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**Visual Arts Integration in College Students' and Its Impact
on Academic Achievement****Jovita F. Punzalan, LPT, MAE**

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Abstract

The major problem of this study was to determine the impact of visual arts integration in college students' on academic achievement. The study made use of experimental research design. For data processing and statistical treatment, mean and standard deviation procedures were utilized in reporting the performances of the members of the experimental and control groups using the following sampling distributions. The t – test for correlated means was used in testing the significance of the differences in the performance of the experimental and control groups using the mean of the experimental and control groups, standard error of the mean, and standard deviation. The respondents of the study were selected college students from State University in Bulacan. The data were presented using tables and the results of the study were tabulated and processed using Statistical Packages for Social Sciences (SPSS). The study revealed the comparison of the experimental group and the control group through different categories; (1) IQ - no significant IQ differences exist between the experimental and control group, (2) Age - no significant age differences exist between the members of the experimental and control groups, (3) Pre-test - no significant differences exist in the pretest scores of the experimental and control groups, Moreover, (4) post-test - revealed significant difference. The findings of the study indicated that the group who used visual arts integration in Humanities class recorded significantly helps in performance and achievement than those who utilized the lecture-discussion method. The null hypothesis that there was no significant difference exist in the posttest scores of the experimental and control group has been rejected.

Keywords: *College students, visual arts, integration, academic achievement*

1. Introduction

This study about the effects of visual arts integration in college students is deemed meaningful because arts (such as fine arts or visual arts) is an integral part of the development of each human being. Those who have studied learning processes throughout the ages, beginning with Plato, have emphasized the importance of the arts in the education process. Study in the arts is integral to our society. They are a part of every cultural heritage. The arts are what make us most human, most complete as people. The arts cannot be learned through occasional or random exposure any more than math or science can. Education and engagement in the fine arts are an essential part of the school curriculum and an important component in the educational program of every student (KATY.ISD). (n.d.).

Sufficient data exists to overwhelmingly support the belief that study and participation in the arts is a key component in improving learning throughout all academic areas. Evidence of its effectiveness in reducing student dropout, raising student attendance, developing better team players, fostering a love for learning, improving greater student dignity, enhancing student creativity, and producing a more prepared citizen for the workplace for tomorrow can be found documented in studies held in many varied settings.

Why is the study of arts (visual arts integration) important? They engage many areas of the brain and also have far-reaching effects on the learner's mind (Jensen, 2001). The arts promote the understanding and sharing of culture. They promote social skills that enhance the awareness and respect of others. The fine arts enhance perceptual and cognitive skills. The Burton study of more than 2000 children found that those in the arts curriculum were far superior in creative thinking, self-concept, problem-solving, self-expression, risk-taking, and cooperation than those who were not (Burton et al., 1999). The arts have the capacity to engage everyone. All levels of American society can and do participate in the fine arts. There are no barriers of race, religion, culture, geography, or socioeconomic levels.

Winner & Hetland (2007) averred that one justification for keeping the arts integration has now become almost a mantra for parents, arts teachers, and even politicians: arts make you smarter. The notion that arts classes improve children's scores on the SAT, and other tests is practically gospel among arts-advocacy groups. A Gallup poll found that 80 percent of Americans believed that learning in visual arts improved math and science skills.

The studies about arts show a new recognition of the key role of creativity in contributing to economic competitiveness. Countries facing cultural pressures as a result of globalization are accepting that cultural education is important to preserve diversity and promote inter-cultural understanding. The arts are seen as providing a significant contribution to creativity and cultural development (Sharp & Le Metais, 2000).

The National Visual Arts Association (1994) asserts the following contributions of visual arts to the society and students: It benefits the students because it cultivates the whole child, gradually building many kinds of literacy while developing intuition, reasoning, imagination, and dexterity into unique forms of expression and communication. This process requires not merely an active mind but a trained one.

