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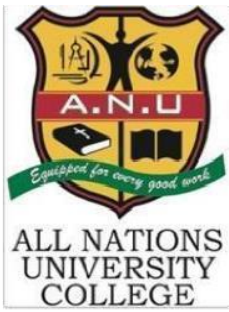


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**Provision and Awareness of Digital Library Resources in a Multi-Mode University: Perspectives of Distance Learners and Librarians.**

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### ***Abstract***

*The purpose of the study was to explore the extent to which digital library provision affects awareness and use of digital contents, digital reference services, and information literacy among stakeholders in distance education at a large multi-mode public teacher education university in Ghana. The study makes use of the concurrent mixed-method design. The population of the study was 1,834 distance students with a sample size of 641 distance learners reading programmes in Basic Education in three distance education Centres of the University of Education, Winneba namely Winneba (247), Kumasi (276) and Asante-Mampong (118). A total of 453 (70.67 percent) distance learners, selected randomly, completed a 31-item questionnaire. Also, the population consisted of four librarians from three Campuses in the vicinity of the Centres. A combination of probability and non-probability sampling methods were used for this study. The study found that awareness and use of digital library resources in the three distance education Centres were very low, if not non-existent. The findings revealed that for all the three main classes of digital library resources and services; digital contents, digital reference services and educative services, provision was very poor or non-existent for the distance learning community. This negatively impacted awareness and use of these resources. Among others, the study recommends a regular collaborative needs assessment of distance learners; establishment of dedicated library services for distance education; and the development of embedded library services which can appreciably raise the visibility of digital library resources in distance education.*

**Keywords:** *Digital library provision; distance learning community; awareness; multi-mode; academic libraries in Ghana.*

### **Introduction**

New demands on universities for user-centred education (Hermans, Kalz & Koper, 2013) has resulted in universities offering more than just brick-and-mortar education, and embracing distance education and the subsequent emergence of multi or dual-mode education (Osei et al., 2013). In response to these developments, academic libraries in multi-mode universities are expected to provide equitable services to its increasingly divergent constituency including distance learners (ACRL, 2008). How this is done and what resources to provide has been the subject of numerous previous studies (Abdelrahman, 2011; Al-Qallaf & Al-Mutairi, 2016; Besseah, Achiro, Mhando, & Salau, 2017; Gopakumar, 2014; Igwe and Onwuchekwa, 2015).

Academic libraries provide content in the form of media resources comprising tangible and intangible resources. While tangible resources such as the print collection, and services such as reference and instructional services continue to feature significantly in conventional education in universities, the emergence of new service models (Ahenkorah-Marfo & Nikoi, 2019), such as ICT-enabled distance education, require more than tangible resources and the scope-limited traditional reference (Luo & Buer, 2015). Distance education subscribers require, in addition to library physical content, the provision of digital learning objects such as online tutorials, subject guides and open educational resources (Brewer, Rick, & Grondin, 2017; Courtney & Wilhoite-Mathews, 2015; Davis, Cochran, Fagerheim, & Thoms, 2016; Salem Jr, 2017) with an ultimate goal of producing information literate graduates (Fernández-Ramos, 2019; Ukwoma, Iwundu, & Iwundu, 2016).

### **Statement of the Problem**

Ghana has adopted distance education as a strategy to address the imbalance in the supply-demand for higher education (Adu, 2019). Even though many successes have been chalked since it was implemented in Ghana's educational system (Adu, 2019), a lot of teething problems continue to bedevil the successful implementation of this distance education. Among these include the lack of purpose-built academic library services to distance learners and other members of the distance learning community (Larson & Owusu-Acheaw, 2016). Among other factors (Owusu-Ansah et al., 2018b), administrators and some academic librarians in conventional universities, that have also integrated distance education, make a false assumption that distance learners in their institutions use and or are satisfied with the existing library resources simply because those resources are online. Even though distance learners in Ghana possess a high readiness for e-learning (Forson & Vuopala, 2019), issues of access to technology militate considerably against e-learning adoption (Arthur-Nyarko & Kariuki, 2019) and, as a corollary, there may be little awareness and use of digital libraries in distance education.

The University of Education, Winneba's digital library provides strategic support to the University's mandate of providing cutting edge teaching, learning and research in teacher education and its performance has not been in doubt (Owusu-Ansah et al., 2018a; Owusu-Ansah & Takyi, 2017). However, previous evidence points to an unsatisfactory distance learning library service at the university (Larson & Owusu-Acheaw, 2016; Owusu-Ansah et al., 2018b). There is a need for academic libraries in conventional universities providing distance education to re-align traditional library resources to suit the needs of the distance education community (Ahenkorah-Marfo & Nikoi, 2019).

This research reports the results of a survey on the extent of provision of digital library resources and distance learners' awareness of digital library resources and services at a large multi-mode public teacher education university in Ghana. Consequently, the key question of this study is: *To what extent are the provision and awareness of digital library resources enhancing distance*

*learners' use of digital library resources?* To understand the various dimensions of the research question, the study probes into the:

1. Extent to which librarians' make provision for digital library resources and services in distance education.
2. Degree to which distance learners are aware of digital library resources and services.
3. Extent to which librarians' market digital library resources and services in distance education.

