A COMPARISON BETWEEN LEARNING MOTIVATION, PROBLEM SOLVING, SELF-ESTEEM LEVEL IN EDUCATED CHILDREN IN CHILD-BASED PRESCHOOLS WITH EDUCATED CHILDREN IN TEACHER-BASED PRESCHOOLS

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Abstract
The purpose of this study was comparing the learning motivation, problem solving, self-esteem level in educated children in child-based preschools with educated children in teacher-based preschools. The statistical population was 50 children who passed their preschool in child- based and teacher-based centers in 2018-19. Among them, 25 preschool children were randomly selected from each preschool educational center of Almasi Shahrak (child-based, teacher- based) by research with a comparative design. Children who have completed their preschool education in both child-based, teacher- based centers, were participated in this study. Subjects answered three data collection tools including Academic Motivation Questionnaire (1980-1981), Parker Problem Solving Questionnaire (1997) and Cooper-Smith Self-Esteem Questionnaire (1967). The data were analyzed using descriptive statistics (mean and standard deviation) and variance analysis. Therefore, the descriptive statistics such as frequency, mean and standard deviation of scores was used and in the inferential part of independent t-test and multivariate analysis of variance (MANOVA) were used. The results showed that the components of learning motivation, problem solving and self-esteem among educated children in preschool with a child-based approach is higher than teacher-based approach.
Keywords: Learning Motivation, Problem solving, Children's self-esteem, Preschool with child-based and, teacher-based approach

Introduction
Nowadays, in many developed countries, child-based education has become the main policy and part of annual curriculum education. Child-based education is based on the philosophy of participatory education and cooperation of children and educators. (Adrienne, Akers et al., 2014). Learning motivation in child- based learning causes teachers and educators to adapt to each child's talents inclined to the learning process. In this way, children's thought and art flourish. (Hartley Brewer, 2011).
Children's learning motivation has a significant relationship with their self-esteem. Self-esteem in children is one of the most essential factors in the development of their personality. Having strong will and self-confidence, decision-making and initiative, creativity and innovation, physical and mental health, has a direct relationship with the level and nature of self-esteem (Biabangard, 2015).
All children face many problems in their individual and social life. Having the necessary skills to solve problems successfully causes children to have more self-confidence and feel more valuable, but if they do not have the necessary skills to solve problems or use inappropriate methods to solve them, they will have difficulty adapting to the environment and their mental health will be threatened. (Fist, Jess and Fist, Gregory J. 2002). Problem solving is a skill that can be learned and applied in child-based centers. This problem solving requires several activities; first, children can define problems carefully without the help of a teacher. Then they themselves propose and examine different solutions to each problem and finally select and implement the most appropriate and effective way (Shariatmadari, 1995).
The child- based educational approach is an educational program that should be in accordance with the individual development situation and compatible with the innate interests and desires of the child to learn (Safavi, 2008). In programs based on this approach, principled attention is paid to the comprehensive needs of children in order to identify their strengths and weaknesses (Mofidi, 2004). Today, in many developed countries, this child- based creative method has become the main program of education (Mohsenipour, 2004). Numerous researches have been done on the child- based educational approach, which show that any activity that frees a person from recognition, repetition, pressure, determination and responsibility, etc., leads to liberation, freedom, motivation and self-esteem. In the schools and institutes, according to the child-based approach, the educator, the principal, the teacher does not act as a master of power and a cause of fear, but as a sincere and loving guide and

supporter of the children. In this type of education, commanding education is substituted by free education (Gorani, 2014).

Many researches have been conducted on the effect of motivation on learning. Aguroglu and Wahlberg (1979) examined the correlation coefficient between the measures of motivation and academic achievement resulting from research conducted on 637,000 first-graders and twelfth graders and showed that the average correlation coefficients were +/34. (Seyf, 2008)

Keith and Cole, 1992 (quoted by Lafrançue 1997) examined the effects of several important factors, such as learners' ability, teacher training, and learning motivation from more than 25,000 students. The most important factor that directly showed a positive relationship with the rate of learning was the level of ability of the learners. Two other important factors were teacher training and learning motivation. They concluded that children who attend a high- quality school and education programs are highly motivated. These children accept more educational activities, do more homework, and as a result become more successful (Seyf, 2008).

