

THE EFFECT OF INTERVENTION OF TRAINING PACKAGE ON DRAWING SKILL ACQUISITION AMONG STUDENTS OF SELECTED UNIVERSITIES IN NIGERIA

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Abstract

The status of students intake into the Industrial Design departments of some selected universities in Nigeria reveals that greater percentage of students admitted into the department lacked background in art.

The study then went ahead to determine the effect of an intervention in term of a training/teaching package on the students. The quasi-experimental approach was employed to subject students to a seven weeks training session. Students from two homogeneous universities constituted the control and experimental groups.

The pre-test and post-test were given to both groups at the beginning and end of the exercise respectively, with only the experimental group exposed to the treatment.

After the results of the performances of both groups were analysed, it revealed that the experimental group that used the drawing package performed significantly higher than the control group which did not use the package.

Keywords:

Drawing Skill Acquisition; Intervention; Training Package

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1. INTRODUCTION

The inception of Industrial Design programme in Nigeria can be traced back to 1977 when it was carved out of the Fine Art Department of the Ahmadu Bello University, (ABU) Zaria, Nigeria (Ogunduyile, 1999). The introduction of the programme into a few universities of technology in the early 1990s initiated more challenges especially in candidates' subject combination and admission requirements. The requirement for admission into the Industrial Design Programme of Nigerian Universities is given thus: Five Ordinary Level credits, including Mathematics and English, and 3 of Chemistry, Biology, Economics, Geography, Fine Art, Technical Drawing and other art courses offered in technical schools (JAMB Brochure 2007). Even though Art and Technical Drawing are part of the requirement for admission, it has become obvious that a large number of candidates who gained admission into the Industrial Design Department do not have prior training in Art/Drawing.

A survey of student intake into the Industrial Design departments of the Federal University of Technology, Akure and the Abubakar Tafawa Balewa University, Bauchi between year 2000 and 2008 reveals that only 12% and 2.5% respectively of the students had background in Fine Art (Abegunde, 2008).

From the JAMB Brochure (2010) the admission requirements are virtually the same for the four Nigerian universities offering Industrial Design. Particularly, JAMB (Joint Admission Matriculation Board) requirements were used for admission in three Nigerian universities of technology; Abubakar Tafawa Balewa University, (ATBU), Bauchi; Federal University of Technology, Yola, (FUTY) and Federal University of Technology, Akure, (FUTA). It could therefore be inferred that a great percentage of first year students of these universities do not have basic foundation in Art or Art related courses; this assertion is rooted in the fact that the status of the universities of technology demands that students being considered for admission are basically science oriented. However, and in most cases some of the students do not offer Fine Art/Visual Art. Akinbogun (2001) further clarifies the assertion by stating that Industrial Design is a new programme in a science dominated environment, and *drawing* is an integral part its curriculum.

This study therefore made use of a Photo Series Drawing Package produced both in print and electronic media as the intervention in a drawing skill acquisition training carried out by the researcher. The print medium is in book form while the electronic medium is in video format which can be played on a VCD (Video Compact Disc), DVD (Digital Video Disc) or computer CD ROM (Compact Disc, Read Only Memory) and then projected for a wider view. It is however important to note that the print medium of the package can be used independent of the electronic medium. This implies that power failure would not be a barrier.

The effectiveness of the drawing package is however determined by the performance of students who were exposed to the package as well as the evaluation of experts in the field of drawing and package development.

2. RESEARCH BACHGROUND

Three out of the four universities in Nigeria offering Industrial Design are universities of technology. The status of these universities of technology demands that students being offered admission into any of its departments are science oriented. However, as a result of the post primary school subject combination that deemphasizes on Fine Art at the high school level, students who offered science subjects do not usually offer Fine Art/Visual Art. This is a problem since the scanty number of students coming in for Industrial Design often lacks the background in drawing.

Akinbogun (2001) posits that the main objective of the establishment of Industrial Design departments in universities of technology is to weave art and science together in order to produce utilitarian objects of high aesthetic value. Akinbogun (op. cit.) further remarks that the few candidates who had background in sciences but who had obtained skills in drawing would rather opt for courses in Architecture and Engineering. This leaves the Industrial Design with very few students with drawing skills and a host of others with no prior training in drawing.

