

TOKEN REINFORCEMENT AND COOPERATIVE LEARNING STRATEGIES IN ENHANCING SOCIAL SKILLS OF CHILDREN WITH INTELLECTUAL DISABILITY IN IBADAN, OYO STATE, NIGERIA

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Abstract

Children with Intellectual Disability (ID) demonstrate poor social skills and have been shown to experience difficulties in interpersonal relationship. Available literature substantiates the impact of utilizing intervention plans to effectively manage children with ID expressing social skill deficit to enhance their social and academic performance. This study, therefore, investigates social skills of children with ID in Ibadan, Nigeria. Pre-test, post-test and control group quasi-experimental research design was adopted. Thirty (30) participants were purposively selected from two special schools in Ibadan. Four hypotheses were tested at 0.05 level of significance and analyzed using Analysis of Co-variance. There was a significant main effect of treatment on social skills development of children with ID [$F_{(2,18)} = 28.719, p < 0.05$). Gender and socio-economic status had no significant effect on skills development and there was no significant interaction effect on treatment. Token reinforcement and cooperative learning strategies were effective in enhancing social skills of children with intellectual disability. Teachers, therefore, should adopt these strategies to enhance social skills of children with ID in classrooms interaction.

Introduction

Children with intellectual disability on the average find it difficult to play and share toys or other activities with other children in a normal way and may engage in abnormal social interaction and functional

play. These children cannot engage in appropriate social interaction like their peers, so they need to be tactfully helped to develop appropriate and functional interaction among their peers. Interaction

and participatory skills in the classroom, self-help skills as well as social and daily living skills are also difficult to acquire for these children.

Good social skills are critical to successful functioning in life. The skills enable us to know what to say, how to make good choices, and how to behave in diverse situations. The extent to which children and adolescents possess good social skills can influence their academic performance, behaviour, social and family relationships as well as involvement in extra-curricular activities. Social skills are also linked to the quality of the school environment and safety. While most children pick up positive skills through their everyday interaction with adults and peers, it is important that educators and parents reinforce this casual learning with direct and indirect instruction. We must also recognize when and where children pick up behaviours that may be detrimental to their development or safety. In the past, schools have relied exclusively on families to teach children important interpersonal and conflict resolution skills. However, increased negative societal influences and demands on family life make it imperative that schools partner with parents to facilitate this social learning process. This is particularly true today given the critical role that social skills play in maintaining a positive school environment and reducing school violence.

Social skills are skills that one uses to communicate with each other, both verbally and non-verbally, through gestures, body language and image. In other word, social skills facilitate

interaction and communication with others. Social rules and relations are created, communicated and change in verbal and non-verbal ways. Social skills encompass both social intelligence and social development. Therefore, we cannot talk about social skills without reference to social intelligence and social development.

Goleman (2006) defines social intelligence as being intelligent not just about our relationships but also in relating with others. His definition includes both the capacity to be socially aware (with components of primal empathy, attunement, empathetic accuracy, and social cognition) as well as the ability to develop social skills or facility (including components of synchrony, self-preservation, influence and concern). Albrecht (2006) primarily defines social intelligence simply as the ability to get along well with others and to get them to cooperate with you. Albrecht's definition is closer to definition of social competence rather than social intelligence. A definition of intelligence should focus on the ability to learn to do something rather than being competent at it.

In each of these definitions, cognitive/thinking, affective/emotional, and cognitive/volitional components are considered important because they provide the foundation for the establishment and maintenance of interpersonal relationships. Therefore, any attempt to develop social capacity (i.e. intelligence) into social competence will need to consider these other domains as well. There are some controversies about whether social intelligence really exists in a manner

similar to cognitive intelligence and the extent to which it can be developed through learning experiences (Weare, 2010). There are similar controversies when discussing other domains such as emotion (Brett, Smith, Price, & Huitt, 2003) and conation (Huitt & Cain, 2005). However, there is no debate about whether people vary in their ability to learn and develop social skills.

The fact that some people are in better social interaction than others has led to detailed investigations into the nature and function of interpersonal interaction. Developing social skills is about being aware of how we communicate with others, the messages we send and how methods of communication can be improved to make the way we communicate more efficient and effective. The quality of the parent-child attachment relationship also predicts children's social skills. A number of studies have found that having a secure attachment with a parent allows children to express emotion effectively and develop strong self-regulatory skills. Moreover, studies on attachment highlight the importance of the child's behaviour, including reactivity and responsiveness, in helping to shape the attachment relationship (Calkins, 2004).

