LAUTECH Journal of Engineering and Technology 14 (1) 2020: 66-73

IMPACT OF UNIVERSITY LIBRARY IN THE TEACHING AND LEARNING OF ENGINEERING: A CASE STUDY OF ADELEKE UNIVERSITY

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ABSTRACT

The library is a resource center for providing a wide range of educational resources to supply information needs of staff and students. However, the use of academic library resources depends on the information literacy skills of staff members and students. The study investigated the university library's impact on the teaching and learning of engineering courses in Adeleke University, Ede, Osun State. Parameters measured include library usage, satisfaction, and implications for teaching and learning of engineering. The study used random sampling and survey research design with a population of 170 comprising members of staff and students of the engineering faculty. Descriptive statistics was used for data analysis and ANOVA was used to test the hypothesis at the 95% level of confidence. Findings revealed that 93% of Faculty of Engineering staff members and students utilize and consult the library regularly for teaching and learning purposes. The study concluded that the university library is instrumental, and it does have a positive impact on teaching and learning of engineering in Adeleke University. The study recommended that the university library should ensure a continuous provision and availability of library resources for effective teaching and learning of Engineering.

Keywords: *library usage, satisfaction, impact, teaching, learning, engineering*

INTRODUCTION

A library is an assortment of sources, assets, and administrations, and the structure where it is organised for use, housed, and maintained by a public body, an institution, or a private individual (Akparobore, 2011). It is regarded as the 'nerve centre of knowledge', the centre of intellectual life and soul of the academic world and it can as well refer to the collection, or building that houses such a collection. Libraries are sorted out social affair of distributed and unpublished books and varying media materials with the guide of administrations of staff who can give and decipher such material as required, to meet the enlightening examination, instructive and recreational necessities of its clients. Libraries are viewed as offices through which wellsprings of data of aggregated information and encounters are chosen, procured, composed, protected and spread to the individuals who need them. Libraries are fundamental devices in learning at any level. It is the scholarly focal point of the general public containing records involving social, academic, monetary and social tendency. With the arrangement of wide assortment of data sources, clients of libraries are presented in various data with their separate qualities. They additionally offer clients the chance to learn and keep learning for the duration of their lives

Engineering personnel including, staff and students tend to "minimize loss rather than maximize gain" when searching for information for varying engineering works (Pinelli, 1991; Tenopir and King, 2004). That is, they incline toward sources with which they are recognizable—for example partners or companions, individual documents, reading material, address notes, and the web, as opposed to invest the energy to look for more definitive wellsprings of data(Brian and Linda, 2007).

Libraries are set up for the precise assortment, association, conservation and dispersal of information and data. It is significant for humans to protect and keep up the important information and data contained in the books and reports since we need to safeguard our insight and astuteness for the coming ages. By protecting the records in a library this information can

be caused accessible to other people with the goal that they too can profit by it.

That is, they incline toward sources with which they are recognizable—for example partners or companions, individual documents, reading material, address notes, and the web, as opposed to invest the energy to look for more definitive wellsprings of data (Pinelli, 1991). It bodes well to acquaint designing understudies with an assortment of dependable data sources while they are in school so when they are working in the industry or the scholarly community, they will have nature with them and be bound to counsel them. Rodrigues expresses that "the ideal time for the engineer to build up their data social occasion and the board abilities isn't when entering the corporate world, rather, it is during the designing instruction," (Rodrigues, 2001) at the point when they approach more data assets than most corporate libraries have just as prepared data experts (for example administrators) to control them in the choice and utilization of these assets.

