CHARACTERISTICS OF BIOLOGY EDUCATION STUDENTS IN THE UNIVERSITY OF UYO AND THEIR SOURCES OF BROWSING THE INTERNET

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ABSTRACT

The study investigated the characteristics of biology education students in the University of Uyo and their sources of browsing the internet. The population of this study consisted of all biology student of the University of Uyo, both males and female. The study adopted survey research design while simple random sampling technique was used in selecting the respondents. The instrument for data collection which was tagged "Characteristics of Biology Education Students Questionnaire (CBESQ)" was administered to the respondents and used for the study. The instrument was vetted by the researcher's supervisor who is an expert in the field before the reliability test was conducted which produced the reliability coefficient of 0.85 proving the instrument to be reliable for the study. Data collected were analyzed using independent t-test analysis, analysis of variance and Pearson Product Moment Correlation Analysis. From the results of the data analysis, it was observed that gender has a remarkable effect on the biology students in University of Uyo as regards sources of browsing internet. Also, academic level of biology students in University of Uyo has a significant effect on their sources of browsing the internet. It was therefore recommended that newly admitted students should be given induction training in computer science in order to be well acquainted with the information and communication technological age.

Introduction

University education is expected to equip students with skill in reading, inquiry, internet browsing and independent thinking. Higher education is expected to expand academic computing resources not only for their pedagogical benefits but also 'because it will be seen to be the duty of education to use such systems in order to prepare its graduates for the reality of a workplace where they will be obliged to use them. Computing technology has tremendous impact on learning and teaching processes. This is probably why Sam et.al (2005) in Reiser (2001) remark that educators who advocate technology integration in the learning process believe that it will improve learning and better prepare students to effectively participate in the 21st century workplace.

In his study, on the impact of the Internet on the reading practices of college students in National University of Mexico, Ramirex (2003) reported that there was a growing interest in digital reading and that a significant percentage of the surveyed students increasingly depended on the Internet sources for their school related activities because it was easy and fast. Studies like that of Gui (2007), Ahmed and Cooke (2008) have revealed that lack of information searching skills by students has been a significant factor hampering their use of computer and electronic resources. Hence, the authors advocated the need to teach information skills in institutions of higher learning as an urgent solution to this problem. Similar views were expressed by Ahmed and Cooke (2008) who wrote that utilization of electronic resources by students is sometimes influenced by their characteristics.

The implication of this is that the Internet has now become a valuable source of information for students looking for ideas for projects and assignments. It is a useful tool for faculty members in helping to prepare lecture notes as there are a number of sites, especially in America, that provides educational material. Awoleye, Siyanbola and Oladipo (2008) have noted that internet browsing has emerged as the educational tool by being a good source of getting the right information and solution to problems in an academic environment. Jagboro (2004) reveal that though, it has some drawback as privacy problem, difficulty to search and to find relevant information. It is more informative, relatively fast and accessible 24 hours a day. The use of Internet (if maximized) plays a major role in helping undergraduate researchers' access large number of materials from different parts of the world (Ifeoma, 2010).

Statement of the Problem

The advances in electronic based information and communication technologies (ICTs) have rapidly transformed the social and economic conditions across the globe which has brought a great improvement in the educational sector. This has provided new tools for enhancing access to information and knowledge management as well as sharing. The internet which is one aspect of this transformation has made a dramatic impact on our society, particularly in the field of education.

Regrettably, there has been total lack of use of internet sources by biology education students in University of Uyo, who are expected to maximally browse and utilize internet resources from the University library as one of their major sources of information. Various reasons have been advanced for this seemingly low reflection of internet sources. While some are of the opinion that students could be influenced by their gender, educational level, level of computer literacy, technical problems in accessing information resources, coupled with lack of knowledge and awareness of the resources, others are of the belief that the institution provides Internet access for staff (academic and administrative purpose) only, leaving students to fend for themselves. This contradiction therefore gives rise to this study which seeks to examine the **c**haracteristics of biology education students of the University of Uyo such as gender and their level of computer literacy as it relates with their sources of browsing the internet.

Objectives of the Study

The main objective of this study is to assess the **c**haracteristic of biology education students of the University of Uyo and their sources of browsing the internet, while the specific objectives are as follows:

1. To ascertain the relationship between the gender of biology education student in University of Uyo and their sources of browsing the internet.
2. To determine the relationship between academic level of biology education student in University of Uyo and their sources of browsing the internet.

