

The Adoption and Use of Digital Literacy among Selected Libraries in Tertiary Colleges in Tanzania

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Abstract: This study chiefly aimed at assessing the adoption and use of digital literacy among libraries in selected tertiary colleges. Two tertiary college were selected as cases studies, namely, Tanzania Public Service College (TPSC) and Dar es Salaam Maritime Institute (DMI). The study aimed at examining the status of digital literacy adoption, determining the use of digital literacy on their day-to-day activities, and identifying challenges of digital literacy adoption and use among libraries in selected colleges. A sample of 98 library users were selected as respondents. Data was collected through questionnaire and face-to-face interview. Quantitative data was analyzed using Statistical Package for the Social Sciences, while content analysis was used for qualitative data.

The findings show that majority of the respondents were aware of the adoption and use of Digital Literacy, but faced challenges such as technophobia, lack of enough and supported instructions on digital literacy, poor power supply to support internet, and insufficient digital literacy facilities. In fact, the majority of respondents had adopted and used digital literacy for less than a year. The use of digital literacy has a number of benefits such as easy and quick access of information, retrieval of library information in cataloguing and classification, as well as accessing different databases to acquire relevant data and information.

The study recommends that the government and top management of institutions or colleges should make available more funds to support libraries in the adoption and use of digital literacy, allow librarians to take short courses to enhance adoption and use of digital literacy, purchase more digital literacy facilities, purchase a strong standby generator, and accommodate digital literacy programmes in college curricula.

Keywords: Literacy, Digital Literacy, Libraries, Adoption, Use.

I. INTRODUCTION

Digital literacy is a proposed umbrella term that signifies skill personnel with corresponding names used often despite some slight difference in their theme (Karpati, 2011). In educational circles, it is defined as recognizing the basics but extreme exceptionalities of the internet and identifying the digitally literate student as possessing a specific set of information skills applicable to text and multimedia information launched on the internet and set in a regular, school-based learning environment (Gilster, 1997).

User education programmes are essential for academic libraries to reinforce the teaching and research demands of their institutions, hence guarantee use of their information resources, sources and services amplified to advantage the users. The novel technology advancement channels access to

easing information for users, while information skills are necessary to collect and present that information. Information workers as intercedes between users and information sources are likely to be less of a role (Chalukya, 2015). The shift of digital culture has been accelerated by the boosting power of the internet, hence digital information sources coinage is the heart of most academic libraries for the aim of guaranteeing equal access to information services and resources by users (Lawal, 2017).

Statement of the Problem

Digital literacy supports different literacies in utilization of the most suitable and significant channels in order to suit and render information appositely in different environments (Karpati, 2011). In the world today, information is constantly changing in terms of its volume, technical aspects of its storage and retrieval, and in the way it is communicated. These advancements have led to different challenges such as the hardship in searching, choosing, and utilizing information (Lwoga et al., 2005). Professionals of all walks of life are aided by Digital Literacy in advancing their skills that annex economic ranks and enrich their common post achievement and living benchmark (Emiri, 2017).

Hence, studies such as Hadjerrouit(2014) and Lawal (2017) have put a lot of effort in higher learning institution rather than in tertiary colleges, which we know little about the adoption and use of digital literacy among libraries of tertiary colleges in Tanzania. In this context, the study sought to investigate how these libraries have adopted and used digital literacy because they are providers of relevant information in this digital era.

Objectives of the Study

The main purpose of the study was to assess the adoption and use of Digital Literacy among libraries of tertiary colleges in Tanzania. The study was guided by specific objectives which aimed to:

- i. examine the status of Digital Literacy adoption among libraries in selected tertiary colleges;
- ii. determine use of Digital Literacy in their day-to-day activities among libraries in selected tertiary colleges;
- iii. identify challenges of Digital Literacy adoption and use among libraries in selected tertiary colleges; and
- iv. Propose ways of mitigating such challenges.

Theoretical and Conceptual Framework

Two theoretical frameworks are discussed in this study concerning digital literacy. The first one is Information literacy for Higher Education by the Association of Colleges and Research Libraries (ACRL) - a division of the American Library Association (Association of College and Research Library, 2016); and the second one is California ICT Digital Literacy Policy Framework. The study adopted the California ICT digital literacy policy framework, which complements digital literacy extending beyond traditional definitions of mere literacy, encompasses the knowledge and skills required for critically and effectively using digital information to achieve goals (Sparks et al., 2016).

