

# ART ABILITY OF BLIND STUDENTS AGED THIRTEEN TO FIFTEEN YEARS IN THE KINGDOM OF SAUDI ARABIA

Fahad Alshemmeri <sup>a</sup>, Abu Talib Putih <sup>b</sup>, Nabeel Abedalaziz <sup>c</sup>

<sup>a,b</sup> Faculty of Education, Educational foundation, University of Malaya, Kuala Lumpur, Malaysia

<sup>c</sup> Faculty of Education, Educational psychology and counseling,

University of Malaya, 50633 Kuala Lumpur, Malaysia

<sup>a</sup> Corresponding author : nabeelabdelazeez@yahoo.com

© Ontario International Development Agency. ISSN 1923-6654 (print)

ISSN 1923-6662 (online). Available at <http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html>

**Abstract:** The present study was conducted to explore art ability of the middle team blind students in the Kingdom of Saudi Arabia. Specifically, The present study sought answers to the following questions: Is the progress in the blind students' ability to make different forms of art increases across ages? Do the students' ability of different ages show significant difference by gender? Is there a significant difference in the blind students' art ability between those studying in special schools and those in integrated schools? Is there a relation between the blind students' art ability and their academic achievement?.

A total of 238 (155 male and 85 female) blind students in the intermediate classes (71 students in class 7, 93 student in class 8, and 74 student in class 9) participated in the study. The samples have been selected from 31 integrated schools and 4 special schools (i.e., 140 student in special schools, and 98 student in integrated schools). The assessment model (checklists) to assess three dimensions of art ability (i.e. Drawing, Handcraft, and Clay) were developed.

Data analyzed using MANOVA analysis. The study indicated that: (1) the progress in the blind students' ability to make different forms of art increases across ages. (2) there is no gender-related differences in art ability and its dimensions. (3) there is an interaction effect of gender and age in the drawing. (4) there is significant differences in the blind students' art ability between those studying in special schools and those in integrated schools for the students in integrated schools. (5) there are significant positive

relations between art ability and academic achievement (i.e. Social studies, Mathematics, English language, and Science).

**Keywords:** Art ability, Blind, Clay, Drawing, Handcraft.

## INTRODUCTION

Although the ministry of education in KSA recognizes visual arts as a core curriculum subject, it does not require that schools offer arts programs. The implementation of arts programs is left up to the individual schools to initiate. Besides the fact that the arts are mandated as part of the kingdom curriculum, the teachers teaching the subject have been in most cases less certified in the field of art.

Because of the lack of special trained art teachers, a general education teacher are allowed to teach art to meet the kingdom's requirements. The training of these teachers by a visual arts specialist to prepare with them as art teachers with an in-depth knowledge would be difficult as they did not have an appropriate education in the field of visual arts. Visual arts specialists learn how to teach visual arts by linking the making of art to art history and aesthetics. They are also trained in the various ways to collaborate with other teachers to provide an integrated curriculum, allowing for the transfer knowledge from one field to another.

It is unlikely that a general education teacher with little or no training in visual arts education could

teach as effectively as a teacher who has had extensive training in art history, studio art, and aesthetics.

A problem for art education is its tenuous security in the curriculum. In order to secure a place for the arts in education, the benefits of arts education needs to be examined and presented to the decision-makers at the kingdom ministry of education. This can be done either by evaluating the impact arts education has on academic achievement, or by examining the effect the arts have in creating well-rounded students who are exposed to an education that consists of a diverse curriculum that is not focused solely on reading and mathematics [14].

Research that establishes a correlation between art ability and academic achievement could provide rationale for arts curriculum funding. Researchers do not agree on the quantifiable effects of art education on academic achievement in terms of increase scores on high-stakes tests [6, 31].

Researchers have observed that there is no measurement or standard curriculum of art education available for blind students in Kingdom of Saudi Arabia. The present study investigating art ability in intermediate school consisting grade 7, 8 and 9 standard students in the schools of Kingdom of Saudi Arabia.

The Kingdom of Saudi Arabia (KSA) is one of the developing countries highly interested in education. The objectives of education in the KSA are set "to ensure that education becomes more efficient in meeting the religious, economic and social needs of the country and to eradicate illiteracy among Saudi adults .These objectives are in fact to provide its citizens enough preparation to cope with the demands of the modern life of this era and providing equal opportunity of education to the children with special needs.

The problem of not finding a models of assessment in the art ability of the blind students in the schools of Kingdom of Saudi Arabia is considered to be one of the most difficult problems that face the development of education operation in teaching the art education as the teachers of art education in the kingdom assess and evaluate the students performance in the art education in accordance to their general attainment or in a moody manner .Therefore this study is to establish the accurate of assessment and evaluation of the art education for blind students.

In general, the teaching of art education is carried out by unqualified teachers who teach this subject for the sake of fulfilling the needs in their schools. This will

definitely, negatively affect the students' attainment in art education and their art ability. So, this study is actually to overcome the shortage in this regard work towards in establishing accurate alternatives and bases in distributing the art education subject to the teachers.

In addition, the problem of not finding a proper methodology for the art education in teaching the blind needs to carry out a field study to suggest the most prominent and suitable art education for the blind students in the Kingdom of Saudi Arabia.

In conclusion, improving quality of education for blind persons is a paramount important task of the Ministry of Education of the Kingdom of Saudi Arabia. Unfortunately, the schools in KSA have not taken any important initiative to implement the teaching of art to the children with sensory disabilities. Taking the serious view of these issues and the goals of special education in the KSA, the present study is planned to explore and assess art activities of the blind students to ensure an effective curriculum is structured to cater the special needs of these under privilege children.