Findings in the study of Sharp & Le Metais, 2000 showed that arts teach a different lesson. They sometimes travel along a road that moves in a direction similar to the one described above, but more often they start from a different place. The arts cultivate the direct experience of the senses; they trust the unmediated flash of insight as a legitimate source of knowledge. Their goal is to connect person and experience directly, to build the bridge between verbal and nonverbal, between the strictly logical and the emotional.

Gullat (2008) suggest that education in its holistic characteristic has been a convincing factor in an argument for effectiveness in arts integration in spite of systematic and logistical concerns. Kilinc (2010) supported that the teachers will be more involved with strategies such as project based learning and inquiry and instruction in conducting art integration. Likewise, Betts (2006) and Bowie (2009), claimed that Art Based Education has the power to open a new horizon or a more innovative instructional activities. The 21st century learning and art-based education allow students to remain product-focused, creating solutions with aesthetic perspective, enjoying art-based experience, and positive character.

Galvez (2018) asserted that students react to information uniquely to others. Thus, it is within the strategies of teachers' to use creativity in presenting different modes and format to teach the subject matter of a lesson. Several authors like Dwyer (2011), Melnick, Whitmer and Trickland (2011), Caldwell and Vaughan (2012), Reeves (2007), and Hartle (2015) raised that art education plays an important role in the heart of education curriculum because of the countless benefits specially in reasoning and critical thinking. In addition, he stressed that art education as the key factor of greater heights for academic instructions. Besides, Melnick (2011) agreed that arts stimulates the brain and rouse minds of students for advance cognitive level such as higher academic achievement, creativity, imagination and self-expression. Thus, advocated that art education a model for the future in educational hopes and practices.

According to various researchers like Walker, Winner, Hetland, Simmons, and Goldsmith (2011), there is a strong evidence for the provisions of using arts to strengthen the knowledge across disciplines especially in Math and Geometry and other discipline. Visual thinking is advantageous to geometric rationalization of the students. This trait of the students in terms of spatial relativity is common and shared by most of the students. Visualizing a solution to complex geometric algorithms requires a constructed mental image to be formulated and translated into multidimensional, symbolic notations. These types of complex visual exercises are more common in art classes. Therefore, a study to determine the relationship between spatial conception and geometric reasoning was conducted to determine any advantage of visual arts in geometry.

Walker (2011) studied problems that require students to design, analyze, create, and present findings while reflecting on their own self-discovery. Panasan & Nuangchalerm, (2010) suggest that the Inquiry-driven instruction utilizes students' pre-existing interests and knowledge challenging their own understanding through opportunities of explanation and examination. Similarly, Betts (2006) advocated for arts implementation across curriculum, based on the belief that arts allow creation from understanding and deepened engagement with a topic. Integration can include core subjects of math, science, language arts, and social studies in addition to various elective courses.

It is deemed necessary to conduct a study that will determine the effects of visual arts integration in college students' and its impact on academic achievement.

1.1 Statement of the Problem

The primary focus of this study is to investigate the effectiveness of arts integration in the teaching and learning Humanities subject. The study also aims to answer the following specific questions:

1. How do the members of the Experimental and Control Group contrast in terms of IQ and age?
2. How do the pretest performances of Experimental Group and Control Group differ?
3. How do the posttest performances of the Experimental Group and Control Group compare?
4. What pedagogical implications may be drawn from the finding of the study?

2. Methodology

2.1 Methods and Techniques

The researcher utilized the experimental method, the pretest – posttest true – control group design in determining the effectiveness of using visual arts on the students' academic performance.

Dimitrov and Rumrill (2003) indicated that with this design, all conditions are the same for both the experimental and control groups, with the exception that the experimental group is exposed to a treatment, whereas the control group is not.

2.2 Respondents of the Study

Table 1 summarized the respondents of the study. They were the Second Year college students taking up Humanities class in one of higher education institution in Bulacan Class- A was the Experimental group and Class -B was the Control group.