The results of this study will, hopefully, provide empirical data on the alignment of the perspectives of both distance learners and librarians on the provision and awareness of digital library resources and services in distance education. Aligning multi-stakeholder perspectives has a strong potential to improve service offering and patron satisfaction (Avuglah et al., 2020).

### **Related Literature**

In a review of distance learning library services in some North American libraries, Huwiler (2015) recommended a six-point framework for designing distance learning library services. The framework consists of environment, access, resources, being real, availability at the point of need, and instruction. The author contends that these priority areas may be used as a guideline for best practices in the implementation of distance learning library services. In terms of the environment, services to provide include, creating a library Web-page for distance education programmes. It has been confirmed in the *Survey of Library Services for Distance Learning Programmes* (Primary Research Group, Inc, 2013) that most libraries (70%) have a Web-page that addresses distance learners' information needs. For access services, libraries may provide course-specific databases and Internet resources that are tailored to the needs of distance students. "Being real" and "availability at the point of need" requires the library to establish personal and ongoing relationships with distance learners. In this regard, Huwiler (2015) outlines the use of phone calls and online videos, among others, by librarians to "create a feeling of dealing with a real person instead of a computer". This need for personalisation has already been implemented in some libraries. Malik and Mahmood (2013), reporting on the ICT applications for digital reference services in Pakistan, found the use of cell phones and short messaging services (SMS) as a source of instant interaction among library users, librarians and library resources. In regards to instruction, Huwiler (2015) also suggests that libraries are expected to provide synchronous and asynchronous forms of education specifically on information literacy to distance learners to boost their confidence and reduce their anxiety in the use of electronic resources.

Previous research has established the relevance of digital library resources in distance education with some studies pointing to the strategic role of these resources to the successful delivery of the vision of distance education (Nuel-Jean & Okoye, 2020; Wharton, 2017). Wharton (2017) conducted a qualitative needs assessment to understand the perceptions and preferences of students and faculty in distance education at Florida State University in anticipation of implementing new distance learning library services. The themes informing the study were, among others, use of databases, the library website, the learning management system, and videos and tutorials. Using a

modified text condensation method, the study reported that participants indicated their highest preference for databases as the opportunity to access journal articles as the most valued experience in using the library. In addition, the opportunity to access resources through off-campus technology was also very pleasing. However, the study pointed out the participants' frustration with the use of the library website stressing that it was difficult to use, "overwhelming", and not user-friendly. To address these challenges, the users called for a participatory design for building usable library websites. Notwithstanding, other valuable resources to the participants included videos and tutorials, the institution's learning management system (Blackboard). Videos and tutorial contents, in particular, enhance inclusivity and reduce the feelings of isolation associated with distance learning (Nuel-Jean & Okoye, 2020). Nuel-Jean and Okoye (2020) found in their study that academic librarians in five universities in the South East Zone of Nigeria perceived various forms of video tutorial content to be relevant in distance education as they promoted information literacy as well as in the digital reference. The respondent librarians identified three classes of interactive tutorials as Blackboard-delivered tutorials including the internet, online chat, voice mail and e-mail; while the use of bulletin board, internet video-conferences, digital video files and digital audio-files; while finally, hypermedia, listserves, voicemail, podcasts and the Blackboard. In a related finding, the study found that academic librarians involved in distance education indicated that the provision of access to databases was a very important pathway to improving students' learning in distance education. This is often facilitated by the provision of authenticated remote access to subscription resources (Owusu-Ansah et al., 2019). Digital libraries can, therefore, enhance distance learners' access to valuable digital content of peer-reviewed primary and tertiary resources including journals and reference sources to facilitate learning and research. Finally, Nuel-Jean and Okoye (2020) revealed in their study that digital libraries have a potential to foster the development of collaboratively-created content in the form of Library guides as librarians and faculty in distance education team up to chart innovative learning and research pathways.

Digital library resources are critical success factors in digital library usability (Lagzian et al., 2013, 2015; Rahman et al., 2020; Singeh et al., 2020). Lagzian et al. (2013) identified six determinants of digital library adoption and use, including the availability of useful content, metadata to promote resource discovery, and continuously updated content. Similarly, Lagzian et al. (2015) found that people and resources (content) was considered as the most important of six critical success factors for digital institutional repositories (IRs). They pointed out that content represented was the core of the IR while noting that the more content there was in a digital library, the more additional content could be generated to spur end-user activity in the digital library. While the provision of digital content is essential in a digital library, it is imperative to ensure that distance learners can obtain full-text resources.

In determining the criticality of the provision of digital content in a digital library, Singeh et al. (2020) placed "full-text access to digital resources" on the top of all items deemed "highly critical". The requirement on digital libraries to facilitate access to full-text information also implies that digital libraries serving distance learners must employ appropriate methods to enhance the role of digital libraries in distance education (Christopher M. Owusu-Ansah et al., 2019). Vrana (2017)

opined that the provision of digital libraries makes it possible for students to access relevant information without restrictions. Vrana described three ways in which digital libraries may enhance students' access to information: first, that digital libraries have the potential to foster learning communities among students; second, that digital libraries can enable the creation of customisable collections through carefully developed metadata; and third, that digital libraries enhance interoperability of digital resources as digital resources are increasingly standard or protocol-based, facilitating users' access to a vast pool of digital resources in and across different digital library providers.