#### **THE RELATION BETWEEN ART ABILITY AND ACADEMIC ACHIEVEMENT**

A few literature reviews have been concerned with the effects of art education on general academic achievement [7, 13, 15]. This academic achievement implies students' good attainment of subjects from a variety of disciplines, other than art. In those studies, the achievement was measured in terms of students' ability in reading and/or language arts and mathematics, occasionally in science or other disciplines as well. In addition to grade point averages and teacher-designed assessments.

In one study, Gardiner et al [17] for example, investigated the effects of a music and visual-arts curriculum on the academic achievement of first-graders. Students who participated in the arts curriculum had test scores below those of the non-arts curriculum students at the beginning of the school year; however, after seven months the arts curriculum students had higher scores on mathematics achievement. At the beginning of the following year, students were retested and the researchers found that the students who participated in the arts curriculum were still ahead of their peers in mathematics achievement. After a second year of treatment, the arts-curriculum students continued to have higher mathematics achievement scores. The researchers also found that the percentage of students at or above grade level in second-grade math was the highest for those students who participated in the arts curriculum

for two years, less for those students who participated for only one year and lowest for those students who did not participate in the arts curriculum.

#### **GENDER AND AGE DIFFERENCES IN ART ABILITY**

Some of the greatest interests regarding variables that might affect performance are those of the individual differences type including gender and age. Gender differences should be of great interest to art educators and aestheticians because boys and girls are both participants in the arts community and any differences should be looked upon as a source of understanding.

Several theories account for gender differences in schoolchildren's art. Socialization factors have been stressed [12], reflecting differences in boys' and girls' socialization [26, 30]. Another theory posits that in early childhood, gender schemas develop and organize gender-related information [2]. Gender schemas crystallize and exaggerate children's gender socialization, thereby increasing expression of gender-`appropriate` content in drawings. In sum, artistic gender differences may be due to children's gender socialization and schemas [29].

With age, children develop the (memory) capacity and the motor skills necessary to represent and recreate an aspect of their everyday experiences. The ability to create images meaningfully is an important human capacity that has been exploited in a number of methods for improving children's comprehension and memory [25]. In other words, as children mature and develop cognitively, their representations move from simple pictures to differentiated, complex ones.

Because of gender differences in fine motor skills [19], females may be at an advantage if interpretations are based on criteria that may be confounded with motor skills. For example, Koppitz [22] found that girls tended to include more body parts and clothing in their figures than boys.

Golomb [18] suggests that most children across age groups align family members side by side facing forward although, with increasing age, composition becomes more relevant to a child's drawing ; 3-4 year olds do not completely align family figures and do not randomly place the figures on the page, but in older children, alignment improves and they display an increased awareness of the coordinates of the paper.

Bensur, Elliot, and Hedge [3] found age differences in the developmental complexity of children's drawings. These differences were related to their recognition and memory of various objects found in their environment.

#### **RESEARCH QUESTIONS**

Generally this study is interested in finding answers to the following question:

- (1) Is the rate of progress in the blind students' ability to make different forms of art consistent across ages?
- (2) Is the students' ability of different ages show significant difference by gender?
- (3) Is the students' ability of different ages show significant difference by school type?
- (4) Is there a relation between the blind students' art ability and their academic achievement?

#### **SIGNIFICANCE OF THE STUDY**

According to Meyer [23], there are very few recent studies that explore the art ability and its relation with academic achievement. The results of studies exploring the value of visual arts education could impact the future funding for arts education in elementary schools. In order to secure a place for arts education in schools, data should be available to support its contribution to the learning environment, either through increased scores on high-stakes tests or by showing how it benefits learners. Instead of being perceived as an extra activity that is not crucial to a child's develop, this study attempted to demonstrate how visual arts education can enhance the learning capacities of young students in ways that cannot be accomplished through the study of other subjects. Presenting evidence through scholarly research to the individuals in charge of making decisions for schools could help secure the status of elementary art education in the future.

The uniqueness of this study was its investigation of gender and age differences of relatively large samples of blind students. It provided an opportunity to examine issues in arts learning in general and issues in assessment of art to the blind students, and the relation between art and academic achievement.

Blind students need arts-related activities that suit their abilities and meet their needs. Although there are many activities related to art, but the present study differs from the earlier ones in terms of arts activities for the blind students.

- (1) This study focuses on arts activities for the blind children in the KSA. It is assumed that it will play a crucial role in the perspective of the development of the healthy society.
- (2) The concept of visual disability is still need to be defined and understood as a crucial part of the development of the Saudi society.
- (3) The primary concern of this research is to do the assessment of arts activities existing to the blind children for their skill development.

## METHODS

### Population

The population of the study includes the blind students in the intermediate classes (i.e., class 7, class 8, and class 9) in the Kingdom of Saudi Arabia schools (registered students in the special schools for teaching and qualifying the blind, and registered students in integrated schools) in the academic year 2009/2010.

### Samples

The samples were selected from 35 schools for males and females considering geographical distribution inside KSA. For the private schools, all the blind students from birth were selected in the grades seventh, eighth, and ninth from two cities, namely: Makkah and Riyadh (purposeful samples).

For the integrated schools, 31 schools were selected randomly from four cities, namely: Makkah, Riyadh, Hael, and Jeddah. All the blind students from birth in grades seventh, eighth, and ninth in these schools were selected. The samples consisted of 238 (155 male and 85 female) blind students in the intermediate classes (71 students in class 7, 93 student in class 8, and 74 student in class 9). The samples have been selected from 31 integrated schools and 4 special schools (i.e., 140 student in special schools, and 98 student in integrated schools). Table 1 shows the distribution of the samples defined by sex, type of the school and the class.

### Instrument

Assessment model (checklists) was developed, and implemented on a pilot sample consisting of 15 male students and 15 female students from the classes 7, 8, and 9 from the intermediate stage to know the responses of the sample individuals, and determine the sufficient time for each skill (dimension). The researcher found that 90% of the sample completed their primary activity (drawing) after 30 minutes, the second activity (handcraft) within 28 minutes, but the third activity (clay) took 26 minutes. Therefore, the researcher viewed that enough time for each activity is 30 minutes (5 minutes for filling data, and 25 minutes for the skill performance).