The primary aim and objective of any library is to provide print, non-print and electronic resources to the users to meet their information needs thoroughly. The information resources available in libraries will systematically educate users from time to time is an important activity. Libraries in tertiary institutions in Nigeria face the challenge of underutilization and apathy (Amusa and Iyoro, 2013) and daunting tasks of creating awareness on available resources, and thus encouraging their usage. Lack of concern to utilization of library assets and administrations may not be detached with the plenty of data accessible on the Internet, and other distantly open electronic assets, address notes, suggested reading material, and other instructive assets up to this point being counseled in scholarly libraries yet now accessible on the Internet (Brunto, 2007). Low reading habit among Nigerians and the college understudies too is another factor that may represent unremarkable utilization of scholastic libraries. Most of them would not utilize libraries except if they have convincing necessities to do as such(Vondracek, 2007; Amusa and Iyoro, 2011). Other data offices, for example, bookshops, Internet bistro, and PC and unwinding focus, are seeking understudies' consideration. The issue of underutilization of scholastic libraries has been putting pressure on the library the executives to legitimize tremendous interest in them. Clients have made their assessment known to the organization of scholarly establishments that scholastic libraries have lost pertinence in the present data world.

The academic library occupies an important place in the modern education system and maintains the expensive educational resources of the academic institutions (Amusa and Iyoro, 2013). Staff and students of engineering should be provided with the right kind of information at the right time to appropriate users to save the time of the user and the academic library should be primarily responsible for the selection and collection of material for the efficient, effective and scientific development of information resources and services hence, the libraries need to be designed and developed systematically (Arora and Agarwal, 2003). Library assists in ensuring the success of higher degree of Engineering and Technology. The significant exercises of designing school libraries incorporate the Collection Development, Reference Service, Circulation, Document Delivery, User Education, Access to Electronic Resources, and so on. Designing school libraries are required to give practical and solid admittance to data utilizing the best in class data innovation apparatuses. The essential target of the Engineering school library is to be a powerful instrument for clarifying the growing skylines of information

With the approach of new advances in the field of PCs and media communications, progressive changes

have occurred in the field of Library and Information Science. The state of conventional libraries containing an enormous number of printed archives is being changed to paper less libraries containing countless digitized reports. The offices offered by systems administration have not left libraries immaculate. Current libraries are digitized as well as. This has prompted the making of virtual libraries for example libraries without dividers through which the client approaches data at whenever, any place on the planet by utilizing the advanced apparatuses of correspondences, for example, PCs and Internet offices. Libraries in the new thousand years are pioneers in information the board. Curators in colleges are imaginative in their utilization of the new data advances to give admittance to a scope of interactive media sources. The present libraries show understudies the data taking care of abilities to endure forever.

Libraries are imperative organizations, which can't be isolated from training. The arrangement of libraries is essential and crucial to training in a country. Accordingly, whatever is done to improve the nature of instruction is done to improve the country. The nonattendance of libraries will negatively affect training. Consequently, singular students and staff member ought to be urged to utilize them.

The traditional image of the library as a quiet place of study, housing mostly print collections, is changing. The shifts in education methods, the impact of computer technology, and the diversity of students have caused libraries to organize resources and design services that meet and anticipate the new needs of study and teaching. Libraries organize collections and provide access and services that incorporate changes in teaching, learning and information technologies. Libraries meant for engineering studies are at various advanced stages in the use of information technology. Today libraries are functioning under constantly changing environment and face a variety of complex challenges like information explosion, I.T. revolution, network evolution, shrinking library budgets, escalating prices of documents, high level user expectations, availability of information resources in diverse media and so on.

A university library should among others fulfill the following objectives (Arora and Agarwal, 2003):

i. acquire, process, organize and make available varied types of reading materials for meeting the needs of different levels of user;
ii. guide students and provide them the resources useful for enhancement of technical projects;
iii. keep the faculty members informed of the latest amount of resources in their fields of specialization;
iv. establish an information centre in the library and render reader advisory services as to enable them to make use of library resources;
v. adopt new technology, e.g. computerization in certain areas with a view to provide purposeful service in minimizing possible time; and
vi. keep the authorities informed of the achievement and literary output of the institute, while to seek support and financial assistance.