Table 1: Respondents of the Study

Section	Number of Students
Class- A	22
Class –B	22
Total	44

The subjects were randomly matched and paired from the original population and were divided into experimental and control groups. The experimental group was exposed to “program x”, the treatment given to the experimental group included the art integration, wherein subject matter are exposed to visual arts (painting, drawing, photography, digital arts and other visual arts). Art activities like reading colors, criticizing painting, seeing the arts in the everyday, draw and paint elements and principles of art and graphic organizer were also included. Several lessons or topics about Humanities subject where be covered. The two groups will be given pre-test first. Scores will be recorded.

The subjects' characteristics were equated using the variable, IQ. T – Test was used to determine the significance of differences in the subjects' characteristics.

2.3 Instruments of the Study

Achievement Test. The researcher formulated a teacher-made test based on the different topics. The constructed test was submitted to a pool of experts in the field of education for further comments and suggestions before it was put in its final form. The same test will be given to both groups in the pre-test and post-test.

In constructing the test, the researcher was motivated by the six-step procedure of Anastasi and Urbina (2007) as cited by Nuqui (2007).

Step 1: Develop a Test Plan. This covered the following activities:

- a. Identify the objectives
- b. Know the learning outcomes.
- c. Adopt on the test format and type of questions. The test contained objective type of test utilizing multiple choice type of question. Based from Anastasi and Urbina (1997) as cited by Nuqui (2007), multiple choice questions can measure more cognitive levels than other objective type of questions. It can measure both knowledge and high level of learning outcomes.

Step 2: Prepare the “Table of Specification” Based on the target schedule, all chapters was executed for 10 days.

Step 3: Develop the Test Items. Under this step the following activities were done.

- a. Multiple choice was used as an item format.
- b. The topics were identified guided by the table of specification
- c. The 50-items were developed and distributed according to Blooms Taxonomy of question formulation. After the thorough examination of the test item analysis, difficult index, and discrimination power, 50 items were retained. (Please refer to Appendix B)
 - Knowledge Question 6 items
 - Comprehension Question 6 items
 - Application Question 6 items
 - Analysis Question 22 items
 - Synthesis Question 7 items
 - Evaluation Question 3 items

Step 4: Write the Test Directions. The researcher identify reason for specific and good instruction. For this reason, the following guidelines were observed in writing the directions:

- a. The directions were clear and specific
- b. The directions were made to direct the test taker as to where and how the test taker should respond to the questions.

Step 5: Test Validation. The Content Validity Procedure was utilized in validating the test. According to Myers and Hansen (2002) as cited by Nuqui, the procedure deals with finding out whether or not the test fairly reflects the content of the course.

Step 6: Dry-Run of the Test. The results of the dry-run were item analyzed, and only items with acceptable difficulty and discrimination indices were included in the final form of the test (Please see Appendix B)

Step 7: Administration of the Test. The researcher was responsible for administering the test to the students considering the following:

- Considered the approval of the higher institution.
- Distributed the instrument/test questionnaire to the respondents.
- Explained clearly the directions or instructions how to answer the test, the duration and conduct of the test.
- Supervised the whole process of answering the questions.
- Collected the test paper.

3. Results and Discussion

Table 2: IQ Comparison of the EG and CG

Scores	Experimental Group				Control Group			
	F	x ¹	fx ¹	fx ²	F	x ¹	fx ¹	fx ²
65-69	1	7	7	49	1	7	7	49
60-64	2	6	12	72	1	6	6	36
55-59	1	5	5	25	2	5	10	50

50-54	0	4	0	0	0	4	0	0
45-49	1	3	3	9	1	3	3	9
40-44	2	2	4	8	2	2	4	8
35-39	3	1	3	3	3	1	3	3
30-34	2	0	0	0	2	0	0	0
25-29	3	-1	-3	3	3	-1	-3	3
20-24	2	-2	-4	8	2	-2	-4	8
15-19	1	-3	-3	9	0	-3	0	0
10-14	1	-4	-4	16	2	-4	-8	32
5-9	3	-5	-15	75	3	-5	-15	75
Total	22		+5	277	22		+3	273

