

The Impact of Pre-elementary School Boys & Girls' Photography on Their Visual Perception

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ABSTRACT

This study is aimed at investigating the effect of pre-elementary school boy and girls' photography on their visual perception and was carried out using the experimental method and by means of pre-test and posttest along with a control group. To this end, 56 persons (28 boys and 28 girls) were randomly selected from among the 6- to 7-year-old children enroll ion the elementary-school-affiliated pre-elementary centers. The data were gathered by means of Frosting Advanced Perceptual-Visual Test (1996). Firstly, a pre-test was administered to the experiment group (14 boys and 14 girls) and control group (14 boys and 14 girls). Then, photography was taught to the experiment group for 12 60-minute sessions for a period of 12 weeks. Finally, a posttest was administered to the experiment and control groups. Results of the covariance analysis suggest that there is a significant difference between male and female subjects' visual perception.

KEYWORDS: Photography, Visual Perception, Pre-elementary, Frosting Advanced Visual Perception Test

INTRODUCTION

One of the goals of humans in the technology era is to make optimal use of all capacities and resources available to further their material and spiritual goals. Nowadays, any changes in human education and development of societies are remarkably considered and all intellectuals and educationalists seek to pave the way for human resource development and growth because it is impossible to image a magnificent, ideal or progressing world without creative, constructive and divergent human beings with all human characteristics (Singer, 1990).

Education has undergone changes as other sectors, and using modern and advanced equipment and methods has increased in this respect. Learning, which is a goal of educational system, is not an exception, and educational systems and administrators attempt to lay the grounds for children's multilateral learning from birth. Undoubtedly, an important, sensitive stage of learning is the pre-elementary period (Haghighi, 2009).

A basic point and major characteristic in the pre-elementary period is children's learning through active research and manipulation in environment. That is why any educational programs which include involving children in activities and using their energy and spirits and interest will be treated as the best methods of child learning (Piri and Adib, 2009). Each and every set of the pre-elementary education activities is concerned with one part in particular and all abilities in general. A serious topic in such educational programs is teaching art. A major part of pre-elementary activities is allocated to art (Sadegh Ayoubi, 2009). Acquiring visual knowledge allows children to take a different view of the phenomena happening around them. Visual knowledge refers to the ability to understand and describe what is seen and assess its aesthetic features and suitability with the goal (Duffy, 1998).

Art in general and visual activities in particular develop children's horizons. Among the visual arts, photography has the highest impact on the process of seeing and improving visual sense. Photography is the subject which, among the visual arts, has the strongest relation to reality. Painters, sculptors or graphic designers mostly borrow from their minds to create works not necessarily from reality. Visual artists often impose the major burden on minds to crate their works and might, instead of dealing with nature or reality, turn to subjectivity and abstraction, and many of such attitudes are observable in the approaches and works of such visual artists, while this is not the case with photography as it highly relies on reality (Langford, 1980). Vision is the least developed sense at birth. When the infants see more clearly and explore their fields of vision more skillfully, they work on classification of environmental characteristic and the way they are arranged and ordered in space, thereby forming visual perception (Berk, 2001).

Visual perception is literally a process which, after receipt of existing visual stimuli, leads to cognition and changed feeling through mental activities and its relation to the past experiences and memories. Visual perception encompasses perception of spatial relationships, i.e. perceiving status of objects in space and places, visual distinguishing, that is the ability to distinguish one object from another, like "S" and "T", drawing from background, to wit. Distinguishing the picture of an object from its background, i.e. recognizing objects or the case in which the whole stimulus is not provided, such as the picture of a human whose foot is removed, or the shape of a square in dots which is perceived in full. Object recognition refers to the ability to recognize the nature of objects when observing them (Faryar & Rakhshan, 1988).

This study investigates the impact of photography of the male and female pre-elementary students on their visual perception (Frosting, 1996). The main issue of this study is to determine the impact of photography skills on promoting male and female pre-elementary students' visual perception. In this regard, it's considered to compare the male and female students who are trained the skills in a regular course with other male and female students. If there is a significant difference between the two groups in terms of visual perception skills, the impact of photography can be found as the independent variable on visual perception as the dependent variable, according to the belief of many philosophers, scholars and educationalist, educational, child's first years of life is the best time when the child is better-prepared than any other time, for growth, learning and education. Therefore, if necessary facilities and appropriate areas are provided for the child, its character, learning, intelligence would be remarkably developed (Pour Alireza Totkaleh, 2006).

