selected instruments was analyzed and evaluated in terms of their suitability for adaptation to the current context of the study. Finally, four instruments were identified to be suitable for some aspects and items from them were then selected and refined for inclusion in a new instrument to be used in a future study.

Keywords—Observation Instrument, Social Skills, Social Skills Competence, Social Skills Instrument.

I. INTRODUCTION

THE most significant contributor to difficulty towards a normal development of children and teenagers who suffer from ASD is their lack of social skills. Their lack of social skills affects effective interaction with family members, educators, peers and society (APA, 2015). Having good social skills is critical for children to learn to participate in society effectively. Good social skills are also essential in promoting social acceptance and self-esteem to enable individuals to have constructive interactions with others (Lynch & Simpson, 2010). Thus, developing social skills competence is becoming an important agenda for education providers of ASD children and social skills customized modules are often developed to enhance ASD children capability in social skills with peers, parents, and society in which they reside.

Research has shown that ASD children who have high social skills competence are able to develop self-confidence, can build a relationship and create social acceptance in any environment (Huitt & Dawson, 2011; Elliott & Busse, 1991; Gresham, Elliott, Vance & Cook, 2011). Therefore,

intervention for social skills is crucial in order to develop social skills competence in ASD children. Unfortunately, each intervention will come with a specifically tailored assessment to measure certain skills in ASD children. Implications, there's an urgency in adopting a new instrument from existing reviewed instrument for the adequate measure of learning outcome for social skill competence. It is desirable to measure social skill competence in the context and learning outcome tailored specifically for ASD children within their own environment. Due to the variations of impairment among ASD children (Gillis & Butler, 2007) and interventions (Mcknight & Davies, 2012), there is a great challenge in establishing a reliable and valid instrument to measure the achievement of targeted social skills competence.

Therefore, the purpose of the current review is to identify instruments that can be adapted or adopted to produce valid and reliable measures for social skills competencies of ASD children in a school setting. The objective of this review on available research instrument was to identify suitable instruments to assess social skills competence of ASD children in Malaysia. Currently, social skills competence is defined as a combination of cognitive, social interaction skills, social communication skills, social emotional skills and social behaviour skills. The instruments identified as suitable will be adopted and adapted for the development of a new instrument to be used in a study on the effect of an intervention on social skills competence.

II. METHOD

The search for instruments involves using Google search engine to search through databases that are under Google Scholar, Science Direct, Sage and Research Gate. The keywords used were social skills instrument, social skill assessment, social skills tool, social skills scales, social skill observation, social skills rating scales, social skills checklist, and social skills behaviour checklist. The selection of instrument was restricted to instruments that (a) are focusing on children between 6-14 years old, (b) are based on student and educator observation or rating types in school setting, (c) consist of constructs namely, cognitive, social interaction, social communication, social emotion and social behaviour, (d) are in English (e) are to be used by teachers.

III. RESULTS

Eighty instruments were initially identified and after careful screening, only ten instruments were found to fulfill all set of criteria. Table 1 shows the summary of each instrument that met the review criteria and is included in this report. Some instruments are teacher based observation while others are teacher-parents rating scales. This research study intended to provide data for social skills competence of ASD children in a school setting. In addition, it will be able to measure ASD children knowledge and skills through educator observation upon these children behaviour to indicate social skills competence.

Overall, no single instrument is found to provide a good measure of the targeted constructs. Therefore, there is a need in constructing a new instrument based on reviewed instruments in order to have a valid, reliable and acceptable instrument for this research study. After a thorough review, four were identified to be fit for the adoption as a newly research instrument. The items provide a similar meaning for a new defined construct for social skills competence to be adopted into the development of a new and acceptable instrument.

IV. DISCUSSION

A. Reliability of Selected Instruments

The first instrument reviewed was the "Autism Social Skills Checklist" by Hanzlick, Petersen, & Rogers, (2010) found in the guideline entitled, "Moving Toward Functional Social Competence: A Scope and Sequence Assessment of Social Skill Development for Students with Challenges in Social Cognition". It had been developed as an alternative assessment in helping educators and parents address the challenges in assessing social skills of an individual with ASD. It was rated using rating scales categories and classified into three level; beginning, intermediate and advanced. It can be used in a variety of ways for any setting.

