Information Literacy Delivery in Tanzanian Universities: An Examination of its Effectiveness

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Abstract

This paper presents the findings regarding information literacy (IL) delivery) in four Tanzanian universities in terms of IL content and delivery methods and their effectiveness. Based on a questionnaire survey of librarians and undergraduate students, the study found that the main IL teaching methods used include lectures, web pages and seminars, while content covered in IL sessions include information search skills, use of library facilities, information evaluation, and use of information sources. However, it is concluded that because of a number of factors, including lack of clear IL policy, inadequate time, the teaching of IL as stand-alone programme on voluntary basis, and non-involvement of teaching staff, the current IL delivery approach is not effective for imparting adequate IL skills. A new IL delivery approach that addresses the identified weaknesses is therefore recommended.

Keywords

Information literacy, teaching methods, evaluation, universities, Tanzania

Introduction

Since the 19th century, librarians have been engaged in teaching people how to use the library and its resources using, various rubrics such as library orientation, bibliographic instruction, information research skills, user education, etc. (Kaufman 1992). In the early years, librarians' emphasis was given to bibliographic instruction, later to user education, and more recently to problem-based learning, which has information literacy (IL) as its core (Hepworth, 2000). Through information professionals, the consciousness of librarians and other educators about IL significance has spread around the world mainly as a result of the technological development of the 21st century that has propagated information proliferation, both in terms of quality and quantity (Bruce and Candy, 2000). This situation has created a challenge in terms of the knowledge and skills that people should possess, in order to handle and use information effectively.

In response to this challenge, professionals in library and information science reconfigured the library skills instruction of the 1960s into a research framework they called information literacy (IL). Today, IL has thus grown, gained strength and recognition world wide both in educational institutions and workplaces, and is considered as an important tool needed by all information users, in order to empower themselves with skills needed for life-long learning and to make them competitive in a global information age. The importance attached to IL has led many education institutions including universities, colleges and schools to introduce IL programmes that would equip students with adequate knowledge and skills for being effective information users. Since most of IL activities involve the information domain of which librarians are experts, most of IL programmes and initiatives in many institutions have been initiated or introduced under the influence of librarians.

This article reports the state of IL delivery in four Tanzanian universities and discusses its

effectiveness in imparting IL knowledge and skills among students. Measures that can lead to further improvements of the IL programmes are also suggested.

Research Problem and Objectives

In Tanzania, as in other developing countries, it is commonly observed by librarians and other information professionals that most information users, especially students, have information skills deficiencies. Students attend universities and other higher learning institutions knowing very little or nothing about the basic library use and information search skills, computer-related skills and other information resources use skills in general. Consequently, students lack the information knowledge and skills necessary to effectively comprehend what they require in order to meet the information needs of their day-to-day academic pursuits. The main reason behind this situation is the poor base of library systems, including school libraries in most developing countries, both in rural and urban centres. A number of studies concerning school libraries in Africa, including those by Dike and Amucheazi (2003) and Obajemu (2002), report poor library resources generally, as well as non-existent or poor school library facilities and services in Nigeria and many other African countries.

The problem of inadequate information and knowledge skills is exacerbated by the fact that many African universities lack meaningful programmes geared to improve the level of information skills education (Mgobozi and Ocholla, 2002). This situation has a detrimental effect on the development of independent learning skills essential for successful educational development among students. In order to remedy this problem, universities and other learning institutions are conducting various programmes to help students and other information users, to become competent and effective information users.

As no comprehensive study had previously been undertaken to assess the nature and forms of library instructions/information literacy programmes in Tanzanian universities, this study was conducted in order to fill this gap. This article emanates from a broader study that was under taken to critically investigate the status and practices of IL as a means for imparting and acquiring skills for effective teaching

and learning in Tanzanian universities. The study was undertaken with the main objective of coming up with best strategies that can be adopted by higher learning institutions in Tanzania to improve or develop effective IL programmes to assist students to gain the knowledge and skills necessary for life-long learning in the contemporary information environment. A more specific objective of the study was to identify and evaluate the types and forms of library instruction (as an aspect of IL) being practised in the universities under study.