That is why the importance and necessity of pre-school education has been taken into consideration more than ever before. The overall goal of the education grade (pre-elementary) is to develop the child's physical and motion powers and matching these, to build the abilities required to learn which leads to create accuracy and skills in careful and deep observation in the environment in a broad sense (Sadegh Ayoubi, 2010).

At this point of time that speed, accelerated life and creation of amazing developments are considered as its characteristics, the production of knowledge has become so fast that the rain of information falling down on human beings. Thereby, to pass the era of information and enter the future world, children, should be trained up empowered, creative, sociable and fluent in new technology of the day, so that having a high motivation and enthusiasm for life. Today's children need art with which help they could better think in the future (Mirza Aghaei, 2008).

Current human need and especially our community is to educate people who look well, hear well, touch well and use their smell and taste powers appropriately. Almost everyone has traditional senses that are more or less used, but the issue of how to increase the sensitivity of the senses it requires a deep sense and proper training. Motion powers of a child are treated in relation to the senses, and properly training of art will enrich the individual activities. A child that learns to act in an active and sensitive environment will certainly think well, and the way of acquiring his basic knowledge and necessary skills would be automatically provided (Sadegh Ayoubi, 2010).

The present study aims to investigate the effect of pre-elementary school boy and girls' photography on their visual perception. Photography as one of the stout branches of the tree of art can have an important role in the growth and development of children. Since the art is a reflection the child's knowledge and thinking, art education leads to thinking improvement and cognitive development. Art education lays the grounds to academic progress in the later stages of education. It also reduces anger and aggression in children. Creation of art works increases children's self-esteem. In children, artworks enhances their sensorimotor activities. Children, with the activities, learn seeing and making connection between hands and eyes, they practice using fingers and holding things in hand and more important there will be a connection between seeing and process of thinking (Zakeri, 2011). The present study is the only research conducted on investigating the effect of photography training on boy and girls' visual perception.

The main purpose of this study is to determine the difference in pre-elementary school boy and girls' visual perception after their photography.

LITERATURE REVIEW

Yousefi (1991) believes that learning plays a major role in coordinating perception and motor responses. If sensory stimulation takes place and perception is achieved but natural responses to stimulation are inhibited, there will be deficiencies in sensorimotor integration. There are many studies conducting that show a significant relationship between the visual-motor performance and various academic aspects. Platto et al (2002) achieved a moderate and significant relationship between the visual-motor and writing tests, and the test. In addition to writing, reading and mathematics are also affected by visual-motor performance. Motor evaluation is one of the several major indicators of children's future academic progress. In relation to mathematics, the visual-motor performance has a significant effect on it as well (Vanderkamp & Savelsbergh, 2002).

Savelsbergh et al (2003) found in their study that visual-motor integration is significant correlated with achievement in mathematics, as well as reading. The researchers consider visual perception and visual-motor integration as basic assumptions for academic activities progress, especially mathematics and reading. As a child learns to overcome or compensate visual perception and motor skills defect later, it would consider school as its failure, suffering from the defect, and perhaps secondary emotional problems. Therefore, education authorities and families are responsible for solving the problems related to learning in the preschool years.

Belordi (2003) in a research on the impact of pottery training on visual perception and fine motor skills improvement of children with mild mental retardation has concluded that the children' attention significantly increases by teaching pottery.

Haghighat Doust (2003) in a research entitled as the impact of art education on the development of visual perception of students with mild mental retardation in Tehran, has investigated two hypotheses (1) art training course is effective on visual perception development of retarded children (with mild mental retardation) and (2) visual perception scores of mild retarded boys and girls are nearly similar. The pretest/posttest controls group was

used. Total of 30 subjects in two groups of 15 male and female third grade students were studied in two elementary special schools in Tehran.

Visual perception of subjects was measured using visual perception test dependent on movement, before and after training. The test was taken in ten sessions that were conducted during two months. The findings indicate that the training course of drawing art, i.e. drawing lines and shapes, coloring and crafts affects the improvement of visual perception of retarded children with mild mental retardation and the subjects' gender has not had any significant effect on their performance during the test applied in the research. To investigate the hypotheses, the mean of scores of the subjects was calculated in the pre-test and post-test in both experimental and control groups using the t-test. This analysis results suggested that there is no significant difference between the scores of male and female subjects in the two groups.

