



# An Investigation of the Effects of a Period of Individual and Team Plays on the Social Development of Educable Mentally Retarded Children

Jamal Fazel Kalkhoran, Morteza Homayounnia\*

Department of Physical Education and Sport Sciences, University of Tehran, Tehran, Iran  
Email: [mortezahomayoun@gmail.com](mailto:mortezahomayoun@gmail.com)

Received 10 March 2015; accepted 25 March 2015; published 31 March 2015

Copyright © 2015 by authors and OALib.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

## Abstract

Children learn to collaborate with and attract children of their own age, to observe others' rights, to live a team life and to develop many more social processes through play. The present study aimed at investigating the effects of a period of individual and team plays on the social development of educable mentally retarded children. In this quasi-experimental study, two experimental and one control group were used with the pretest-posttest design. The statistical population consisted of mentally retarded students (aged between 8 and 11) in Tehran Province. Two schools were selected from special schools of Tehran Province by cluster sampling method. Then, 45 male students were randomly selected from the students of these schools and assigned to three groups (each group 15 subjects) of experimental ( $10.7 \pm 0.3$ ) and control ( $10.5 \pm 0.4$ ). After the parents' consent, experimental subjects performed the school plays for a month, 12 sessions, and 3 sessions per week. Covariance and Tukey post hoc test were used to analyze the data. The results showed that the mean scores of social development in experimental groups drastically increased in the posttest ( $P = 0.001$ ). In addition, there was a significant difference in the mean between the experimental and control groups while there was no significant difference in the mean between the team and individual experimental groups ( $P < 0.001$ ). It can be concluded that team plays in mentally retarded children can lead to their better adaptability and relations in their community. It is suggested that proper facilities should be established for the physical activity of these children and the children should be involved in social interactions so that they can get rid of isolation and loneliness.

## Keywords

Team and Individual Plays, Social Development, Mentally Retarded Children

\*Corresponding author.

## Subject Area: Sports Science

---

### 1. Introduction

The researches on socialization in sport have had a direct relationship with the development of sport sociology. During the 1960s and the first years of 1970s, many researches attempted to explain different aspects of physical activity. Most researches on socialization of sport have focused on two aspects: one aspect is antecedents of sport participation, that is to say how and under what conditions a person starts sports, and the other aspect is outcomes of sport participation. These two processes are called socialization in social role and socialization through social role [1]. Therefore, in most sources, socialization in sport and socialization through sport can be observed. In the first expression, persons in their sport roles, like athletes, get socialized while the second expression points to the learning of attitudes, values, skills and general tendencies such as chivalry and discipline which can be achieved through sport activities. Socialization through sport is the effect of sport on beliefs, attitudes... It seems that those experiences we learn through sport participation are transferable to other social aspects and consequently help us to be successful in these aspects [2]. Danish asserts that children learn communication and decisiveness skills through participating in sport [3]. Physical education plays a role in accepting responsibility towards developing social values in the people of a society especially in students and it is regarded as a factor to improve these values and proper human behaviors [4]. Socialization and its relationship with sport reached its utmost importance in an international seminar in Canada in 1971. In this seminar, it was concluded that physical culture was an important factor in socialization. [5] believes that civilization has emerged only through priority and dignity of championship, that is to say, a competitive game is the fountain of democracy and people ruling themselves [6]. The socialization in children begins with their primitive sport activities and provides the grounds for motor development in childhood and the sport participation in the future [7]. Sports as one of the activities in leisure time attract cultural values. In team sports, the players try to gain other players' satisfaction and to establish higher adaptability in a team so that they can be absorbed faster in the team. From the sociological perspective, sport in leisure time prevents static mood and deviation from abilities and competencies in the people of the society especially in the youth and consequently enhances their various social and economic productivity and efficiency [8]. Research shows that physical disorder is one the clearest characteristics observed in mentally retarded children. Physical-motor characteristics have a close relationship with cognitive power. The weaker a person is in intelligence quotation and cognition, the more problems will arise in coordination, agility and motor flexibility. In most societies, mentally retarded children live alone; they do not attend parties and other gatherings and deviate from their routine life. As they are excluded from society, they will have limitations to use social facilities. Children acquire many social skill patterns from children of their own age and they maintain a part of their mental health through healthy and equal relationships with their peers. However, if this part of their life faces a problem, there will be many negative outcomes. A main strategy for mentally retarded children to enter the society is to highlight physical education and to add special physical education programs to their daily routine [9]. If a play is considered by children as a means of enjoying and performing activity as well as a means of providing facilities to interact with the environment, it will be called an educational play. Educational plays should be designed beforehand and as a result the learner is to pass all the designed phases step by step and forcefully so it cannot be completely called as a play [6]. There are many different viewpoints on sports, plays and socialization. Some researchers such as Haywood (2002) believe that children's participation in team activities and plays with their peers lead to their social development, while Youkslen (2008) notes that school environment, contrary to free play, provides children with fewer opportunities for social behavior. Other researchers consider an increase in social development through physical activity as a weak probability [7]. In this dilemma, Smith states that the play comprises a suitable proportion of time and an important proportion of development in many children. Even if the play helps increase power or develop creativity, children do not play to improve their muscles and to increase their creativity, but perform these activities for fun [6]. Coe and Pivarnik (2006) concluded in their study that those students participating in sport and team activities enjoyed better social development than other students [10]. Gartlan and Strosnider (2013) reported team, sport and extracurricular activities as a factor to provide social development in children [11]. Goldshtrom and Korman (2010) announced that participation in physical activities and sports played an important role in socialization [12]. Hooper and Swartz (2002) investigated

