

Full Length Research Paper

Academic achievement among radiography students in a Nigerian university: Does program interest count?

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This research assessed the relationship between the level of interest and academic achievement among Radiography students in a Nigerian University, and implications for career counseling. From the population of all the Radiography students (65) in the third, fourth and fifth (final) years, a sample size of forty students was drawn through stratified sampling technique. The ex-post facto research survey method was adopted. The program interest inventory (PII) was developed, validated and used for the study. Data analysis was done through descriptive, correlation coefficient and t-test statistics at 5% level of significance. A significant relationship between students' academic performance and the level of interest in Radiography program was revealed. Consequently, students with higher interest levels performed better in cognitive test than their counterparts with low interest level. Gender is considered an important factor, as this study revealed a significant difference in the interest levels of female and male students. The study confirms that the interest level of students in a Radiography program significantly influences their academic performance. The study recommended a targeted counseling service to help students develop genuine interest and love for their chosen careers and to avoid academic failure.

Key words: Career counseling, radiography students, program interest, academic achievement, Nigerian university.

INTRODUCTION

Career decisions among students can often be tedious and dependent upon personal and environmental variables. In the Nigerian school system, career decisions are made by the adolescent on the basis of their personal interests, parental wishes and peer group pressures (Ode 2008). Accordingly, the decisions arrived at

are hardly in consonance with their ability or interest and therefore may impact negatively on eventual performance.

In our experience, many Nigerian radiography students attempt to change their program as well as university probably due to lack of interest or as a result of difficulty in coping with the academic requirements of

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the Radiography program. The National Centre for Educational Statistics admits that more than one third of high school graduates admitted into post-secondary institutions leave within two years without any degree (National Centre for Education Studies 2001). This was attributed to academic deficiency anchored on lack of interest. Besides, academic environments vary in the way they reinforce patterns, interest and implement an individual's self-concept (Allen 1996). Whereas individuals actively seek environments that are congruent with their interests (Holland 1997), a students' performance in a particular subject is closely linked to interest (Ukwueze 2009). Some authors have dealt with the level of interest in specific disciplines such as Science and Technology education (Balogun 1985), and Organic chemistry (Chartrand et al., 1992), but none looked into the relationship between interest and academic achievement among Radiography students in any known Nigerian university. This is the justification for the present study.

Generally speaking, students' performance in their chosen programs is dependent on a number of factors such as self efficiency, interest congruence and commitment (Ezeudu 1998; Tranberg et al., 1993), and may vary with gender (Tranberg et al., 1993). A previous study had opined that medical studies at University impose serious both physical and psychological challenges on students; which invariably dampen some students' interest and ability (Balarable 2009). From our observations, many students who initially applied for Medicine and Surgery as a major, but admitted into paramedical programs such as Radiography, tend to show little or no interest in their programs.

It is therefore worthwhile to find out if interest has anything to do with Radiography students' academic performance during their course of study. The present study will be useful in career guidance, as well as planning of adaptive mechanisms for students seeking entry into health related disciplines such as Radiography.

Research question

Does the interest level of Radiography students affect their academic performance?

METHODOLOGY

This study employed the ex-post facto research survey method since the researchers were interested in the relationship between an independent variable (interest level), and the dependent variable (academic achievement). The population used for the study included all the 65 Radiography students' in the third, fourth and fifth (final) years at the Nnamdi Azikiwe University, Nnewi Campus, Nigeria. Through stratified sampling, a total of forty students made up of twelve (12) third year students, seventeen

(17) fourth year students and eleven (11) final year students were used for the study. The choice of third to fifth year students is based on the fact that core radiography subjects are introduced from the third year in Nigerian Radiography curriculum. The first and second year subjects are mainly basic medical sciences and general science studies, and students may be allowed to change programs to allied medical courses. In the third year, change of programs may no longer be possible; and thus represent a threshold to assess the students' genuine interest in their respective domains.

In all, a total of twenty eight males and twelve females made up the study group. The research instrument (Appendix 1) is the programme interest inventory (PII). The PII was developed by the researchers to ascertain the interest level of the respondents. This instrument contains a modified form of Likert responses with four response levels. It originally contained twenty five items that were later reduced to fifteen by three experts of Educational psychology who validated the instrument. A test re-test that was subjected to correlational analysis yielded a score of 0.76 to attest to the reliability of the instrument. The PII has a maximum of sixty scores out of which anything less than thirty is scored low.