Bozorgmanesh (2004) in a research entitled as the impact of visual arts education on the increase of visual and verbal memory performance in girls and boys primary students in education zone 17 in Tehran proceeded as: after selecting 60 male and female students that was conducted through a multistage cluster sampling as well as aquasi-experimental research method based on the pre-test, post-test plan with the control group and random assignment, the tools of Kim karad visual memory and verbal-numerical memory were used. After formation of two peer groups of 30 people, visual arts education program was implemented. Data analysis indicated an increase of and verbal memory performance in the experimental group.

Rivard (2004) in an article entitled as a simple, affordable and easy to use form of digital cameras that helping to strengthen instructors' training program has stated that: digital cameras should be recognized as training tools that support targeted and meaningful training with a clear vision of curriculum, educational program and assessment of thinking. He also declared digital cameras are the most popular technology used in the classrooms. This is attributed to students who are more visual, because they are more familiar with video and computer games and videos. Another point raised in this study is that digital images motivate students to write. You need to know digital photos encourage students to show their willingness to write.

Lindroth (2004) in a research entitled as teaching the use of digital and video images stated that students welcome creativity and assessment opportunities given them by digital photos with open arms. Hence, teachers consciously increase the use of these cameras in the classroom for students' learning and successful.

Supon (2006) in a research entitled as the use of digital cameras for multi-dimensional learning show that digital cameras have a specific effect on today's classrooms. Effectively using the cameras, multidimensional learning opportunities will occur for students. He also stated that when students take photographs, a sense of ownership grows in them. When they look at their photos taken, concepts would be clear and accessible for them. Another point that is emphasized in this paper is that the use of digital cameras increases reasoning skills and has been used as a tool to evaluate students' performance. The issue that students should be aware of their performance can be effectively proven through pictures. Students, with their assessment will be more thoughtful and effective. This process increases assessment performance.

Stokes (2002) in an article titled visual knowledge in teaching and learning stated that using visual elements in teaching and learning will bring positive results. Serriere (2010) in a study entitled digital photography and preschool children' social awareness suggested that digital photography can be a strong and interesting way for children in order to examine complex problems and dealing with inequalities.

MATERIALS AND METHODS

Statistical population of this study consists of all 5 to 6-year old preschool children that have enrolled in preschool centers attached to elementary schools of Borazjan in the academic year of 2011-12. They were 678 people, from which 299 boys and 379 girls were studying in 21 schools. The study sample consists of 56 5 to 6-year old girls and boys of the pre-school center attached to primary schools which were selected by cluster sampling. Borazjan County was divided into 5 districts due to the cultural, economic and social infrastructure. Then the zone 3 was randomly selected among the districts, as well as Narjes girls' school and martyr Javid Kazerouni boys' school among the attached centers. Both schools had a total number of 28 new pre-school children, 14 female students and 14 male students were selected in a simple random sampling from both centers, they were then put in the experimental group, and 14 students from each class were places in the control group. The tool used in the study is frosting development test of visual-perception (1996). He has considered 5 sub-tests to measure a variety of visual skills that are as: Hand eye coordination test, field of the present disclosure, the stability of shape, status perception and spatial relationships. Researcher after obtaining permission and letter of introduction from the Department of Education of Dashtestan County referred to Narjes girls' school and martyr Javid Kazerouni boys' school and determining the control and experimental groups using lottery method, both groups were taken the pre-test. Providing Adequate space and facilities required at the schools, the researcher run teaching photography to any person for 12 weeks (12 sessions) for 60 minute in the experimental group. After completion of the data collection, finally the task of description and statistical analysis was conducted on 112 copies of questionnaires (56 copies of questionnaires related to the experimental group in pre-test and post-test stage, 56 copies of questionnaire related to the control group in pre and post-test stage).

The reliability of frosting development test of visual-perception

The reliability of frosting development test of visual perception with subtests was calculated using Cronbach's alpha. The reliability has been calculated 0.67 (Noghabi and Dortaj, 2008). In this study, the reliability coefficient of frosting development test of visual perception was calculated using Cronbach's alpha and it was obtained 0.80.