students' activities and their participation in extracurricular team sports in Sweden and Italy and concluded that individuals learned a main part of communication and social skills in team sports and used these skills during their life [8]. Joheson (2003) believed that physical activities not only provided physical health but also played an important role in social development [13]. Leisman (2010) and Lerner (2003) believed in the role of sport in socialization and found out that athletes were more sociable than non-athletes [14] [15]. In addition, the scores of mental health, vitality, general health, physical performance and the elimination of anxiety improved in male workers of a factory after 24 weeks of aerobic and weight training [3]. Brosnan (2002) in his research reported that soccer players enjoyed higher mental health than wrestlers and the reason could be attributed to this fact that soccer was a team sport [16]. Overall, the type of sport can influence mental and spiritual dimensions. This feature can introduce purposive motor activities as a therapeutic method to improve social development in mentally retarded children. Therefore, the main hypothesis of this study was whether team and individual plays could influence the increase of social development in mentally retarded children. More attention of physical education and sport authorities, education authorities and parents of mentally retarded children to motor skills and different plays specifically in childhood and in different grades of elementary school is one of the main drives to conduct this study. On the one hand, with regard to the main mission of education which is the achievement of modern and effective methods, it can be beneficial to employ motor activities and plays. Most researches on the role of sport in social development have been descriptive and have explained social development in athletes and non-athletes. On the other hand, very few researches on the role of team and individual plays in social development of mentally retarded children have been conducted worldwide. And as experimental studies about the role of team and individual plays in the social development of mentally retarded children are rare, this study attempts to investigate the effects of team and individual plays on social development of mentally retarded children.

## 2. Method

In this quasi-experimental study, there were three groups, team plays, individual plays and control, and a pretest-posttest design was used.

### 2.1. Participants

The statistical population consisted of mentally retarded students aged between 8 and 11 in Tehran Province. Firstly, two schools were selected from special schools of cities of Tehran province through cluster sampling method. Then, 45 students were randomly selected from the students of these schools. The selected students were randomly assigned to three groups (each group 15 subjects): two experimental groups and one control group. After the parents filled out the consent forms, the study started.

The intervention for one experimental group consisted of team plays while it consisted of individual plays for the other experimental group during one month, 12 sessions and 3 sessions per week. Individual plays and team plays were performed while the control group did not receive any plays and training.

### 2.2. Research Instrument

Vineland Social Maturity Scale was used to measure students' social development. This scale was developed by Doll in 1935 and then was modified in 1956; it consists of 117 items and 8 subscales including communication skills, general self help ability, locomotion skills, occupation skills, self direction, self help eating, self help dressing and socialization skills which can be applied for all ages. In addition, this scale was standardized on 620 subjects including 10 men and 10 women in each age group from birth to 30 years of age. The reliability coefficient was reported as 0.92 through retest of 123 subjects. It should be noted that the interval of retest was one day to 9 months. The validity coefficient of this scale was reported as 0.89.