The study discussed two conceptual frameworks and adopted Technology Adoption Model by Fred Davis and Venkatesh 1996 (TAM) (Oghenetega & Cln, 2015) and also the California ICT digital literacy policy theoretical framework (Sparks et al., 2016). Below is the researcher's Digital Literacy frame work applied in this study.

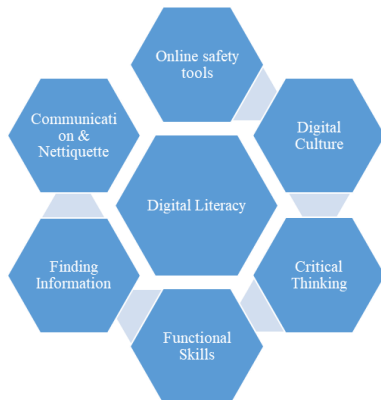


Figure 1: Digital Literacy Model

Source: Designed by researchers

Empirical Studies

Libraries demonstrate their value as community anchors of information by responding to issues and identifying trends that impact the community. Free library programmes provide learning opportunities and entertainment for children as well as adults. Books and digital resources support educational goals from early literacy through lifelong learning. Library collections include books and resources that represent the diversity of people, cultures, and the faraway places that make up the world we live in (Funding & Learning, 2015).

Academic librarians are working largely with reallocated funds to transform programmes and services by repurposing space, migrating collections, and redeploying staff in the digital resources environment. Academic researchers are users of big data, extremely large data sets that are beyond the capability of most software tools to process and analyse. Academic librarians traditionally assess the research needs of academics, but big data poses new challenges. The sheer quantity and rate of accumulation of data require new skills

and resources to enable researchers to share, analyse, and reuse it (Funding & Learning, 2015).

Many libraries have therefore made a logical step of seeking to develop the digital literacy of those who do not master digital services and technology, who feel uncomfortable online, or who do not understand the positive or negative impact of what they do in their digital lives. Librarians are aware that the ability to use technology meaningfully facilitates professional, personal and social endeavours (IFLA, 2017).

The development and growth of digitization have resulted in an increased demand of digital literacy, competences and skills. The wide variety of terms reflects the rapid development of technologies but also different areas of interest, such as computer or library studies and/or data analysis. Furthermore, changes in culture and society, based on new technology, have effects on the terms reflecting rapid development of technologies (Bejaković & Mrnjavac, 2020). Distinct countries and heritages may have essentially a variety of needs for digital literacy; in many countries, educational policies for the development of digital literacy first focused on the development of infrastructure. Hence, in an increasing number of developing nations, digital literacy has become a national primacy (Karpati, 2011). On the other hand, librarians are aware that the ability to use technology meaningfully facilitates professional, personal and social endeavours (IFLA, 2017).

Academic libraries in Tanzania, such as the library of the University of Dar es Salaam (UDSM) since 1990's have been putting efforts towards integrating IT with library functions and services (Mungwabi, 2019). Sokoine University of Agriculture (SUA) and Muhimbili University of Health and Allied Sciences (MUHAS) have also managed to integrate Information Technology into their library services and functions; this way, they have been able to build good infrastructure to cater for their needs (Mungwabi, 2019).

In practice, academic libraries that have adopted and used Digital Literacy face different challenges such as inadequate IT infrastructure, inadequate initial training, insufficient motivation, absence of technical services support, insufficient facilities, poor connectivity, limited time, unreliable power supply, inadequate bandwidth, administration that does not embrace ICT usage, lack of ICT and Information Literacy policies and lack of administrative support (Nkebukwa, 2016; Mungwabi, 2019). However, institutions and librarians are working hard to overcome such challenges. The main concern lies on the tertiary colleges where funding and expertise on ICT and Digital Literacy, in particular, might be a problem. Therefore, although Tanzania Public Service College (TPSC) and Dar es Salaam Maritime Institute (DMI) functions and services have adopted and used Digital Literacy, little is known about the adoption, use and challenges they face in enhancing Digital Literacy in academic aspects.