3. METHOD

The first part of this report enunciates the steps taken in the design and production of the package while the second section dwelt on the experimental aspect of the research where the package was being tested.

For the purpose of this study, the experimental aspect of the research is being considered.

Design and Production of the Drawing Skill Acquisition Package

Two stages were involved the development of the package, (I) the design, (II) the production and it gave birth to the Drawing Skill Acquisition Package (DSAP) which was designed by serializing the 200 level Industrial Design students' syllabus into small lecture modules. More attention was paid to Life/Figure Drawing, an aspect of Free Hand drawing syllabus, which was observed to be a major challenge of the industrial design students. Ifeagwu, (2004) remarked that of all natural and man-made objects the most dexterous is human figure, being that it tells the personality of the person drawn/sitter as well as takes the artist through all the principles and elements of art and design.

The production was also in two phases: (1), the production of the Hard Copies – print media and (2), the production of the Soft Copies – VCD

Each step or frame of the drawing modules had also a short textual explanation of the sketches/drawings. Study of a few drawings of some artists and great masters was also included as guides and reference point.

Experimental Aspect of the Research (Determining the effect of the intervention)

Research Design and Procedure

The quasi-experimental study involved an experimental and a control group. The research adopted the quasi-experimental studies, whereby the experimental group A and a control group B were given a pretest and posttest. Both groups at the inception of the experiment took the pretest before

the experimental group A was exposed to the treatment, which is the drawing package and regular class instruction while the control group B had regular class instruction. Posttest was then administered to both groups at the seventh week to find out if the drawing package had a significant effect on the experimental group.

Treatment

Experimental group = Lecture + Photo-Series Drawing package

Control group = Lecture only

Group A OB X OB (Experimental Group)

Group B OB OB (Control Group)

Where *X* represents an exposure of a group to an experimental variable or treatment, the effect of which is being measured.

OB represents an observation or measurement recorded on an instrument. (Creswell, 2003)

In the experimental group, total change in the dependent variable,

$$(Z_e) = (Z''e - Z'e),$$

Where *Z_e* = observation on the experimental group

Z''e = 'after' observation on the experimental group

Z'e = 'before' observation on the experimental group

In other words:

$(Z''e - Z'e) = (\text{Impact of treatment}) \pm (\text{Impact of extraneous variables}) \pm (\text{Impact of chance variables})$

In the control group, total change in the dependent variable,

$$(Z_c) = (Z''c - Z'c), \quad \text{where } Z_c = \text{observation on the control group}$$

Z''c = post-test observation on the control group

Z'c = pre-test observation on the control group

In other words:

$$(Z''c - Z'c) = (\text{Impact of extraneous variables}) \pm (\text{Impact of chance variables})$$

The difference between control and experimental group = $(Z''e - Z'e) - (Z''c - Z'c)$, which is $(\text{Impact of treatment}) \pm (\text{Impact of extraneous variables}^*) \pm (\text{Impact of chance variables}^\#) - (\text{Impact of extraneous variables}^*) \pm (\text{Impact of chance variables}^\#)$. Using a simple arithmetic operation this = *Impact of the treatment*

Therefore, the impact of any intervention or treatment is equal to the difference in the 'before' and 'after' observations in the dependent variable between the 'experimental' and 'control' groups (Kumar 1999).

Target Population

The Industrial Design Students of Nigerian universities of technology offering courses in drawing constituted the target population. The 200 level students of Industrial Design Department of the Federal University of Technology, Akure, and the Abubakar Tafawa Balewa University, Bauchi constituted the two intact groups; the former for experimental group, and the latter for control group. The two universities were chosen based on ample information they offered as well as the fact that they are two equivalent groups based on the similarity in their drawing course contents, admission requirement, programme duration, and the type of degree they award.