### 2.3. Statistical Analysis

To analyze the data, descriptive statistics were used. In addition, inferential statistics such as covariance were used after the normal distribution of data and homogeneity of variance among groups were assured.

In order to meet research ethics, the procedures and aims of the study were explained to the parents and they were justified that this study was only a scientific survey and people were free to choose to participate in this study or not.

### 3. Results

The descriptive findings of this study consisted of mean and standard deviation statistics. **Table 1** shows all the variables under study.

**Table 1** showed the mean scores social development of educable mentally retarded children in pretest and posttest for the three groups. As a result, mean scores of social development in experimental groups drastically increased in posttest.

**Table 2** showed that P was big; therefore, the hypothesis of the homogeneity of variance of social development scores for the two groups was confirmed at error level of 0.05 or 0.01. The results of covariance can be used for this hypothesis.

**Table 3** showed that considering the pretest scores as the dependent variable, educational interventions (team and individual plays) made a significant difference between experimental and control groups ( $P = 0.007$ ). Also, the statistical power was 0.98 units which showed the appropriateness of sampling size.

To compare means of social development in pairs in experimental and control groups, Tukey post hoc test was used.

**Table 4** showed a significant difference in mean between experimental and control groups while there was no significant difference in mean between team and individual experimental groups.

**Table 1.** Mean and standard deviation of all groups in Vineland social maturity scale.

Group	Subjects	Pretest		Posttest	
		Mean	SD	Mean	SD
Experimental (team play)	15	11.01	1.01	12.42	0.63
Experimental (individual play)	15	11.06	1.24	11.27	1.34
Control play	15	10.58	1.29	11.16	1.22

**Table 2.** Homogeneity of variances in experimental and control groups for social development in posttest.

F statistic	DF of numerator	DF of denominator	P
1.456	1	14	0.243

**Table 3.** The results of covariance, the difference in social development in all groups.

	Sum of squares	DF	Mean of squares	F	sig	Eta	Power of test
Pretest	18.36	1	18.36	25.03	0.0001	0.29	0.98
Group	9.48	2	5.17	6.12	0.007	0.19	0.81
Error	30.73	40	0.81				

**Table 4.** Tukey test to compare the mean of social development in pairs in experimental and control groups.

Group i	Group j	Sig
1	2	0.95
	3	0.02
2	1	0.95
	3	0.01
3	1	0.02
	2	0.03

## 4. Discussion

The aim of the present study was to investigate the effect of individual and team plays on social development of educable mentally retarded children aged between 8 and 11 in Tehran Province. The scores obtained from Vineland Social Maturity Scale in the three groups and their comparison showed that individual and team plays had a significant effect on the social development of mentally retarded children. This study showed that social development of those children in individual and team play groups was significantly higher than that of control group. This difference may be due to this fact that those children who experienced individual and team plays during their physical education courses at school were more exposed to social interaction with their classmates compared with the control group. In fact, plays can be employed as children's suitable and favorite ways to have social interactions with their friends and children of their own age which, in turn, improve social development. Moreover, plays are considered as a very important factor in children's relationship with other children. The results of the present study were in line with Corapci (2008) and Skaines (2006) findings [17] [18]. These researchers introduced physical activity as a very important factor in social development of children. They believe that play is a very important factor in children's relationship with other children. On the contrary, in his research found out that play could not be the only factor in children's social development. He stated that children could reach their social development and puberty when their cultural environment provided them with these interactions. He asserted that parents and teachers should be instructed to learn how to interact with their children [11].

From a social perspective, sport is an approach in discovering and examining motor talents while the individual is establishing his specific relationship with the world and himself. Those who enter the sport world will learn how to learn; will discover how to deal with the world and the responsibilities and how to conquer different skills, techniques and symbolic processes using their unique methods. Then, they trust themselves and their competences in being attached to the world and as they are observing and feeling these experiences, they prepare themselves to learn other experiences and to accept those patterns with lower homogeneity [5]. The results of this study showed that team plays had a higher effect on social development of children compared with the individual plays. Play is natural for children; they can use it to understand themselves and their inner characteristics and employ these characteristics. In individual and team plays, children have the opportunity to understand and respond to their feelings and to expose their inner problems through these plays. Similar to adults who express their problems through talking, children use plays as tools to express their feelings and emotions; through play, they find an opportunity to expose their inner feelings resulted from tensions, failures, aggressions, fears and confusions. Plays alleviate many pains and behavioral disorders in children and children find an opportunity to express their anger through plays (for instance, through hitting their dolls). Overall, plays and movements are considered as assuring factors through which children can get familiarized with their environment and feel secure [19].