Research Gap

The simplicity of searching and retrieval of electronic resources have led the current generation to shift their attitudes on digital content (Nkebukwa, 2016); hence, the research gap is that the majority of libraries in developing countries like Tanzania have limited facilities to tap the new technological environments and are financially constrained (Muneja, 2010). Based on the above evidence, there was therefore a need to conduct a study that would focus on the adoption and use of digital literacy in libraries in Tanzania, taking Tanzania Public Service College (TPSC) and Dar es Salaam Marine Institute (DMI) as cases in point, to assess the adoption and use of digital literacy. The reason, as mentioned earlier was to fill the research gap, since little is known concerning tertiary colleges on the topic at hand.

II. METHODOLOGY

The study employed a case study method based largely on qualitative data. The area of study, as said, was Tanzania Public Service College and Dar es Salaam Maritime Institute. The study population involved library users and librarians. The study employed simple random and purposive sampling. Simple random sampling was used to identify library users, while purposive sampling was used to identify librarians for interview. A total of 105 respondents comprising of 98 library users and 7 librarians formed the sample, out of 1050 population from the two institutions. The study employed primary and secondary data; the latter included print and electronic materials, published and unpublished information sources such as books, journal articles, reports and policies. The former was obtained from the field through questionnaires and interviews.

Quantitative data was analysed using Statistical Package for Social Sciences (SPSS). Descriptive statistics such as frequencies, percentages, means and standard deviations were calculated and used to summarize data into meaningful forms such as tables, pie charts, bar graphs and histograms. Qualitative data was sorted and categorized according to emerging and recurring issues. The study used illustrations such as tables, charts and description to present data under each research question or objective that guided the study.

Before the actual study, piloting was done to test the instruments to at least five library users and four librarians to find out if the tools were clear to the respondents. Obtaining the necessary permit, and consent from the respondents, and ensuring anonymity and confidentiality, were important matters to consider. The researcher faced some challenges such as unavailability of respondents in the field but managed through scheduling proper times for their availability. Financial constraints were managed through personal savings.

III. FINDINGS AND DISCUSSION

The study mainly aimed to assess the adoption and use of Digital Literacy at the Dar es Salaam Maritime Institute and Tanzania Public Service College.

Findings from the study show that 89% (87) of the population were aware of digital literacy compared to 11% (11) who were unaware. In this situation, Cordell (2013) suggests that a curriculum should be developed to encompass clearly-defined student outcomes for an entire programme of study. Such study would aim at raising awareness on Digital Literacy to the rest of the students.

As far as the possession of Digital Literacy awareness education to both TPSC and DMI was concerned, findings show that searching skills via internet, access, communication and analysing were familiar to individuals in the two colleges. Moreover, four librarians during the interview admitted that he was familiar with information searching through various databases, information sharing and content creation.

Findings have also shown that library orientation programmes, library trainings and digital literacy classes were the commonest subjects. Around 65(32%) of library users in personal efforts and were also being assisted by colleagues in acquiring digital literacy awareness education to reach out to their goals. Meyers et al. (2013) was of the opinion that a digitally literate person ought to be a functional and cognizant partaker, frequently assessing those chances for their advantages and drawbacks. Cementing on the above findings, the 7 librarians in an interview to use trainings, guidance and daily assistance per user requirements as their key method in transferring digital literacy awareness education to users.

Moreover, the study shows weekly and monthly basis instructional frequency used in digital literacy awareness education within tertiary colleges. An interview conducted to librarians demonstrated that both colleges, thus DMI, and TPSC daily guide and assist users per their requirements. Digital literacy experts are available in both Dar es Salaam Maritime Institute and Tanzania Public Service College and a few numbers of users who are unaware of the presence of the digital literacy experts in their libraries. Hence presence of experts in the tertiary colleges are in line with IFLA recommending that the Higher Education Institutions to apply the skills and knowledge of librarians, in academic libraries and embedded in learning management systems, to improve digital literacy among students and researchers (IFLA, 2017).

Table 1: Digital Literacy Experts in Library

Responses	Frequency	Percent
Yes	76	78
No	22	22
Total	98	100

Source: Field Data, 2021

Moreover, study findings show that computers and internet are key digital literacy facilities available in the libraries mostly used by the users. To top on this, in the interview librarians from Dar es salaam Maritime Institute (DMI) mentioned to own eight (8) working desktop computers for users, two (2) scanners thus one for users and the other for the

library staff, one (1) printer and internet while from Tanzania Public Service College declared to possess only eighteen (18) desktop computers which are not all working properly, one (1) printer for library staff and internet. According to Muneja, (2010) and Emiri, (2017) have put into light that in order to obtain more facilities someone has to escalate pressure to the organizational management and user needs must be in mind thus realizing how users interact and so forth. However almost half of respondents 47(48%) have adopted digital literacy below one year.