These two groups are equivalent in every respect except the intervention/treatment applied to the experimental group. In all, two intact groups of 24 and 60 students were used in the Abubakar Tafawa Balewa University (ATBU), Bauchi and Federal University of Technology, Akure (FUTA) respectively. While the ATBU students were used as the control group the FUTA students were used as the experimental group.

Validation of the Instrument

The experts from Industrial Design department scrutinized the content of the package to ascertain its appropriateness to the curriculum. Thereafter validated the qualitative and quantitative aspects of the production of the package; after which they completed “Visual Evaluation Form” (Appendix VI).

Procedure for Administration and Data Collection

Two Research Assistants were trained to conduct a seven week-treatment and control group sessions with the students.

The quasi-experimental group took a pretest at the beginning of the exercise and was exposed to the package for six weeks. The posttest was given at the seventh week. This was meant to find out whether the study measures the extent and impact of treatment in the students’ drawing. The control group also took the same pre-test on the first day of the study and thereafter was exposed to the traditional method of “chalk-talk” teaching also for a period of six weeks. The posttest was given at the seventh week.

The Procedure for Data Analysis

The total score obtainable was 80 (Appendix V) which was spread over the required drawing skills expected to be acquired by the students. After the assessment of their performances, 20 respondents were selected from each group using a random sampling approach so as to give every individual in the population an equal probability of being selected. For the experimental group which had a population of 60 students, the selection was done thrice and the average taken to get 20 respondents. The selections were done with replacement; these representative samples from each population provided the aptitude to generalize to each population. The t-test of Statistical Packages for the Social Sciences (SPSS) version 10 was used to determine the significant difference between the

means scores of the pretest and posttest of the students in order to find out if it will be statistically significant or otherwise at alpha 0.05 levels.

4. RESULTS AND DISCUSSION

Comparing between groups to determine the efficiency of the groups

Description	Mean	N	Std. Deviation	Std.Error Mean
Pre-test General Performance for Experimental Group	42.0000	20	12.07433	2.69990
Pre-test General Performance for Control Group	43.2500	20	14.07452	3.14716

Table 1 Pre- Test Analysis for the Experimental Group and the Control Group (Paired Samples Statistics)

Table 1 gives a Paired Sample Statistics of the test analysis. It can be inferred from the table that the mean general performances of both the Experimental, 42.00 and Control Group, 43.25 this however further buttresses the fact that the two groups are two equivalent groups based on similarity in their admission requirement, course contents, and programme.

Post - test Analysis

Description	Mean	N
Post-test General Performance for Experimental Group	54.2500	20
Post-test General Performance for Control Group	47.2500	20

Table 2 Paired Sample Statistics for the Experimental Group and the Control Group

Table 2 shows the post-test general mean performance of the Experimental group and the Control group.

Growth Difference Analysis between the Two Groups

Description	Mean	N
Control Group's Difference in General performance	4.0000	20
Experimental Group's Difference in General Performance	12.2500	20

Table 3 Comparing Growth between the Two Groups

Table 3 is very crucial to this research report, in the sense that it provides a summary of the growth difference analysis between the experimental group and the control group as well as those of the three parameters being tested.

Growth Difference between the two Groups

Description	Mean	Std. Deviation	t	df	Sig. (2-tailed)
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Control Group's General Performance Difference - Experimental Group's General Performance Difference	8.25000	-	12.27696	-3.005	19	.007*
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Table 4 Growth Difference between the two Groups

*Significant at 0.05 alpha level

Table 4 gives of the mean difference between the general performance of the Experimental group and the Control group.

