Perceived training needs assessment of librarians in Tanzanian academic libraries aimed at introducing microlearning intervention to training

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Abstract

The constant change in technology, its impact on the electronic information environment and complex library users are forcing academic librarians to majorly change their skill set. Patrons no longer request physical information but are accessing and retrieving information electronically. This study investigated the current training needs of librarians in Tanzanian academic libraries with the aim of developing microlearning intervention for training. Using a self-administered questionnaire, data were collected from 138 librarians in six Tanzanian academic libraries. Results identified the most important competencies and skills needed by the librarians and also identified barriers to librarians' training. Identifying librarians' training needs will accelerate the training required for the librarians to gain current expertise based on need. Using microlearning for training will eliminate the barriers to librarians' training. Increasing training and learning efficiency is crucial if these academic libraries are to maintain relevance and continue to meet the needs of their users.

Keywords: Training needs assessment; Librarian's training and development; librarians' knowledge and skills; microlearning; Tanzania

Introduction

New information technologies, rapid growth of information, and changes in the types and formats of information have had an impact on the tasks of librarians in academic libraries as well as on users' needs. The purpose for the continued existence of librarians in academic libraries has become a concern at a time when information is available in many forms and when academic libraries are not the only major source of academic information. Academic libraries are established in universities to support the primary functions of the parent institution which are, teaching, research and publication and community services. They are responsible for identifying, selecting, organizing, processing and providing access to information resources in various formats that are required for academic work. Ibegbulam and Eze (2016) observed that the worth of an academic library is measured by the extent to which its resources and services meet the needs of the academic community where it is established.

The influx of technology and electronic information are having a major impact on society as a whole and libraries in particular since their sole purpose is to provide information to its clientele. Santra (2007) observed that what was once the domain of the librarians alone, is now readily accessible by their users. Academic librarians need new skills to cope with the expanding information provision task entrusted to them. The increasing transformation in the academic library's environment is calling for continuous training and development of library staff (Abban, 2018). Library buildings and large library collections and spaces are only glorified warehouses if they are without skilled professionals since the staff represent 75% of what it takes to make a good library (Abban, 2018; Adeniji et al., 2012). Changes in libraries have resulted in the need for new or expanded skills, abilities, and knowledge of librarians. These changes include the implementation of new technologies such as computer-based cataloguing, automated circulation systems, online access to machine-readable bibliographic databases, and the

development and formalization of personnel policies and procedures (Bamidele et al., 2013).

The emerging challenges faced by the library profession have been great in number leaving the library profession lagging behind. This has impacted upon library service provision. Thomas et al. (2010) asserted that these challenges are posed by the application of digital literacies which are manifested in many forms or notions. These include digital repositories, open access, user-centric services (e-learning, e-teaching, e-information literacy, orientation programs, MOOCs, webinars), web-based library services and the application of social networking.

With major changes as stipulated above, research suggests a number of organisational and instructional factors impede librarians from receiving training. These include low budget allocations to staff development, very busy schedules at work limiting training time, lack of top management support, lack of clarity from instructors delivering training and an inability to re-access teaching material upon training completion whenever needed. It is therefore crucial for librarians to find better and more affordable training opportunities to keep abreast of the ever-changing technological applications in library operations.

The introduction of microlearning as a format for staff training can be used to overcome the above-mentioned drawbacks to librarians' training. According to Skalka & Drlík (2018), microlearning is a term that has been used in many aspects of learning, didactics, and education. It deals with very small content units and narrow topics. It offers a new way of designing and organizing learning i.e. learning in small steps and small units of content, with structure and classification created by the learner. Microlearning can be defined as training delivered in a bite-sized format involving short-term learning activities and small learning units which enable individuals to be in control of what they're learning whilst meeting learning outcomes (Job & Ogalo, 2012; Kovachev et al., 2011). It enables

learners to access content more easily in specific moments and conditions of the day and is often a single topic, limited in length, consumed quickly, and often limited by software or device (Job & Ogalo, 2012).

Microlearning can deliver more personalized and relevant information on a need basis. By using microlearning to deliver learning skills, librarians will be able to choose only what is most relevant to their job and current need to get a task done and/or experience level eventually creating a personalized experience. This will empower librarians and drive productivity by expanding access to focused and relevant content. With the large amount of information librarians are expected to know to be effective at work, microlearning will contribute to building capabilities by letting them engage with what they need to and easily look up the rest.