But for the scoring scheme, a mark (1) was fixed for every student who made the step accurately, and mark zero was given for each step performed wrongly. Therefore, the final mark for each skill is 13 marks.

And to determine the full mark for each skill, the researcher used a group of three evaluators from art education teachers, and requested from every referee to assess the student mark for each skill and then, the average was calculated for the three evaluators'

marks as representative for the student ability for this skill.

## RESULTS

**Results related to the answer of the first research question:** Is the rate of progress in the blind students' ability to make different forms of art consistent across ages?

Preliminary assumption testing was conducted to check for multivariate normality and equality of variance. No violations were found multivariate normality. and equality of variance.

A one way, between groups multivariate analysis of variance was performed on the three dependent variables (drawing, handcraft, and clay) for class domain (class7, class 8, and class 9). There was a significant difference by class domain on the combined dependent variable art ability:  $F(6, 231)=22.80$ , Wilks' lambda = .60,  $p < .01$ . Table 2 shows the results of one way MANOVA analysis to explore the differences between the means of the students' performance in the various educational levels (classes) in art ability and its dimensions.

Table 2 shows that The three groups (class domain) differ in drawing:  $F(2,235)=73.63$ ,  $p < 0.01$ ; handcraft:  $F(2, 235)=61.03$ ,  $p < 0.01$ ; clay:  $F(2,235)=53.51$ ,  $p < 0.01$ ; and art ability:  $F(2,235)=105.97$ ,  $p < 0.01$ .

To explore the significance of the dual performance differences between the students in the various educational levels in art ability and its dimensions, multiple comparisons (i.e., Scheffe Test) were used. Table 3 shows the results of Scheffe Test to explore the significance of the performance differences between the pair wise means of the students' performance in various educational levels in art ability and its dimensions.

Table 3 shows, there are statistically significant differences between the mean of student performance in the ninth class and the mean of student performance in the eighth class in art ability and its dimensions in favor of the ninth class students.

There are statistically significant differences between the mean of student performance in the ninth class and the mean of student performance in the seventh class in art ability and its dimensions for the favor of the ninth class students.

There are statistical significance difference between the mean of student's performance in the eighth class and the mean of student's performance in the seventh class in the art ability and its dimensions in favor of the eighth class students.

To determine which dimension of art ability affect the differences between male students in different classes, one way, between groups multivariate analysis of variance (one way MANOVA) was performed on the three dependent variables (drawing, handcraft, and clay) for class domain (class7, class 8, and class 9). There was a significant difference by class domain on the combined dependent variable art ability:  $F(6, 231)= 11.02$ , Wilks' lambda = .67,  $p < .01$ . Table 4 shows the results of one way MANOVA analysis to explore the differences between the means of male students' performance in the various educational levels (classes) in art ability and its dimensions.

Table 4 shows that the three groups (class domain) differ in drawing:  $F(2,235)= 28.79$ ,  $p<0.01$ ; handcraft:  $F(2, 235)=31.08$ ,  $p<0.01$ ; clay:  $F(2,235)=28.86$ ,  $p<0.01$ ; and art ability:  $F(2,235)=35.85$ ,  $p<0.01$ .

To explore the significance of the dual performance differences between the means of male students in the various educational levels in art ability and its dimensions, the multiple comparisons (i.e., Scheffe Test) were used. Table 5 shows the results of Scheffe Test to explore the significance of the performance differences between the means of the male's student's performance in various educational levels in art ability and its dimensions.

Table 5 shows the follows:

There are statistical significance difference between the mean of the male student's performance in the ninth class and the mean of the male student's performance in the eighth class in the art ability and its dimensions and for the favor of the males in the ninth class.

There are statistical significance difference between the mean of the male student's performance in the ninth class and the mean of the male student's performance in the seventh class in the art ability and its dimensions and for the favor of the males in the ninth class.

There are statistical significance difference between the mean of the male student's performance in the eighth class and the mean of the male student's performance in the seventh class in the art ability and its dimensions and for the favor of the males in the eighth class.

To determine which dimension of art ability affect the differences between female students in different classes, one way, between groups multivariate analysis of variance was performed on the three dependent variables (drawing, handcraft, and clay) for class domain (class7, class 8, and class 9). There was a significant difference by class domain on the

combined dependent variable art ability:  $F(6, 231)=16.56$ , Wilks' lambda = 0.37,  $p < .01$ . Table 6 shows the results of one way MANOVA analysis to explore the differences between the means of female students' performance in the various educational levels (classes) in art ability and its dimensions.

Table 6 shows that The three groups (class domain) differ in drawing:  $F(2,235)= 43.49$ ,  $p<0.01$ ; handcraft:  $F(2, 235)=22.42$ ,  $p<0.01$ ; clay:  $F(2,235)=14.24$ ,  $p<0.01$ ; and art ability:  $F(2,235)=30.72$ ,  $p<0.01$ .

To explore the significance of the dual performance differences between the female students in the various educational levels in art ability and its dimensions, the multiple comparisons (i.e., Scheffe Test) were used. Table 7 shows the results of Scheffe Test to explore the significance of the performance differences between the means of the female student's performance in various educational levels in art ability and its dimensions.

Table 7 shows the following:

There are no statistical significance difference between the mean of the female student's performance in the ninth class and the mean of the female student's performance in the eighth class in the art ability and its dimensions and to the favor of the females in the ninth class.

There are statistical significance difference between the mean of the female student's performance in the ninth class and the mean of the female student's performance in the seventh class in the art ability and its dimensions, and to the favor of the females in the ninth class.

