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Abstract
The study assessed the extent of awareness and utilization of electronic library resources by students of the Tamale Technical University in Ghana's Northern Region. Descriptive survey design was employed to collect data from 150 students using questionnaire. From the analysis, the study found that students awareness level of electronic resources was very low as majority (61%) of the students interviewed indicated they were unaware of the existence of electronic library resources in the school because they did not have prior knowledge of its existence. As a result, many of the students still resorted to the traditional library system for their research. Added to this, the small proportion (16%) of students who were aware of the existence of the electronic library resources in the school hardly utilise it for their academic purposes as 37% of respondents reported they used the electronic library resource once a week whilst 31% of the respondents used it twice week. The study therefore concludes that the low awareness of electronic resources by students in the school culminated in its low utilisation.

Key words: Electronic Library Resources, Awareness, Utilisation.

Introduction
Over the last decade, electronic resources have become increasingly substantial components of academic libraries. This is due to the growing development of information technology and its impact on collection development policies in Libraries (Nataranjan & Santhi, 2012). In view of this, libraries have transformed into digital and virtual libraries where books, journals and magazines have changed into e-books, e-journals, and e-magazines (Akpojotor, 2016). This has increased the global dissemination of information such that, e-journals, e-books, e-databases, web resources, e-serials amongst others are easily accessible in remote areas. Jone (2008) in Akpojotor (2018) opined that electronic resources solved storage problems and controls the flood of information by eliminating physical limitations of storing data, access, retrieval and distribution of information to several users within the shortest possible time.

The rapid growth of new technologies has changed the information seeking behavior of users and reduced the cost and time of searching for information in the library. Electronic information resources can be defined as the electronic representation of information which can be accessed via electronic system and computer network (Johnson et al, 2012). They further buttress that electronic information sources can be seen as the most recent development in academic libraries and that they are available in various forms like e-books, digital libraries, online journal magazine, e-learning tutors and online test. Application of information communication technology (ICT) in libraries has given enough opportunities for the provision of e-resources and its dissemination to suit the needs of its patrons (Nataranjan & Santhi, 2012).

The changing trend of users' need and attitude to information is virtually forcing librarians to succumb to the collection and development of electronic resources. Thus, it has been the rights of users to know more about the availability and management of electronic resources (Dadzie, 2005). With the changing needs of users and growing popularity of e-resources, academic libraries are gradually migrating from print documents to e-resources. This has led the academic libraries to redesign their collection development policies and its implementation drives, giving every opportunity for equal access to information (Kesavan, 2009). The content of libraries is no more restricted to traditional printed resources such as books, magazines or journals but to online resources and other electronic-driven materials (Yebowaah & Plockey, 2017). Electronic library resources facilitate an effective provision of information to all calibre of users, promote collaborative efforts in research; using communication network tools and encourages generation and dissemination of knowledge.

The use of electronic library resources does not however take the place of printed resources but facilitates it through access to large stock of library materials (Okazie, 2016). The change that has occurred in the world of ICT is what has shifted the content of libraries' resources from printed information to online information resources. Electronic resources give new dimension to learning and have affected education in many ways (Bajpai et al. 2016). In spite of the role of electronic resources; it appears that users of Tamale Technical University library seem not aware of the existence of e-resources in the library and its services have not been fully utilized. This has grossly affected effectiveness of research activities and thus requires improvement in terms of awareness creation to sustain adequate usage. In the mist of all these, it seems very little research is known about students' awareness and utilization of electronic library resources in the Tamale Technical University, hence the need to carry out this study.

Background of the Study Institution (Tamale Technical University)
The Tamale Technical University formerly of Tamale Polytechnic located in Tamale in the Northern Region of Ghana began as a Trades Training Centre in 1951 and then became the Government Training School in 1954. It was converted to a junior Technical institute in 1960. The School was later elevated to the statutes of a Polytechnic in August 23, 1992. As a result of the Educational Reform Programme and the enactment of the PNDC Law 321 in 1992, Tamale Polytechnic was elevated to tertiary status together with Accra, Kumasi, Ho, Cape Coast and Takoradi Polytechnics and subsequently to University status in 2016.