Literature Review

The concept of IL has been used primarily in higher education, although it has started to diffuse in other places such as workplaces. Since the 1990s, some IL scholars have come with studies and theories that underpin IL. In the past, the approach to IL has frequently been narrowly skills- and sources-based in a way that focused on equipping and aiding students to acquire skills in using a particular library and its specific sources or tools (Mutch, 2000; Eisenberg and Brown, 1992; Kuhlthau, 1987). This approach has been criticised by a number of authors including Bruce (1997) and Kuhlthau (1987). For example, Kuhlthau (1987) points out that this approach had disadvantages in the difficulty of transfer to other situations of information seeking.

Kuhlthau (1987) asserts that the theoretical base for library instruction is the one that combines learning theory, information seeking behaviour and a broader view of library skills. Essentially, Kuhlthau's IL theory is a combination of cognitive science and constructivist learning theory drawn from views of other scholars like Dewey (1933), Kelly (1963) and Bruner (1973; 1986). In principle, approaches to IL teaching are now influenced by both learning theories developed by education psychologists and research in information seeking behaviour. According to Kuhlthau (1987, 2001), new methods for teaching IL are based on cognitive and affective attributes and applied to teaching methodologies that are concerned with problem solving and seeking meaning. For example, the developmental psychology theories, developed by the Swiss biologist, Jean Piaget, contend that children's cognitive abilities develop in a sequence of stages from sensor-motor, preoperational, concrete operations to formal operations. These stages as

conceived by Piaget can be applied in IL programmes.

Kuhlthau (1987) contends that other theories from other psychologists like Kelly, Bruner and Neisser that are also based on sequential learning can be applied in IL programmes. Based on those theories, Kuhlthau (2001) advocates a constructivist approach to learning as being suitable for teaching and learning IL as opposed to the transmission approach or skills approach. Constructivism is a philosophy of learning, based on the premise that learning takes place through reflecting on one's own experience and constructing understanding of the world we live in. Under constructivist teaching, strategies are tailored to encourage students to analyse, interpret and predict information, and to apply hands-on approaches to learning and problem solving.

A constructivist approach is very pertinent in developing IL skills, especially regarding the aspect of independent and lifelong learning. Constructivism involves linking and classifying information in new ways, as well as helping to build personal meaning. Kuhlthau (1989) observes that the information research process is a holistic learning process encompassing the affective experience of students, as well as their intellect. She thus emphasises that IL should be imparted by means of genuine assignments rather than source-based instruction. Information literacy is also influenced by research in information seeking behaviour. Accordingly, research in information retrieval has expanded from studies on text or source representations and search techniques to studies on users.

Modes of Delivery for Information Literacy Programmes

There are different approaches or modes of providing IL programmes that include the following:

Course Integrated Instruction: Course integrated instruction, according to Young and Harmony (1999), is instruction that meets at least the following requirements:

- Members outside the library are involved in the design, execution and evaluation of programme.
- The instruction of the programme is curriculum-based in the sense that it is directly related to students' course work or assignment.
- Students are required to participate.

- Student's work is graded or credit is received for participation.

Because of its effectiveness in imparting IL knowledge and skills, this approach is most preferred by many authors and IL practitioners.

Non-Integrated Instruction: Unlike course integrated instruction, a non-integrated course is not an essential component of any specific course and/or research assignment. Although some members of academic staff may be involved in deciding the content or linking it to particular assignments, this type of a programme, according to Young and Harmony (1999) lacks two aspects:

· Members of academic staff do not actively collaborate with librarians in designing and providing the content.
· Librarians have very little involvement in the design and evaluation of research assignments.

According to Young and Harmony (1999), non-integrated instruction programme can be delivered as either stand-alone presentations or a one-time lecture. *Stand-alone programmes* are scheduled and presented by librarians independent of academic course schedules and assignments. What is taught in these programmes depends on the assessment by librarians of what may be needed by students, such as an introduction to the on-line catalogue, databases and specific resources or specialised topics. Attendance by students is also voluntary, as they do not receive assignments, grades or credit. *The one-time-lecture method* mainly consists of a lecture delivered in class by a librarian invited by a lecturer to come and speak on specific resources or on an information search topic that may be considered important and needed for accomplishing a particular piece of work or an assignment. This type of programme, according to Young and Harmony (1999), is considered to be inadequate for delivering IL skills, because it provides limited chances to include aspects of evaluation and problem solving that are very important in IL programmes.

Web–Based Tutorials: Web-based tutorials are instruction offered through Web interfaces. These tutorials can be used to give assignments or self-paced IL learning modules. The web is an integrated teaching tool that allows students to use the actual resource itself to learn, as well as to conduct their research (Young and Harmony 1999). Web tutorials

range from the simple to the complex, and focus on issues such as online-searching, evaluating web sites, citing sources, information ethics, and broader information literacy topics (Eisenberg, Lowe and Spitzer 2004).