There are statistical significance difference between the mean of the female student's performance in the eighth class and the mean of the female student's performance in the seventh class in the art ability and its dimensions, and to the favor of the females in the eighth class.

To determine which dimension of art ability affect the differences between students in integrated schools in different classes, one way, between groups multivariate analysis of variance was performed on the three dependent variables (drawing, handcraft, and clay) for class domain (class7, class 8, and class 9). There was a significant difference by class domain on the combined dependent variable art ability:  $F(6, 231) =10.00$ , Wilks' lambda = .66,  $p < .01$ . Table 8 shows the results of one way MANOVA analysis to explore the differences between the means of the integrated students' performance in the various educational levels (classes) in art ability and its dimensions.

Gender	School	No. of schools	Number of the Students			
			Class 7	Class 8	Class 9	Total
Males	Special	2	23	35	25	83
	Integrated	17	18	32	22	72
Females	Special	2	18	18	21	57
	Integrated	14	12	8	6	26
<b>Total</b>		35	71	93	74	238

**Table 1:** Samples Distribution by Gender, Class, and School Type

	Sum of Squares	Degree of freedom	Mean Square	F. Value	p-value
Drawing	106.33	2	53.16	73.76	0.00
Handcraft	19.36	2	45.68	61.03	0.00
Clay	63.11	2	31.56	53.51	0.00
Art ability	773.42	2	386.71	105.97	0.00

**Table 2:** Results of One way MANOVA Analysis for Differences Between the Means of the Students Performance in the Three Educational Levels (classes) in the Art Ability and its Dimensions

		Class 7	Class 8	Class 9
Drawing	Class 7	-----	1.01*	1.71*
	Class 8	-----	-----	0.70*
	Class 9	-----	-----	-----
Handcraft	Class 7	-----	0.90*	1.59*
	Class 8	-----	-----	0.68*
	Class 9	-----	-----	-----
Clay	Class 7	-----	0.73*	1.32*
	Class 8	-----	-----	0.59*
	Class 9	-----	-----	-----
Art ability	Class 7	-----	2.65*	4.61*
	Class 8	-----	-----	1.96*
	Class 9	-----	-----	-----

\*significant at  $\alpha = .05$

**Table 3:** Results of Multiple Comparisons (Scheffe Test) for the Differences between the Means of the Students Performance in Art Ability and its Dimensions

	Sum of Squares	Degree of freedom	Mean Square	F-value	p-value
Drawing	48.52	2	42.26	28.79	.00
Handcraft	52.75	2	26.37	31.08	.00
Clay	35.24	2	17.62	28.86	.00
Art ability	405.69	2	202.84	35.85	.00

**Table 4:** Results of one way MANOVA analysis for Differences between the Means of the Male Students Performance in the Three Educational Levels (classes) in the Art ability and its Dimensions

		Class 7	Class 8	Class 9
Drawing	Class 7	-----	0.74*	1.50*
	Class 8	-----	-----	0.77*
	Class 9	-----	-----	-----
Handcraft	Class 7	-----	0.81*	1.57*
	Class 8	-----	-----	0.77*
	Class 9	-----	-----	-----
Clay	Class 7	-----	0.24*	1.28*
	Class 8	-----	-----	0.54*
	Class 9	-----	-----	-----
Art ability	Class 7	-----	2.29*	4.35*
	Class 8	-----	-----	2.06*
	Class 9	-----	-----	-----

\*significant at  $\alpha = .05$

**Table 5:** Results of Multiple Comparisons ( Scheffe Test) for the Differences between the Means of the Male Students Performance in Art ability and its Dimensions

	Sum of Squares	Degree of freedom	Mean Square	F-value	p- value
Drawing	44.14	2	22.07	43.49	.00
Handcraft	28.63	2	14.32	22.42	.00
Clay	16.69	2	8.34	14.24	.00
Art ability	256.26	2	128.13	30.72	.00

The value of Wilks lambda ( $\lambda = 0.37$ ), and its significance at  $\alpha = .05$ .

**Table 6:** Results of one way MANOVA Analysis for the Differences between the Means of Female Students Performance in the Three Educational Levels in Art Ability and its Dimensions

		Class 7	Class 8	Class 9
Drawing	Class 7	-----	1.46*	2.40*
	Class 8	-----	-----	0.59*
	Class 9	-----	-----	-----
Handcraft	Class 7	-----	1.14*	1.70*
	Class 8	-----	-----	0.58*
	Class 9	-----	-----	-----
Clay	Class 7	-----	0.73*	1.43*
	Class 8	-----	-----	0.71*
	Class 9	-----	-----	-----
Art ability	Class 7	-----	3.32*	5.18*
	Class 8	-----	-----	1.58*
	Class 9	-----	-----	-----

\*significant at  $\alpha = .05$

**Table 7:** Results of multiple comparisons (Scheffe Test) for the differences between the Means of the Female Students Performance in Art ability and its Dimensions

Table 8 shows that the three groups (class domain) differ in drawing:  $F(2,235)= 28.86, p<0.01$ ; handcraft:  $F(2, 235)=26.35, p<0.01$ ; clay:  $F(2,235)=21.65, p<0.01$ ; and art ability:  $F(2,235)=32.16, p<0.01$ .

To explore the significance of the dual performance differences between the integrated students in the various educational levels in art ability and its dimensions, the multiple comparisons (i.e., Scheffe Test) were used. Table 9 shows the results of Scheffe Test to explore the significance of the performance differences between the means of the integrated student's performance in various educational levels in art ability and its dimensions.

Table 9 shows the following:

There is statistical significance difference between the mean of the integrated student's performance in the ninth class and the mean of the integrated student's performance in the eight classes in the art ability and its dimensions to the favor of the ninth class.

There are statistical significance difference between the mean of the integrated student's performance in the ninth class and the mean of the integrated student's performance in the seventh class in the art ability and its dimensions to the favor of the ninth class.