Literature Review

Current skills needed by librarians in academic libraries

Librarianship is a labour-intensive profession and to be able to provide effective and efficient service requires a lot of skills and well-trained staff. Abban (2018) pointed out that libraries have been part of a major information revolution for more than a decade and must rethink all their functions, services and their organizational structure. The extensive use of digital literacies in the university libraries, especially the growth of the internet together with the availability of online resources, has impacted significantly on the knowledge and skills requirements for librarians working in this digital environment (Ahmed & Yesmin, 2019). While library schools are the starting point for all information professionals to learn about the organization of information, the formal educational system (library school) does not adequately teach *specific* job skills and those who want to become specialized librarians need more tailored training, as they will serve a professional clientele with specialized needs (Santra, 2007; Sanyal & Hisam, 2018).

In the 21st century, the World Wide Web and other technological innovations have forced academic libraries towards an online existence (Khan & Begum, 2016). Their opinion is that because of digital revolutions, academic librarianship has experienced considerable changes in its organizational structure. With technological advancements and the changing learning environment, librarians are providing borderless information services and are now expected to acquire skills and expertise in the use of digital information and management and online databases. In addition, Ahmed and Yesmin (2019) noted that librarians are not only expected to master information technology and digital environment but also to take the role of educators who build users' capabilities to access various online information resources. A number of researchers found that online searching skills, web design, use of social media, information technology and software troubleshooting skills were essential technical skills needed for today's librarians (Haddow, 2012; Ocholla & Shongwe, 2013). These skills are emphasized in job requirements as more information services, particularly in academic and research environments, become digitally based or e-access and e-service enabled (Haddow, 2012; Ocholla & Shongwe, 2013).

Chukwu et al. (2019) also mentioned roles performed by librarians in the present digital age as; information broker, educator, researcher, subject expert, global information provider, resource manager all of which require different and ever-expanding skills sets. They were of the view that the responsibility of the librarian and information scientist has increased regarding packaging and repackaging of information, electronic publishing, advising users on how to identify relevant electronic sources. Barbuti et al. (2019) emphasised the need for libraries and their librarians to reinvent their models, ways of working, and techniques. The risk of a digital competencies gap is high. Library staff, researchers, and users need more training in order to be able to cope with new and different topics: digital information management, sharing, enhancement and preservation, data access, blockchain- a digital record of transactions, text and data mining, etc.

Librarians training needs assessment

Brown et al. (2015) stated that when designing training one needs to consider both the background of the librarian and the details of the expanded role they are expected to play. For librarians to be able to cope with the emerging trends in teaching, learning and research, there is the need and importance for constant and relevant training and development activities (Asante & Alemna, 2015). This importance is emphasized by Mathew and Zacharias (2016) who pinpointed the advantages of ongoing training as improving service quality, decreasing labor costs, increasing productivity and profitability, and more effectively managing workforce diversity.

Determining the training needs of librarians prior to attending training is the initial step in guaranteeing that librarians receive training that suits their needs and that will have a great impact on service provision in the library. This can be done by conducting a pre-training knowledge audit and post-training evaluations (Boateng & Lamptey, 2018). Training must be addressed in such a way that it covers the librarians' performance-development needs and is in accordance with their job descriptions.

Dang Kum et al. (2014) stressed that both the employee and the employer have to work together in order to determine the employees' knowledge gap. They must also identify the training method which exerts an impact on the job so that he/she can be trained in order to fill that particular gap. The employee should be granted the responsibility to make decisions regarding his/her training, while employers should provide their employees with opportunities to improve their foundational skills so as to enable them to cope with more complex situations.

Effective training and development programs should be conducted systematically and objectively. The training needs assessment is the building block of a training program. It is in this phase that answers to questions like who must be trained, what training is required, when should training occur, where should the training take place and of what

form will the training be, are answered (Kavita, 2007). A training needs assessment helps to identify if the librarian deficiency can be corrected through training or not. Gebeyaw (2016) defined need assessment as a method used to estimate deficiencies, any effort that attempts to determine need and effort that gauges gaps and insufficiencies. It is a method of determining if a training need exists, and if it does, what training is required to fill the gap. Training needs are those aspects in which a librarian is lacking attitude, aptitude, knowledge, and skills. Training must be provided not only for doing the present job but also for acquiring the desirable extra skill or knowledge for development in the future (Gebeyaw, 2016).