Providing digital library resources and making them accessible is only one-half of the job to ensure digital library adoption and use in distance education. There is an urgent need to create awareness of these resources and services if they are to be used. As noted by (Yevelson-Shorsher & Bronstein, n.d.), there is a need for greater communication among librarians and faculty and students if planned programmes are to achieve their goals. Marketing of digital library services is an essential component of the digital library strategic planning process as "communicating the identity, intent and nature of a digital library in a way that resonates with its target audiences" (Calhoun, 2014:163) can ensure the patronage of the digital library (Robinson, 2012). Despite the relevance of marketing in digital library implementation, several developers fail to market the services of their digital libraries (Robinson, 2012). The barriers to effective adoption of marketing in the strategic planning process may be due to lack of marketing education, little or no training in marketing for library staff, resistance to change, budget cuts, and centralisation (Garoufallou et al., 2013). Taking steps to innovatively market digital library services in the modern competitive technological environment is a requirement for survival (Garoufallou et al., 2013). Robinson (2012) points out that instead of tactical marketing approaches such as promotion, branding, public relations, and advertising, digital libraries must adopt a strategic approach by developing and integrating their marketing plans into their strategic plans to ensure the sustainability of their digital brands. Calhoun (2014:164) also highlights the need to brand digital libraries, a process of describing the library's core values to its user community. Even though the author admits that only a few digital libraries are branded, she outlines the marketing value of digital library brands such as Europeana: "think culture", Internet Archive: "universal access to all knowledge", and Project Gutenberg: "the first producer of free e-books". These brands promote these digital libraries and eventually make them successful (Calhoun, 2014:164). The importance of creating awareness of digital library resources cannot be overstated; it is a critical factor for digital library success (Lagzian et al., 2015; Umukoro & Tiamiyu, 2017). Despite this knowledge, it appears that little is being done to promote digital libraries in the African context, with dire effects on distance learners. Umukoro and Tiamiyu (2017) identified lack of awareness as a major factor for the non-use of e-library services among non-library users of the University of Ibadan in Nigeria. The implication of this was that quality information services such as online catalogues are left unused while less quality web-based alternatives are resorted to by students. (Okoroma, 2018), also reporting from the University of Ibadan in Nigeria, underscored the importance of awareness in the use of digital library resources, pointing out that lecturers at the University were not familiar with the

institutional repository of the University including its aims and potential benefits. From the University of Venda in South Africa, (Tlakula & Fombad, 2017) found undergraduate students' awareness of electronic library resources to be low. The implication was that the students misunderstood electronic resources to be web-based resources. To address this challenge, the authors advocated for enhanced marketing and mobilisation of electronic resources on the one hand, and collaboration between academic staff and librarians as a way of boosting awareness and use of electronic resources.

Collaboration has been established as an important factor in promoting digital library resources and services. Mnkeni-Saurombe (2015) admonished librarians to integrate digital resources and services, including information literacy training, in university learning management systems. Mnkeni-Saurombe (2015) intimated that many librarians are increasingly successfully integrating library systems in university learning management systems, albeit with challenges.

### **Contextual setting**

The study was set in three distance education centres of a large multi-mode, multi-campus public university in Ghana, the University of Education, Winneba. The University comprises the main campus (Winneba), three satellite campuses (Kumasi, Mampong and Ajumako) and 40 distance learning Centres across the ten regions of Ghana (UEW Corporate Strategic Plan, 2019). It is one of the largest teacher education universities in Africa, with a total student population of 61,711 (UEW Corporate Strategic Plan, 2019). As a result of its focus on teacher education, it employs multiple teaching and learning modes to complement mainstream classroom-based education. However, distance education is a deal-breaker in the overall instructional strategy of the institution (UEW Corporate Strategic Plan, 2019). Distance teaching and learning in this University is both through occasional face-to-face and open education technologies. The University also runs programmes through the sandwich (during summer and Christmas), part-time (evening and weekends) throughout the year, hence its multi-mode status.

### **Methods**

To obtain empirical data on the problem, this study makes use of the concurrent mixed-method design in which the researcher merges the quantitative and the qualitative data to provide a detailed analysis of the research problem of the study (Creswell, 2009:15). This method was found appropriate to help understand the major variables of the study: provision of digital library resources in distance education (qualitative) from the perspective of librarians and the awareness and use of these resources by distance learners (survey). To create awareness of a phenomenon, it is important to ask questions involving *what* is it that requires awareness? and *how* the awareness is to be achieved, as well as *why* there is a need to be aware, which is expected to culminate in the use of the phenomenon. Furthermore, this design enabled the researcher to obtain important data such as demographic characteristics of a large number of distance learners. Again through the use of the survey, it was possible to formulate standardised questions based largely on the DELOS Framework for Digital Libraries (Candela et al., 2007).



The population of the study was 1,834 distance students with a sample size of 641 distance learners reading programmes in Basic Education in three distance education Centres of the University of Education, Winneba namely Winneba (247), Kumasi (276) and Asante-Mampong (118). A total of 453 (70.67 percent) distance learners, selected randomly, completed a 31-item questionnaire. In addition, the population consisted of four librarians from the three Centres. A combination of probability and non-probability sampling methods were used for this study. First, the study made use of stratified purposive sampling in selecting three distance Centres as the sites for the study. In addition, purposive sampling was again used in selecting the third and the fourth year undergraduate students reading Basic Education programmes across the three Centres.