There are no significance difference between the mean of the integrated student's performance in the ninth class and the mean of the integrated student's performance in the seventh class in drawing and clay.

There are statistical significance difference between the mean of the integrated student's performance in the eighth class and the mean of the integrated student's performance in the seventh class in the handcraft and art ability to the favor of the eighth class.

To explore the significance differences between the means of student's performance who study in private schools in the art ability and its dimensions, one way between groups multivariate analysis of variance was performed on the three dependent variables (drawing, handcraft, and clay) for class domain (class 7, and class 9). There was a significant difference by class domain on the combined dependent variable art ability:  $F(3, 231)=118.19, \text{Wilks' } \lambda = .40, p < .01$ . Table 10 shows the results of one way MANOVA analysis to explore the differences between the means of the blind school students'

performance in the various educational levels (classes) in art ability and its dimensions.

Table 10 shows that the two groups (class domain) differ in drawing:  $F(1,236)=29.98, p<0.01$ ; handcraft:  $F(1, 236)=27.41, p<0.01$ ; clay:  $F(1, 236)=20.13, p<0.01$ ; and art ability:  $F(1,236)=32.44, p<0.01$ . As such, the mean scores of class 9 students is significantly higher than the mean scores of class 7 students.

**Results Related to Second Research Question: Is the students' ability of different ages show significant difference by gender?**

To explore the significance differences between the means of males and females performance in the art ability and its dimensions, t test was used. Table 11 shows the results of t- test to explore the significance differences between the means of males and females performance in the art ability and its dimensions.

Table 11 shows that there are statistically significant differences between the means of males and females performance in drawing:  $t = - 2.35, p<0.05$ ; handcraft:  $t = - 2.25, p<0.05$ ; clay:  $t = - 2.14, p<0.05$ ; and art ability:  $t = - 1.97, p<0.05$ . As such, the mean score of females are significantly higher than the mean scores of males in art ability and its dimensions.

**Results Related to the Third Research Question**

Is the students' ability of different ages shows significant difference by school type?

To explore the significance of the difference between the performance mean of the students who study in Special schools and the mean of the students in integrated schools, t test was used. Table 12 shows the results of t -test to explore the significant difference between the means of the students' performance of those from special schools and the means of the performance of the students from integrated schools.

Table 12 shows that there are statistically significant differences between the mean of the performance of the students who study in special schools and the mean of the students who study in the integrated schools in performance in handcraft:  $t (236) = - 2.21, p<0.05$ ; clay:  $t (236) = - 2.13, p<0.05$ ; and art ability:  $t(236) = - 1.96, p<0.05$ ., while there is no statistically significant difference between the mean of the performance of the students who study in private schools and the mean of the students who study in the integrated schools in drawing:  $t (236) = 1.20, p>0.05$ .



	Sum of Squares	Degree of freedom	Mean Square	F-value	p-value
Drawing	43.99	2	22.00	28.86	.00
Handcraft	39.95	2	19.97	26.35	.00
Clay	26.87	2	13.43	21.65	.00
Art ability	328.75	2	164.37	32.16	.00

The value of Wilks lambda ( $\lambda = 0.66$ ), and its significance at  $\alpha = .05$ .

**Table 8:** Results of one way MANOVA analysis for differences between Means of the integrated Students Performance in the Three Educational Levels in the Art ability and its dimensions

		Class 7	Class 8	Class 9
Drawing	Class 7	-----	0.44*	1.38*
	Class 8	-----	-----	0.94*
	Class 9	-----	-----	-----
Handcraft	Class 7	-----	0.48*	1.33*
	Class 8	-----	-----	0.85*
	Class 9	-----	-----	-----
Clay	Class 7	-----	0.34*	1.08*
	Class 8	-----	-----	0.74*
	Class 9	-----	-----	-----
Art ability	Class 7	-----	1.26*	3.78*
	Class 8	-----	-----	2.53*
	Class 9	-----	-----	-----

\*significant at  $\alpha = .05$

**Table 9:** The Results of multiple comparisons (Scheffe Test) for the differences between the Means of the integrated Students Performance in Art ability and its Dimensions

	Sum of Squares	Degree of freedom	Mean Square	F-value	p-value
Drawing	45.17	1	22.59	29.98	0.00
Handcraft	40.53	1	20.26	27.41	0.00
Clay	26.09	1	13.04	20.13	0.00
Art ability	330.83	1	165.42	32.44	0.00

**Table 10:** Results of one way MANOVA analysis for differences between Means of the blind school Students Performance in the Two Educational Levels in the Art ability and its dimensions

	Gender	Mean	Standard Deviation	t-Value	p-Value
Drawing	Male	7.56	1.04	- 2.35	0.02
	Female	7.99	1.16		
Handcraft	Male	9.30	1.03	-2.23	0.03
	Female	9.60	1.02		
Clay	Male	10.70	0.92	-2.14	0.03
	Female	10.96	0.93		
Art ability	Male	27.29	2.88	-1.97	0.05
	Female	28.51	2.75		

**Table 11:** The Results of t-test for comparing between the Male and Female Students performance in Art ability and its Dimensions

	School	Mean	Standard Deviation	t-Value	p-Value
Drawing	Special	7.77	1.14	-1.20	.23
	Integrated	7.94	1.03		
Handcraft	Special	9.29	1.90	-2.21	<b>.03</b>
	Integrated	9.59	1.02		
Clay	Special	10.71	0.94	-2.13	<b>.03</b>
	Integrated	10.97	0.90		
Art ability	Special	27.77	3.02	-1.96	<b>.05</b>
	Integrated	28.50	2.72		

**Table 12:**Results of t-test Comparison Between the Integrated Students and Students of Special Schools Performance in Art Ability and its Dimensions

	Social Studies	Mathematics	Science	Language
Class 7	.60**	.37**	.25**	.39**
Class 8	.86**	.73**	.79**	.62**
Class 9	.44**	.37**	.32**	.27**
Overall	.68**	.55**	.51**	.50**

\*\* Significant at  $\alpha = .01$

**Table 13:**Summary of the Correlation Coefficients between the Art ability and Academic Achievement

Results Related to the Forth Research Question: Is there a relation between the blind students' art ability and their academic achievement?