With a current student population of over 5000, the University offers various tertiary and non-tertiary programmes to fit the interest of all people interested in pursuing programmes of their

choice. Some of the tertiary programmes include HND Mechanical Engineering, Agricultural Engineering, Electrical Engineering, Building Technology, Hotel, Catering and Institutional Management, Industrial Arts (Leather Works, Ceramics, Painting and Decorating and Textiles options). The non-tertiary programmes include Painting and Decorating, Electrical Installation, carpentry and Joinery, Block-laying and concreting, Welding and Fabrication, Radio and TV, and Fashion and Designing. To further enhance research and learning among students, the University established an electronic library system in 2017 directly opposite the main library of the school. The facility is opened to all students in the school.

Objectives of the Study
The study sought to achieve the following objectives. These are:
1. To identify the awareness level of students about electronic library resources.
2. To determine the e-library resources mostly consulted by students
3. To assess the level of utilization of electronic library resources by students
4. To identify the challenges encountered by students in accessing electronic library resources.

Hypothesis
H_0: There is no significant relationship between awareness and utilisation of electronic library resources by students.
H_1: There is a significant relationship between awareness and utilisation of electronic library resources by students.

Literature Review

Awareness of Electronic Resources
'Awareness' is knowledge about particular information and manifested through a particular behavior (Akpojotor, 2016). Oni and Ahiauzu (2008) also indicated that 'Awareness' is knowledge about something that exists or understanding of a situation or subject at the present time based on information or experience. It can also be seen as knowledge or perception of a situation, fact, consciousness, recognition, realization, grasp and acknowledgement concern about and well-informed interest or familiarity in a particular situation or development.

Awareness of the changes in technology in recent years has dramatically altered how information is accessed, stored and disseminated (Tsakomas & Papatheodorou, 2006). Whereas information provision and usage in academic libraries was previously based upon the collection of physical library materials, it is now increasingly the case that academic libraries are moving into the virtual arena. University students in their reaction to such stimuli ought to be aware of the availability of such resources to aid them in their academic pursuit. With advances in technology and e-publishing, online test full text databases, Emerald, Science Direct, Academic Search Premier, Ebscohost, TEEEL, Oare Sciences, Hinari, Virtual Library (NUC), online public access catalogue (OPAC), CD-ROMs (Compact Disc-Read Only Memory), e-books collections, e-journals covering a variety of subjects, and major bibliographic databases like AGORA and MEDLARS, access to information on a local, regional, national and international basis has overcome the traditional barriers of time, easy of accessibility and space (Prangya & Rabindra, 2013 in Akpojotor, 2016). They further opined that awareness is core to usage of electronic

information resources. Where materials are in closed access, users' ease of access to such electronic resources is by far reduced. But where they are in open access (not subscription-based), students' find them, and make do with them for whatever reasons they need them for. The usage of electronic library resources over the years has yielded positive results in the area of teaching and research and that through the use of electronic information resources, researchers, academic and students now have access to global information resources, particularly the Internet for their scholarly intercourse.

Ojo and Akande (2005) stated that students' level of access, usage and awareness of electronic information resources at the University College Hospital (UCH) Ibadan, Nigeria was not high and that the major problem however identified in their study is lack of information retrieval skills for exploiting electronic resources, thus making the level of usage of resources by medical students very low. Ajuwon (2003) study on ICTs by health science students at the University College Hospital (UCH) Ibadan, revealed that students studied could not use a computer, and that the use of the database was poor, due to lack of awareness, lack of access to computers, insufficient training and high cost of provision of electronic information resources subscription. Awareness and use of electronic information resources is very important so as to keep postgraduate students alert of the available media through which they can access needed information. It is apparent that the use of these electronic information resources require special skills in information and communication technologies (ICTs) that will help students navigate the maze of resources at their disposal via telecommunications channels (Balogun, 2008). It is also imperative to understand the purpose of using electronic information resources by postgraduate students of library and information science. Abinew and Vuda (2013) in Akpojotor (2016) survey on acceptance and use of electronic library services in universities respondents were asked about their awareness of the available e-library services to indicate their answers by way of saying "Yes", "No" and "To some extent". Majority of the respondents (57.97%) responded "To some extent" to indicate that they have only limited awareness about the existence of e-libraries resources and didn't know well and in detail. 20.65% of respondents do not know anything about the existence of the e-library services at all. Only 21.38% of the respondents were well aware of the existence of the e-library services. They also found in the same study that there is no significant difference in awareness of e-library services that existed between universities, academic staffs and postgraduate students, and among streams (faculties/colleges/institutions).