Furthermore, simple random sampling was used to select distance education students within each of the classes. In selecting librarians, the use of purposive were considered. For instance, purposive sampling was used to select librarians to participate in the qualitative investigation.

The study made use of a structured and semi-structured questionnaire instrument. Generally, the instrument used for this study is adequately described in both Owusu-Ansah, Rodrigues, and Van Der Walt (2018a, 2018b). The structured questionnaire was analysed using statistical analysis tools whereas the semi-structured component of the questionnaire, used for the qualitative investigation with the librarians, was analysed using thematic analysis (de-Graft Aikins et al., 2019). In this study too, data analysis methods consistent with thematic analysis were used as reported in Owusu-Ansah, Rodrigues and Van Der Walt (2018a).

### **Results and Discussion**

Digital library services consist of a range of digital products and information services that may or may not be mediated by humans (librarians). As part of the assessment of the variety of digital library provision, a comprehensive list of digital library resources and services (which are all not necessarily available in the distance education Centre libraries) were presented for participants to indicate their awareness or otherwise. Their awareness was expected somewhat as a predictor of the availability of these resources. A summary of the responses is presented in Table 1.

Table 1: Provision and awareness of digital libraries in distance education

No.	Variable	Response							
		Not offered		Don't know		Offered		No response	
		Freq.(n)	%	Freq.(n)	%	Freq.(n)	%	Freq.(n)	%
1.	Toll-free- telephone	153	33.8	187	41.3	20	4.4	93	20.5
2.	E-mail	88	19.4	135	29.8	157	34.7	73	16.1
3.	Online access to other Ghanaian academic sites	103	22.7	175	38.6	86	19	89	19.6
4.	24/7 call Centre	88	19.4	119	26.3	148	32.7	98	21.6
5.	Library Web-page for distance education programmes	116	25.6	169	37.3	75	16.6	93	20.5
6.	Digitised special collections	107	23.8	148	32.7	105	23.2	93	20.5
7.	Online study skilled lessons	113	24.9	132	29.1	108	23.8	100	22.1
8.	Information literacy programmes offline/online	123	27.2	137	30.2	98	21.9	94	20.8
9.	Current awareness	114	25.2	162	35.8	76	16.8	101	22.3
10.	Virtual reference desk	84	18.5	150	33.1	113	24.9	106	23.4
11.	Photocopying of material	110	24.3	167	36.9	72	15.9	104	23
12.	Document delivery of journals articles and other documents	89	19.6	81	17.9	203	44.8	80	17.7
13.	Inter-library loan	96	21.2	158	34.9	98	21.6	101	22.3
14.	Interactive library Web-page for searching	146	32.2	173	38.2	35	7.7	99	21.9
15.	IRC (Internet Relay Chat) with librarian	116	25.6	135	29.8	93	20.5	109	24.1
16.	Thinking skills tutorials	123	27.2	173	38.2	50	11	107	23.6
17.	Online access to course materials	98	21.6	135	29.8	110	24.3	110	24.3
18.	Direct access to the library system from home (Remote access)	131	28.9	106	23.4	119	26.3	97	21.4
19.	Recommended websites to guide in my literature searches	164	36.2	105	23.2	85	18.8	99	21.9
20.	Periodically produced brochures about the library services	132	29.1	128	27.8	94	20.8	101	22.3

*Source: Author construct, 2016*

### Distance learners' perspective

Table 1 is a summary of the findings of distance learners' awareness of digital library services and resources at the University of Education, Winneba Libraries. Since librarians, together with the Centre coordinators are responsible for the provision of an enabling library environment for distance education, distance learners' views were compared to those of stakeholders where applicable, to confirm or disconfirming distance learners' views. A critical look at the range of services in the list indicates that most of these digital library services may be any of these three: *digital content* (3, 5, 6, 9, 11, 12, 13, 17, 18 and 19); *digital reference services* (1, 2, 4, 10, 14, and 15); and *instructional services/information literacy skills* (7, 8, 16, and 20). The discussions on the findings here are, therefore, categorised and presented along with these themes.

### Awareness of digital content

Digital objects are the most important resources in a digital library. It is important, therefore, that potential and actual users of a digital library are aware of these contents. In respect of distance learners' awareness of digital content, several findings from the study are revealing. Digital content consists of "born-digital" materials such as database content (e-journals and e-books etc) or print-only materials which have been converted to digital form through the process of digitisation (Lesk, 2005:2). Also, digital content in a given digital library may include specially selected free Internet resources, as well as links to quality external resources (Cleveland, 1998). Some of these external resources include institutional repositories of other universities, their library websites and OPACs. These services may be very useful when carefully implemented (Jurkowski, 2010:61). On students' awareness of online access to other Ghanaian academic library resources, the results in Table 1 suggest that most (n=175, 38.6%) of the distance learners are unaware that their Centre library provides online access to other Ghanaian academic resources. 103 (22.7%) learners, however, explicitly noted that the service is not offered to them. Moreover, responses on distance learners' awareness of a library Web-page for distance education programmes by the Centre libraries show that majority (n=169, 37.3%) of the distance learners are not aware of the library Web-page specifically dedicated for distance education programmes. Additionally, 116 (25.6%) of the learners noted that they do not know of the library Web-page. Several libraries also digitise some of their print-only resources when multiple or remote access to such documents are considered critical. Some of these include past questions and dissertations. These are often available in institutional repositories that are maintained by the libraries. Responses on the provision of digitised special collections on the subject areas of the students showed that majority (n=148, 32.7%) of the learners had no idea of digitisation in their respective libraries. Furthermore, 107 (23.8%) of the learners noted it is not available in their Centres whereas on the other hand 105 (23.2%) of the learners indicated it is available. The respondents were also asked about their awareness of current awareness services as part of the library services in their respective study Centres. In response, the majority (n=162, 35.8%) of the distance learners pointed out that they are not aware of the existence of current awareness services at their study Centres. Furthermore, 114 learners (25.2%) stated that they do not have access to current awareness services in their