Friendship becomes increasingly important in middle childhood and adolescence, especially, for the development of social skills. As children improve their ability to understand the emotions of others, they build increasingly mature friendships and strengthen their interpersonal learning-related skills. Children and adolescents who have

difficulty empathizing or self-regulating have few positive social interactions and are likely to be rejected or neglected by peers, which can significantly impact social well-being and academic outcomes (Rubin, Bwowski, & Parker, 2006).

A large body of available literature on children's social skills (including interpersonal skills and learning-related skills) plays in social academic successes. In general, children's interpersonal skills have been linked to school outcomes whereas learning-related skills have predicted academic success. Interpersonal skills are, especially, important for social adjustment in childhood and adolescence. For example, a study found that poor interpersonal skills (e.g. externalizing problems) in childhood, predicted academic problems in adolescence which in turn led to internalizing problems in adulthood (Masten, Roisman, Long, Burt, Obradovic, & Riley, 2005).

Negative effects of poor social skills cannot be over-emphasized. The ability to interact, get along, develop and maintain a relationship is a powerful predictor of current as well as later psychological adjustment. Young children with poor social skills are unhappy, are alienated from their peers, have poor achievement levels, and have low self-esteem. Peer rejection in adolescence is even more destructive with increased school failure, absenteeism, dropping out and delinquency. In adulthood, our social skills play a large role in the type of work we are able to find and whether or not we can maintain it. It determines whether or not we will have friends and romantic

partners and ever marry and raise a family. For example, children who have attention problems may have trouble listening and contributing to conversations, unable to inhibit the impulse to talk or say things at inappropriate times. Children with memory problems may have difficulty following conversation because they cannot remember what was just said. Children with language and communication difficulties are, especially, vulnerable to social problems. They may have difficulty keeping up with the pace of a conversation, especially, when there is a group of children talking. Children with autism and Asperger's syndrome are ill equipped to deal with social situations.

Literature list such evidence indicates that a number of factors can impact on the social development of learners. For the purpose of this study, we will only highlight two major strategies that could possibly have impacted on the present and future development of social competence as well as social skills of the learners, most especially, the intellectually disabled. These include: Token Reinforcement and Cooperative Learning Strategies.

Reinforcement is the experimental introduction of an unconditioned stimulus along with a consolation stimulus. It is a circumstance, or a condition that increases the likelihood that a given response will recur in a situation like that in which the reinforcing condition originally occurred (The American Heritage Medical Dictionary, 2007). Repp and Deitz (1974) reported that positive reinforcement techniques (such as exchangeable tokens),

differential and reinforcement of other behaviours were used to reduce poor social skills development and self-injurious behaviour of four children with intellectual disabilities in Georgia State University. The researchers reported that the rate of aggressive and poor social skills acts reduced significantly with the use of reinforcement techniques.

Token reinforcement systems are useful classroom and therapy tools to increase appropriate behaviours. In such a system, a token (for example, penny, sticker, etc) is given to encourage appropriate behaviour, and after a predetermined number of tokens are collected, they can be traded in for a back-up reinforcer (for example, candy, toy, interactive activity, etc). The true goal of all external rewards is that appropriate behaviour encouraged will lead to its own intrinsic rewards. All skilful teachers use effective rewards, or arrange desirable consequences, for their pupils. These can take either the form of tangible rewards or social approval. To shape behaviour effectively, the reward should follow the targeted behaviour as soon as possible. In the case of social approval (e.g. praise by the teacher or recognition from a peer group), this is easily and quickly accomplished, using terms such as "I like the way you are working quietly, well done, that was a good question". However, if praise is unsuccessful, a tangible reward may be a strategy and this is not easily immediately delivered. One solution is a token reinforcement strategy (such as the awarding of stars or points), that can be exchanged at a later time for a tangible

reward. To increase the immediate association of the targeted behaviour with a future reward, the reward of the token should always be paired with praise. Always be ready to remove the tangible rewards when praise alone has become a sufficient reward.

Cooperative learning has been found to yield many benefits to students who engage in it. Not only does it assist students in acquiring knowledge, it also helps them to develop cognitive and social skills. Cooperative learning is a teaching technique that brings students together to learn in small, heterogeneous groups. In these groups, students work interdependently without constant and direct supervision from the teacher. Assignments are structured so that everyone contributes. Challenges as well as rewards are shared. Brainstorming, lively discussions and collaborations are the hallmarks of the cooperative-learning classroom.