Utilisation of Electronic Resources
As stated by Zimmermann (1951) "Resources Are Not; They Become" which suggests that the recognition or awareness of the presence of resources without its utilization is meaningless. In this regard the concept of utilization of electronic library resources is significant to students who are the beneficiaries of the resources. Cambridge English Dictionary (2017) therefore defines 'utilisation' to mean the act of using something in an effective way with the sole purpose of achieving a certain objective. Therefore, utilisation of electronic library resources is not only a choice but inevitable in the era of information technology (Dar et al. 2017 in Yebowaah & Plockey, 2017). Libraries are gradually establishing resource sharing to reduce cost and meet the requirements of user demands. This establishes a direct link between libraries and information services with joint influence on knowledge discovery and dissemination in the digital era. The use of information technology has created advance contribution in the information technology field which has improved the services of libraries significantly. Besides, the application of ICT,

libraries are providing opportunities to users to access and utilize both online resources and other services effectively (Prakash, 2017 in Yebowaah & Plockey, 2017).

Bhukuvhani et al (2012) study revealed that 86.7% of the respondents indicated that they used at least one or more electronic information resources to find information for use for their teaching and/or research. Only 13.3% lecturers indicated non-usage of electronic information sources, of the lecturers who participated in this study, 66.67% indicated that they had attended the EIRST workshops provided by the University library while 33.33% did not attend. A study by Yebowaah and Plockey (2017) on Awareness and Use of Electronic Resources in University Libraries in the University for Development Studies Library revealed the frequency of e-resource utilisation in the Library. It was found out that only 2 respondents representing 7.7% use e-resources of the Library every week while 4 respondents representing 15.4% of the sample use it twice every week. It was also discovered that 11 respondents representing 42.3% use the e-resources of the once in every month while 9 respondents representing 34.6% use the facilities once a while. The categories of users that use it once a while are not regular users of the e-resources in the Library facility. The foregoing discussion implies that many of the lecturers are aware of the e-resources facilities in the Library. However, some (67.5%) of them are still not users of the e-resource facilities. This suggests that some factors may be influencing use of the e-resources in the UDS Library.

Electronic Library Resources
Electronic library resources (ELRs) are often used as a synonym for virtual library and digital library (Barshev et al, 2015). However, experts place in question equivalence of these definitions. Thus Yury Stolyarov, well-known theorist of librarianship, defining the term "virtual library", wrote that "this expression is metaphorical, non-strict, conditional", continuing: "...it has synonyms: automated, electronic, computer, online."(Barshev et al, 2015). Eduard Sukiasyan, expert in the field of library terminology, noting the differences in terms of "digital library" and "electronic library", stated: "...the term "electronic library" is the most practical for defining such libraries". Updating of ELRs definition reflects prevalent in different periods of libraries development understanding of the role and the purpose of electronic library, ways to interact with the traditional library. To a great extent, definition differences are due to specific expertise of information technology integration into library activity, adaptation of current library activity to changing reader needs, and education technology development.

Electronic library resource is defined herein as "the provision by a library of primary information (actual materials) and secondary information (information about the materials) electronically, via communications networks, together with the infrastructure for this purpose. It is therefore a collection of information as full text (aggregated) databases, e-journals, image collections, multimedia in the form of CD, tape, internet, web technology. E- Resources also include e-journals, e-discussions, e-news, data archives, e-mail, online chatting, just to mention but a few (Thanuskodi, 2012). Electronic information resources are a wide range of products going from electronic periodicals to CD-ROMs, from mailing list to databases, have a common feature of being used and sometime modified by a computer (Thanuskodi, 2012).