As shown in Table 2, the members of the experimental group registered a mean IQ of 33.136, with a standard deviation of 17.70. On the other hand, the members of the control group posted a mean IQ of 32.681 with a standard deviation of 17.60. The difference of .45 when analyzed using a t-test procedure with a computed t-value equal to .083. At .05, where of = 42 the critical t-ratio was recorded at 1.96. Since the computed t value did not exceed the critical t ratio the null hypothesis may be accepted. This means that no significant IQ differences exist between the experimental and control group.

Table 3: Summary of Statistics in the IQ of the Experimental Comparison and Control Group

Statistics	Experimental Group	Control Group
N	22	22
M_E	33.136	32.681
σ	17.70	17.60
SE_M	3.86	8.84
σ_D	5.44	
D	.45	
T	.083	

Summary of Statistics:

Computed t : .083

α = .05

Critical t : 1.96

df = 42

Decision Accept Ho

Interpretation: No significant IQ differences exist between the experimental and control group.

Table 4: Comparison of the Age of the EG and CG

Age	Experimental Group				Control Group			
	F	x ¹	fx ¹	fx ²	F	x ¹	fx ¹	fx ²
34-35	1	5	5	25	1	5	5	25
32-33	1	4	4	16	1	4	4	16
30-31	1	3	3	9	1	3	3	9
28-29	1	2	2	4	1	2	2	4
26-27	1	1	1	1	1	1	1	1
24-25	2	0	0	0	1	0	0	0
22-23	6	-1	-6	6	7	-1	-7	7

21-20	7	-2	-14	28	6	-2	-12	24
18-19	2	-3	-6	18	3	-3	-9	27
Total	22		-11	107	22		-13	113

Table 5: Summary of Statistic in the Age Comparison of the Experimental and Control Group

Statistics	Experimental Group	Control Group
N	22	22
M_E	23.5	23.3
σ	4.29	4.37
SE_M	9.36	9.54
σ_D	1.37	
D	.20	
T	.14	

Summary of Statistics:

Computed t : .14

α = .05

Critical t : 1.96

df = 42

Decision Accept Ho

Interpretation: No significant IQ differences exist between the experimental and control groups.

In terms of age, Tables 4 and 5 show that the mean age of the members of the experimental group was 23.5, while the comparison group posted a mean age of 23.3. The computed standard deviation value were 4.29 and 4.37 respectively. When analyzed using a t-test procedure, a difference of .20 was obtained resulting to a computed t value equal to .14. Since this value is way below the critical t-ratio of 1, 96, the null hypothesis was accepted. It was concluded that no significant age differences exist between the members of the experimental and control groups

Table 6: Pretest Comparison of the Experimental and Control Group

Scores	Experimental Group				Control Group			
	F	x ¹	fx ¹	fx ²	F	x ¹	fx ¹	fx ²
22-23	1	5	5	25	1	5	5	25
20-21	1	4	4	16	1	4	4	16
18-19	4	3	12	36	1	3	3	9
16-17	5	2	10	20	2	2	4	8
14-15	2	1	2	2	5	1	6	6
12-13	4	0	0	0	3	0	0	0
10-11	2	-1	-2	2	2	-1	-2	2
8-9	1	-2	-2	4	2	-2	-4	8
6-7	1	-3	-3	9	3	-3	-9	27
4-5	1	-4	-4	16	1	-4	-4	16
Total	22		22	130	22			117

Table 7: Summary of the Statistics in the pretest Comparison of the Experimental and Control Group

Statistics	Experimental Group	Control Group
N	22	22
M_E	14.5	12.77
σ	4.43	4.60
SE_M	2.04	2.12
σ_D	2.94	

D 1.8
T .162

Summary of Statistics:

Computed t : .612 $\alpha = .05$

Critical t : 1.96 df =42

Decision Accept Ho

Interpretation: No significant IQ differences exist in the pretest scores of the experimental and control groups.