Workbooks: A workbook is a book that provides assignments and activities that users can write in and practise lessons on skills or concepts. Workbooks can be in paper form or electronic (Young and Harmony1999).

Other Methods: Other useful methods that can be used to complement the above approaches and methods include signage, tours, exhibits, slides, tapes and videotapes. Signage, usually paper-based and posted in conspicuous areas, can be used for different purposes, including providing information, instruction and procedures for using equipment like computers, databases and printers. Signage can also be used to provide warning and directions. On the other hand, maps can be used for self-help in locating materials, service points and other important locations in a single building or in multi buildings within larger areas such as a campus (Grassian and Kaplowitz 2001).

Tours can be guided by librarians or be self-guided. Self-guided tours can be provided on paper, electronically by audiotape, CD-ROM or can be Web-based. In most cases, librarians combine the physical tour with a brief introduction to the set up of the library and instruction in the use of various resources that are available (Grassian and Kaplowitz 2001).

Signs that are hand-lettered or computer printed, glossy photos, printed posters, enlarged sample websites and sample research papers constitute an exhibit or display that can become very useful for information users. Slides, tapes and short video instructional programmes with live dialogue and voiceovers are also effective means of instruction to information users. A combination of images and voices are effective tools for capturing an audience's interest (Grassian and Kaplowitz 2001).

It is important to note in conclusion that contemporary teaching and learning practices are now characterised by student-centred, problem-based or inquiry-based approaches. All these approaches have their philosophies drawn from various learning and teaching theories. What needs to be emphasised is that in order to achieve the

maximum IL outcomes, the whole process of IL teaching should be considered as part of contemporary learning theories because, as pointed out by Moore and Page (2002), IL exists in pedagogical terms at the confluence of resource-based learning practice, constructivist and meta-cognitive theories, and derives from the practice of developing thinking skills through modelling and scaffolding. It is therefore important for educators engaged in IL (librarians inclusive) to be knowledgeable about various learning theories. This stance is clearly affirmed by Grassian and Kaplowitz (2001) that:

> *The most effective information literacy instructors are those who are familiar with a variety of learning theories and the teaching techniques that are based on those theories. Effective instructors remain flexible and are willing to mix and match various techniques as needed.*

Methodology

The study involved four Tanzanian universities: University of Dar-es-Salaam (UDSM), Sokoine University of Agriculture (SUA), Iringa University College (IUCO), and St. Augustine University of Tanzania (SAUT). Tanzania currently has a total of nineteen universities of which eight are state owned while eleven are privately owned. By the time of the study in 2006, however, Tanzania had a total of 10 universities out of which five were state owned while the other five were privately owned. The four universities involved in the study were deliberately selected using purposive sampling method. Purposeful sampling was considered appropriate because some of the universities were relatively too new and small to provide adequate information in relation to IL. The selection of the four universities was considered ideal for allowing a balanced representation from two sectors offering university education (state and private), as well as capturing data from two bigger universities in terms of the number of students and staff from each sector.

A survey method of data collection using a self-administered questionnaire was used to collect data from librarians and undergraduate students in the four

universities. A total of 25 librarians who constituted the entire population of librarians with a minimum qualification of a first degree participated in the study. Of the librarians, two (8%) were associate professors, nine (36%) were senior librarians, five (20%) were librarians, and nine (36%) were assistant librarians. In terms of their academic qualifications, seven (28%) had PhDs, 15 (60%) had master's degrees, two (8%) had first degrees, and one (4%) had a post-graduate diploma. In terms of work experience, ten of them (40%) had worked for over 16 years, three (12%) had worked for between 11-15 years, two (8%) had worked for between 6-10 years, while 10 (40%) had worked for between 1-5 years.

The students' sample was obtained using probability sampling techniques. A list of all undergraduate students in each university was obtained, and the names were stratified according to students' faculties and years of study. In each stratified group, a sample was picked systematically by making the selection at a regular interval from a sampling frame.

Using a formula by Krejcie and Morgan (1970) for determining the population sample size, a total of 1123 copies of a questionnaire were administered to the students, while the 25 librarians has their own separate questionnaire. The return rate was 25 (100%) for librarians and 664 (59.1%) for students.