respective study Centres. The students were also requested to indicate whether they have access to photocopying and printing of digital materials at the libraries of the Study Centres. In response, the majority of the respondents (n=167, 36.96%) insisted they are unsure whether the libraries provide photocopying and printing services to distance learners. Nevertheless, 110 (24.3%) of the learners stated that the service is not offered in their respective study Centres. Similarly, responses concerning document delivery of journal articles and other documents show that close to half (n=203, 44.8%) of the learners noted they were not aware their libraries offer document delivery of journal articles and other documents to which they can take advantage. 89 (19.6%) of the learners, however, maintained that they do not receive this service at their respective Centres whereas 81 (17.9%) of the respondents stated they are not aware of such services at their Centres. The respondents were also asked to indicate if they had remote access to digital library resources from their homes and workplaces. In response, 106 (23.4%) of the respondents claimed that they were unsure if they can access library digital resources from anywhere including their homes and workplaces, while another 131 (28.9%) said that there was no such provision for remote access to digital library resources. In contrast, 119 (26.3%) distance learners opined they can access digital library resources remotely. This is an important provision for distance learners since they are, for most of the time, away from their study Centres. Despite the high number of students who are unaware of remote access to digital resources, it is encouraging to note that a sizeable number of distance learners are aware of remote access to digital library resources. Regarding inter-library loans services, the responses from the distance learners show that the majority (n=158, 34.9%) of the learners do not know about interlibrary loan services in their Centre libraries. The results, however, show that 98 (21.6%) of the learners believed that the service is provided at their study Centres. Responses on students' awareness of online access to course materials revealed that majority (n=135, 29.8%) of the learners do not know if they are offered access to course materials online. Meanwhile, 110 (24.3%) of the learners noted that they are offered course materials accessible online. 98 (21.6%) of the learners, however, stated their study Centres do not offer course materials to learners online.

Again, distance learners were asked whether their study Centres provide recommended websites to guide in their literature searches. In response, the majority of the learners (32.2%) maintained that they are not given recommended websites to guide them in their literature searches. Additionally, 105 (23.2%) of the distance learners declared that they are unaware of the fact that they are given recommended websites to serve as a guide when they are searching for literature. Also, the respondents were asked whether their libraries periodically produce brochures about the library services. The responses show that the majority (n=132, 29.1%) of the learners are not offered brochures about the services provided by the library whereas 128 (27.8%) of the learners stated they do not know if this was done.

### **Awareness of digital reference services**

There is a need for distance learners and other remote library users to have some form of communication or contact with the library. The study investigated distance learners' awareness of the availability or otherwise of digital reference services in the library at their Centre. Notable in the responses is the little to total lack of awareness of digital reference services among distance learners.

Responses on the availability of toll-free telephone services indicate that the majority (n=187, 41.3%) of the distance learners are not aware of toll-free telephone services available on their respective Centres. Toll-free telephone services ensure that a caller places a call to a receiving party (the subscriber) without bearing the cost of the call because the charge is paid for by the toll-free subscriber. This service is an essential feature of digital reference since it may facilitate cheap two-way communication between the library and users outside the library. With the availability of this service, 153 (33.8%) of the respondents stated explicitly that there are no toll-free telephone services from their libraries. Similarly, on the provision of 24/7 call Centre services for distance and remote users, the results demonstrate that about one-third, being the majority (n=148, 32.7%) of the learners, indicated that their Centres provide them with a 24/7 call Centre services. Meanwhile, 119 (26.3%) of the learners stated they do not know of such a service. More so, the responses with respect to the provision of e-mail platforms on the study Centres revealed that majority of distance learners (n=157, 34.7%) believe that e-mail services are offered on their respective libraries whereas 135 (29.8%) of the learners indicated their ignorance of the availability of the service at their Centres. On the other hand, 88 (19.4%) of the learners maintained it is not offered on their campus. Again, in reference to a question on the availability of a virtual reference desk, most (n=150, 33.1%) of the distance learners disclosed that they are not aware of a virtual reference desk available at their study Centre libraries. 113 learners representing 24.9% of the learners indicated that they have virtual reference desks available at their study Centre. In relation to the provision of an interactive library Web-page for searching, most (n=173, 38.2%) of the learners stated they have no idea about the availability of an interactive library Web-page for searching. Additionally, about 146 representing 32% of the learners pointed out that their study Centre libraries do not provide them with interactive library Web-page for searching. Finally, distance learners were asked whether their study Centre libraries have Internet relay chats (IRC) with librarians. To this question, the majority (n=135, 29.8%) of the learners reported not knowing anything about an IRC facility at their study Centres whereas 116 comprising 25.6% of the learners stated they do not have that opportunity to chat with librarians.