The resources in any engineering college library can be broadly grouped into two i.e. print and electronic formats. The following are the some of the examples of Print Form-Books, Hardcopies of Periodicals, Back Volumes of Periodicals, Question Papers, Reports, Directories, Project Reports, News papers, Newsletters, etc. (Karnati and Surendra, 2017) For various reasons, the engineering college libraries are acquiring and subscribing electronic resources

besides print versions. Due to the availability of information and communication technology, the librarians could think for electronic resources to satisfy the information requirements of users (Nomambulu, 2013; Oyintola and Morayo, 2016). Now the concept of information provision to users is shifted from information availability to information access. Therefore, there is no option left to library professionals except going for electronic resources. The electronic resources have a variety of advantages which provoked the library professionals to incorporate them in library collections (Quadri, 2012; Adebayo *et al.,* 2018). The following are the some of the resources in electronic format; E-Databases, E-Journals, E-Magazines, E-Books, E-Lectures, EAudios, E-Music, E-News, E-Images, E-Subject Guides, E-Newsletter, EConference Proceedings, E-Reports, E-Studies, E-Interesting Development and E-Directories.

METHODOLOGY

Study Area: The study was conducted at Adeleke University, Ede. Ede lies between Latitudes 8^{o} 08^{1} and 8^{o} 10^{1}N of the Equator and Longitudes 4^{o} 10^{1} and $4^{o}14^{1}$ E of the Greenwich Meridian. The climatic condition of Ede is mostly influenced by the Northeast and Southwest trade winds with a maximum temperature of 33^{o}C and a minimum temperature of 28^{o}C.

Research Instrument: A well structured questionnaire designed electronically and administered by members of staff and students of the Faculty of Engineering, Adeleke University.

Research Hypothesis: The hypotheses used for the study include:

Hypothesis 1: Students and members of staff of the faculty of engineering do not utilize and consult the university library regularly for teaching and learning purposes

Hypothesis 2: Students and members of staff of the faculty of engineering are not satisfied with the available resources and personnel in the library

Hypothesis 3: The university library has a good impact on effective teaching and learning of engineering at Adeleke University

Sampling Technique and Procedure: Random sampling technique was used in determining the total population used for this study. The sample procedure was a direct contact with the respondents to fill in the correct information on the questionnaire. The total population size contains students, teachers (lecturers) and technologists in the faculty of engineering, Adeleke University, Ede, Nigeria. Slovins formula was used for estimation of the population size before administering the questionnaires as presented in Equation 1. The faculty at time of articulating this article boasts of an average of 19 full time teachers and 14 technologists across her four departments and a total of 261 regular students from 200 to 500 level hence, making a total population of 294 students and members of staff. Thus, the estimated population size (170) was obtained using Slovins formula as presented in Equation 1 (DSC, 2020):

$$n = [\frac{N}{(1+N.e^{2})}] \quad (1)$$

Where: n is the Estimated Number of samples (170), N is Total population (294) and e is Error tolerance level (obtained as a fraction based on confidence level; at 95% level of confidence, e =0.05)

Research Questions: The research questions are as follows:

i. Does staff and student of the faculty of engineering utilize the available resources in the university library?
ii. How often do the students and members of staff of the faculty of engineering use the library?

iii. Are the students and members of staff of the faculty of engineering satisfied with the available resources and personnel in the university library?

iv. Does the available resources in the university has a good impact on the quality of effective teaching and learning of engineering?

v. What are the main problems encountered with the use of the university library?

Design, Data Classification and Analysis: The design used techniques that facilitated the participants's sharing of personal experience and perceptions. A systematic process was used to analyse the data obtained using Qualitative Descriptive Statistical Method (frequency counts and percentages) to achieve the set objectives Sandelowski (2000). The hypotheses formulated were tested using regression and Analysis of Variance (ANOVA) to summarise the collected data. Statistical Package for the Social Science (SPSS) version 20 and Microsoft excel 2013 was used for analysing the data

RESULTS AND DISCUSSION

A total of 161 responses was gathered from the survey making 94.7% of the total population. This comprises of a total of 76.1% (123) of the respondents are students, 16.9% (27) are Lecturers in the faculty of engineering of the university while the remaining 7% (11) are Technologists.