The second instrument was the "Autism Social Skills Profile" by Bellini (2006). It was designed to provide planning for an appropriate intervention for an individual with ASD. There are 49 items rated using a Likert scale and appropriate for students between the age of 6 to 17 and has a high test-retest reliability was 0.904 and has the internal consistency for the reliability of 0.926 (Bellini & Hopf, 2007).

The third instrument reviewed was the "Social Skills Rating Form" in TSSA by Stone, Lisa, Hepburn, Coonrod,

Burnette, Pennington & Brigham (2010). It was a teacher rating form that rates ASD child's ability to perform each behaviour on a four-point scale. It was developed to address the need of a simple tool in evaluating social skills of ASD children for providing or recommending future intervention. The internal consistency for reliability was 0.92 for the parent rating form and 0.94 for the teacher rating form (Golzari, Hemati Alamdarloo, & Moradi, 2015).

The fourth instrument was the "Social Skills Checklist" by Project Data team, (2004) from the University of Washington. It measured social skills in three levels; beginning, intermediate, and advanced. The respondents were required to respond to the rating scale that included almost always, often, sometimes, and almost never. Upon completion of the observations, each child's checklist was analyzed and rated. According to Medeiros (2007), the inter-rater reliability of the instrument was 0.967.

B. Social Skills Competence: A Definition of Its Domains

The definitions of domain related to social skills are inconsistent and mainly constructed from widely interrelated elements (Boyd & Ward, 2013). Numerous documented researchers propose that social skills intervention can be formed from a variety of domains related to a wide area of skills. According to Gillis & Butler (2007), social skills intervention for ASD children needs to be focusing on enhancement of social interaction, social communication and social emotional. Examples of social interaction skills are engaging in play, sharing thing, taking-turn and interact with peers. While social communication skills are initiating a conversation, negotiating and responding to others. Lastly, examples of social emotional skills are concern, empathy and generosity.

Meanwhile, Kent, Carrington, Couteur, Gould, Wing, Maljaars & Leekam (2013) had also identified the three main domains to be the focus for improvement namely, social interaction, social communication and social imagination. Social interaction involves skills such as difficulty in forming relationships, ignorance to social norms and uniqueness. Social communication, on the other hand, refers to the difficulties in verbal and non-verbal communication, understanding of facial expression, body language, eye contact and tone of voice. Lastly, social imagination involves skills such as difficulty in interpersonal, imagination and repetitive behaviour or interest. Additionally, Gottman, Gonso & Rasmussen (1975), also suggested that social skills should be studied in conjunction with social interaction, emotional and behaviour of a person.

TABLE I
SOCIAL SKILLS ASSESSMENT INSTRUMENTS FOR ASD CHILDREN

No.	Instrument	Rating Type			Target Age	Constructs
		Self	Educator	Parents		
1.	Moving Toward Functional Social Competence Autism Social Skills Checklist (Hanzlick et al., 2010)		Yes		3 to 22	Social Competence: <ul style="list-style-type: none"> • Joint Attention • Greeting • Play/Leisure Skills • Self-Regulation • Conversation • Perspective Taking • Social Problem Solving/Critical Thinking Skills • Friendship • Life Skills
2.	Autism Social Skills Profile (ASSP) (Scott Bellini, 2006)		YES	YES	6 to 17	Social Functioning: <ul style="list-style-type: none"> • Social Reciprocity • Social Participation/ Avoidance