### **Awareness of instruction/information literacy**

Educational services in a digital library may be educative programmes and services that provide the relevant knowledge, skills and attitudes required for lifelong learning. These include information literacy tutorials, online study skills lessons, and thinking skills tutorials. The successful integration of these components may require collaboration between librarians and

teaching faculty which may result in richer learning experiences for distance learners. In relation to this goal, the study determined if there were such educational services in the digital library and if distance learners were aware of them.

In terms of whether learners are offered information literacy skills tutorial through the digital library, a summary of the responses revealed that information literacy programmes were not offered to distance learners via the digital library. The majority (n=137, 30.2%) of the learners pointed out they did not know of an information literacy tutorial. Meanwhile, 123 (27.2%) of the learners stated they are not offered any online information literacy programme. In a related finding, the participating distance learners were asked to indicate if they had any programme on online study skilled lessons on the digital library. The results depict that the majority (n=132, 29.1%) of the learners are not aware of any online study skilled lessons offered them by the university library. Additionally, 113 (24.9%) of the learners stated that the university library does not provide them with any online study skilled lessons. On thinking skills tutorials, the responses reveal that again the majority (n=173, 38.2%) of the learners are not aware of thinking skills tutorial whereas 123 (27.2%) of the learners stated they are not offered.

### Librarians’ perspective

This section describes the results of the qualitative investigation through the semi-structured questionnaire answered by academic librarians at the University of Education, Winneba on their provision and subsequent promotion of digital library resources and services.

Table 2: Provision of digital libraries in distance education

	Centre		
	Winneba	Kumasi	Mampong
<b>Provision of digital library resources</b>	E-journals Databases Institutional repository Online Catalogue	E-journals Databases Institutional repository Online Catalogue	E-journals Databases Institutional repository Online Catalogue
Selection criteria	N/A	N/A	N/A
Priority for selection	Online availability	Online availability	Online availability
Patron-driven acquisition	No	No	No
Accessibility of digital resources	Through personal digital devices	Through personal digital devices	Through personal digital devices
<b>Marketing digital content</b>			

Awareness creation methods	N/A	N/A	N/A
Suggestions for off-campus access to digital libraries	Information literacy Workshops	Information literacy Workshops	Information literacy Workshops

N/A = Not Available

### Provision of digital library resources

From Table 2, it was observed that all the centre libraries share common digital content such as electronic journals and databases, institutional repository and the Online Catalogue (OPAC). In terms of selection criteria, it was shown that there are no selection criteria for selecting digital resources for distance education, even though some criteria are used in selecting digital resources for on-campus users. Priority for the selection of resources is the online availability of the resource. There is no patron-driven acquisition for digital resources and, finally, librarians expect that distance learners will access digital resources from the library through their own digital devices.

In respect of the marketing of digital content and services to distance learners, the results suggest that there is no marketing in the first place for digital library resources in distance education. Librarians' suggestions for future marketing of digital library resources in distance education include teaching information literacy to distance learners and organising workshops for stakeholders in distance education.

Regarding the development of digital collections and information services in distance education, three of the librarians explained that this was the responsibility of the University Librarian and so they would prefer to leave questions related to it for him. The University Librarian pointed out that "distance learners have access to all digital library resources of the library. These include e-Journals, the institutional repository and the Online Catalogue since all of these are online". Even though the other librarians agreed with this assertion, they were not sure how this provision impacted on distance learners' use of these resources.

On the criteria for selecting the digital resources to be made available for distance learners' use, most of the librarians stated that they did not know of that since that was done by the University Librarian. To confirm this, the University Librarian responded that there are no explicit selection criteria for digital resources in distance education since digital library collections are usually developed for the whole University community. The criteria used in selecting digital contents include content, relevance, currency, authorship, and the scope of the digital resource. The University Librarian further explained that the main motivation of the library in the selection of digital library resources is that "...it [the digital library resources] is readily available to everyone who has connectivity and requires very current and relevant information".

Again, in response to a question as to how the library ensures accessibility for distance learners, the University Librarian said that “distance learners are encouraged to access online information with their digital devices”. From this response, it can be concluded that the libraries assume that distance learners own digital devices on which they can access digital library resources.

### **Marketing of digital library services**

On marketing and creating awareness of digital library services among distance education stakeholders, most of the librarians indicated that they never formally marketed digital library resources to distance learners, however, the University Librarian pointed out that the library simply marketed what new resources it had on the University website. The Head of the Mampong Library was of the view that digital library services are not adequately marketed among distance learners and he believed that the problem can be solved through the teaching of information literacy to distance learners. This view is in the right direction, because on-campus students are taught information literacy in their first-year as a credit-bearing course.

On how distance learners enhance their accessibility to digital library resources, most of the librarians suggested training workshops and information literacy classes for distance learners. Also, all the librarians were of the view that to enhance distance learners’ access to digital library resources, they should be provided with tablet computers that are configured to the institutional local area network, which can enable them to access electronic journals at any point in time.