To form clear and detailed overview for the correlation between the art ability and its dimensions, and the art achievement, the Person Equation for calculating the correlation coefficients between the art ability and its dimensions on one side, and the student's achievement in art from another side for the students in the various educational levels was used. To test the significance of the correlation coefficients, t-test was used. Table 13 shows the values of the extracted correlation coefficients.

Table 13 shows that:

There is a significant positive relation between the art ability of the students in class 7 and Social Studies ( $r(238) = 0.60$ ,  $n=238$ ,  $p<0.01$ ); Mathematics ( $r(238) = 0.37$ ,  $n=238$ ,  $p<0.01$ ); Science ( $r(238) = 0.25$ ,  $n=238$ ,  $p<0.01$ ); and English language ( $r(238) = 0.39$ ,  $n=238$ ,  $p<0.01$ ).

There is a significant positive relation between the art ability of the students in class 8 and Social Studies ( $r(238) = 0.86$ ,  $n=238$ ,  $p<0.01$ ); Mathematics ( $r(238) = 0.73$ ,  $n=238$ ,  $p<0.01$ ); Science ( $r(238) = 0.79$ ,  $n=238$ ,  $p<0.01$ ); and English language ( $r(238) = 0.62$ ,  $n=238$ ,  $p<0.01$ ).

There is a significant positive relation between the art ability of the students in class 9 and Social Studies ( $r(238) = 0.44$ ,  $n=238$ ,  $p<0.01$ ); Mathematics ( $r(238) = 0.37$ ,  $n=238$ ,  $p<0.01$ ); Science ( $r(238) = 0.32$ ,  $n=238$ ,  $p<0.01$ ); and English language ( $r(238) = 0.27$ ,  $n=238$ ,  $p<0.01$ ).

There is a significant positive relation between the art ability of the students and academic Social Studies ( $r(238) = 0.68$ ,  $n=238$ ,  $p<0.01$ ); Mathematics ( $r(238) = 0.55$ ,  $n=238$ ,  $p<0.01$ ); Science ( $r(238) = 0.51$ ,  $n=238$ ,  $p<0.01$ ); and English language ( $r(238) = 0.50$ ,  $n=238$ ,  $p<0.01$ ).

The highest relation between art ability and academic achievement is for the students in class 8.

## DISCUSSION

The purpose of this study was to explore art ability of the middle team blind students in KSA. This section represents the discussion of the study findings as follows:

**First:** Discussion the results related to answer question number one (Is the progress of the blind students' ability to make different forms of art consistence by ages?).

Results from one way MANOVA analysis indicated that there are significant differences in art ability and its dimensions among the means performance of the students in different classes. Furthermore, post-hoc analysis indicated that: the mean scores of class 9 students was significantly higher than the mean scores of class 7 students; the mean scores of class 9 students was significantly higher than the mean scores of class 8 students; and the mean scores of class 8 students was significantly higher than the mean scores of class 7 students.

Results from one way MANOVA analysis indicated that there are significant differences in art ability and its dimensions among the means performance of the male students in different classes. Furthermore, post-hoc analysis indicated that: the mean scores of class 9 male students was significantly higher than the mean scores of class 7 male students; the mean scores of class 9 male students was significantly higher than the mean scores of class 8 male students; and the mean scores of class 8 male students was significantly higher than the mean scores of class 7 male students.

Results from one way MANOVA analysis indicated that there are significant differences in art ability and its dimensions among the means performance of the female students in different classes. Furthermore, post-hoc analysis indicated that: the mean scores of class 9 female students was significantly higher than the mean scores of class 7 female students; the mean scores of class 9 female students was significantly higher than the mean scores of class 8 female students ; and the mean scores of class 8 female students was significantly higher than the mean scores of class 7 female students.

Results from one way MANOVA analysis indicated that there are significant differences in art ability and its dimensions among the means performance of the integrated students in different classes. Furthermore, post-hoc analysis indicated that: the mean scores of class 9 integrated students was significantly higher than the mean scores of class 7 integrated students; the mean scores of class 9 integrated students was significantly higher than the mean scores of class 8 integrated students; and the mean scores of class 8 integrated students was significantly higher than the mean scores of class 7 integrated students.

Results from one way MANOVA analysis indicated that there are significant differences in art ability and its dimensions among the means performance of the blind school students in different classes. Furthermore, post-hoc analysis indicated that: the mean scores of class 9 blind school students was significantly higher than the mean scores of class 7 blind school students; the mean scores of class 9 blind school students was significantly higher than

the mean scores of class 8 blind school students; and the mean scores of class 8 blind school students was significantly higher than the mean scores of class 7 blind school students.

In conclusion, art ability and its dimension increase by increasing the age (academic level). It is obvious, to even the most casual observer, that abilities change with age. Perhaps the most dramatic changes occur during childhood and adolescence. During this period almost all skills and abilities increase rapidly. (This fact is reflected in the use of age- and grade-equivalent scores on ability and achievement test). Not only abilities increase during earlier years, they also decline in later life.

The ability is also affected by the experiences of the particular person. If an individual has not been exposed to the appropriate experiences and training, he obviously cannot develop an ability. However, more specific abilities, particularly ones that can be learned through formal education and abilities are modifiable by specific training. In some, abilities can change as a result of maturation and training [4].