Research Questions

The following research questions will be answered:

1. To what extent does gender of biology education student in University of Uyo relate with their sources of browsing the internet?
2. What is the relationship between academic level of biology education student in University of Uyo and their sources of browsing the internet?

Research Hypotheses

The following hypotheses will be tested:

1. There is no significant relationship between the gender of biology education student in University of Uyo and their sources of browsing the internet.
2. There is no significant relationship between academic level of biology education student in University of Uyo and their sources of browsing the internet.

Literature Review

Gender

Reinen and Plomp (1997) assert that females enjoy using the computer less than do male students. In addition, research has found that men and boys have significantly more positive attitudes toward computers and more stereotyped attitudes regarding who is capable of using them while female students' attitudes and attributions toward computers discourage them from using the technology. The inference drawn is that gendered attitudes are central to discrepancies in use. Beyond attitudes, the literature points to another important factor that influences technology use: self-efficacy. Coined and initially elaborated by Bandura (1977), self-efficacy beliefs revolve around ‘‘one's capability to organize and execute the courses of action required to manage prospective situations" and includes both anxiety and enactive and vicarious experience regarding task-specific competencies. Computer-related self efficacy has been an important extension of this concept. In a wide variety of research settings, men have been found to exhibit higher self-efficacy scores (Torkzadeh and Van Dyke, 2002). Women, on the other hand, generally display less confidence and more discomfort (Dickhauser and Stiensmeier-Pelster, 2002).

Manda and Mulkangara (2007) report that gender is associated with the use of electronic information resources, and that male postgraduate students were more likely to use e-resources than female students. A study by Amkpa (2007) revealed that male and female students differ significantly in attitudes towards computer applications which later affect their job opportunities after graduation. A study by Tella and Mutula (2008) on gender difference in computer literacy reported that students with higher computer literacy were more inclined to access and make use of library facilities. They further reported that differences exist between female and male undergraduate students at the University of Botswana with regard to computer literacy. In the same vein, Ford and Miller (1996) report that gender is a predictor of internet use and attitudes, males seem to enjoy browsing on the internet for enjoyment, while females tend to only use it for work-related purposes. Ford and Miller (1996) found that women tend to experience more difficulty in finding information online than men, and Steinerova and Susol (2007) revealed that statistically, there is high preference for the Internet as the first source of information among men. Ozoemelem (2009) reports a high frequency of use of electronic information resources by both male and female postgraduate students. The gender gap in electronic resources usage appears negligible.

Different studies have identified how students acquire their search skills for the use of e-resources. Adomi, Omodeko and Otlo (2004) reports that majority of students obtained their knowledge by trial and error or with the help of fellow students. Adomi, Omodeko and Otlo (2004) also reports that most students acquired Internet knowledge and skills through practical self-teaching. Irrespective of gender, e-resources are used by students for different purposes. Obaje and Camble (2008) reported that e-resources are used for theses/dissertation/ project writing by postgraduate and final–year students. Badu and Markwei (2005) all reported that students used e-resources mainly for research and assignments.

According to Bassi (2010), gender issues have been in the forefront of impassioned public discussion regarding higher education. Similarly, according to Bassi (2010), gender is a relevant factor in use of electronic databases. A study by Sacks, Bellissimo, and Mergendoller (1994) of higher school students found that their attitudes to computer and use

tended to vary by gender. Utulu (2006) observes that the issue of the gender gap in the digital divide and the impact of new technologies on gender in particular on the economic and political spheres of women lives are of major importance. This is because gender influences factors such as income, time constraints, literacy, education, language, and cultural context that affect access to facilities, training, and employment in information Technology. A survey by Bassi (2010) on attitudes of students towards use of e-resources shows that students form the major users of these libraries and they are heterogeneous in nature.