A study conducted by Oni et al (2016) on 'Awareness and Utilization of Electronic Resources by Students of Benson Idahosa University Benin City, Edo State Nigeria' revealed the e-library

resourced commonly consulted by students. Thus respondents opinion on the e-resources frequently consulted include e-books came first with 96(80%), e-journal came second with 88(73%), followed by e- newspaper/ magazine with 79 (66%) and Wikipedia with 68 (57%). E-books, e-journals, e- newspaper/magazine and Wikipedia are some of the e-resources students consult frequently. However, the average percentage of the respondents that agreed to all the listed items of 458(65%) is high. This study corroborated the work of Kumbar et al (2005) in Oni et al, 2016) that focused on students' attitudes toward digital resources and services. Their study revealed that majority of the students is using the digital resources frequently. This study is in contradiction with the work of Adetimirin (2008) who posited that the use of ICT for academic tasks by undergraduates in Nigerian universities was low, with 73.2% of the respondents in the low use category and 21.0% and 17% in the average and high use categories respectively. The finding of this study implies that majority of the students used e-resources for study (e-book), for research (e-journal), for information and pleasure (e-newspapers/magazine) and for reference (Wikipedia). Also, Omotayo (2010) carried out a study on the use of electronic journal and reported that 22 (8.98%) respondents use electronic journals daily, 67 (37.35%) respondents use electronic journals weekly, 102 (41.63%) respondents use electronic journals bi-monthly, 34 (13.88%) and 20 (8.16%) used electronic journals monthly and occasionally respectively.

Challenges Associated with the Use of Electronic Library Resources
Popoola (2008) in Oni et al (2016) submits that the inability of university libraries to meet the information requirements of some library users might have forced them to use personal collections when conducting research. Lack of time is the main reason given for not using electronic resources. Unfamiliarity with computerized searching comes next. Chisenga (2004) in Oni et al (2016) carried out a survey of the use of ICTs in ten African Public Library Services. The survey found that, although most libraries had internet connectivity, very few were offering web-based information services to their users. The study however, identifies four barriers to the effective provision of electronic resources in those libraries, namely: lack of strategic planning: lack of adequate or reliable funding; lack of use of Internet to provide information services to users and a lack of consistent training for users in new ICT services.

According to Yebowaah and Plockey (2017) some factors were identified as challenges associated with the use of e-resources in the Library. From the results, 42 respondents representing 52.5% of the sample population indicated that they always have problems with the password. Low internet speed as a challenge has been encountered by 31 respondents representing 38.8% of the study. Other challenges such as inadequate staff in the Library and lack of assistance from the librarians were mentioned by 10 respondents each representing 12.5%. About 9 respondents denoting 11.3% said inadequate computers in the Library was a barrier to their effective usage of the Library. Five (5) representing 6.3% indicated that there was no or low bandwidth while the remaining 2 respondents amounting to 2.5% maintain that the attitude of staff in the library was also challenge.

Methodology
The methodology of this paper adopted and modified the methodology used by Oni et al (2016) to conduct a similar study in the Benson Idahosa University, Benin City, Edo State, Nigeria. In the light of this, the study employed the descriptive survey design to examine the awareness and utilization of electronic resources by students of Tamale Technical University (TaTU), Tamale,

in the Northern Region of Ghana. In this regard, questionnaire was administered to students in the electronic library. The population for the study comprised of all the registered students of TaTU library. Purposive sampling technique was used to sample students for the study in that only students who were found in the library within the period of the study were selected for the study. A total number of one hundred and fifty students (150) were found in the library within the period of the study and as such formed the sample size for the study. The questionnaire titled "Awareness and Utilisation of Electronic Library Resources among Students of Tamale Technical University, Tamale, Northern Region of Ghana (AUERSQ)"was used as the instrument for data collection. The questionnaire was made up of two parts. The first part consisted of background information of respondents. The second part constituted of structure statements or items aimed at eliciting information or data on the Awareness and Utilization of Electronic Resources by Students of the University. The data obtained from the copies of questionnaire retrieved from respondents were analyzed using the Statistical Package for the Social Sciences (SPSS) software thereby presenting data in the form of frequencies and simple percentages.