The reliability coefficients of frosting development test of visual perception using Cronbach's alpha

Scale	Number of items	Alpha coefficient
Visual-motor coordination	16	0.67
Field of the present disclosure	8	0.76
The stability of shape	2	0.77
Status perception	8	0.54
Spatial relationships	7	0.72

The validity of frosting development test of visual-perception

Alborzi (2005) has reported the validity of the test significant, using the correlation with Bender-Gestalt visual-motor coordination test.

To determine the test validity, the method of criterion-related validity has been used. The criterion used for calculating the validity coefficient of scores in math lessons was reading, dictation and mean of them. Correlation coefficients calculated between the scores have shown four criteria and total score of the test and subtests scores. Coefficients calculated for the test total score and subtests 1, 2 and 3 are not significant, but the coefficients of subtests 4 and 5 were significant at the level of 0.05 (Noghabi and Dortaj, 2008). Thus, it can be concluded that the tests have a high empirical validity.

Data Analysis

Frequency distribution of subjects according to their gender

Table 1 indicates the frequency distribution of respondents by their gender and age.

Table 1: Frequency distribution of subjects by gender and age

Percentage	Frequency	Variable	
48.2%	27	6 years old	Age
51.8%	29	7 years old	
100%	56	Total	
50%	28	Boy	Gender
50%	28	Girl	
100%	56	Total	
6.5 سال		Mean	
0.5 سال		Standard deviation	

The above table data shows that 50 percent of all subjects are male and the remaining 50 percent are female. It also shows that 48.2 percent of all subjects are 6 years old and the remaining 51.8 percent are 7 years old. The mean of subjects' age is 6.5 years old and the standard deviation is 0.5 years.

-Comparison of visual perception among preschool boys and girls

In Table 2, the visual perception of male and female subjects has been compared using one-way analysis of covariance.

Table 2: the results of one-way analysis of covariance of preschool boys' and girls' visual perception

Source of changes	Sum of squares	Degrees of freedom	Mean square	F value	Significance level	ETA squared
Pre-test	858.6	1	858.6	12.98	0.001	0.197
Intergroup	773.6	1	773.6	11.69	0.001	0.181
Intragroup (Error)	3505	53	66.1	-	-	-
Total	102914	56	-	-	-	-

As it can be seen in the above table after controlling for the effect of pre-test on visual perception with analysis of covariance method, F calculated for male and female subjects equals to 11.69 and it's significant at the level of ($P < .001$). Thus, there is a significant difference between the mean of pre-test scores of male and female subjects' visual perception.

DISCUSSION AND CONCLUSION

The results suggest that there is a significant difference observed between preschool girls' and boys' visual perception. Men are more successful in face recognition than women. It can be said that women are considerably

superior to men in colors detection and sizes perception. Today, there is no doubt that color blindness is inherited and of sex-linked traits, because the number of colorblind men is sixteen times more than women. Even if we ignore color blind people, women's superiority to men can be still easily verified in terms of color perception. For example, women identify a wide range of colors from pink to purple such as pink, magenta, lavender, eggplant, bright pink, and finally purple and they better understand the subtle difference in colors, while the color diversity with details could not be found in men (Anstasi, 1965).

Some recommendations will be considered on the basis of this study including:

- The research has been done in Borazjan County. It's recommended to be conducted in other cities and provinces.

- Teach perception skills and visual distinction to the students.

- Examine intelligence variables and handedness.

- Since the visual perception is a multifactorial structure, and in other words various cognitive-emotional components including intelligence and family socioeconomic conditions could affect it, so it is suggested that in future research either control such variables or consider and discuss them as a part of the study.

- With regard to the findings of research on the positive impact of photography on the visual perception on the one hand, and the weakness of art education in schools on the other hand, it's recommended to schools, in spite of modern facilities and technologies in most families such as mobile with advanced facilities of photography, to include photographic activities in the curriculum, especially in preschool.

Limitations of the study conducted include the following items:

- Variables examined in this study were limited. In fact, many of intervention factors affecting visual perception were not considered.
- Scientific studies, particularly according to the impact of photography on human factors in a manner that is customary in the Behavioral Sciences, especially in Iran, were very limited. In fact most of research in the field of photography has dealt with artistic and technical aspects related to the art, and resources used have had less research aspect as it's popular in educational sciences.

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