Activities that Use Digital Literacy

The most influential library activities into adopting and use of digital literacy are research purpose, learning and collaboration, reference service, and communication. (Emiri, 2017) states that Digital Literacy benefits a number of people in communication purpose keeping up with societal trends while (Muneja, 2010) shows that university libraries with reference to University of Dar es Salaam library he observe that they are well equipped with ICT based services such as creation of local content, Acquisition, Circulation and Online Public Access cataloguing.

The study has found the importance of digital literacy adoption and use which includes: easy access of information helps user search and use information from different digital databases and platforms, easy and quick sharing of information/knowledge enables user to acquire information or knowledge from different digital platforms and share via them, inspires creativity here users create their own content to serve their own purposes, for communication purposes, influence correct access of information, and influence intellectual property rights of information. Hence the figure below presents the summary of the findings.

Importance of adopting and using digital literacy in libraries

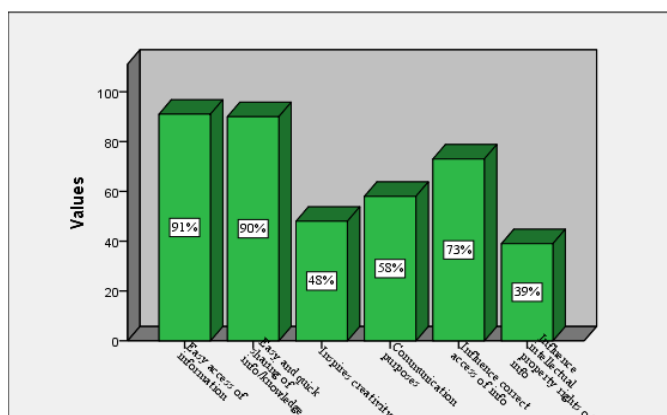


Figure 2: Importance of adopting and using Digital Literacy in Libraries

Source: Field Data, 2021

Also, librarians from DMI and TPSC in the interview declared to benefit saving time for both users and librarians, Easy and quick access of information, performing retrieval functions for the library activities such as cataloguing and classification,

selection and acquisition, researchers’ needs through the use of different databases to acquire relevant information needs, Remote accession of information even when they are not in the college or library premises. Hence, bMuneja, (2010) and Cordell, (2013b) demonstrate that libraries in the digital era have valued the library users to simplify the process of locating, access and use of library information and communication with and participation in the user’s various communities are significant elements of digital literacy.

Challenges faced in the Adoption and use of Digital Literacy

The challenges faced by users include inadequate library experts on digital literacy, inadequate digital facilities in the library, inadequate instructions on digital literacy hence users require more instructions on digital literacy adoption and use, and poor power supply to support internet. Additionally, Meyers et al., (2013) have noted that there are constraints to digital literacy thus access to technology, expertise and social support. Hence below is the pie chart for further presents the details of the findings.

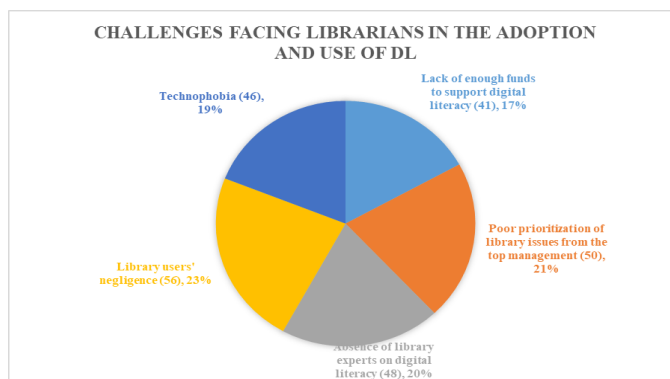


Figure 3: challenges facing librarians in the adoption and use of Digital Literacy

Source: Field Data, 2021

Both DMI and TPSC librarians face similar challenges, thus inadequate funds to support programs and facilities for users, inadequate library budget allocation, users’ technophobia whereby some users fear technology even touching or switching on and off the computer is a bit difficult for them thus hindering adoption of digital literacy. According to Muneja, (2010) lack of fund, unchangeable mind (rigidity of managers), and technophobia are seen as barriers to development of ICTs based projects in the libraries. More over Emiri, (2017) have boldly stood on the matter that library materials and services should suffice quality, profoundness, heterogeneity, and currency to support the institute's curriculum.