Results and Discussion
This section of the paper presents analysis and discussion of field data on awareness of electronic library resources by students of the Tamale Technical University. It is presented according to the study objectives which are to identify the awareness level of students about electronic library resources; to determine the e-library resources mostly consulted by students; to assess the level of utilization of electronic library resources by students and to identify the challenges encountered by students in accessing electronic library resources. It also captured relevant background information of respondents as presented in the next sub-section.

Background Information of Respondents
Relevant background information of respondents comprised sex and year of study of respondents as presented in Tables 1 and 2.

Sex
Table 1: Sex Distribution of Respondents

Sex	Frequency (N)	Percentage (%)
Male	106	71
Female	44	29
Total	**150**	**100**

Source: Field data, September 2018

Table 1 shows sex distribution of respondent. In this case, significant majority (71%) of the respondents are males whilst their female counterparts constituted only 29%. This implies that more males' students use electronic library resources than their females' counterparts in the Tamale Technical University.
Year of Study
Table 2: Various Years of Study of Respondents

Year of Study	Frequency (N)	Percentage (%)
Level 100	37	25
Level 200	46	30
Level 300	67	45
Total	**150**	**100**

Source: Field data, September 2018

Table 2 presents the various year or level of study by respondents. The field results show that students across the various levels of study use electronic library resources of the University for various purposes of study. Therefore, majority (45%) of the respondents are in level 300 or in their final year of study. This implies that since students are their final year, they will need to do more research on their assignments and project and therefore it is necessary for the students to constantly make use of the e-library resource for reference purposes. Besides, the level 300 who are the majority users of the e-library resource, the level 200 or second years are the next majority users of the resource of the University which represents 30% of the respondents. The results therefore indicate that the usage of the e-library resource of the University varies according to the year of study by students.

Awareness of Electronic Library Resources
Table 3: Awareness of Electronic Library Resources by Respondents

Awareness Level	Frequency (N)	Percentage (%)
High	24	16
Moderate/Average	35	23
Low	111	61
Total	**150**	**100**

Source: Field data, September 2018

It is obvious from Table 3 that the awareness level of electronic library resources by students is very low as 111 respondents representing 61% rated their awareness level as 'Low'. This suggests that majority of the students in the University still use 'brick and mortar'or the traditional library system to search for material for their assignments and or gaining further knowledge on their various courses of study. Therefore, they are unaware of the presence or the relevance of electronic library resources for their private studies or research. This supports the findings of Ojo and Akande (2005) on students' level of awareness of electronic information resources at the University College Hospital (UCH) Ibadan, Nigeria where students' awareness level was low. Added to this, Abinew and Vuda (2013) in Akpojotor (2016) found that awareness of e-library resources by students was quite low as majority of the respondents indicated they had limited awareness about the existence of e- libraries resources. This notwithstanding, a small proportion (16%) of respondents rated their awareness level of e-library

resources as 'High' implying some students are fully aware of the presence of electronic library resource in the University.

Electronic Library Resources Commonly Used
Table 4: Electronic Library Resources Frequently Used by Students

E-Library Resource	Frequency (N)	Percentage (%)
e-Journal	25	16
e-Books	74	49
e-Project work/Dissertation	30	20
e-Newspaper/Magazines	12	8
e-Dictionaries	9	7
Total	**150**	**100**

Source: Field data September 2018

The field data on Table 4 reveals that students used various electronic resources for their studies. These are e-Journals, e-Books, e-Project work/dissertation, e-Newspaper/Magazines and e-Dictionaries. In this regard, majority (49%) of the respondents consulted e-Books as this was followed by e-Project work/Dissertation which constituted 20%. It is worth noting that the third most commonly consulted electronic library resources by respondents is e-journal. The least consulted electronic library resource by respondents is e-Dictionaries. These findings corroborate what Oni et al (2016) found in their study on 'Awareness and Utilization of Electronic Resources by Students of Benson Idahosa University Benin City, Edo State Nigeria'. They found that the commonly used e-library resources among students included e-journals, e-books and e-Newspapers/Magazines.

