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A Comparative Performance of Male and Female Students in Technical Drawing: A case study of Pre-degree students of Federal University of Technology, Minna.

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Minna**Abstract.**

In this study an attempt was made to examine performance of pre-degree (Male and Female) student in Technical drawing. The scores of 183 students were used for analysis. Data was analysed by the use of frequency count, percentage, mean, and t-test statistics. It was found that performance of students in Technical Drawing was moderate. The implication of this was discussed. In the light of this revelation, it was therefore recommended among others that: a functional guidance and counseling unit should be established in post primary schools: students be made to practice every concept taught under-supervision by teachers and a learner centered methods be used by teachers.

Introduction

The Federal Government of Nigeria in the National policy on Education (Revised, 1981) adopted education as instrument per excellence for effecting national-development. Hence, it continued to spend heavily on education, since it is the door to modernisation, veritable machinery for socio-economic transformation and foundation for a new social order.

Studies on students' performance have been carried out in many academic fields. These studies helped to know the true position of our students' performance in their various disciplines. For instance, Ahiakwo (2000) compared students' mathematics achievement and academic performance in chemistry. This was with a view to establishing the relationship between the two. Also Idu, (2002) examined the differential performance of business education students in educational management at the NCE level. Performance varies form course to course and from individual to individual. This is from the perspectives of the psychology school of thought. The educational sector is fraught with a myriad of problems, which if not checked may make the quality of education in Nigeria to fall below unimaginable standard. This therefore calls for immediate action by educators to curb this impending educational disaster.

Statement of the Problem.

Education is the process of acquisition of knowledge and skills that will help change the attitude of the recipients for good. The acquisition of the type of education that will provide an opportunity for self-reliance is commonly termed vocational education. Technical Drawing is one of the most important courses vocational education students have to study. At the Federal University of Technology Minna, all students take technical drawing.

Technical drawing according to Yarwood, (1994) is a means by which those working in industries such as mechanical engineering, building, architecture or electrical engineering communicates their ideas of the shape, form and dimensions of the articles being made. A review of other definitions centers on a graphic information that enables successful construction to be carried out. Technical drawing is a pillar, which provides service to all engineering and technology-based courses. Since it is unavoidable for one passing through university of technology, it would therefore be of benefit to prospective engineering and technologist to have its basic knowledge. It is on this premise that this study investigating the performances of male and female pre-degree students of Federal University of Technology Minna.

Methodology:

The pre-degree students (offering Technical Drawing) OF Federal University of Technology, Minna Niger State, constitute the study population. They were exposed to the same teaching method and instructional materials at the time of instruction. Systematic sampling technique was used to select scores of 183 students for 2001/2002 academic session, this consisted of scores of 106 male and 77 female students. The raw score of the students as recorded by researcher was subjected to analysis. The grades were converted to points, which ranged from 1 to 5. Points were further classified in performance levels as low (1 to 2), moderate (3) and high (4 to 5) respectively. Frequency counts, percentages, arithmetic mean and t-test statistic were used for data analysis.

Result:

The performance of male students in Technical Drawing is shown in table 1. From the table, 32.1% of the male students' performance ranged from 1 to 2 points. This suggests low performance. Also 35.8% of the students had scores at 3 points, which suggest moderate performance. While 32.1% of the students performed highly with scores ranging from 4 to 5 points. It is clear that most students had moderate performance in technical drawing. The mean performance was 2.92.

Table 2 shows the performance of female students in technical drawing. It revealed that 31.1% of the students performed poorly with scores ranging from 1 to 2 points. Also 37.7% of the students performed moderately with scores at 3 points. While 31.2% of the students performed highly with scores ranging from 4 to 5 points. The mean performance was 2.97. The findings show that majority of students performed moderately and that performance of male students was fairly better than that of female students.