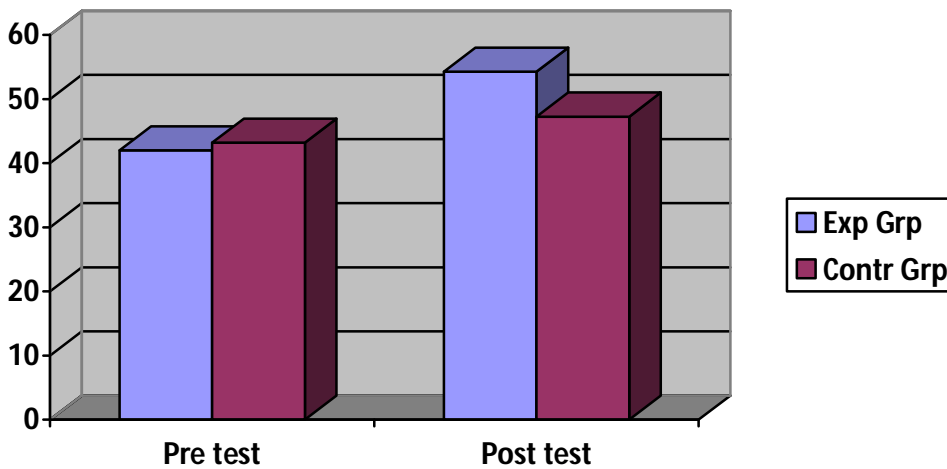


Figure 1 Bar Chart Showing Pre-test and Post-test of Experimental and Control Group

Discussion of Result

It is clear from the Growth Difference Analysis (Table 4) that there is significant difference in the general performances of the students exposed to Drawing Skill Acquisition Package and those who were not. This is evident in value of p which is 0.007, a value, less than 0.05. This therefore implies that the difference is statistically significant at 0.05 levels. This further explain that the Drawing Skill Acquisition Package had a positive effect on the student who used it

Summary of Findings

From the collection of data, production of the package, the analysis of data and to the results obtained, the major findings of the study are summarised thus:

1. A great percentage of students intake into the Industrial Design programmes of the Nigerian universities lacked background in drawing.
2. From the data collected on students' admission, it was obvious that if the universities had insisted on admitting only candidates who offered Fine Art/Technical Drawing into the department of Industrial Design, only very few students would have been qualified
3. Drawing skills like any other practical skills could be acquired irrespective of whether the learner had an inborn talent in drawing or not.
4. The students responded positively to the teaching method that employed the use of skill acquisition package; a method that went beyond the traditional method of teaching.

5. CONCLUSION

The study reveals the status of students' intake into the industrial design departments of universities of technology design students who usually do not usually have background in drawing from secondary schools because of their subject combinations. It therefore establishes that student with or without backgrounds in art can actually obtain adequate drawing skill if exposed to the appropriate teaching aids. The general performance of the experimental group haven used the package showed that the package positively impacted on learners, hence a contribution to knowledge.

APPENDIX

MAKING SCHEME FOR ASSESSING STUDENTS SKILLS

Dexterity	30
Resemblance	15
Shading	10
Proportion	15
Neatness	<u>10</u>
Total Mark Obtainable	80

$$\% \text{ Score} = \frac{\text{Total Mark Scored}}{\text{Total Mark Obtainable}} \times \frac{100 \%}{1}$$

References:

- Abegunde, T.I. (2008). The Development of Photo-Series Drawing Package in Training Industrial Design Students of Selected Nigerian Universities. An Unpublished M. Tech. Thesis. Federal University of Technology Akure, Nigeria.
- Akinbogun, T. L. (2001). Balancing Art With Science in Design Schools, *Journal of Industrial Design and Technology*, 2 (2): pp 1-9 Department of Industrial Design. Federal University of Technology, Akure.
- Clay, R. (1974). *Drawing*. Teach Yourself Books. Great Britain: The English University Press.
- Ifeagwu, D. (2004). *A Simple Approach to Life Drawing; For Art Students and Teachers*. Nigeria: DIC Publishing Company
- JAMB (2010)- Joint Admission Matriculation Board. Office of the Registrar, JAMB. Nigeria.
- Kumar, R, (1999) *Research Methodology: A Step-by Step Guide for Beginners*: London, SAGE Publication Inc.
- Merriam- Webster Online Dictionary <http://www.m-w.com>. Accessed; 13th November,2005.
- Ogunduyile, S.R.(1999) The Concepts of Industrial Design in Nigerian Universities. *Journal of Industrial Design and Technology* 1 (1) pp 3-7. Federal University of Technology, Akure.
- The Federal University of Technology, Akure Calender (2008-2011).