The results of this study showed that team plays had a higher significant effect on all social development components compared with the individual plays. Accordingly, mentally retarded children were able to improve in their dressing, eating and socialization skills after employing intervening approaches compared with the control group. The reason may be due to this fact that teamwork during plays resulted in their social development. Those environments such as schools and educational institutes where physical education is considered to be important for educable mentally retarded children can play an important role in social development of children [12]. Probably, the most important role physical education at schools and physical education courses play for mentally retarded children is that these children grow as useful members of their society; consequently, it can be stated that not many courses can replace or be compared with physical education and sport [20]. These results confirmed Skaines (2006) findings; in his research entitled "Playfulness in children with autistic disorder and their typically developing peers", he stated that due to their variety, school plays had an effect on infrastructures of different dimensions of motor-perceptual abilities and those plays appropriate to children's motor abilities can play an important role in children's development and can show the priority of active children over inactive ones if they are educated correctly and appropriately [21]. Brosnan (2002) in his research reported that soccer players had more mental health than wrestlers and the reason could be that soccer was a team sport [16].

Mendez & Fogle (2002) in a research on the relationship between play behavior, verbal expression and behavioral problems showed that play skills were associated with the amount of involvement in the class. They found out that those children who played well showed more incentive, attention, insistence on training and positive attitude towards learning in the class than those who did not play well [22]. De Villiers and Pyers (2002) believed

that competency in interactions with others needed a realm of cognitive, social and verbal skills. In the social domain, children should perceive behaviors. Those who potentially hold different ideas, aims and information [9] need to perceive social directions and to change their strategies based on the feedbacks they receive from their social friends in order to reach these aims more properly [18]. On the other hand, Tomporowski (2008) in his research found no significant relationship between individual and team physical activities and social development. He stated that after some sessions of activity, no difference was observed in social development between the children in team group and those in the individual group. It seems that the reason was that the researchers could not provide the team group with special training for their social development [1].

## 5. Conclusion

The findings of the present study showed that special attention should be paid to team plays of mentally retarded children at special schools, as these plays can create higher adaptability and self-sufficiency in these children and consequently these children can gain personal abilities such as personal hygiene, dressing ability, eating ability and other beneficial affairs. It is suggested that those physical education teachers who work with mentally retarded children should be educated, environments suitable for physical activity of these children should be established and that these children should be involved in social activities so that they can get rid of loneliness and isolation.