Cooperative learning helps to build higher-level cognitive skills as well as interpersonal skills (Michaelson, 1992, cited in Freeman 2004). Cooperative learning helps students to develop interpersonal skills (Slavin, 1987) such as: getting to know and trust team members; communicating effectively and clearly; providing support and challenging fellow team members; and engaging in constructive conflict resolution (Johnson & Johnson, 1996). In addition, these social skills may help students to acquire a sense of social responsibility (Vermette, 2004).

Cooperative learning is deemed highly desirable because of its tendency to

reduce peer competition and isolation, and to promote academic achievement and positive interrelationships. A benefit of cooperative learning, therefore, is to provide students with intellectual disabilities (ID), who have social interaction difficulties, an instructional arrangement that fosters the application and collaborative skills within natural setting (that is, group activity). Thus, cooperative learning has been used extensively to promote social skills achievement of students both with and without intellectual disabilities (Slavin, Leavy, & Madden, 1984).

Gender describes the behavioural sex differences, that is, whether male or female in exhibition of good social skills. Various research findings about gender and social skills, for example, Lancelotta and Vaughn (1998), Cole and Dodge (1992), opine that girls are less tolerant of all types of behaviour than boys. A number of studies have found that social skills deficits have been more often documented in boys than girls. Compared with girls, boys are more likely to be suspended and expelled at every grade level, drop out of school, exhibit behaviour problems, and have lower education levels (Gilliam & Shahar, 2006). Research also indicates that girls have stronger aspects of learning-related skills and more adaptive classroom behaviour than boys.

Socio-economic status is a moderating variable in this study. Research documents have it that children who are

disadvantaged or of minority socio-economic status may be at risk of having difficulty socially and academically in early childhood. For example, studies have linked growing up in poverty to a number of risk factors, including poor achievement on cognitive and language outcomes, increased behavioural problems (both externalizing and internalizing), increased stress levels, and difficulties with self-regulation (Dearing et al, 2006). Children from disadvantaged backgrounds also have been found to exhibit poorer learning-related skills and do worse on academic indices throughout elementary school compared to their peers. (McClelland et al, 2006). These results suggest that income level and socio-economic status can be risk factors in the development of social skills for children and adolescents.

Therefore, this research work intends to look into the token reinforcement and cooperative learning strategies capable of enhancing social skills of children with intellectual disabilities in Ibadan.

Purpose of the Study

The purpose of this study is to experimentally investigate the effect of cooperative learning and token reinforcement strategies in enhancing social skills of children with intellectual disability (ID). Also, to determine which of the two experimental strategies is more effective in achieving social skills development in children with intellectual disability. Likewise, it is to determine the effect of gender and socio-economic status

of children on their social skills development.

Hypotheses

The following hypotheses were tested at 0.05 level of significance

HO1: There is no significant effect of treatment on students' social skills.

HO2: There is no significant interaction effect of treatment and gender on students' social skills.

HO3: There is no significant interaction effect of social economic status and gender on students' social skills.

HO4: There is no significant interaction effect of treatment, socio-economic status and gender on students' social skills

Methodology

Research design

The study adopted a pre-test, post-test, control group, quasi experimental design that utilized a 3x2x2 factorial matrix. The first treatment group was made up of 10 participants who were exposed to token reinforcement strategy while the second treatment group comprised of 12 participants who were exposed to cooperative learning strategy and control group comprised of 8 participants.

Sample and Sampling Technique

The target population for the study comprises primary four (4) and five (5) pupils with intellectual disability in special schools in Ibadan, Oyo State. The sample size was thirty (30) in all. The sample of the study comprises pupils purposively drawn from the primary four and five pupils with intellectual disability in two selected special schools in Ibadan

metropolis. In the primary four and five classes, all the pupils were screened for intellectual disability.

The following instruments were used to carry out this research:

- Slosson Intelligence Test (SIT)
- Socio-economic Status Scale
- Modified Social Skills Scale

The SIT was constructed and validated by Slosson (1963) for persons of age 4 to 16 and re-normed in 1981. It has been re-normed in 2005 and called SIT-R3. The test, retest was done using Conbach alpha

Results and Discussions

and a reliability coefficient value of 0.86 was obtained. The Socio-economic Status Scale was also designed and validated by Salami (2000), the test, retest value of 0.87 was obtained using Cronbach alpha. The Modified Social Skill Scale which was designed and validated by Van Staden (2004) was also adopted for the study.

Method of Data Analysis

The data collected was used to analyse, using descriptive statistics and Analysis of Co-variance (ANCOVA) using pre-test scores as covariance.