The scores on a course titled "Psychology for Radiographers" written by the students was used to ascertain their cognitive level in their programs. The choice of this course was based on the fact that it was a compulsory course for the three categories of students used in the study embracing both the clinical and academic aspects of radiography. Some specific topics include: Students approach to diagnostic and therapeutic radiography, critical and reflective thinking in diagnostic medicine, cognitive behavioral therapy and application in radiotherapy, psychosocial progression in pregnancy and applications in obstetric sonography, emotional adjustment, and stress management in radiography practice and many others. Moreover, the course contents include an assessment of students' adaptability and interpersonal relationship within the hospital/clinical environment. All categories of students have commenced clinical attachment in hospitals where core radiography duties are undertaken. The scores were based on 100%. The usual pass mark for such courses in the medical school is fifty percent (50%).

RESULTS

The research questions were answered using descriptive statistics. The data (Table 1) show that 21 candidates (57.5%) with high academic scores (50 and above) and may be inferred to have high interest in their program while three candidates (7.5%) with low interest, have high academic scores. In all, twenty four candidates (60%) have high interest in Radiography while sixteen candidates (40%) have low interest in the program. From Table 2, the r-calculation (0.82) is greater than the critical r-value of 0.304 at 0.05% level of significance. This indicates that a significant relationship exists between the academic performance and interest levels of Radiography students. From Table 3, the t-calculation (7.78) is greater than the critical t-value (1.96) at 0.05% level of significance thus suggesting that the academic scores of students has a relationship with high interest in Radiography. The data in Table 4 indicate that female Radiography students with higher academic score on the

Table 1. Academic scores and interest level of Radiography students.

Candidate	Academic scores (100)	PII scores (60)	Interest level
1	49	30 (5%)	High
2	41	18 (30%)	Low
3	47	20 (33.3%)	Low
4	52	31 (51.7%)	High
5	41	14 (23.3%)	Low
6	64	36 (60%)	High
7	40	14 (23.3%)	Low
8	43	19 (31.7%)	Low
9	53	28 (46.7%)	Low
10	45	24 (40%)	Low
11	55	32 (53.3%)	High
12	43	21 (35%)	Low
13	52	30 (50%)	High
14	52	31 (51.7%)	High
15	55	36 (60%)	High
16	41	22 (36.7%)	Low
17	62	38 (63.3%)	Low
18	45	25 (41.7%)	Low
19	39	13 (21.7%)	Low
20	60	30 (50%)	High
21	37	18 (30%)	Low
22	51	31 (51.7%)	High
23	59	36 (60%)	High
24	59	38 (63.3%)	High
25	63	40 (66.7%)	High
26	63	38 (63.3%)	High
27	64	36 (60%)	High
28	68	40 (66.7%)	High
29	54	31 (51.7%)	High
30	60	30 (50%)	High
31	65	34 (56.7%)	High
32	39	30 (50%)	High
33	63	29 (48.3%)	Low
34	61	31 (51.7%)	High
35	45	31 (51.7%)	High
36	65	38 (63.3%)	High
37	57	30 (50%)	High
38	31	15 (25%)	Low
39	51	25 (41.7%)	Low
40	28	26 (43.3%)	Low

the average (54.42%) equally have higher program interest (29.58) than their male counterparts with a mean of 50.32% and 28 for academic performance and program interest, respectively. Generally, we can infer that low interest of the Radiography students (28.79) is likely to be responsible for their "little-above-average"

performance (50.37%) in academic test.

DISCUSSION

Ordinarily, students in tertiary institutions are expected to

Table 2. Relationship between academic performance and program interest of Radiography students.

Variable	N	Mean	SD	r- cal	r- val
Academic performance	40	51.55	10.15		
Program interest	40	28.48	7.62		

Table 3. The t-test analysis of academic scores of Radiography students with high and low interest levels.

Interest level	N	Mean	SD	r- cal	r- val
high interest	24	57.3	7.05	7.78	
Low interest	16	43	8.3	1.96	

Table 4. Academic achievement and interest of Radiography students on gender basis.

Variables	Gender	N	Mean	SD
Academic Test	Male	28	50.32	10.79
Interest	Female	12	54.42	7.77
Total		40	50.37	9.28
Academic Test	Male	28	28.00	7.53
Interest	Female	12	29.58	7.63
Total		40	28.79	7.58

pursue their programs of study with a lot of enthusiasm and with hope of future prospects. This cannot be generalized to Radiography students at Nnamdi Azikiwe University. Using our assessment platform (PII), the degree of interest largely correlates with the academic performance. Students with high PII were shown to have a better performance than their counter parts. This is largely in agreement with the findings of other authors (Ukwueze 2009; Balogun 1985; Ogboji 2005). Although these studies did not focus on Radiography students, we can infer that radiography students' academic performance in any achievement test, is a function of their level of interest.