Students' Academic Level and Their Sources of Browsing the Internet

In this age of information and communication technology (ICT), the use of the Internet has become the norm and this is more common among the final year or semi-final year students, (Marshall (2002). Developing countries like Nigeria are not exempted from this trend. The craving for the Internet stems from its central role in ICT with access to free online journals, magazines, and other information resources anytime and from anywhere for academic and research purposes. Nigerian university undergraduates are required to carry out research projects in their final year in the university. Project writing is a major pre-requisite for the award of degrees in tertiary institutions in Nigeria. Every student considers project writing important to his or her academic success. Research project writing involves a student or group of students carrying out a study on a topic of interest. When the project is completed, it is evaluated by the quality of the work submitted within the stipulated time. It is used to indicate the student's ability to select, research, and draw logical conclusions from findings. The quality of the research project is to a large extent dependent on the quality, quantity and recency of resources consulted and cited (Marshall (2002). The use of the Internet (if maximized) plays a major role in helping undergraduate researchers' access large number of materials from different parts of the globe.

According to Ani (2005), the Internet is a network of linked computers which are located at different points all over the world that provides easy communication between persons and organizations no matter where they are located. The Internet is used mostly in obtaining information. Sadler (1995) observed that the Internet is not a single network of computers but a network of nets, a large network that connects many smaller networks to one another. The major functional advantage of the Internet stems from its willingness to share information with others so that everyone might benefit. Shitta (2002) posits that the Internet is a communication super highway that links, hooks and focuses the entire world into a global village, where people of all races can easily get in touch, see, or speak to one another and exchange information from one point of the globe to another. It is the largest network in the world that allows computer users to communicate and access electronic databases with ease. Daramola (2004) maintains that an observable trend in the Internet is that more and more resources are moving to it and in some cases being made available only in the Internet.

Daramola (2004) reveal that the Internet has many benefits in the academic cycle as it provides a round the clock access to global sources of information. It also gives researchers the ability to discuss and share experience with colleagues. (Marshall (2002) identified areas in which Internet could be used to include education, agriculture, office automation, security, entertainment, politics, construction, banking, commerce, health, etc. The Internet also has a role to play in the library, which is the hub of research activities in a university. Ani (2005) outlined the roles of the Internet in the library as thus: an electronic resource that is now having the most significant impact on library services, operations and on the professional activities of librarians. This strength of impact is due to its multi-faceted nature since it simultaneously fulfils three important roles in library services, first, it is a resource that can be consulted and used like any other reference tool. Second, it is more dynamic and far – reaching than any other resource used in a library setting. Finally it provides a medium of

communication that has extended the potential of librarians' interaction beyond the physical library to users, colleagues and other professional activities and relationships with library users.

The Internet is very useful in obtaining information for research. Adegboji and Toyo (2006) in their study on the impact of the internet on research reported that the Internet contributed significantly to the ease of research through downloading materials. It is commonly believed that researchers and students in Nigerian higher education institutions are battling the problem of inadequate and out-of-date materials. The only way to pursue knowledge is through research and the Internet is having a profound impact on the research process and dissemination of information.

Methods

Research Design

The research design for this study was a survey design. This study was descriptive in nature and it gives a systematic description of the characteristics of biology education students in the University of Uyo and their sources of browsing the internet by employing the use of questionnaire to obtain adequate information.

Area of the Study

The area of this study is University of Uyo in Uyo Local Government Area.

Population of the Study

The population of this study consisted of all biology student of the University of Uyo. They are both males and female.

Sample and Sampling Technique

The sample of this study consisted of two hundred (200) biology students selected for the study. The simple randomly sampling technique was adopted in selecting the biology students from the four levels of education in faculty of education. The balloting system was used in selecting the sample.

Research Instrument

The instrument used by the researcher for this study was a research questionnaire. The questionnaire tagged “CHARACTERISTICS OF BIOLOGY EDUCATION STUDENTS QUESTIONNAIRE (CBESQ)” was used to obtain data on the independent and dependent variables presented in both sections A and B of the questionnaire.

Validation of the Research Instrument

The face validation of the research instrument was made by the researcher’s supervisor who is an expert in the field. The items in the questionnaire were properly worded to meet the respondents level of understanding.

Method of Data Analysis

The data obtained were analysed using independent t-test analysis, analysis of variance and Pearson Product moment correlation analysis. Independent t-test analysis here was used to compare the two independent groups such as: male and female; older as well as younger ones. Analysis of variance was used to the four independent groups (levels 1, 2, 3 and 4), while Pearson product moment correlation analysis was used to find the relationship between the two variables: computer literacy and sourcing of browsing the internets.