Library Usage and Consultations by Staff and Students of the Faculty of Engineering

Figure 1 shows the rate of library usage by the students and members of staff of the Faculty of Engineering, Adeleke University, it was obtained on the average that 4.2% of the respondents uses the university library daily, 15.5% uses the library at least one or two times every semester, 11.3% uses the library three to four times in a semester, 9.9% uses the library 5 to 6 times every semester, 8.5% uses the library 7 to 8 times per semester, 7% uses the library 9 to 10 times in a semester, 35.2% uses the library more than 10 times in a semester while 1.4% attest to the fact that there is no specific time to library usage, they consult the library when they deem fit and necessary.

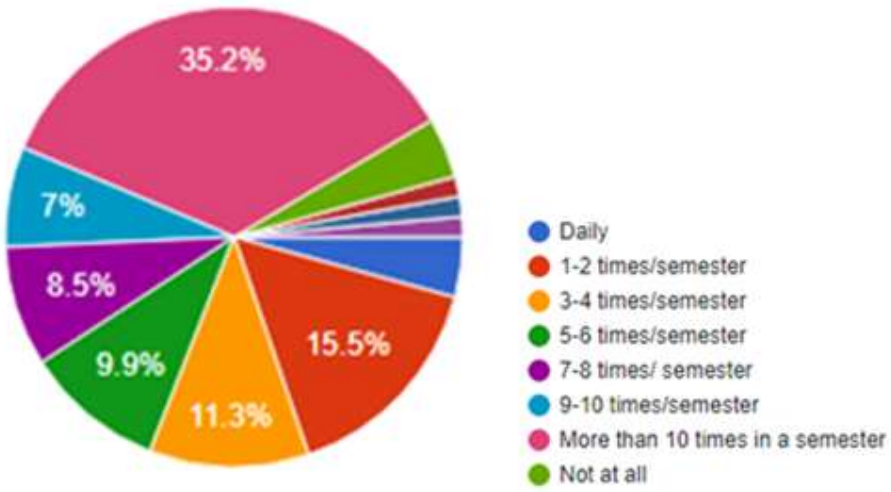

Figure 1: Rate of Library Usage by Students and Members of Staff

Hypothesis 1: Students and members of staff of the faculty of engineering do not utilize and consult the university library regularly for teaching and learning purposes

Table 1: Analysis of variance of the rate of library usage

Source of Variation	*S.S.*	*df*	*MS*	*Ftab*	*P-value*	*F crit*
Between Groups	976.5625	1	976.5625	6.18952	0.02607	4.60011
Within Groups	2208.875	14	157.7768			
Total	3185.438	15				

The findings from the analysis in Tables 1 shows the analysis of variance of the rate of library usage by members of staff and students of the faculty of engineering, it was observed that Ftab value of 6.18952 is higher than the Fcritical value of 4.60011 at 0.05 alpha level and the p-value of 0.02607 is less than 0.05 hence, Hypothesis I is rejected with 0.95 certainty. This implies that students and members of staff of the faculty of engineering utilize and consult the university library regularly for teaching and learning purposes.

Satisfaction with Library Usage

Table 2 shows the assessment of the level of satisfaction with library facilities and resources while the Analysis of variance table for testing the level of satisfaction is presented in Table 3

Table 2: Assessment of the level of satisfaction with library resources, facilities and personnel