Table 1: ANCOVA table showing the effect of learning strategies in enhancing Social Skills of Children

Source of variance	Type III sum of square	D F	Mean Square	F	Sig P	Parital Eta Squared
Corrected model	15426.30	11	1402.366	8.127	.000	.832
Intercept	6123.562	1	6123.582	35.486	.000	.663
Pre-test	.280	1	.280	.002	.968	.000
Treatment	9911.750	2	4955.875	28.719	.000	.761
Socio-economic Status	800.028	1	800.028	4.636	.045	.205
Gender	421.885	2	210.942	.1222	.318	.120
Treatment * social economic status	13.105	1	13.105	.076	.786	.004
Treatment * Gender	551.983	2	275.991	1.599	.299	.151
Social Economic Status Gender	31.909	1	31.909	.185	.672	.010
Treatment * Social Economic Status * Gender	74.515	1	74.575	.432	.519	.023
Error	3106.137	18	172.563			
Total	116573.000	30				
Corrected Total	18532.167	29				

R squared = .832 (Adjusted R squared = .730)

Table 1 shows a summary of the effect of treatment, social economic status and gender on students' social skill. The table also indicates the significant effect of treatment on students' social skill ($F=28.719; df=2,18, P<0.05$. Since P-value (0.00) was less than 0.05 level, then there

is significant effect of treatment on students' social skill. The partial Eta squared estimated was 0.761. This implies that the treatment accounted for 76.1% of the total variance observed on the post test students' social skill scale.

Table 2a: Scheffe Post Hoc Multiple Comparison of Students' Social Skill

Treatment (I)	Treatment (J)	Mean Difference	Standard Deviation	Sig. P
Token reinforcement	Cooperative learning	7.967	5.529	3.68
	Control	51.917*	5.894	.000*
Cooperative Learning	Token reinforcement	-7.967	5.529	3.68
	Control	43.950	6.125	.000*
Control	Token reinforcement	-51.917*	5.894	.000*
	Cooperative learning	-43.950*	6.125	.000*

Table 2b: Scheffe Post Hoc Homogenous Test Showing the Means in Students' Social Skill of the Treatment Groups

Treatment	N	Subtest	
		1	2
Control	8	21.75	
Cooperative Learning	10		65.70
Token reinforcement	12		73.67
Sig		1.000	.408

The result of Scheffe post hoc multiple comparisons on Table 2a shows that there existed a significant mean difference between the social skill of the students in token reinforcement group and those that are in cooperative learning group. Also, the mean difference between token reinforcement and control group was significant and the mean difference between cooperative learning and control group was also significant. The result of Scheffe post hoc in Table 2b shows that students that belong to Token reinforcement had mean score of 73.67,

which is significantly different from cooperative learning group which had 65.70. The control group had the lowest mean score of 21.75. The finding shows that there is significant main effect of treatment on students' social skill.

Conclusion

This study determines the effect of token reinforcement and cooperative learning strategies on social skills achievement of children with intellectual disability in Ibadan, Nigeria. The training programmes were carried out, data were

generated for the study and analyzed and the discussion reveals that:

- (i) token reinforcement and cooperative learning strategies were effective in enhancing the social skills competency of children with ID expressing deficiencies in social skills achievement;
- (ii) despite the fact that both token reinforcement and cooperative learning strategies were effective in enhancing the social skills development, token reinforcement strategy was more effective in enhancing the social skills competency of children with ID expressing deficiencies in social skills achievement;
- (iii) The treatment programme had significant effect in its attractive between high and low social economic status of children with ID expressing deficiencies in social skills achievement. Also, the significant interactive effect between gender and socio economic status mediate the efficacies of the two training programmes;
- (iv) deficiencies or lack of social skills development can be managed. Also, social skills competency of children with ID expressing deficiencies in social skills development can be positively improved upon to foster academic success of children with ID expressing deficiencies in social skills achievement in school.

Recommendations

Children with intellectual disability are experiencing and had experienced in the

past academic failure and low performance in basic subjects of reading, writing and even arithmetic. The motivation and aspiration of these sets of children usually are at a very low level. They continually express anxiety, restlessness and inattentiveness or impulsivity, get low grades in school and seem to take it for granted that they will continue to get this caliber of grades despite what they try to do. Based on this context therefore, the researcher would like to make the following recommendations:

- (i) the family, society and others should take time to appreciate and understand the academic and developmental challenges faced and experienced by children with intellectual disability who are expressing deficiencies in social skills achievement so as to device appropriate measures to help them overcome their challenges and adjust well to their challenges;
- (ii) children with ID expressing deficiencies in social skills performance should not be labeled or stigmatized as failure but should be encouraged and re-enforced positively to overcome their frustrating academic experiences and function optimally in school and attain good academic performance;
- (iii) the teacher should endeavour to use token reinforcement and cooperative learning strategies as effective measures to encourage children expressing deficiencies in social skills development as self-help to develop

their social abilities and competence through self-support;

- (iv) also, the teacher should pair more competent and less competent children with ID in social skills development to work together.