That is the practical implications of the fact there are changes in ability? The obvious implication is that we must always consider the developmental level and past experiences of an individual when interpreting his scores on ability measures. His score indicates his level of development at the time of measurement. Whether this represents the maximal level of his development or only a stage in the developmental process will depend on his age and previous experience.

**Second:** Discussion the results related to answer question number two (Is the students' art ability of different ages show significant difference by gender?).

Results from t-test analysis, revealed that: there were significant gender related differences in art ability and its dimensions. Research findings seem to be consistent with the previous study (e.g. [9, 11, 29]). Furthermore, Research has consistently demonstrated that during the elementary school years, boys and girls produce different kinds of pictures (e.g., [11, 27, 28]). Boys often draw themes of power, competition, and depersonalized aggression, with monsters, vehicles, and weapons. Compared to girls' drawings, boys' characters are drawn further apart, in profile, and in motion. Girls typically draw static images of natural settings with people and animals; people are often drawn with facial and bodily detail and in an inactive, frontal view. A specific example comes from a study of 8- to 11-year-olds who were

asked to draw pictures of water; girls drew calm rivers and oceans, boys drew storms at sea [21]. There are also technical differences, as between ages 9 and 12 years boys draw angular, geometric shapes, but girls are likely to produce curvier, organic forms. Some have stated that gender differences emerge by first grade and are stable thereafter [28].

**Third:** Discussion the results related to answer question number four (Is there a significant difference in the blind students' art ability and its dimensions between those studying in private schools and those in public schools?).

Results from t-test analysis, revealed that: there were significant differences in art ability and its dimensions between those studying in private schools and those in public. Chorniak [10] investigated that an overall consideration for blind students is that they have the fullest possible contact with sighted children. Academically oriented students with visual impairments have been mainstreamed successfully into regular classes for many years. Such contact has the dual purpose of helping them to relate well to the sighted world in which they must function, and of enabling the sighted to appreciate blind children as children with limitations and capabilities [16].

The researcher noticed through observing the blind students, who are merged in public schools, that their works are perfect, and this is because of the occasional help of their sighted colleagues to complete their works, and helping them inside the Art Education Room to get the required tools. For example, in some drawing works they get the help of their colleagues to complete the work in good manner. Whatever, this is good work that motivates the linkage between blind and sighted students as they also help them in the school courtyard, and to touch things by their hands as the teacher focus and help them for their fewness, where their number is from 1 to 2 in each class. But in the private school, the number of the students is from 10 to 15, and one teacher for art education, which makes the teacher facing difficulty to focus on one student for the shortness of time, and it is well known that the blind needs long time to execute the work and he gets difficulty to move inside the Art Education Room.

Public or sighted schools are considered to be the natural environment in which the normal and disabled children can grow. Therefore, modifications can be made in natural environment to fulfill the special needs for disabled children, which is easier and more effective than modifying artificial environment to fulfill the basic needs. So the advantages of teaching blind students in the sight schools are:

(1) Inclusion of disabled children gives them the opportunity to stay at home after the studying day, which enables them to be effective members in their families and social environments. (2) Inclusion prevents the negative directions, which accompany isolating them in special schools. Inclusion is a flexible education method through increasing, developing, and diversity of the provided educational services for the handicapped children. (3) Teaching the handicapped children in usual classes enables them to socially react with their normal peers. (4) Inclusion environment works to reduce the social acceptance for the handicapped children from their normal peers. (5) Inclusion enables disabled children to imitate the behavior of their normal peers. (6) Inclusion works to increase the opportunity of communication between the disabled children and their normal peers. (7) Practicing of the disabled children with their normal peers in early age may contribute in improving the normal children behavior toward their disabled peers. (8) Inclusion may enable the disabled children to recognize the strength and weakness points for their disabled peers, which leads to limit or to get rid from any wrong concepts that they might have. (9) Inclusion may work to find a realistic environment in which the children get various experiences and diverse indications which may enable them to form correct and realistic concepts about the world, which they live in. (10) Inclusion may work to deepen our understanding for the individual variations among the children. (11) Educational inclusion might show for the specialists and non-specialists the aspects of similarity between the disabled and normal children more than showing the aspects of variations.

**Forth:** Discussion the results related to answer question number five: (Is there a significant relation between the blind students' art ability and their academic achievement?).

Testing the Correlation Coefficients between the Art ability and Academic Achievement revealed that: there were significant positive relations between art ability and academic achievement. Research findings seem to be consistent with the previous studies (e.g. [7, 20]). The strong positive relationships that we found between art ability and academic achievement are similar to other empirical studies [5] that found a correlation between music involvement and academic achievement. Research findings also support the conclusion of Catterall, Chapleau, and Iwanaga [8] that students involved in art music are "doing better than those who are not—for whatever constellation of reasons" (p. 4).

In a meta-analysis of 24 correlation research studies, Butzlaff [5] calculated a reliable, but low relationship between music instruction and standardized measures of reading ability ( $r = .17$ ). In the six experimental

studies, he calculated an even smaller effect for music instruction on reading. A similar meta-analysis was conducted by Palmarini [24] for Reviewing Education and the Arts Project. He found little quantitative data to support the notion that the arts improve reading skills.

Adler [1] is illustrative of many educational philosophers who have felt that the arts should play a central role in education. Educating students through the arts is felt to be critical for the development of a whole person. Eisner [32] has outlined a number of ways this can be done, including (a) the integration of the arts into specific projects (e.g., a history project), (b) integration within the arts, such as comparing rhythm in music and the visual arts, (c) working out a specific theme from artistic or non-artistic perspectives, and (d) problem solving through multiple perspectives. This process begins quite naturally in infancy and early childhood as learning experiences are holistic and integrated, not separated into specific domains. Consider, for example, children's television programming. Shows such as Sesame Street incorporate music along with a wide variety of arts into the informal learning experience. Several curricular models have been developed with an arts integration approach. For example, the A+ Schools program "combines arts integration, continuous, whole school professional development, and the use of statewide Academic support networks for teachers and administrators to implement a state's mandated curriculum and meet accountability standards".