## References

- [1] Davis, C.L., Tomporowski, P.D., Boyhe, C.A., Wallev, J.H., Miller, P.H. and Naglieri, J.A. (2007) Effect of Aerobic Exercise on Overweight Children Cognitive Functioning a Randomized Controlled Trail. *Research Quarterly for Exercise and Sport*, **5**, 35-41.
- [2] Denckla, M.B. (2007) Executive Function: Building Together the Definitions of Attention Deficit/Hyperactivity Disorder and Learning Disabilities. In: Meltzer, L., Ed., *Executive Function in Education*, Guilford Press, New York, 5-18.
- [3] Atlantis, E., Chin-Mio, C., et al. (2004) The Association between Exercise and Health-Related Quality of Life Subjects Whit Mental Disorders. *Preventive Medicine*, **39**, 424-434.
- [4] Nober, A.C. and Reill, J. (2004) Time Is of the Essence. *Trends in Cognitive Sciences*, **8**, 387-389.
- [5] Michalowski, M.P. and Kozima, H. (2007) Methodological Issues in Facilitating Rhythmic Play with. *16th IEEE International Conference on Robot & Human Interactive Communication*.
- [6] Steel, M. (2004) Making the Case for Early Identification and Intervention for Young Children at for Risk Learning Disabilities. *Children Education Journal*, **32**, 75-79. <http://dx.doi.org/10.1007/s10643-004-1072-x>
- [7] Haywood, K.M. and Getchell, N. (2002) Life Spans Motor Development. 3rd Edition, Human Kinetics, Champaign.
- [8] Hooper, S.R., Swartz, C.W., Wakely, M.B., Dekruif, R.E. and Montgomery, J.W. (2002) Executive Functioning in Elementary School Children with and without Problems in Written Expression. *Journal of Learning Disabilities*, **35**, 57-68. <http://dx.doi.org/10.1177/002221940203500105>
- [9] De Villiers, J.G. and Pyers, J.E. (2002) Complements to Cognition: A Longitudinal Study of the Relationship between Complex Syntax and False-Belief-Understanding. *Cognitive Development*, **17**, 1037-1060.
- [10] Coe, D.P., Pivarnik, J.M., Womack, C.J., Reeves, M.J. and Malina, R.M. (2006) Effect of Physical Education and Activity Levels, on Academic Achievement in Children. *Medicine and Sciences in Sport and Exercise*, **38**, 15-19.
- [11] Gartlan, M. and Strosnider, R. (2013) Learning Disability and Young Children: Identification and Intervention. *Learning Disability Quarterly*, **30**, 63-72.
- [12] Goldshtrom, Y., Korman, D. and Bendavid, J. (2010) The Effect of Rhythmic Exercise on Cognition Behavior of Mal-treated Children: A Pilot Study. *Journal of Bodywork and Movement Therapies*, **15**, 326-334.
- [13] Joheson, J.P., Im-Bolter, N. and Pascal-Leone, J. (2003) Developmental of Mental Attention in Gifted and Mainstream Children: The Role of Mental Capacity, Inhabitation, and Speed of Processing. *Child Development*, **74**, 1594-1614. <http://dx.doi.org/10.1046/j.1467-8624.2003.00626.x>
- [14] Leisman, G. and Melillo, R. (2010) Effects of Motor Sequence Training on Attentional Performance in ADHD Children. *International Journal on Disability and Human Development*, **9**, 275-282. <http://dx.doi.org/10.1515/IJDHD.2010.043>
- [15] Lerner, J.W. (2003) Children Whit Learning Disabilities: Theories, Diagnosis and Teaching Strategies. Hoghton Millfflin, Allyn and Bacon, Boston.
- [16] Brosnan, M., Demetre, J., Hamill, S., Robson, K., Shepherd, H. and Cody, G. (2002) Executive Functioning in Adult

and Children with Development Dyslexia. *Neuropsychologia*, **40**, 2144-2155.  
[http://dx.doi.org/10.1016/S0028-3932\(02\)00046-5](http://dx.doi.org/10.1016/S0028-3932(02)00046-5)

- [17] Corapci, F. (2008) The Role of Child Temperament on Head Start Preschoolers' Social Competence in the Context of Cumulative Risk. *Journal of Applied Developmental Psychology*, **29**, 1-16.
- [18] Briaszgoonor, L.D. (1998) The Role of Physical Activity in the Prevention and Treatment of Non Communicable Disease. *Journal of Rapp Trimmest Static Mond*, **4**, 242-250.
- [19] Clawson, M. (2002) Play of Language: Minority Children in an Early Childhood Setting. In: Roopnarine, J.L., Ed., *Conceptual, Social-Cognitive, and Contextual Issues in the Fields of Play*, Ablex, Westport, Vol. 4, 93-116.
- [20] Cote, S., Zoccolillo, M., Tremblay, R.E., Nagin, D. and Vitaro, F. (2001) Predicting Girls' Conduct Disorder in Adolescence from Childhood Trajectories of Disruptive Behaviors. *Journal of the American Academy of Child and Adolescent Psychiatry*, **40**, 678-684.
- [21] Skaines, N., Rodger, S. and Bundy, A. (2006) Playfulness in Children with Autistic Disorder and Their Typically Developing Peers. *British Journal of Occupational Therapy*, **69**, 505-512.
- [22] Mendez, J. and Fogle, L. (2002) Parental Reports of Preschool Children's Social Behavior: Relations among Peer Play, Language Competence, and Problem Behavior. *Journal of Psychoeducational Assessment*, **20**, 370-385.