Adeniji et al. (2012) opined that human resources are the key to sustainable library services and that when the services of any library are evaluated, the staff of that library is indirectly evaluated. According to Boateng & Lamptey (2018), nowadays librarians' tasks have broadened with added responsibilities placed on them by the demands of the diverse research needs of the clients. They are challenged to be open-minded and approachable to queries while knowing how to satisfy the information needs of the client. There is the need to have efficient and dynamic personnel that can translate the objectives of the library into reality.

Brown et al. (2015) emphasized the need to have continual in-service segments of training to provide ongoing skills development. These segments can be in the nature of formal (tertiary) education, training courses (in-house or externally provided), and informal learning that is either self-directed or supervisor/peer-assisted. In support of the above statement, Santra (2007) depicted one path of learning for librarians is to apply the concepts of informal, self-directed, lifelong learning to their own careers.

The microlearning technique is one of those self-directed learning avenues that can be used to equip librarians with the conceptual skills to develop creative solutions to information management problems. Microlearning is a technique that can be used to train

librarians while on the job. Job & Ogalo (2012) highlighted that microlearning is the new way of responding to the necessity of work-based learning, lifelong learning, personal learning, and much more. It has the potential to be more successful due to its perfect combination of small chunks of learning content along with the flexibility of technology (Jomah et al., 2016). Microlearning is being used as a technique responding to the needs of growing learners and workplace complexity. As technology changes more quickly, it is allowing us to incorporate microlearning faster than any other transformation in our approach to work-based and corporate training. It is a way of responding to the growing need for lifelong learning or learning on demand.

With the continuing budget cuts in academic institutions, less time devoted to training, changing roles of librarians, and complex library users, it is crucial for librarians to find better and more affordable training opportunities to keep abreast of the ever-changing technology. The introduction of microlearning as a format for staff training can be used to overcome the above-mentioned drawbacks to librarians' training.

The present study sought to find out the current perceived training needs of librarians so as to design microlearning training courseware to enable them to access and re-access training material whenever needed.

Research aim and research questions

The main objective of the present study was to determine the current training needs of librarians in the selected Tanzanian academic libraries with an aim of developing microlearning courseware intervention for training. The following questions were investigated: What current ICT skills do librarians have that support the use of microlearning for training purposes? What is the perceived knowledge and skills need gap among librarians? What are the perceived benefits of training for librarians? What are the librarians' preference for microlearning? What are the barriers for librarians to receive training?

Methodology

To answer the research questions, a 5-point scale, self-administered questionnaire with validated measurement items was adapted and used to collect data from six academic libraries in Tanzania. By using tools such as surveys and skill assessments, a good understanding of the professional development needs of the librarians was obtained and can be used for planning effective training (Crompton et al., 2015). The measured factors included, current ICT skills, perceived knowledge and skill gap, perceived benefit to training, preference to microlearning and perceived barriers to training. The reliability of the scale instrument was calculated using Cronbach's alpha (α). The reliability coefficient results for the scales used can be seen in Table 2. Exploratory factor analysis was conducted for the construct validity of the instrument. Because only one method of data collection was used, the questions were designed such that the respondents were not required tell more than they know and the task of answering the questions matched the capabilities of the respondents. This ensured the respondents' motivation to undertake the study and the ability to provide accurate answers. This qualified the minimization of issues of common method bias.

The total population for the study was all 138 librarians who worked in the selected academic libraries. The participants were informed about the voluntary nature of the survey participation and anonymity was ensured. Ninety-five (95) librarians in total filled in the questionnaire giving a response rate of 69%. The data were analysed using SPSS and descriptive statistics were used to measure different variables. [Table 1 near here] [Table 2 near here]

Results

As stated above data were analysed using SPSS and descriptive statistics were used to measure different variables in line with the research questions. The results section is presented according to the order of the research questions.

RQ1: What are the current ICT skills held by librarians that support the use of microlearning for training purposes?