Studies conducted by Fitrosi et al., Vazini Taher et al., Kadimeh et al., Hasti, Johnson Wardsell, Robinson et al., showed that child-based education has a significant effect on improving the motor skills of children in preschool. A study conducted by Mohammad Asoudeh and Maryam Zarepour (2012) on the impact of child-based on children's academic achievement and social skills showed the impact this approach on children's academic achievement and social development. Shokoohinejad (2001) compared the effect of educational methods on the growth and creativity of preschool children and in this regard has compared the two methods of child- based and teacher- based on the growth of creativity in the age group of 5-6 years in several kindergartens in Tehran. The results showed that child- based education was more suitable for developing creativity.

A study conducted by Yosel (2009) entitled "the effect of student-based educational on students' success" showed that the student-based method has achieved better and more significant results than teacher-based. Lee Mang (1996) in his study compared the impact of child-based and teacher-based teaching methods on the development of preschool children's creativity. The results showed that the pre-test and post-test scores of the creativity test were significantly different, and it was concluded that the child-based method is a more appropriate for initiative and creativity than the teacher-based.

There was no literature review that comprehensively examined and compared the motivation of learning, problem solving, self-esteem of preschool children with teacher-based or child- based approach. Therefore, the purpose of this study is to investigate whether there is a difference between learning motivation, problem solving and self-esteem level of children education in child-based and teacher- based preschools?

Methodology

The present study used a random and causal-comparative method. The statistical population of the study was 25 children in the 15th district of Tehran who were in the 2017-18 academic year and in the Shahid Almasi kindergarten and preschool (child-based) and also 25 children who were in the Shahid Almasi (teacher-based) primary school in 2018-19 academic year. The data collection tools were three questionnaires: Academic Motivation Questionnaire, Problem Solving Skills and Self-Esteem Questionnaire. Participants used three tools including Harter Academic Motivation Questionnaire (1980-1981) and Parker Problem Solving Questionnaire (1997), and the Cooper Self-Esteem Questionnaire (1967). Demographic data were collected at the end of three sets of measurement tools. The questionnaire data were used in two parts; descriptive; mean and standard deviation, minimum and maximum, skewness and analysis of variance.

Findings

Table 4-1 shows information about the frequency of age of sample members. Accordingly, 34 participants in the study are 7 years old and 16 are 8 years old.

Table 4-1 Age Frequency distribution of sample members

Age	Frequency	Percent
7 years	34	68
8 years	16	32
Total	50	100

Table 4-2 shows the descriptive statistics of the mean and standard deviation of academic motivation scores separately for children in child-based and teacher-based preschools. As it can be seen, the average scores of academic motivation of educated children in child-based preschools are higher than teacher-based preschools.

Table 4-2: Statistical description of academic motivation scores by each group

Group	Mean	Standard deviation
Child-based preschools	109.48	11.012
Teacher-based preschools	101.68	13.069

Table 4-3 shows the descriptive statistics of the mean and standard deviation of problem solving ability scores separately for children in child-based and teacher-based preschools. As it can be seen, the average scores of problem solving ability of educated children in child-based preschools are higher than teacher-based preschools.

Table 4-3: Statistical description of problem solving ability scores by each group

Child-based preschools			Teacher-based preschools	
Variable	Average	Standard deviation	Average	Standard deviation
Feeling	17.72	2.052	15.40	3.391
Intuition	18.12	2.713	16.24	3.320
Feeling	17.76	2.471	15.96	3.048
Thinking	16.92	2.431	15.32	2.657

Table 4-4 shows the descriptive statistics of the mean and standard deviation of self-esteem scores separately for children in child-based and teacher-based preschools. As it can be seen, the average scores of self-esteem of educated children in child-based preschools are higher than teacher-based preschools.