References

- Albrecht, K. (2006). *Social Intelligence: The New Science of Success*. San Francisco: Jossey-s Bass.
- Bierman, K.L, and Erath, S.A. (2006). Promoting Social Competence in early Childhood: Classroom Curricula and Social Skills Coaching Programs. In K. McCartney *Childhood Development* (pp.595-616). Maiden MA: Blackwell
- Blair, C. (2002). School readiness: Integrating cognition and emotion in neurological conceptualization of children's functioning at school entry. *American Psychologist*, 57, 111- 127.
- Brett, A., Smith, M., Price, E.,andHuitt, W. (2003). The affective domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved from <http://www.edpsychinteractive.org/papers/affectdev.pdf>.
- Calkins, S.D. (2004). Early attachment processes and the development of emotional self-regulation. In R.K. Ballmeister and K.D.Vohs (Eds.), *Handbook of Self-regulation: Research, Theory and Application* (pp 324-339). New York: Guildford Press.
- Cole, J.O and Dodge, K.A. 1992. Dominance rank, copulatory behaviour and differential reproduction.*Rnantely Review of Biology*. 59(2) 135-159.
- Dearing E., Berry, D., and Zaslow, M. 2006. Poverty during early childhood. Ink Freeman, C. E. (2004). Trends in Educational Equity of Girls & Women: 2004. Education Statistics Quarterly, 6(4). Retrieved September 9, 2006 from <http://nces.ed.gov-/programs/quarterly/vol 6/6 4/8 1.asp>
- Gilliam, W.S., and Shahar, G. 2006. Preschool and child care expulsion and supervision: Rates and predictors in one state. *Infants and Young Children*, 19(3), 228-245.
- Goleman, D. (2006). *Social intelligence: The Revolutionary New Sciences of Human Relationships*. New York: Bantam Dell.
- Huitt, W., and Cain, S. (2005). An overview of the conative domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved from <http://www.edpsycinteractive.org/pape rs/conative.pdf>
- Johnson D.W. & Johnson, R. T. 1996. Cooperative Learning and Traditional American Values: An

Appreciation. *NASSP Bulletin*, 80 (579), 63-65.

Lancellota, G.X and Vaughn, S. 1998. Relation between types of aggression and socio-metric status peer and teacher perceptions. *Journal of Education Psychology*, 81, 86-90.

Masten, A.S., Roisman, G. I., Long J.D. Burt, K.B., Obradovic, J., Riley, J.R., et al. (2005). Developmental Cascades: Linking academic achievement and externalizing and internalizing symptoms over 2 years. *Developmental Psychology*, 41 (5), 733-746.

McClelland, M.M., ACOCK, A.C, and Morrison, F.J. 2006. The impact of kindergarten learning-related skills on academic trajectories at the end of elementary school. *Early Childhood Research Quarterly*, 21, 471-490.

Michaelsen L.K. (1992) Team learning: a comprehensive approach for harnessing

Rothbart, M.K., and Rueda, M.R. (2005). The development of effortful control. In U. Mayr, E. Awh, and S. Keele (Eds.), *Developing individually in the human brain: A tribute to Michael I. Posner* (pp. 167-188). Washington D.C: American Psychological Association.

Rubin, K.H., Bwkowski, W. M., and Parker, J.G. (2006). Peer interactions, relationships and groups. In N. Eisenberg (Ed.), *Handbook on child psychology*, Vol 3, Social, emotional and Personality development (6th ed., pp. 619-700). New York: Wiley.

Slavin, R.E. (1990). *Cooperative learning: Theory, Research and Practice*. Boston: Allyn & Bacon.

Slavin, R.E, Leavey. M.B, & Madden, N.A. (1984). Combining Cooperative Learning and Individualized Instruction: Effects on Student Mathematics Achievement, Attitudes, and Behaviours. *The Elementary School Journal*, 84 (4), 409-422.

Vermette, P, Harper, L. & DiMillo, S. (2004). Cooperative & Collaborative Learning with 4-8 year olds: How does research support teachers' practice? *Journal of Instructional Psychology*, 31 (2), 130-134.

Weare, K. (2010). Mental health and social and emotional learning: Evidence, principles, tensions, balances. *Advances in School Mental Health Promotion*, 3 (1), 5-17.