Three categories of skills were identified to be of relative importance to determine the current ICT skills held by librarians. These categories were basic computer skills, library operational ICT skills and use and access to electronic resources skills. Librarians (M=4.06, 48.4%) indicated owning a high level of ICT skills in internet use i.e. ability to use the internet for e-mail, research, downloading and saving materials alongside also having a high level of information retrieval skills (M=3.86, 38.9%); a crucial skill in service delivery. The librarian's current ICT skills level is a good indication for the integration of microlearning into their training activities since having basic ICT skills enables one to be able to access and re-access training material whenever needed and from wherever they are stored. The results are represented in Table 3. [Table 3 here]

RQ2: What is the perceived knowledge and skills need gap among librarians?

To gather information about librarians' knowledge and skill gap, two questions were asked. The first question was about how librarians determine their need for training in which 69 (72%) indicated presence of new trends in the profession (M= 4.57) while 66 (69.5%) stated that they need training in order to get familiar with new technology at work (M= 4.49). In addition, (M= 3.9, 43.2%) librarians indicated a need for training when they received a low rank during performance appraisal and (M=4.1, 43.2%) when they encountered difficulty in completing a given task. More results are shown in figure 1 below [figure 1 here].

The second question was about ranking their degree of current knowledge alongside their training needs. Analysing the degree of current knowledge alongside their training need

enabled the researchers to easily determine the most needed and urgent skill to be trained first. There was a total of four categories of skills. The first of these was *ICT and technical skills*. Significantly, results show that while librarians indicated a high ICT skill level, there is a 90.5% indication of very high need for training librarians on database management (M= 4.07) and website designing (M= 4.07). The librarians lack of knowledge on advanced computer skills implies a great need for training (M=3.91, 44.2%). Other skills results are shown in figure 2 below [figure 2 here].

The second category was on skills related to *online resources skills*. There were no significant mean differences in the need for training on open access (M=3.66, 31.6%), e-journals (M= 3.66, 32.6%), and e-books (M= 3.73, 32.6%) against the current knowledge observed by librarians. This shows no urgency in training in these specific skills. However, for the rest of the skills, librarians showed a significant mean difference when compared to training needs, taking an example of current knowledge on online databases (M= 3.48, 18.9%) and training need on online databases (M= 3.92, 42.1%). Further results are represented in Figure 3 [figure 3 here].

The third category was *information storage and retrieval skills*. The majority of the librarians had a good level of knowledge and skills of this category but still indicated a high need for training. A majority, 83.2% (M= 3.56) of librarians indicated having a good level of knowledge/skill on information organization and storage while at the same time 90.5% (M= 3.85) indicated a high need for training on the same skill. In addition, 88.5% of the librarians showed having a good level of knowledge on searching databases and online resources and 83.2% showed a high need for training on searching databases and online resources. More results are shown in figure 4 [figure 4 here].

The last category was on *library management systems (LMS).* It was observed that these specific skills are highly needed by majority of librarians. Detailed results are shown in figure 5 [figure 5 here].

RQ3: What are the perceived benefits of training for librarians?

The importance of training cannot be over emphasized. The study investigated skills and job-related benefits and when the librarians were asked to rate the importance of training based on those benefits, majority of the respondents strongly agreed that training is beneficial. With skills related benefits, librarians (80.0%) indicated that training keeps them up to date with new trends in the profession while with job-related benefits, librarians (74.7%) indicated that training helps them build their capacity to respond to the needs of the users. Further results are shown in table 4 [table 4 here].

RQ4: What are the librarians' preference for microlearning?

In order to determine the librarian's preference for using microlearning as a training technique, the study first assessed what training formats were most preferred by librarians. A majority (88.4%) of the librarians preferred face-to-face (M= 4.4) and workshop/seminar setting (M= 4.29). This could be because these are the most used and the most familiar formats. This finding is however contrary to findings related to preference to microlearning which indicated majority of the librarians preferred using microlearning for training. This indication was probably due to awareness made to the librarians on the characteristics of microlearning. What was also interesting was that 64.6% (M= 3.69) of the librarians preferred using learning technologies for training. These learning technologies included Webinars, MOOCs and microlearning to mention a few. Detailed results are presented in figure 6. The librarian's preference for microlearning results are also represented in table 5 with the majority preferring being trained using microlearning courseware. [figure 6 and table 5 here]

RQ5: What are the barriers for librarians to receive training?