Table 3 shows the t-test analysis of male and female students in Technical Drawing. It revealed that there is no significant difference between the performance of male and female students in Technical Drawing. The hypothesis tested at 0.05 level of significance shows that t-calculated was 0.29 as compared to t-test value of 1.96. Hence null hypothesis was accepted.

Table 1; performance of Male Students in Technical Drawing:

Grade	Point	F	%	%	P _m	X _M
A	5	7	6.6	32.1	High	2.92
B	4	27	25.5			
C	3	38	38.8	35.8	Moderate	
D	2	19	17.9	32.1	Low	
E	1	15	14.2			

Key: F = Frequency: % = percentage: = P_m performance level: X_M = Mean performance

Table 2: Performance of Female Students in Technical Drawing:

Grade	Point	F	%	%	P _m	X _M
A	5	8	10.4	31.2	High	2.97
B	4	16	20.8			
C	3	29	37.7	37.7	Moderate	
D	2	14	18.2	31.1	Low	
E	1	10	12.9			

Key: F = Frequency: % = percentage: = P_m performance level: X_F = Mean performance.

Table 3: t-test Analysis of Male and Female Students in Technical Drawing:

Group	X	S.D	t_c	t_v
Male	2.92	1.12	0.29	1.96
Female	2.97	1.15		

Key: X= Mean; SD =Standard Deviation; t_c =t- calculated; t_v =t -table vale.

Discussion:

Technical drawing is very important for technology and engineering based courses, hence a university requirement for students passing through Nigeria University of Technology. The study found out that performance of female students in the 2001/2002 session was relatively better than performance of male students. This finding may be due to the fact that women are becoming conscious of their role in technological development of the nation.

Lack of experience on the course, lack or improper use of instructional facilities at post primary level, and limited or lack of practice by students can be held responsible for the poor performance of a good number of male and female students. Other reasons can be methods of teaching earlier adopted by the teachers, social environmental and economic differences among others. Confirming the above assertions are Craft (1980); Mogbo (2000); Davies (1972); Ekong (1994); and Ibe (1994).

Craft (1981) observed that a comparison made between two communities revealed that the social and economic differences of the two communities have effects on school achievement. Natural or heredity factors as well as the genetic characteristics within an individual may inhibit or facilitate his ability to learn.

Mogbo, (2000) however maintained that there are problems caused by poor living conditions and lack of play space which restrict children's development and learning.

Davies, (1972) declared that teaching methods can be either teacher or learner centered. When it is teacher centered, the teacher dominates it on the other hand, When dominated by learners, it is learners centered and leads to better performance of students. Commenting on women low participation in sciences Bako (2000) declared that sex stereotyping in occupational choice which leveled some jobs as the exclusive preserve of men contribute immensely. This work however debunks the assertion, as performance of female students was fairly better than that of male students. Thus, sex stereotyping in occupation has no base but could probably be based on sentiments.

Ekong, (1994) was of the opinion that teachers need to focus on the utilization of instructional materials meaningfully through arrangement of the mechanics of presentation, depending on the intended skills.

Ibe (1994) observed that when no workshop tool are made available to the students as to enable them have enough practice before examination, they would have no other option than to revert to mere memorization of the principles which they simple regurgitate.

Conclusion

The study found that performance of students in technical drawing was moderate. The implication of this is that if this can be maintained, technical drawing as a university requirement will be a work over for candidates passing through the pre-degree and universities will in turn produce engineers and technologist that will be able to take up technological challenges in terms of design. This work also concluded that stereotyping in occupational choice should be avoided.

Recommendations

Based on the outcome of the study it is recommended that:

- Government should establish functional guidance and counseling unit in post primary school to guide students on subjects necessary for a particular career.
- Teachers and entire public should avoid stereotyping careers and occupations.

- The use of instructional facilities by the teachers especially in technical drawing be made compulsory in post primary schools
- Students should be made to practice every concept taught under supervision by the teachers.
- Teachers should use a learner centred method as it leads to a better performance of students

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