Table 4-3: Statistical description of self-esteem scores by each group

Child-based preschools			Teacher-based preschools	
Variable	Average	Standard deviation	Average	Standard deviation
Public self-esteem	15.68	3.727	13.16	2.544
Family self-esteem	5.88	2.774	4.40	1.871
Social self-esteem	5.92	2.482	3.88	1.764
Job / academic self-esteem	4.04	2.010	2.88	1.590

The Independent t-test was used to compare the academic motivation of educated children in child-based with teacher-based preschools. The results of this test and its assumptions are given below.

Table 4-5 Kolmogorov–Smirnov test results to check the normal distribution of scores

Statistical index	Number	Kolmogorov–Smirnov z	Sig level
Academic motivation	50	0/754	0/620

Table 4-5 shows the results of the Kolmogorov –Smirnov test to examine the normality of the distribution of academic motivation scores. Based on the results in the table, the significance level of the calculated statistic is more than 0.05, thus, the assumption of normal distribution of scores is accepted.

Before performing the independent t-test, the variance homogeneity of the scores of the groups was examined using Levin test.

Table 4-6. Levin test results to investigate the homogeneity of variance of groups

Variable	F	Df1	Df2	Sig level
Academic motivation	0/005	1	48	0/945

Given that the significance level of the obtained F value is more than 0.05, the null hypothesis that there is no difference between the variances of the groups is confirmed.

Table 4-7. Independent t test results to compare academic motivation of child-based and teacher-based preschools

Variable	t-statistic	Df	Sig Level	Average difference
Academic motivation	2.282	48	0.27	7.80

Table 4-7 shows the independent t-test to compare the academic motivation of educated children in child-based with teacher-based preschools. According to the table, the value of t to compare the average scores of the two groups is 2.282 and its significance level is less than

0.05 (P <0.05). As it can be seen, the academic motivation of educated children in child-based preschools are higher than teacher-based preschools.

Multivariate analysis of variance (MANOVA) was used to compare the problem-solving ability of educated children in child-based with teacher-based preschools. The obtained results and its assumptions are presented below.

Table 4-8. Result of covariance matrix homogeneity test (box)

Sig level	df2	df1	F	Box's M
0/155	11015/139	10	1/442	15/850

As can be seen, the significance level of the box test is 0.155.

Table 4-9. Levin test result to investigate the homogeneity of variances

Variable	F	Df 1	Df2	Sig level
Feeling	3/956	1	48	0/052
Intuition	0/609	1	48	0/439
Feeling	1/330	1	48	0/255
Thinking	0/350	1	48	0/557

As it can be seen, Levin test results are not significant in any of the variables.

Table 4-10. Kolmogorov -Smirnov test results to check the normal distribution of scores

Variable	Kolmogorov –Smirnov z	Sig level
Feeling	0.976	0.296

Intuition	0.812	0.524
Feeling	0.844	0.475
Thinking	0.921	0.365

Table 4-10 shows the results of the Kolmogorov –Smirnov test to examine the normality of the distribution of academic motivation scores. Based on the results in the table, the significance level of all variables is more than 0.05, thus, the assumption of normal distribution of scores is accepted.