The study sought to investigate hinderances to librarians accessing training. Data were collected against three sets of barriers i.e. organizational, instructional and personal barriers that were foreseen to prevent librarians from receiving training. Librarians

indicated that organizational barriers such as no transparency and fairness in selecting employees for training (42.1%), lack of prospects for training (40.0%) and organizational culture not supportive of employee training (39.0%) hinder librarian training the most. As for instructional barriers, it was interesting to observe 46.3% of participants did not agree that the lack of flexibility to learn anywhere and anytime was a limiting factor to training. This is supported by the fact that 88.4% of the participants preferred being trained in a face-to-face manner. Librarians (29.5%) also expressed that training usually takes too long to acquire a certain skill which was a limiting personal barrier to training [table 6 here]

Discussion

The study investigated the perceived training needs of librarians in Tanzanian academic libraries aimed at introducing microlearning intervention to training. This discussion will be based on the study objectives.

Current ICT skills held by librarians that support the use of microlearning for training purposes

The findings show that 47.2% were of the age between 26-35 years. These are Generation Y employees who easily accept new technology since they have been born into a technology-rich contextual environment and have a high technological literacy (Naim & Lenka, 2018). The introduction of microlearning as a training technique is foreseen to be accepted rather effortlessly. It is no wonder, therefore, that the results show that librarians have sufficient basic ICT and library operational ICT skills and the use of and access to electronic resources skills to tackle day to day library activities and operations. These basic ICT skills will facilitate the use of microlearning for training because microlearning is accessing and re-accessing learning material anytime anywhere with the use of electronic devices. The relevance of determining the level of ICT knowledge and skills among librarians in preparation for introducing new technology cannot be

overemphasized. Librarians in this study indicated a need of more training on database management, institutional repository, and digitization of materials. The study ==revealed== that librarians especially administrative librarians have deficits in these skills to some degree as a result of them only attaining library qualifications when what they now need to meet new technological demands is the extra qualification afforded by an ICT related degree.

The perceived knowledge and skills need gap among librarians

The library profession has seen a great shift of service operation from a traditional library setting to a more digital oriented library in the past decade or more. The presence of new technology and new trends in the library profession have led to a need for further training among the librarians. Suhasini and Suganthalakshmi (2014) stated that organizations are using a blend of different methodologies to facilitate learning and training with a particular interest in electronic learning.

ICT and technical skills: A majority of the librarians indicated they are quite knowledgeable on basic ICT skills but still need training on database management, website design, advanced computer skills and Web 2.0 skills. Researchers ==have== emphasized that librarians must furnish themselves with new technological innovation so as to realize desired organizational objectives and also lay the foundation to serve the users of tomorrow (Ezema & Ugwuanyi, 2014; Kaur & Gaur, 2017). The study findings are ==in line with those of other studies which suggest== that librarians need to plug into the information superhighway and exploit the technology to achieve the maximum benefit for the organization and for the users. They must update and upgrade their knowledge and skills so as to work in today's changing information world.

Online resources skills: A major skill librarians need updating is on digitizing library materials, institutional repositories, and online databases. The goal of updating is to nurture and maintain an adequate supply of skilled professionals who are motivated to

provide effective digital library services. This advantages the library by opening up new approaches for technology usage in finding and managing information resources.

Information Storage and Retrieval skills: The sole purpose of a librarian's job is to deliver accurate and timely information to the right user, to identify the information relevant to the areas of interest of the target users' community and to analyse the contents of the resources or documents. The study found that the librarians did not have sufficient skills on skills of records management and archiving, information organization and storage and evaluating information and its sources and highly needed to be trained on these skills. When carrying out this activity, librarians encounter problems because in the web environment the size, volume, and variety of information sources are growing rapidly and virtually everybody in the world can post anything. Finding information from credible sources is then of paramount importance. The study proposes that these librarians are equipped with necessary searching and storage techniques so as to fulfil their users' needs.