Level of Utilisation of the E-Library Resources
Table 5: Utilisation of Electronic Library Resources by Respondents

Use of E-Library Resource	Frequency (N)	Percentage (%)
All days in the week	15	10
Four times a week	11	7
Three times a week	23	15
Two times a week	45	31
Once a week	56	37
Total	**150**	**100**

Source: Field data, September 2018

Table 5 shows the level of utilisation of electronic library resources by students in the TaTU. The data reveals that all the students interviewed used the resources throughout the week implying that students used the resource for various purposes at various times. However, its level of utilization is quite low among students as majority (37%) of respondents indicated they used the e-library resource once a week. This is followed by 31% of the respondents who used the e-library resource twice week. It is however fascinating to know that some students visited the e-library resources on daily basis as 10% of the respondents indicated they used the e-library

resources all days in the week. These findings are in tandem with Yebowaah and Plockey (2017) findings on Awareness and Use of Electronic Resources in University Libraries in the University for Development Studies. Their findings revealed that utilization of e-library resources by users was low just as the case of TaTU. To further establish whether there is a significant relationship between awareness and utilization of electronic library resources by students, chi-square test at *95%* significance level with a critical value of **0.05** is used to establish this relationship as shown in Table 6.

Table 6: Relationship between Awareness and utilisation of Electronic Library Resources

Indicator	Observed N	Expected N	Residual	Chi-Square (χ^2)	df	Asymp. Sig. (p)
High	24	50.6	-26.6			
Average	35	50.6	-15.6			
Low	111	50.6	60.4	8.245	3	.000
Total	150					

χ^2 = 8.245, *p*-value= .000, degree of freedom (df) =3
Source: Field data, September 2018.

From Table 6, a strong association between awareness and utilization of electronic library resources is observed suggesting that once awareness level of electronic resources by students is low; its utilization is also low. This means that the Null hypothesis (**H₀**) is rejected since χ^2 (3) = 8.245 and p < .05 (.000) and the Alternate hypothesis (**H₁**) accepted.

Challenges Associated with the Utilisation of E-Library Resources
Table 7: Challenges with Utilisation of the e-library Resources by Respondents

Challenges	Frequency (N)	Percentage (%)
Lack of ICT Knowledge	89	19
Insufficient ICT facilities	105	22
Slow internet speed/Poor network	112	24
Unskilled ICT librarians	65	14
Difficulties in reading from the screen	96	21
Total	**467**	**100**

Source: Field data, September 2018   *Multiple responses

Table 7 shows that utilization of e-library resources by students comes with various challenges ranging from lack of ICT knowledge by students to difficulties in reading from the screen. Majority (24%) of the respondents reported slow internet speed or poor network. This is followed by 22% of the respondents who also reported insufficient ICT facilities in the e-library facility. The rest of the challenges encountered by respondents in accessing e-library resources are unskilled ICT Librarians, lack of ICT knowledge by students themselves and difficulties in

reading from the screen. These findings did not deviate much from the findings of Oni et al (2016) and Yebowaah and Plockey (2017) on their studies on challenges of associated with the utilisation of e-library resources. Oni et al (2016) found that insufficient ICT facilities as well as lack of ICT knowledge by students impeded their use of the e-library resources. Yebowaah and Plockey (2017) further established in their study that the prime challenges to the use of e-library resource by users were low internet speed and inadequate skilled Librarians to assist users of e-library resources.

Conclusion

In terms of awareness of electronic library resources by students in the Tamale Technical University, the study concludes that students awareness level is very low as majority of the students hardly visit the electronic library and in this case still preferred the 'brick and mortar' or the traditional library system in search for material for their assignments and or gaining further knowledge on their various courses of study. This culminated in low utilization of the electronic library resources of the University by students.

Recommendations

- Management of the University's library should embark on intensive sensitisation on the availability of e-library resources and its utilization. With this, many students would become aware of the availability of this important e-learning resource and as such will make use of it.
- Management should provide and equip the library with adequate and sufficient ICT infrastructure that will facilitate the use of e-library resources by students for their assignments and other purposes.
- Students are also encouraged to go in for ICT training by themselves to compliment the ICT knowledge that is acquired in the university in order to equip themselves with the necessary skills that are needed to properly utilize e- library resources.
- Students should design their reading own study table in such a way that, time is allocated for visiting the library for the purpose of using e-resources.

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