Table 4-11 Results of multivariate analysis of variance to compare children's problem-solving ability in the child-based and teacher-based preschools

Effect	Tests	Value	F	Df of effect	Df of error	Sig level	Size Effect
	Pillai's Trace	0.255	3.854	4	45	0.009	0.255
	Wilks Lambda	0.745	3.854	4	45	0.009	0.255
Group	Hotelling's Trace	0.343	3.854	4	45	0.009	0.255
	Roy's Largest Root	0.343	3.854	4	45	0.009	0.255

As can be seen, the significance level of all four relevant multivariate statistics, Pillai's Trace, Wilks Lambda, Hotelling's Trace and Roy's Largest Root, is less than 0.01 (p <0.01). Therefore, there is a significant difference between the problem-solving ability among educated children in child-based and teacher-based preschools.
In order to investigate the differences between the two groups in each of the problem-solving components, the inter-subject effects test was used. Table 4-12 shows the results of the inter- subject effects test to compare the components of problem-solving ability among educated children in child-based and teacher-based preschools. According to the results presented in Table 4-12, the value of F is significant for all variables at the alpha level of 0.05 (P <0.05). Therefore, there is a difference between the problem-solving ability among educated children in child-based and teacher-based preschools. Comparing the average scores of the two groups, it can be seen that the average scores of problem-solving ability of educated children in child- based are higher than teacher- based preschools.
Multivariate analysis of variance (MANOVA) was used to compare the self-esteem of educated children in child-based with teacher-based preschools. The obtained results and its assumptions are presented below.
Table 4-12 Inter-subject effects test to compare problem-solving components among educated children in child-based and teacher-based preschools

			Df	Average square	F	Sig level	Size effect
Feeling	Intergroup	67.280	1	67.280	8.565	0.005	0.151
	Intragroup	377.040	48	7.855			
Intuition	Intragroup	441.200	48	9.192			
	Intragroup	369.520	48	7.698			
Feeling	Intragroup	311.280	48	6.485			
Thought							

Table 4-13. Result of covariance matrix homogeneity test (box)

Sig level	df2	df1	F	Box's M
0/067	11015/139	10	1/737	19/093

As can be seen, the significance level of the box test is 0.067.

Table 14-4. Levin test result to check the homogeneity of variances

Variable	F	Df 1	Df 2	Sig level
Public self-esteem	2/427	1	48	0/126
Family self-esteem	2/707	1	48	0/106
Social self-esteem	1/832	1	48	0/182
Job / academic self-esteem	3/028	1	48	0/088

As shown in Table 4-14, Levin test results are not significant in any of the variables. Hence, our null hypothesis for homogeneity of variance of variables is confirmed.

Table 4-15. Kolmogorov-Smirnov test results to check the normality of the distribution of scores

Variable	Kolmogorov-Smirnov z	Sig level
Public self-esteem	0.716	0.684
Family self-esteem	1.122	0.162
Social self-esteem	1.047	0.223
Job / academic self-esteem	0.932	0.350

Table 4-15 shows the results of the Kolmogorov-Smirnov test to check the normality of the distribution of variables' scores. Based on the results in the table, the significance level of the calculated statistic for all variables is more than 0.05

Table 16-4. Results of multivariate analysis of variance to compare children's self-esteem in child-based and teacher-based preschools.

Effect	Tests	Value	F	Df of effect	Df of error	Sig level	Size Effect
	Pillai's Trace	0.337	5.722	4	45	0.001	0.337
	Wilks Lambda	0.663	5.722	4	45	0.001	0.337
Group							
	Hotelling's Trace	0.509	5.722	4	45	0.001	0.337
	Roy's Largest Root	0.509	5.722	4	45	0.001	0.337

As can be seen, the significance level of all four relevant multivariate statistics, Pillai's Trace, Wilks Lambda, Hotelling's Trace and Roy's Largest Root, is less than 0.01 (p <0.01). Therefore, there is a significant difference between the self-esteem among educated children in child- based and teacher-based preschools.

In order to investigate the differences between the two groups in each of the self-esteem components, the inter-subject effects test was used. Table 4-17 shows the results of the inter- subject effects test to compare the components of self-esteem among educated children in child-based and teacher-based preschools. According to the results presented in Table 4-17, the value of F is significant for all variables at the alpha level of 0.05 (P <0.05). Therefore, there is a difference between the self-esteem among educated children in child-based and teacher- based preschools. Comparing the average scores of the two groups, it can be seen that the average scores of self-esteem of educated children in child-based are higher than teacher- based preschools.