Data Analysis and Results

Hypothesis One

The null hypothesis states that there is no significant influence of gender of biology education student in University of Uyo on their sources of browsing the internet. In order to test the hypothesis, two variables were identified as follows:-

1. Gender as the independent variable
2. Sources of browsing the internet as the dependent variable.

Independent t-test analysis was then used to compare the mean of the two groups of respondents with regard to sources of browsing the internet (see table 1).

Table 1

Independent t-test analysis of the influence of gender of biology education student in University of Uyo on their sources of browsing the internet

Gender	N	$\overline{X}$	SD	t
Male	80	15.85	1.90	
				5.56*
Female	120	14.31	1.94	

***Significant at 0.05 level; df = 198; N = 200; Critical t value =1.96**

Table 1 presents the obtained t–value (5.56). This value was tested for significance by comparing it with the critical t value (1.96) at 0.05 levels with 198 degree of freedom. The obtained t-value (5.56) was greater than the critical t-value (1.96). Hence, the result was significant. The result therefore means that gender has significant influence on student's sources of browsing the internet, meaning that the sources of browsing the internet by the male students (15.85) was significantly higher than that of their female counterparts (14.31).

Hypothesis Two

The null hypothesis states that there is no significant influence of the level of biology education students in University of Uyo on their sources of browsing the internet. One-way analysis variance was used in order to produce F-value (see table 4.3).

Table 2

One -way analysis of variance of the influence of the level of biology education students in University of Uyo on their sources of browsing the internet

Level	N	$\overline{X}$	SD
Level 1	48	12.88	1.38
Level 2	48	13.73	0.45
Level 3	55	15.27	0.65
Level 4	49	17.71	1.17
Total	**200**	**14.93**	**2.06**

Source of variation	SS	df	MS	F
Between group	658.24	3	219.412	
				229.19*
Within group	187.64	196	0.957	
TOTAL	845.88	199		

***Significant at 0.05 level; N= 200; df = 3 & 196; critical F- value = 2.60**

Table 2 shows the calculated F-value as (229.19). This value was tested for significance by comparing it with the critical F- value (2.60) at 0.05 levels with 3 & 196 degree of freedom.

The calculated F-value (229.19) was greater than the critical F-value (2.60). Hence, the result was significant. The result therefore means that level of biology education students has significant influence on their sources of browsing the internet, meaning that level 4 students were the most involved groups of students in browsing the internet (17.71). This was seconded by the level 3 students (15.27). Level two students were third in the list (13.73) while level 1 students were the least group of internets browsers (12.88).

Post Hoc test was also performed in order to reveal the independent groups between which the significant difference lied. From the analysis it was observed that the significant difference lied among all the independent groups with the least significant difference lying between levels 1 and 2 biology students with regard to the extent of browsing the internet (0.8542).

Discussion of Findings

The result of the data analysis in table 1 was significant due to the fact that the obtained t-value (5.56) was greater than the critical t-value (1.96) at 0.05 level with (198) degree of freedom; this result implies that there is significant influence of sex of students on their sources of browsing the internet. The significance of the result is in agreement with the opinion of Reinen and Plomp (1997) who said that females enjoy using the computer less than do male students. The significance of the result caused the null hypotheses to be rejected while the alternative one was accepted.

The result of the data analysis in table 2 was significant due to the fact that the obtained F -value (229.19) was greater than the critical F-value (2.60) at 0.05 level with 3 & 196 degree of freedom. This result implies that there is significant influence of level of biology education students in University of Uyo on their sources of browsing the internet. The significance of the result is in agreement with the opinion of Marshall (2002), who emphasized that in this age of information and communication technology (ICT), the use of the Internet has become the norm and this is more common among the final year or semi-final year students. The significance of the result caused the null hypotheses to be rejected while the alternative one was accepted.

Conclusion

Based on the findings of the research, it was concluded that gender has a remarkable effect on the biology students in University of Uyo as regards sources of browsing internet. Also, academic level of biology students in University of Uyo has a significant effect on their sources of browsing the internet.

Recommendation

Based on the findings of the study the researcher recommends that:-

1. Female biology students in University of Uyo should compete with their male counterparts in the training and usage of information and communication technology facilities.
2. The gap between academic level of biology students in University of Uyo and their sources of browsing the internet should be given a priority attention.
3. As a matter of urgency newly admitted students should be given induction training in computer science in order to be well acquainted with the information and communication technological age.

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