Library Management Systems skills: Librarians need to keep transforming periodically to challenge the ever-changing environment in which they work. The integration of digital technologies in library operations have given rise to library management systems (LMS) that perform almost 100% of library operations nowadays. The biggest advantage of these systems like any other is to facilitate quick and accurate information retrieval for library users and the ease of use and convenience to the users. Findings suggest that the population in this study is in dire need of training in library information skills. This supports the views of (Buwule & Ponelis, 2017) who stated that the first level of change in using LMS is reskilling. These librarians must personally embrace the required skills that are needed to use LMS to offer services that can positively transform society. Reskilling automatically calls for high levels of creativity and innovation among librarians. Linking LMS to e-learning platform e.g. Moodle was the training need most

identified by the librarians followed by running the online public access catalogue (OPAC) on LMS and database management. Garcia and Barbour (2018) stated that the initiation of online learning platforms has called into question the need for brick and mortar libraries and librarians have seen not only new demands on their skills but changes in the daily activities they must perform.

Perceived benefit for training

In order to find relevance in training librarians, the study measured the importance of training to the librarians. A majority (73.7%) of the librarians strongly agreed that training enables them to gain more skills and knowledge. In addition, training and development programs can also reduce the stress that employees feel when they are not trained properly and thus increase workplace engagement and employee retention. Training also has benefits for the organization in general. To support this, Jaworski et al., (2018) stated that training can have a significant impact on reducing employee turnover and that organizations should consider the cost of not providing training or providing limited training for their employees. For this study, the indication and willingness of employees to receive training will reduce the turnover of library staff and other forms of resistance among employees, increase employee motivation, increase capacity to adopt new technologies and methods such as using microlearning for training which will enhance the benefits of training and eventually decrease the cost of training employees.

Barriers to training

The study identified four major barriers to training. First, low budget allocation for training which makes librarians not to request to go for training knowing that they will be denied the opportunity due to limited funds. Second, there is no transparency and fairness in selecting employees for training which leads to challenges such as favouritism in an organization and seriously demotivating employees to request training . Third, the lack of prospects for promotion. This indicates that when employees do not see an

opportunity of being promoted to a role that will require them to apply gained knowledge and skills from the training offered, they may get demotivated to learn. And lastly organizational culture not supportive of employee training.

In order to overcome these barriers, the study proposes the introduction of microlearning for training as this will greatly eliminate these barriers. With the use of microlearning, all employees have access to training courseware whenever needed and without any limitations such as budget allocations and employee selections to undertake training.

Limitations and implications

There are some limitations to this study that should be acknowledged. The choice of the study area was limited to only six Tanzanian libraries. This was of special attention for the PhD studies under investigation. The sample size is relatively small which means that the generalization of the results should be taken with caution. The study only focuses on the identification of skills for the integration of microlearning as a training technique. Further research could be conducted to examine how a broader mix of training approaches could be applied in building the skills and knowledge of librarians. The findings can be used as a starting point for more large-scale studies in other sectors that intend to introduce microlearning as a training technique.

Conclusion

This study tackled training needs of librarians for selected academic libraries in Tanzania with the aim of creating a microlearning intervention for training the librarians. The study specifically investigated the following research questions; what current ICT skills do librarians have that support the use of microlearning for training purposes? What is the perceived knowledge and skill need gap among librarians? What are the perceived benefits of training librarians? What are the librarian's preference for microlearning? What are the barriers for librarians to receive training? The study population was 138

librarians and data were collected using a 5-point scale, self-administered questionnaire.

Inclusive findings in past research on training librarians suggest that there is an urgent need to train librarians so that librarians keep abreast of the changing technology. The findings of this study have confirmed those of other studies by discovering the current training needs of librarians amid the current digital literacy trends. However, the presence of rapid technological changes, ever-increasing budget cuts for libraries, and complex library users' needs call for a change in the way librarians equip themselves with new skills and knowledge. Considering these findings, organizations endeavoring to improve librarians training outcomes must ensure that appropriate and continuous training is provided which will help transfer learned knowledge and skills and provide organizational support to librarians. Continuous training can be achieved using the microlearning approach by designing training microunits and these training related microunits will facilitate better transfer of training and increase librarian's skill set. Conventional education for working-class personnel has brought about many drawbacks to training staff and technological innovation has been a way through which staff has received training. Microlearning being a new concept has paved the way into training and development rapidly and has overcome a number of previous barriers.