IV. RECOMMENDATIONS

The research study recommended users’ willingness to attend digital literacy programs whenever arranged, should familiarize oneself with digital facilities in the library. This is concurring with Alexander et al., (2017) states digital literacy is the interest, attitude, and ability of individuals to use digital

technology and communication tools appropriately to access, manage, integrate, analyze and evaluate information, construct new knowledge, and create and communicate with others. Also Meyers et al.,(2013) suggests that a digitally literate person develop an understanding of themselves in relation to the technologies and services with which they engage.

At the College levels, the top management should accommodate digital literacy awareness courses in the syllabus to enhance effectiveness and efficiency of adoption and use of digital literacy. Colleges’ management should prioritize funds for the library, Support purchase of current facilities, database installation and subscription payments, and programs to enhance and promote better provision of digital literacy awareness. With regard to the willingness of students to learn, readiness to engage in a particular process of learning can be derived both from personal motivation to acquire certain knowledge and skills and/or from external motivation(Lwehabura& Stilwell, 2008).

The findings show that librarians need much more in this digital age to embrace digital literacy skills on their work than ever before. Also there is need for librarians to have digital literacy skills, so that they can use them to progress on their jobs and on their careers as supported by Emiri,(2017). With these skills, librarians will be more equipped for resource sharing, social networking, surfing the net, instant messaging and blogging and host of others digital oriented activities. These skills can also help them on their jobs to assist users get desired information and education.

The aim of considering government’s recommendation was due to the challenges faced by users and librarians in order to improve adoption and use of digital literacy. From this perspectives, the study come up with the following major recommendations to the government as summarized in the following figure.

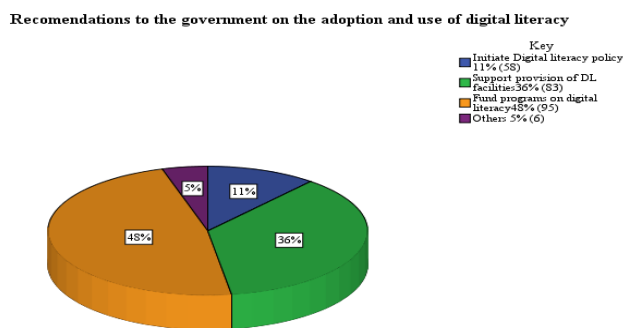


Figure 4: Recommendations to the government

Source: Field Data, 2021

Both DMI and TPSC respondents from questionnaire and interview suggested that the government should fund programs on digital literacy, support provision of digital literacy facilities, initiate digital literacy policy for tertiary colleges so as the management would raise more funds and prioritize funds to the libraries thus ensuring availability of more digital literacy facilities and programs attendance to both users and librarians enhancing efficiency and effectiveness of adoption and use of digital literacy. Muneja, (2010)and Bejaković & Mrnjavac,(2020)suggest that the government, educational institutions and employers to set sufficient budgets for sustaining library services, design new forms to assess digital skills, change standards to reflect the value of 21st century literacy, design and implement intervention programmes.

V. CONCLUSION

The main purpose of this study was to assess on the adoption and use of digital literacy among libraries of tertiary colleges in Tanzania, particularly Dar es Salaam Maritime Institute (DMI) and Tanzania Public Service College (TPSC). The study examined the status of digital literacy adoption among libraries in selected tertiary colleges. It aimed at determining use of digital literacy on day to day activities among DMI and TPSC libraries, and identified challenges of digital literacy adoption and use among DMI and TPSC libraries.

Majority of the respondents comment that they are aware of digital literacy adoption and use. The findings show that digital literacy has an influence on library activities hence libraries in the surveyed institutions have realized the importance of adopting and using digital literacy. However, there are challenges some of them are availability of digital experts, still libraries face inadequate digital literacy facilities, poor prioritization of library issues, technophobia from library users, inadequate funds to support digital literacy and poor power supply to support internet. Hence emphasis on promotion of digital literacy programs, prioritization of library issues, government endorsement of more funds to colleges support libraries, College integration of digital literacy curriculum to support trainings and short courses and ensure standby generators to support power supply for internet use in tertiary colleges.

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