### **Further Discussion**

#### **Distance learners’ perspective**

From the survey responses, it was clear that distance education stakeholders were, generally, not aware of digital contents in their Centre libraries. A potential list of digital contents offered to distance learners included online access to other Ghanaian academic sites, a library Webpage for distance education programmes, digitised special collections (institutional repositories), current awareness, document delivery of journals articles and other documents, interlibrary loan, electronic journals and databases, an online catalogue, an interactive library Webpage for searching, and recommended websites for literature searches. Even though the findings from the librarians confirm that not all of the resources are provided in the digital library, among those that were provided such as digitised special collections (institutional repositories), electronic journals and databases, and the online catalogue (OPACs), most of the distance learners expressed lack of awareness of these services. This result is congruent with that of Mensah and Afful-Arthur (2019) who found that only 15.50% of distance learners at the College of Distance Education of the University of Cape Coast in Ghana were aware of library provision for resources and services at the University. However, in Mensah and Afful-Arthur's (2019) study, a considerable number of the respondent distance learners expressed that they were aware of the availability of library services for students in general. The result is also supported in Umar (2018) who reported that



77% of distance learners at the National Open University of Nigeria lacked awareness of the library's OPAC, reiterating that the OPAC is a gateway to all library resources. Specifically, with online access to other Ghanaian libraries' resources (with institutional repositories), most of the respondents said they were not aware of this service. With the deployment of institutional repositories built predominantly with DSpace, an open source digital repository, most academic libraries in Ghana are able to provide linking to the institutional repositories of other sister academic libraries (Bossaller & Atiso, 2015). This is a common feature of most institutional repositories in Ghana and this ensures open access to important research information, an alternative to licensed databases which may be comparatively difficult to access by distance education stakeholders. Institutional repositories may contain pre-print or post-print, reports, theses and dissertations, teaching materials, presentations, among others (Calhoun, 2014:94). These digital contents may be valuable to distance learners in teacher education (Muthanna & Sang, 2019).

In respect of the provision of digital reference services, the findings revealed that among a suite of services such as telephone services, e-mail services, virtual reference services, interactive library Web-page and chat services, distance learners were predominantly unaware of any of these digital reference services from their Centre libraries. Digital reference services in academic libraries ensure that remote library users can communicate with library staff for a variety of information needs (Chesley et al., 2020). This form of communication may be achieved primarily through one-way (asynchronous) such as e-mail or two-way (synchronous) such as chat or telephone services. Despite the overwhelming lack of awareness of these digital reference services, most of the distance learners singled out the e-mail as a service they were aware of, a response which was least surprising because e-mail software is common on most hand-held digital devices (Adzobu et al., 2020). Notwithstanding, from the interview with librarians, it was noted that the library does not have any form of communication service with distance learners and this includes digital reference services. Consequently, it may be concluded that distance education stakeholders and the library has no means of communication, a situation that may lead to distance learners making use of less authoritative information sources (Ahenkorah-Marfo & Akussah, 2016; Ahenkorah-Marfo & Nikoi, 2019). Chawinga and Zozie (2016) found that among three major sources of information for distance learners at a Malawian University, library sources placed last among a list that included lecture notes and internet sources. The lack of communication with distance learners is at variance with distance learning library standards which requires distance education providers to offer comparative services (ACRL, 2008). To bridge the communication gap between the library and distance learners, Amofah-Serwaa (2018) recommends the development and implementation of a digital reference service guideline, re-echoing the IFLA digital reference service guidelines, to drive digital communication between these partners.

On distance learners' awareness of educative digital library services such as information literacy tutorials, libguides, online study guides and critical thinking toolkits, the study found that distance

learners were not aware of any form of educational services such as information literacy offered through the digital library, even though information literacy training was a compulsory course for full-time students. These resources provide the relevant knowledge, skills and attitudes required for lifelong learning. This finding is similar to that of Baro and Keboh (2012) who found in their survey of five African libraries offering information literacy that three of the five libraries did not use online delivery methods for teaching information literacy. Baro (2011) in another study notes that a significant new trend of teaching information literacy is to embed the course in learning or course management systems. Digital libraries are equally and probably better placed to embed information literacy courses while providing a link of the course from the digital library to existing course management systems. In this way, learners' experiences will be further streamlined as they may be able to use digital library content to support their learning and at the same time enhance their overall information skills through the digital library.

### **Librarians' perspective**

The interview with the librarians also revealed that digital collection development is guided by some form of criteria such as content, relevance, currency, authorship, and the scope, among others. These criteria are used in selecting digital resources for campus-based users and not distance learners. There is no collection development policy for selecting digital library resources for distance learners. Such a policy will guide the development and management of a sound collection for use in distance education. For instance, in teacher education, there is a constant need for collections on core subjects such as educational philosophy, educational psychology, instructional technology, school organisation and management, academic writing, teaching practice etc. Furthermore, undergraduates are obsessed with past questions and so it is in the right direction to include these resources. The collection development policy for content in a digital library must include most or all of these aspects.

In respect of librarians' views on accessibility of digital library resources to distance education stakeholders, the findings reveal that librarians believe that accessibility to digital library resources is tied to a potential user's access to the Internet and/or digital devices. This perspective does not take into account inhibiting factors of access such as the quality of digital technologies available to distance learners, for instance, modems and the speed of connectivity (bandwidth) (Liebenberg, Chetty, & Prinsloo, 2012). Furthermore, since distance learners usually (or are most likely to) access the digital library remotely either from work or home, these factors may be compounded by affordability and cost. It is therefore important for libraries in distance education institutions to ensure that there are adequate public computer terminals in their libraries to facilitate distance learners' access to digital library resources. Furthermore, since remote and distance learners are increasingly accessing digital resources via mobile, digital library managers need to ensure that their contents are optimised for mobile viewing and access.