Disclosure statement

No potential conflict of interest was reported by the author

Word count

6389

Abban, S. (2018). Training and Development of Library Staff: A Case of Two

University Libraries in Ghana. *Library Philosophy and Practice (Ejournal)*, 1794.

https://digitalcommons.unl.edu/libphilprac

Adeniji, M. A., Babalola, G. A., & Adeniji, S. E. (2012). Workers training programmes

in two University libraries in Nigeria. *Library Philosophy and Practice*, 1–10.

https://digitalcommons.unl.edu/libphilprac

Ahmed, S. M. Z., & Yesmin, S. (2019). Information Skills of Librarians Working at

Public Universities in Bangladesh : A Task-Based Analysis of Pre- and Post-

Training Performance Scores Information Skills of Librarians Working at Public

Universities in Bangladesh : *International Information & Library Review*, *0*(0), 1–

8. https://doi.org/10.1080/10572317.2018.1550319

Anlesinya, A. (2018). Organizational barriers to employee training and learning:

evidence from the automotive sector. *Development and Learning in Organizations*,

32(3), 8–10. https://doi.org/10.1108/DLO-03-2017-0022

Asante, E., & Alemna, A. (2015). Training and Development Issues: Evidence from

Polytechnic Libraries in Ghana. *Library Philosophy and Practice (e-Journal)* .

http://digitalcommons.unl.edu/libphilprac/1221

Bamidele, I. A., Omeluzor, S. U., Imam, A., & Amadi, H. U. (2013). Training of

Library Assistants in Academic Library: A Study of Babcock University Library,

Nigeria. *SAGE Open*, *3*(3), 215824401350396.

https://doi.org/10.1177/2158244013503964

Barbuti, N., Giorgio, S. Di, & Valentini, A. (2019). The Project BIBLIO – Boosting

Digital Skills and Competencies for Librarians in Europe : An Innovative Training

Model for Creating Digital Librarian. *International Information & Library Review*,

51(4), 300–304. https://doi.org/10.1080/10572317.2019.1669935

Boateng, M. S., & Lamptey, R. B. (2018). *Assessing the Training Needs of Academic*

and Research Libraries Staff in Ghana. *6*(1), 1–7.

Brown, R. A., Wolski, M., & Richardson, J. (2015). Developing new skills for research support librarians. *Australian Library Journal*, *64*(3), 224–234. https://doi.org/10.1080/00049670.2015.1041215

Buwule, R. S., & Ponelis, S. R. (2017). Perspectives on university library automation and national development in Uganda. *IFLA Journal*, *43*(3), 256–265. https://doi.org/10.1177/0340035217710539

Chukwu, S. A. J., Nkeiru, E., Ngozi, N. M., & Ngozi, C. J. (2019). The librarian in the digital age: A preferred nomenclature, perceptions of academic librarians in Imo State Nigeria. *Library Philosophy and Practice*, *2019*(March 2019).

Crompton, H., Olszewski, B., & Bielefeldt, T. (2015). The mobile learning training needs of educators in technology-enabled environments. *Professional Development in Education*, *42*(3), 482–501. https://doi.org/10.1080/19415257.2014.1001033

Dang Kum, F., Cowden, R., & Karodia, A. M. (2014). The impact of training and Developemnt on Job Performance. *Singapolean Journal of Business Economics, and Management Studies*, *3*(3), 1–34.

Ezema, I. J., & Ugwuanyi, C. F. (2014). Skills Requirements of Academic Librarians for the Digital Library Environment in Nigeria: a Case of University of Nigeria, Nsukka. *International Journal of Library and Information Science (IJLIS)*, *ISSN*(1), 2277–3584. www.iaeme.com/IJLIS.asp

Garcia, M. A., & Barbour, J. B. (2018). "Ask a Professional—Ask a Librarian": Librarianship and the Chronic Struggle for Professional Status. *Management Communication Quarterly*, *32*(4), 565–592. https://doi.org/10.1177/0893318918776798

Gebeyaw, Y. (2016). *Employees Training and Development Practices : The case of Pharmaceutical Fund and Supply Agency* (Issue May). S. Mary's University.