Furthermore, the authors consider a forty-three percent (43%) low performance as significant and in agreement with another work by which noted a low academic performance among students of Nnamdi Azikiwe University (Nwokolo et al., 2009). The study has also revealed a significant difference between the academic scores of students with high interest and those with low interest in Radiography programme. This result follows the pattern described for other disciplines (Ode 2008; Ogboji 2005). It is also possible that the marginal

improvement in performance by female radiography students may be due to their higher interest levels. The South Eastern region prides itself with commercial and trading activities and has often witnessed declining enrollment of male students in higher institutions who preferred to engage in commerce after secondary education.

Implications for counseling

Counsellors are needed not only in secondary schools but also in the University system where late adolescents (youths) are found. The findings of this study have several implications for career counseling in Nigerian Universities. Since career decisions hinge on interest and abilities, professional counselors need to be close to Nigerian undergraduates to assist students in making the right choice of career. Furthermore, counselors owe it as a professional duty to educate matriculating students during the orientation program on the need to develop sincere interest in their chosen careers, as a pre-requisite to academic excellence. Through individual and group counseling, the gender issue in relation to choice of career, interest and abilities could be stressed.

Conclusion

A significant relationship exists between Radiography students' program interest and academic performance. Furthermore, academic achievement depicted by students' scores is a function of their level of interest in Radiography program. Furthermore, female Radiography students appear to have a marginally greater interest than their male counterparts, a factor which influenced their academic performance. Nigerian undergraduates therefore need counseling services to enable them

develop enable them develop appropriate interest for effective career decision and to excel in their academic pursuit. Based on the findings of this work, the following recommendations are made:

1. Pre-entry counseling should be introduced in Nigerian education system for students seeking admission into higher institutions. This should be done before prospective candidates for the unified Tertiary Matriculation Examinations (UME) are allowed to fill their entry forms.
2. Selection of students for admission into various courses in Nigerian Universities should be based on interest and ability. They should not be placed into any program just to fill the vacancies.
3. Group and individualized counseling is necessary and there is need to sensitize appropriate agencies, parents and individuals on issues of career aspirations irrespective of gender.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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APPENDIX 1

Students' academic programme satisfaction index (SAPSI)

Instruction: This instrument is designed to obtain data on students' satisfaction with their academic programmes. Kindly supply your information with the highest degree of honesty and truth in you. Mark X against each statement under any of SA (Strongly Agree), A (Agree), D (Disagree) and SD (Strongly Disagree)

Section A: Personal data

Name of University/School _____
 Reg. Number: _____ Course: _____
 Level: _____ Age: _____ Gender: _____

Section B: Level of satisfaction.

S/N	Item statements	Response category			
		SA	A	D	SD
1	I wish I hadn't gotten into my course				
2	I feel good about my course				
3	I feel like changing my course				
4	I would have been happier in another course				
5	Self-actualization is guaranteed in my course				
6	My personal qualities are in agreement with my course				
7	I often feel satisfied with my examination scores				
8	I am enjoying all the satisfactions of my course				
9	My course does not give me any joy				
10	I feel good because my course will lunch me into a brighter future				

Programme interest inventory (PII)

Instruction: This instrument is designed to ascertain students' interest in their academic programmes in Nigerian Universities. Please supply your answers faithfully. Mark X against each statement under any of SA (Strongly Agree), A (Agree), D (Disagree) and SD (Strongly Disagree)

Section A: Personal data

Name of School / University: _____
 Reg. Number: _____ Course: _____
 Level: _____ Gender: _____

Section B: Interest level

S/N	Item statements	Response category			
		SA	A	D	SD
1	I enjoy every aspect of my course				
2	I don't enjoy the practical aspect of my course				
3	Activities involving demonstration are interesting to me				
4	I always feel bored each time I have lecture				
5	My course makes me feel I have a bright future				
6	The theoretical aspect of my course is boring				
7	I enjoy spending my free time reading materials related to my course				
8	My interest in my course is fading gradually				
9	I don't like my course because of the risks involved in practicing it.				
10	I have no interest at all in my course				
11	I often feel reluctant to do my assignment.				
12	Research activities in my course are fascinating				
13	I cannot go into teaching my course				
14	I don't like to discuss my course with people				
15	I am studying my course just to satisfy my parents				