Another important concern the study sought to understand was how available existing digital library resources were marketed among distance education students. In response to this question, some of the librarians pointed out that they simply post information on digital and other resources (such as new book acquisitions) on the library website. This approach does not appear to be very effective for marketing digital library resources since distance learners in particular rarely visit the library website. Conversely, another respondent was of the view that teaching information literacy to distance learners was the best approach to marketing digital library resources among distance learners. Despite the seeming effectiveness of this approach, because information literacy is not being presently taught to distance learners, there is a need for other pragmatic marketing measures. Huwiler (2015) suggests that the marketing of library services to distance learners can be achieved through market analysis. This involves investigating the information behaviour of distance learners and ensuring that the library's digital resources are easy to use. Again, the author suggests using social media tools such as Facebook and Twitter to communicate with and create awareness among students on the library's resources. Finally, the marketing of digital library resources may be more effective by establishing personal contact between librarians and academic faculty, who may, in turn, recommend the resources to their students (Huwiler, 2015).

On the question of whose responsibility it is to market library resources, some of the librarians believed that it was their responsibility. Others believed that collaboration between the library and the distance education department (Centre for Distance Education) was essential in marketing library resources to distance learners. The literature, however, seems to be in support of distance education providers taking on this responsibility in collaboration with librarians (Huwiler, 2015).

The findings on the marketing of digital library services among distance education stakeholders also reflect the views of Robinson (2012) who asserts that several institutions fail to market the services of their digital libraries. This failure may be attributed to a general lack of strategy in marketing in the library. According to Garoufallou et al. (2013), adopting innovation to market digital library services in the modern competitive technological environment is needed for survival. Robinson (2012) suggests a strategic approach to marketing digital library services by developing and integrating marketing plans into the overall library strategic plan to ensure the sustainability of digital brands.

### **Conclusion**

The study found that awareness and use of digital library resources in the three distance education Centres were very low, if not non-existent. Relatedly, the findings revealed that for all the three main classes of digital library resources and services; digital contents, digital reference services and educative/information literacy, provision was very poor or non-existent for the distance learning community. This negatively impacted awareness and use of these resources. In respect of digital contents, awareness among distance learners was found to be very low. Similarly, awareness of digital reference services among the students was also very low, even though

librarians confirmed this service was not offered even for full-time students. Again, awareness of educational digital services such as online information literacy tutorials was also very low, if not non-existent. This level of awareness and use is primarily anchored on the poor level of provision of digital library resources and services.

Digital contents are the most important resources in a digital library. It is, therefore, imperative that digital library managers ensure that the appropriate contents are available for the use of their patrons. Even though digital content in the digital library was quality resources, it is important to note that these were not selected for the needs of distance learners in mind. It is important to engage distance education stakeholders to ascertain what kinds of contents and services they require for their academic activities. This may be achieved through collaboration with these stakeholders. Librarians in dual-mode institutions should also deliberately and systematically assess the information needs of the distance education community alongside their assessment of on-campus users.

It is also recommended that dedicated services or library services be established for distance education to boost digital library use in distance education in dual-mode institutions. This may be in the form of a dedicated “distance education resources” Web-page on the library website with links to the distance education website and further to the learning management system. This site must also be optimised for mobile devices as students are increasingly accessing online content through their mobile devices (Adzobu et al., 2020). Also, to achieve enhanced representation for distance services, the appointment of subject librarians for discipline-specific research consultations (Chesley et al., 2020) in distance education is also recommended.

Furthermore, these efforts may be enhanced by the development of embedded library services which can appreciably raise the visibility of digital library resources in distance education (Olesova & Melville, 2017). For instance, Mnkeni-Saurombe (2015) recommended that librarians can embed library resources on distance learning management systems by linking module sites to librarians or library websites where most or all relevant digital library resources are explicitly relevant to academic tasks. Again, a snapshot of OPAC results containing relevant books on a particular topic in a course and simple information on how to borrow a book may be very useful for distance learners. These efforts must be spearheaded by the subject librarian for distance education in the library.

In terms of creating awareness of digital libraries in distance education, it is suggested that intensive education campaigns be embarked upon to, first and foremost, change the negative perception and attitude of distance education stakeholders on the value of digital library resources in their teaching and learning activities as negative attitudes are known to negatively affect the use of digital resources in libraries (Tlakula & Fombad, 2017). This campaign cannot succeed without a plan (Owusu-Ansah et al., 2018). Consequently, there must be a systematically developed plan

which should be captured in a training policy to educate distance education stakeholders on the usefulness of digital resources in distance education. Having managed their attitude on digital libraries, it would then be opportune to employ innovative marketing techniques in creating awareness of the various digital library resources. These marketing techniques should be integrated into the overall strategic plan of the library to ensure consistency and performance management (Owusu-Ansah & Takyi, 2017). It is also important that librarians are trained in marketing promotion and assessment techniques of marketing (Brahme et al., 2018) to enhance their ability to market these resources. In distance education, developing and making use of web-based marketing tools such as libguides and Web 2.0 tools that are embedded in learning management systems are effective marketing strategies (Brahme et al., 2018).

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