The effectiveness of the randomization efforts initiated was assessed by administering a pretest to the groups. Tables 6 and 7 present the summary of the statistical analysis as shown in Table 9, the mean pretest score of experimental group was 14.5, which the comparison group, 12.77, which standardization values of 4.431 and 4.431 and 4.60 respectively presents of the statistical analysis showed a computed a value of .612. This value is way below the critical t-value of the 1.96. This means that the null hypothesis has to be accepted. It was concluded that no significant differences exist in the pretest scores of the experimental and control groups.

The finding also indicate that the randomization efforts were successful, and there is reason to believe that the members of the experimental and control groups were more or less equivalent to the mean.

Table 8: Post test Comparison of the Experimental and Control Group

Scores	Experimental Group				Control Group			
	F	x ¹	fx ¹	fx ²	F	x ¹	fx ¹	fx ²
45-47	1	5	5	25	0	5	0	0
42-44	4	4	16	64	1	4	4	16
39-41	9	3	27	81	1	3	3	9
36-38	1	2	2	4	1	2	2	4
33-35	2	1	2	2	1	1	1	1
30-32	2	0	0	0	2	0	0	0
27-29	1	-1	-1	1	5	-1	-5	5
24-26	1	-2	-2	4	4	-2	-8	16
21-23	1	-3	-3	9	4	-3	-12	36
18-20	0	-4	0	0	2	-4	-8	32
15-17	0	-5	0	0	1	-5	-10	50
Total	22		46	190	22		-33	169

Table 9: Summary of the Statistics in the Post Test Comparison and Experimental and Control Group

Statistics	Experimental Group	Control Group
N	22	22
M _E	37.27	26.5
σ	6.19	6.99
SE _M	1.35	1.52
σ_D	2.03	
D	10.77	
T	3.28	

Summary of Statistics:

Computed t : .3,28 $\alpha = .05$

Critical t : 1.96 df =42

Decision: Reject Ho

Interpretation: Significant differences exist in the post test scores of the experimental and control groups.

After two months of experiment using visual arts in the teaching of Humanities subject, the experimental and control groups were post tested and the results are summarized in Tables 8 and 9.

The findings revealed that the experimental group, the group who utilized the use of usual arts obtained a mean score of 37.27 with a standard deviation of 6.19, while the control group, the group who made use of the traditional lecture discussion method recorded a mean score of 26.5 with a standard deviation of 6.99. Comparison of the posttest result showed a difference of 10.77 in favor of the experimental group. To find out whether this difference may be considered to be statistically significant or not, the data were to a significance of difference test called t-test for correlated mean.

Results showed a computed t-value of 3.28 at .05 significance level, at 22 degrees of freedom, the critical t-value is registered at 1.96. Comparison of the computed and critical t-values indicates that the computed t-values is greater than the critical value, giving the researcher reason to reject the null hypothesis in favor of the research hypothesis. It may be safely stated that significant difference exists in the posttest performances of the experimental and control groups, in other words, the group who utilized the visual arts in studying art appreciation recorded significantly helps performance than those who used the traditional lecture discussion method.

This may be explained by what Booth (2016) is saying that the arts offer opportunities for students to explore and demonstrates skills important in making and depicting meaning. Arts education introduces students to a different way of understanding themselves and the world. It is an effective avenue for them to have different ways of expressing thoughts, experiences and feelings that are not easily expressed in the traditional lecture methodology.

3.1 Implications

The results of the study explored the effects of visual arts integration in college students' and its impact on academic achievement. It has been articulated in the present study that visual art integration yields positive relationship on college students' academic performance and achievements.