						<ul style="list-style-type: none"> • Detrimental Social Behaviours
3.	TRIAD Social Skills Assessment (Stone et al., 2010)	YES	YES	YES	6 to 12	<p>Social Skills :</p> <ul style="list-style-type: none"> • Problematic Behaviour • Behaviours interfere with the child's ability to make and keep friends. • Child's interests and opportunities for making friends. • Number of friends • Number of peer interaction opportunities • Preference for different types of social activities. <p>Social Behaviours:</p> <ul style="list-style-type: none"> • Affective Understanding/Perspective Taking • Initiating Interaction • Responding to Initiations • Maintaining Interaction <p>Child Interaction:</p> <ul style="list-style-type: none"> • Conversation • Social understanding <ul style="list-style-type: none"> ○ Joint attention ○ Feelings/situations ○ Perspective-taking ○ Use of surrounding context • Role plays • Social motivation. <p>Social Play and Emotional Development:</p> <ul style="list-style-type: none"> • Beginning Play Behaviour • Intermediate Play Behaviours • Advance Play Behaviours <p>Emotional Regulation:</p> <ul style="list-style-type: none"> • Understanding Emotions • Self-Regulation • Flexibility • Problem Solving <p>Group Skills:</p> <ul style="list-style-type: none"> • Seeking Assistance • Participate in Group • Follow Group <p>Social Skills:</p> <ul style="list-style-type: none"> • Communication • Cooperation • Assertion • Responsibility • Empathy • Engagement • Self-Control <p>Problem Behaviours:</p> <ul style="list-style-type: none"> • Externalizing • Bullying • Hyperactivity/ Inattention • Internalizing • Autism Spectrum <p>Academic Competence: (teacher form only)</p> <ul style="list-style-type: none"> • Reading Achievement • Math Achievement • Motivation to Learn <p>Appropriate And Inappropriate Social Skills:</p> <ul style="list-style-type: none"> • Appropriate Social Skill • Inappropriate Assertiveness • Impulsive/Recalcitrant • Overconfident • Jealousy/Withdrawal • Miscellaneous Items <p>Social Competence:</p> <ul style="list-style-type: none"> • Peer Relations, • Self-Management/ Compliance, • Academic Behaviour. <p>Antisocial Behaviours :</p> <ul style="list-style-type: none"> • Hostile/Irritable, • Antisocial-Aggressive, • Defiant/Disruptive. <p>Treatment Subscales</p> <ul style="list-style-type: none"> • Social Awareness • Social Cognition • Social Communication • Social Motivation
4.	Social Skills Checklist (University of Washington, 2004)		YES		NONE	
5.	Social Skills Improvement System Rating Scales (Gresham et al., 2011)	YES	YES	YES	3 to 18	
6.	Matson Evaluation of Social Skills with Youngsters (MESSY) (Matson, Kozlowski, Neal, Worley, & Fodstad, 2011)	YES	YES		4 to 18	
7.	School Social Behaviour Scales, 2nd Edition (SSBS-2) (Alfonso, Rentz, Orlovsky, & Ramos, 2007)		YES		5 to 18	
8.	Social Responsiveness Scale, Second Edition (SRS-2) (Bruni, 2014)		YES	YES	4 to 18	

9.	School Social Skills Rating Scale (SSRS) (Brown, Black, & Downs, 1994)			6 to 18	<ul style="list-style-type: none"> • Restricted Interests • Repetitive Behaviour Pro-social skills <ul style="list-style-type: none"> • Adult Relations • Peer Relations • School Rules • Classroom Behaviours
10.	The Devereux Student Strengths Assessment (LeBuffe, Shapiro, & Naglieri, 2009)	YES	YES	3 to 14	Social-emotional Competence: <ul style="list-style-type: none"> • Self-Awareness • Social-Awareness • Self-Management • Goal-Directed Behaviour • Relationship Skills • Personal Responsibility • Decision Making • Optimistic Thinking

Hence, based on the meta-analysis conducted by Gresham, Cook, Crews, & Kern, (2004), they also agree that social skill intervention needs to include cognitive, social interaction and social behavioural domains. Even the most popular instrument to measure social skill competence as Social Skills Improvement System - Rating Scales by Gresham & Elliott, (2008) focuses on the relationship between academic achievement and problematic behaviour together with social skills elements. It can be concluded that to improve domains related to social skills, the key factor is to foster a positive behaviour that is understandable and accepted by people in their surroundings. In addition, it can be adjoined with a variety of domain that intervenes with each other's.

Therefore, structured observations will be conducted to measure the standard behaviour of ASD children in their natural setting (Johnson & Christensen, 2008, 237). It is intended to measure the level of learning outcome in ASD children for child's development. In the proposed research, the instrument will be used to assess the social behavior of ASD children toward the used of assistive technology in teaching and learning of social skills module. Positive and acceptable social behaviour was a very important aspect in ASD children as its indicate social skills competence (Virginia Department of Education, 2011). In addition, an in-depth knowledge of ASD children behavioural profile can be used to provide better support and intervention to assist towards better outcomes in future (Duncan & Bishop, 2015).