Table 4-17 Inter-subject effects test to compare self-esteem components among educated children in child-based and teacher-based preschools

Variable	Source	Sum of squares	Df	Average square	F	Sig level	Size effect
Public self-	Intergroup	79.380	1	67.280	7.795	0.007	0.140

esteem	Intragroup	488.800	48	7.855			
Family self-esteem	Intergroup	27.380	1	79.380	4.892	0.032	0.092
	Intragroup	268.640	48	10.183			
Social self-esteem	Intergroup	52.020	1	27.380	11.223	0.002	0.190
	Intragroup	222.480	48	5.597			
Job / academic self-esteem	Intergroup	16.820	1	52.020	5.123	0.028	0.096
	Intragroup	157.600	48	4.635			

Discussion

According to the results in Table 4-7 , the average difference between educated children in child-based and teacher-based preschools in academic motivation variable is 2.282 and its significant level is also less than 0.05 (P <0.05). Comparing the average scores of the two groups, it can be seen that the academic motivation of educated children in child-based preschools are higher than teacher-based preschools.

According to the information obtained from Table 4-12, the F value is significant for all variables at the alpha level of 0.05 (P <0.05). Therefore, the difference between the problem- solving ability among educated children in child-based and teacher-based preschools are confirmed. Comparing the average scores of the two groups, it can be seen that the average scores of problem-solving ability of between educated children in child-based preschools are higher than teacher-based preschools. Therefore, it can be said that children who have learned skills in centers with a child-based approach have higher problem-solving skills than children with a teacher-based approach.

According to the information obtained from Table 4-17, the F value is significant for all variables at the alpha level of 0.05 (P <0.05). Therefore, the difference among the self-esteem among educated children in child-based and teacher-based preschools are confirmed. Comparing the average scores of the two groups, it can be seen that the average scores of self- esteem among educated children in child-based preschools are higher than teacher-based preschools.

The results of this study are consistent with the results of previous research on comparing the child-based with the teacher-based method. A study was conducted by Mohammad Asoudeh and Maryam Zarepour (2012) on the effect of child-based method on children's academic achievement and social skills. The purpose of this study was to show the effect of child-based approach on academic achievement and social development of children. In this study, some children were selected from Atash Dast primary school using simple random sampling and trained for one month based on a child-based approach. The findings showed that the child- based approach compared to the control group is effective in providing opportunities for social acceptance and self-confidence and improving mental abilities.

A study conducted by Yosel (2009) entitled as a student-based educational effect on student success. This study was performed on 60 third grade elementary school students and the results of this study showed that the student-based teaching method has achieved better and more significant results than children whose method was teacher-based. Deganji et al., 1993 conducted a comparative research on the advantages and positive effects of child-based games. In this study, 12 children who were in preschool age and had sensory-motor disorders were selected. These children were examined for 8 weeks and one hour a week by playing two types of games. The treatment method using structured games to promote violent motor skills such as self-care was more effective than treatment with child-based games, but in contrast, child- based games developed fine motor skills in children. Lee Mang (1996) in his study compared the impact of child-based and teacher-based teaching methods on the development of preschool children's creativity. The results showed that the pre-test and post-test scores of the creativity test were significantly different, and it was concluded that the child-based method is a more appropriate for initiative and creativity than the teacher-based.

Conclusion

The number of children participated in this study was 50 who were 7-8 years old and the child- based and teacher-based approach method in preschools was applied to investigate their academic motivation, problem-solving ability and self-esteem. The results showed that the level of academic motivation, problem-solving ability and self-esteem among educated children using child-based approach is higher than teacher-based. This is a pioneering study due to following reasons; it was the first time that child-based and teacher-based approach was compared using the mentioned variables. The second one is that, the previous studies mainly investigated other variables among children. Finally, the future studies should consider other variables of preschool children.

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