	Excellent	**Good**	**Fair**	**Poor**	**Undecided**
Building & Infrastructure	82 *(50.9%)*	68 *(42.2%)*	9 *(5.6%)*	1 *(0.6%)*	1 *(0.6%)*
Computer Set	67 *(41.6%)*	64 *(40%)*	23 *(14.3%)*	4 *(2.5%)*	3 *(1.9%)*
Internet Facilities	77 *(47.8%)*	58 *(36%)*	12 *(7.5%)*	13 *(8.1%)*	1 *(0.6%)*
E-Resources	95 *(59%)*	61 *(37.9%)*	5 *(3.1%)*	0 *(0)*	0 *(0)*
Books & Journals	101 *(62.7%)*	43 *(26.7%)*	7 *(4.3%)*	5 *(3.1%)*	5 *(3.1%)*
Personnel	54 *(33.5%)*	49 *(30.4%)*	26 *(16.1%)*	27 *(16.8%)*	5 *(3.1%)*
Signage	121 *(75.1%)*	38 *(23.6%)*	1 *(0.6%)*	0 *(0)*	1 *(0.6%)*
Furniture & arrangements	80 *(49.7%)*	72 *(44.7%)*	3 *(1.9%)*	3 *(1.9%)*	3 *(1.9%)*
Staff helpfulness	59 *(36.6%)*	42 *(26.1%)*	21 *(13%)*	19 *(11.8%)*	20 *(12.4%)*
Staff friendliness	92 *(57.1%)*	47 *(29.2%)*	17 *(10.6%)*	3 *(1.9%)*	2 *(1.2%)*
Staff availability	142 *(88.2%)*	13 *(8.1%)*	2 *(1.2%)*	1 *(0.6%)*	3 *(1.9%)*
Other services (like resident time for borrowed books	57 *(35.4%)*	48 *(29.8%)*	34 *(21.1%)*	18 *(11.2%)*	4 *(2.5%)*

Hypothesis 2: Students and members of staff of the faculty of engineering are not satisfied with the available resources and personnel in the library

Table 3: Analysis of Variance of Satisfaction with Library facilities

Source of	*S.S.*	*df*	*MS*	*Ftab*	*P-value*	*F crit*

Variation						
Between Groups	59046.1	4	14761.53	61.95931	9.95E-20	2.539689
Within Groups	13103.5	55	238.2455			
Total	72149.6	59				

Table 3 shows that the F_{tab} value of the rate of satisfaction with library resources (61.95931) is greater than the $F_{critical}$ (2.539689) at 955 level of confidence and the p-value is less than 0.05 hence, Hypothesis II is rejected then we conclude that students and members of staff of the faculty of engineering are satisfied with the available resources and personnel in the library at 95% level of certainty.

Impact of University library on Effective Teaching and Learning of Engineering Courses

It was obtained from field survey that 74 respondents strongly agreed that library resources has enhanced effective learning and teaching of engineering courses while 67 agreed; 12 were neutral, 7 disagreed and only 1 strongly disagreed. Also, 93 respondents strongly agreed that the university library has positively impacted the teaching and learning of engineering courses in Adeleke University while 58 respondents agreed, 3 were neutral, 4 disagreed and 3 strongly disagreed. The analysis of variance table used for testing hypothesis 3 is presented in Table 4.

Hypothesis 3: The university library has a good impact on effective teaching and learning of engineering at the university

Table 4:Analysis of Variance for Impact of Library on effective teaching and learning

Source of Variation	*S.S.*	*Df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0	1	0	0	1	5.317655
Within Groups	11837.6	8	1479.7			
Total	11837.6	9				

Table 4 shows that the Ftab value is zero and the p-value is 1 which is higher than 0.,05 hence, we accept hypothesis 4 that Adeleke university library has a good impact on effective teaching and learning of engineering a the university

CONCLUSION

The impact of a good academic library is paramount to effective learning and teaching of engineering. The ability to use and retrieve information effectively will enhance teaching and learning as well as enable positive and successful use of the library resources while in the university. The study revealed that student and staff members of the faculty of engineering utilizes and consults the library regularly for teaching and learning purposes. This is because they are satisfied with the available resources and personnel in the library. It also revealed that Adeleke University library has a good impact on effective teaching and learning of engineering at the university.

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