## REFERENCES

- [1] Adler, M. (1982). *The Paideia Proposal: An Educational Manifesto*. New York: Collier Books,
- [2] Macmillan Publishing Company.
- [3] Basow, S. A. (1992). *Gender stereo types and roles* (3rd ed.) . Pacific Grove, CA: Brooks/Cole.
- [4] Bensur, B. J., Eliot, J., & Hedge, L. (1997). Cognitive correlates of complexity of children's drawings. *Perceptual and Motor Skills*, 85, 1079–1089.
- [5] Brown, F. (1976)- *Principles of educational and psychological testing* Second Edition the Dryden Pregs Inc.
- [6] Butzlaff, R. (2000). Can music be used to teach reading? *Journal of Aesthetic Education*, 34(3-4), 167-178.
- [7] Catterall, J. S. (1997). Involvement in the arts and success in secondary school. *Americans for the Arts Monographs*, 1(9) 1-11.
- [8] Catterall, J. S. (1998). Does experience in the arts boost academic achievement? A response to Eisner. *Art Education*, 51(4), 6-11.

- [9] Catterall, J., Chapleau, R., and Iwanaga, J. (1999). Involvement in the arts and human development: General involvement and intensive involvement in music and theatre arts. In *Champions of change: The impact of the arts on learning* (E. B. Fiske, Ed.). Washington, DC: Arts Education Partnership.
- [10] Cherney, I., Seiwert, C., Dickey, M., & Flichtbeil, D. (2006). Children's Drawings: A mirror to their Minds. *Educational Psychology Vol 26, No. 1, February 2006, pp. 127-142.*
- [11] Chorniak E.J. (1977) *Education of Visually Impaired Children – Objectives in the Education of Visually Impaired Children* in Jan J.E.
- [12] Chris, J., Bulie, E. (1999). Gender Differences in Preschooler's and Kindergratner's Artistic Production and Preference. *Sex Roles, Vol 41, No 718.*
- [13] Cox, M. V. (1993) . *Children's drawings of the human figure*. Hillsdale, NJ: Erlbaum. Creative Child Pre s (1991) . *Keep busy! Keep happy! Coloring and activity book*. New York: Playmore Inc.
- [14] Douglas, H. (2004), "Finding the Will and the Way To Make the Arts a Core Subject: Thirty Years of Mixed Progress," *The State Education Standard, Vol. 4, Number 4*, Washington, DC: National Association of State Boards of Education.
- [15] Eisner, E. (2005). Back to whole. *Educational Leadership, 63(1)*, 14-18. Retrieved March 20, 2007 from the Academic Search Premier database.
- [16] Eisner, E.W. (1998). Does experience in the arts boost academic achievement? *National Society for Education in Art and Design*, 51-60.
- [17] Gage N.L. and Berliner D.C. (1992) *Educational Psychology*. Houghton Mifflin Co. USA.
- [18] Gardiner, M.F., Fox, A., Knowles, F., & Jeffrey, D. (1996). Learning improved by arts training. *Nature*, 381, 284.
- [19] Golomb, C. (2004) *The child's creation of a pictorial world*. Mahwah, NJ: Lawrence Erlbaum.
- [20] Halpern, D. F. (2000). *Differences in cognitive abilities* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- [21] Haley, J. A. (2001). The relationship between instrumental music instruction and academic achievement in fourth grade students. (Doctoral dissertation, Pace University). *Dissertation Abstracts International, 62 (09)*, 2969A.
- [22] Kawecki, I. (1994) . Gender differences in young children's artwork. *British Education al Research Journal, 20*, 485- 490.
- [23] Koppitz, E. M. (1968). *Psychological evaluation of children's human drawings*. New York: Crune and Stratton.
- [24] Meyer, L. (2004). The complete curriculum: Ensuring a place for the arts in America's schools. *The State Education Standard, winter*, 11-15.
- [25] Palmarini, J. (2000). The REAP Report: A New Study Examines the Connection between Arts Education and Academic Outcomes. *Teaching Theatre, 12(1)*, 12.
- [26] Pressley, M. (1977). Imagery and children's learning: Putting the picture in developmental perspective. *Review of Educational Research, 49*, 319-370.
- [27] Pomerleau, A., Bolduc, D., Malcuit, G., & Cossette, L. (1990). Pink or blue: Environmental gender stereotypes in the first two years of life. *Sex Roles, 22*, 359- 367.
- [28] Reeves, J., & Boyette, N. (1983) .What does children' s art work tell us about gender? *Qualitative Socio logy, 6*, 322- 333.
- [29] Rubenstein, J., & Rubin, C. (1984) . Children's fantasies of interaction with same and opposite sex peers. In T. Field, J. Roopnarine, & M. Segal (Eds.), *Friends ip in normal and han dicapp ed children* (pp. 99± 123) . Norwood, NJ: Ablex.
- [30] Silver, R. (1993). Age and Gender Differences Expressed Through Drawings: A Study of Attitudes Toward Self and Others. *Art therapy: Journal of the American Art Therapy Association. 10(3)* pp. 159-168.
- [31] Thorne, B. (1993). *G ender play: Girls an d boys in school*. New Brunswick, NJ: RutgersUnive rsity Press.
- [32] Winner, E., & Hetland, L. (Eds.). (2001). The arts and academic improvement: What the evidence shows [Special issue]. *Translations, 10(1)*.  
[www.vermontartsdirectory.org/grants/documents/int\\_arts\\_monograph.html](http://www.vermontartsdirectory.org/grants/documents/int_arts_monograph.html)
- [33] Eisner, E. (2002). *The arts and the creation of mind*. New Haven: Yale University Press.