Haddow, G. (2012). Knowledge, Skills and Attributes for Academic Reference

Librarians. *Australian Academic and Research Libraries*, *43*(3), 231–248.

https://doi.org/10.1080/00048623.2012.10722279

Ibegbulam, I., & Eze, J. U. (2016). Training needs of paraprofessional library staff in

university libraries in South-East Nigeria. *Library Management*, *37*(8/9), 482–495.

https://doi.org/10.1108/LM-03-2016-0019

Jaworski, C., Ravichandran, S., Karpinski, A. C., & Singh, S. (2018). The effects of

training satisfaction, employee benefits, and incentives on part-time employees'

commitment. *International Journal of Hospitality Management*, *74*(October 2017),

1–12. https://doi.org/10.1016/j.ijhm.2018.02.011

Job, M. A., & Ogalo, H. S. (2012). Micro learning as innovative process of knowledge

strategy. *International Journal of Scientific & Technology Research*, *1*(11), 92–96.

http://www.ijstr.org/paper-references.php?ref=IJSTR-1212-5582

Jomah, O., Masoud, A. K., Kishore, X. P., & Aurelia, S. (2016). Micro Learning: A

Modernized Education System. *BRAIN. Broad Research in Artificial Intelligence

and Neuroscience*, *7*(1), 103–110.

https://www.edusoft.ro/brain/index.php/brain/article/view/582/627

Kaur, R., & Gaur, R. (2017). ICT Skills and Competencies for LIS Professionals in

Digital Environment. *International Journal of Research in Engineering, IT and

Social Sciences*, *07*(06), 92–95.

Kavita, G. (2007). *Project on improvement of local administration in Cambodia:

manual on training needs assessment*.

https://www.jica.go.jp/project/cambodia/0601331/pdf/english/3_TNA_01.pdf

Khan, A., & Begum, H. (2016). Training Needs Analysis on Leadership Skills of

University Librarians in Pakistan. *PUTAJ – Humanities and Social Sciences*, *23*(2),

87–102.

Kovachev, D., Cao, Y., Klamma, R., & Jarke, M. (2011). Learn-as-you-go: New Ways

of Cloud-Based Micro-learning for the Mobile Web. *Advances in Web-Based Learning - ICWL 2011 - 10th International Conference*, 51–61. https://doi.org/10.1007/978-3-642-25813-8

Mathew, G. A., & Zacharias, S. (2016). A Conceptual Overview on Relationship between Employee Attitude towards Training and Organizational Commitment. *3rd International HR Conference*, *3*(1), 73–83.

Naim, M. F., & Lenka, U. (2018). Development and retention of Generation Y employees: a conceptual framework. *Employee Relations*, *40*(2), 433–455. https://doi.org/10.1108/ER-09-2016-0172

Ocholla, D., & Shongwe, M. (2013). An analysis of the library and information science (LIS) job market in South Africa. *South African Journal of Libraries and Information Science*, *79*(1). https://doi.org/10.7553/79-1-113

Okoye, M. O., & Okoye, C. N. (2015). Strategies for enhancing capacity building among academic librarians in South-. *Review of Information Science and Technology*, *1*(1).

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Annual Review of Psychology*, *63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Santra, N. (2007). Academic medical librarians in Malaysia: What roles do they play? *Malaysian Journal of Library and Information Science*, *12*(1), 83–96.

Sanyal, S., & Hisam, M. W. (2018). Impact of Training and Development on the Performance of Employees - A Comparative Study on Select Banks in Sultanate of Oman. *International Journal of Scientific Research and Management (IJSRM)*, *06*(03), 191–198. https://doi.org/10.18535/ijsrm/v6i3.em02

Skalka, J., & Drlík, M. (2018). *Conceptual Framework of Microlearning-Based*

Training Mobile Application for Improving Programming Skills (pp. 213–224). https://doi.org/10.1007/978-3-319-75175-7_22

Suhasini, R., & Suganthalakshmi, T. (2014). Emerging Trends in Training and Development. *International Journal of Scientific and Research Publications*, *5*(1), 2250–3153. www.ijsrp.org

Thomas, V. K., Satpathi, C., & Satpathi, J. N. (2010). Emerging challenges in academic librarianship and role of library associations in professional updating. *Library Management*, *31*(8), 594–609. https://doi.org/10.1108/01435121011093379