It may be concluded that visual arts integration was effective for college students and showed impact on their academic performance and achievement. An active participation from the experimental group regarding various activities was outstanding. The overall findings revealed the advantage of art integration and the use of visual arts in learning process of the students. The traditional lecture-Discussion method used in the control group revealed a less active participation and difficulty in the learning process. The null hypothesis that there was no significant difference exist in the posttest scores of the experimental and control group has been rejected. Using visual arts in different learning areas encourages students to participate and this will develop their confidence and advantage in learning process.

Every educational institutions must ensure and challenge themselves to use visual arts integration not only on arts related subjects but more so on other areas of disciplines. Other factors to consider regarding arts integration:

Art Integration

According to Efland (2002) arts have long been considered part of the human affective experience. One reason proponents cite for integrating the arts with academic curricula is the perception that works of art have the ability to engage the students emotionally with the curricula (Greene, 2001; Eisner, 2002; Kindler, 1997). Elkins (2001) agreed that by simply looking at paintings humans one may be overwhelmed by emotions. In one of the arguments from the Platonic tradition, art objects were thought of as models, imitations of nature, used to help humans understand abstract concepts. The classic scholars said that, there was no true knowledge in the art object itself, or in the process of making the art object. An artist was merely born with a skill to produce visual images that evoke

a particular human thought (not an emotional response). In his study, Halliwell (2002) obtained result that art was created and understood through the human senses that were known to distort human perception, art was considered an inferior source of knowledge.

More significantly, in the study of Gardner's (2006, 2007), on the Theory of Multiple Intelligence, Goleman's (2006) work and Eisner's (2002) perspective on aesthetics will guide the philosophy of arts integration across the curriculum. The teachers serve as model and will initiate the teaching process of art integration using Multiple Intelligences, Emotional Intelligences, and aesthetic understanding of the artistic process. Artistic disciplines in the education system for art integration include visual arts, Digital art or computer art, music, dance, photography, and theatre arts, to improve the learning process.

Art Integration needs reciprocation. Berke (2000) reported that Art Integration needs interchange implied that integration should be a two-way lane where classroom teachers and arts educators share the accountability and responsibility for planning objectives and goals for student. On the other hand, Deasy (2002) claimed that arts integration as 'the effort to build a strong and comprehensive set of relationships between learning in the arts and gaining knowledge in the other skills and subjects of the Curriculum. In an attempt to understand the effect of arts on the development of students.

Gullat (2008) suggest that education in its holistic characteristic has been a convincing factor in an argument for effectiveness in arts integration in spite of systematic and logistical concerns. Kilinc (2010) supported that the teachers will be more involved with strategies such as project based learning and inquiry and instruction in conducting art integration. Likewise, Betts (2006) and Bowie (2009), claimed that Art Based Education has the power to open a new horizon or a more innovative instructional activities. The 21st century learning and art-based education allow students to remain product-focused, creating solutions with aesthetic perspective, enjoying art-based experience, and positive character.

4. Recommendations

The conclusions recommended the following:

1. Twenty-first century educators are expected to utilize and incorporate these contemporary strategies in teaching like visual arts integration and creative motivational approach in conducting arts related activities, lessons, discussions, presentations, etc., and extend these strategies even in non-art-related subjects like Math, English, Social Science, etc.,
2. Each educational institution must provide continuous programs wherein the implementation of visual art integration to art related and non-art-related discipline or subjects become a major priority. Educators in the field of other disciplines like Math and Geometry, Science, English, etc., may adopt or consider visual art integration based from the conclusion that arts allow creation from understanding and deepened engagement with a topic.
3. For future researchers, that they may conduct studies and explore other experimental investigations about the enormous and diverse impact of visual arts integration in the academic performance and achievements of the students.
4. Teacher's creativity can transform themselves into a well-rounded educator that adopt visual art explosion of this generation. Students around the globe are more visual because of the digital era, having difficulty to learn via traditional methods is alarming. Visual arts integration can be an interesting tool for motivation, learning, creativity and critical thinking that can give students a point of reference for future learning.

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