The aims of teaching and learning of social skills module for the proposed research is to increase ASD children knowledge proficiency in social interaction, social communication, social emotional and social behaviour to develop social skills competence. Systematic reviewed on 80 instruments previously concluded only 10 instruments were identified to address social skills and meet the selection criteria. However, none of these instruments individually were adequate in measuring the learning outcome as stated in table 2.

Therefore, there is a need to construct a new instrument which will achieve by selecting suitable items from the four identified instruments so that it could be consistent with the requirement for measuring the learning outcome to address social skills competence in the proposed research. The new

instrument also will be used to develop an individual's profile of social behaviour in order to produce a report for planning and preparation additional intervention in social skills suitable for ASD children. The instrument also needed to adhere to children between the ages of 6 to 14 years old and address in a school environment. The items also were reviewed in order to ensure its cover the content being delivered to the students through social skills module.

TABLE II
LEARNING OUTCOME FOR SOCIAL SKILLS MODULE

No.	Learning Outcome
1.	awareness of themselves
2.	sense of belonging
3.	self-esteem
4.	awareness of basic feeling
5.	name feeling verbally or nonverbally
6.	strategies to respond appropriately
7.	personal safety

V.CONCLUSION

ASD causes a lack of social competence which must be addressed at an eager stage. Assessment of intervention is a challenging task as ASD varies from one person to another and interventions also need to vary to suit individual spectrum and learning context. A review of current instruments reveals 80 instruments that may have the potential to be used for assessing social competence. However, only 10 instruments were found to be suitable for further review when specific criteria were set; that indicates the difficulties in finding a valid and reliable instrument for assessing social competence among ASD children. Among the 10 instrument, four instruments were found to fulfill some of the set criteria i.e., none of the instruments individually full all the criteria set. Thus, a decision was made to adapt and integrate items from these four instruments as the best option for developing a new social skills competence instrument for ASD children in a school setting.

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REFERENCES

- Alfonso, V. C., Rentz, E., Orlovsky, K., & Ramos, E. (2007). Test Review: School Social Behavior Scales, Second Edition. *Journal of Psychoeducational Assessment*, 25(1), 82–92. <https://doi.org/10.1177/0734282906291793>
- APA, A. P. A. (2015). What is Autism Spectrum Disorder? Retrieved from <http://www.psychiatry.org/patients-families/autism/what-is-autism-spectrum-disorder>
- Bellini, S. (2006). Autism Social Skills Profile. *Building Social Relationships: A Systematic Approach to Teaching Social Interaction Skills to Children and Adolescents with Autism Spectrum Disorders and Other Social Difficulties*.
- 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. <https://doi.org/10.1177/10883576070220020801>
- Boyd, L. E., & Ward, D. M. (2013). Social Compass Curriculum: Three Descriptive Case Studies of Social Skills Outcomes for Students With Autism. *SAGE Open*, 3(4), 1–11. <https://doi.org/10.1177/2158244013507289>
- Brown, L. J., Black, D. D., & Downs, J. C. (1994). *School social skills (S3)*. New York: Slosson Educational Publications. Retrieved from <http://www.worldcat.org/title/school-social-skills-s3/oclc/37775290>
- Bruni, T. P. (2014). Test Review: Social Responsiveness Scale-Second Edition (SRS-2). *Journal of Psychoeducational Assessment*, 32(4), 365–369. <https://doi.org/10.1177/0734282913517525>
- Duncan, A. W., & Bishop, S. L. (2015). Understanding the gap between cognitive abilities and daily living skills in adolescents with autism spectrum disorders with average intelligence. *Autism*, 19(1), 64–72. <https://doi.org/10.1177/1362361313510068>
- Elliott, S. N., & Busse, R. T. (1991). Social Skills Assessment and Intervention with Children and Adolescents Guidelines for Assessment and Training Procedures. *School Psychology International Business Horizons*, 12(3).
- Gillis, J. M., & Butler, R. C. (2007). Social skills interventions for preschoolers with Autism Spectrum Disorder: A description of single-subject design studies-Ini ayat intro. *JEIBI*, 4(3), 532–547. <https://doi.org/http://dx.doi.org/10.1037/h0100390>
- Golzari, F. F., Hemati Alamdarloo, G., & Moradi, S. (2015). The Effect of a Social Stories Intervention on the Social Skills of Male Students With Autism Spectrum Disorder. *SAGE Open*, 5(4), 1–8. <https://doi.org/10.1177/2158244015621599>
- Gottman, J., Gonso, J., & Rasmussen, B. (1975). Social interaction, social competence, and friendship in children. *Child Development*. Retrieved from <http://www.jstor.org/stable/1128569>
- Gresham, F. M., Cook, C. R., Crews, S. D., & Kern, L. (2004). Social Skills Training for Children and Youth with Emotional and Behavioral Disorders : Validity Considerations and Future Directions University of California-Riverside. *Behavior Disorders*, 30(1), 32–46.
- Gresham, F. M., Elliott, S. N., Vance, M. J., & Cook, C. R. (2011). Comparability of the Social Skills Rating System to the Social Skills Improvement System: Content and psychometric comparisons across elementary and secondary age levels. *School Psychology Quarterly*, 26(1), 27–44. <https://doi.org/10.1037/a0022662>
- Hanzlick, H., Petersen, L., & Rogers, L. (2010). Moving Toward Functional Social Competence. A Scope and Sequence Assessment of Social Skill Development for Students with Challenges in Social Cognition.
- Huitt, W., & Dawson, C. (2011). Social Development: Why It Is Important and How To Impact It. *Educational Psychology Interactive*, (2006), 1–27.
- Johnson, R. B., & Christensen, L. B. (2008). *Education research: quantitative, qualitative, and mixed approaches*. (D. McDaniel, J. McNall, L. Mori, & G. N. Chalew, Eds.) (3rd ed.). United States of America: Sage Publications, Inc. Retrieved from <http://www.amazon.com/Educational-Research-Quantitative-Qualitative-Approaches/dp/1412954568>
- Kent, R. G., Carrington, S. J., Couteur, A. Le, Gould, J., Wing, L., Maljaars, J., ... Leekam, S. R. (2013). Diagnosing autism spectrum disorder: Who will get a DSM-5 diagnosis? *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 54(11), 1242–1250. <https://doi.org/10.1111/jcpp.12085>
- LeBuffe, P., Shapiro, V., & Naglieri, J. (2009). An introduction to the Devereux Student Strengths Assessment (DESSA). Retrieved from <https://www.kaplanco.com/content/products/DESSAIntroduction.pdf>
- Lynch, S. A., & Simpson, C. G. (2010). Social Skills : Laying the Foundation for Success. *Dimensions of Early Childhood*, 38(2), 3–12.
- Matson, J. L., Kozlowski, A. M., Neal, D., Worley, J. A., & Fodstad, J. (2011). Cutoffs for the Matson Evaluation of Social Skills with Youngsters-II (MESSY-II) for typically developing children and for children diagnosed with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 5(2), 798–802. <https://doi.org/10.1016/j.rasd.2010.09.008>
- Mcknight, L., & Davies, C. (2012). *Current Perspectives on Assistive Learning Technologies : 2012 review of research and challenges within the field*.
- Medeiros, J. M. (2007). *The Inclusion Model: A Framework for Developing Social Skills In Children with Autism*. New Mexico Highlands University.
- Stone, W., Lisa, R., Hepburn, S., Coonrod, E., Burnette, C., Pennington, M., & Brigham, N. B. (2010). TRIAD SOCIAL SKILLS ASSESSMENT. Virginia Department of Education. (2011). *Models of Best Practice in the Education of Students with Autism Spectrum Disorders*. Retrieved from http://www.doe.virginia.gov/special_ed/disabilities/autism/technical_asst_documents/autism_models_of_best_practice.pdf
- Washington, U. of. (2004). Social Skills Checklist. Retrieved from <https://tun.touro.edu/wp-content/uploads/2016/04/CADD-SocialSkills.pdf>