Findings and Discussion

IL Delivery Methods Used

From the responses given by 23 (92%) librarians, the study confirmed that librarians in all four libraries provided IL training to their users. The methods used for IL teaching include lectures (28%), orientation and hands-on practices (21%) each, Web pages (15%), seminars 7(13%), and leaflets by 1(2%). The study established from responses given by 14 (63.6%) librarians that, IL was taught as stand-alone programmes. In addition, the study confirmed by 82.6% of the respondents that delivery of IL was being undertaken by both *academic* and *non-academic librarians*. In Tanzanian university libraries, academic librarians are those who are employed in the academic staff category. Their terms of employment and their promotion criteria are the same as for teaching staff, while non-academic librarians are employed in the administrative staff category.

The application of a combination of different methods as found in the study is a positive trend leading librarians and information professionals in Tanzanian universities towards imparting IL skills in a more effective manner. As pointed out by Thompson (2003), there is no one solution to solve the problem of how to help students improve their research skills, library skills or information literacy skills, rather a combination of approaches need to be applied. However, what is important is to critically look and make an assessment on how and to what extent those methods are applied, in order to create and bring the desired impact to learners in terms of acquiring the necessary IL knowledge and skills. Therefore, in order to nurture and promote IL knowledge and skills among students, it is important to ensure that different teaching methods are used in ways that would bring positive and effective results.

IL Aspects Taught

From responses given by librarians, the study ascertained that there was a relatively good combination of IL aspects that were being covered. Among the list of IL aspects taught, information search skills had more weight by 34%, followed by use of library facilities with 26%. Information evaluation ranked third with 17.3%, while use of sources of information was fourth with 15.4%. Citation and references ranked fifth and lowest with 5.8%.

Although it cannot be stated categorically that one particular IL aspect is more important than the others, it is important to provide balanced training that would enable students to acquire skills in all aspects, so that they can link one particular skill to another because skills are interrelated and interdependent. For instance, for students, the benefits of being information literate will be limited if they are able to search for information from the Internet, but are not able to critically evaluate the information they access. What needs to be stressed here is that in order to provide students with adequate IL knowledge and skills, the coverage for IL teaching should be as wide and in depth as possible.

Assessment and Evaluation

Assessment and evaluation of any teaching and learning programme is very important. Like any other teaching/learning activity, IL needs to be evaluated as a means of determining its success and facilitating continuous effectiveness. The reasons for doing evaluations of various IL activities, according to Cameron (2004), include:

- To establish a base line of students' skills around which IL might be built.
- To assess the effectiveness of particular library instruction sessions or approaches to instruction.
- To determine the impact of library instruction programmes on student IL skills and academic success.

of IL in the universities under study was weak. Out of 25 respondents who were required to respond regarding the presence of IL assessment and evaluation systems, 17 (68%) of the respondents indicated that there was no assessment/evaluation system, compared to eight (32%) who said the opposite (Table 1). However, from eight respondents who confirmed the availability of evaluation system, the study was able to establish the main areas and stages where assessment and evaluation exercise takes place. The summary is as shown in Table 1.

As it can be noted from Table 1, assessment/evaluation of the teaching methods was not done at all. Evaluation and assessment of teaching methods is crucial, because it potentially leads to improvement of IL delivery.

Table 1: Methods, Aspects and Stages for IL Assessment/Evaluation (N = 8)

Method		IL Aspect		Stage	
Examination	3 (37.5%)	Students' skills gained during the programme	7 (87.5%)	During the programme	4 (50%)
Assignments	2 (25.5%)	Students' prior IL skills	1 (12.5%)	At the end of the programme	2 (25%)
Feedback evaluation forms	3 (37.5%)	Teaching methods	0 (0%)	At the beginning of the programme	1 (12.5%)
				Any time	1 (12.5%)

- To generate data with which to communicate with faculty.

Despite evaluation being stressed frequently both in education and library and information science literature, a number of authors, including Young and Harmony (1999) and De Jager and Nassimbeni (2003), have registered their dissatisfaction concerning IL evaluation. Librarians were therefore asked to confirm the presence of system for assessing or evaluating IL activities in their libraries. The study found and confirmed that assessment and evaluation

Awareness about IL Programme and its Effectiveness

Students were required to answer some of the questions, in order to verify some of the responses given by librarians. Students were asked to confirm their awareness regarding the availability of IL training in the use of library resources conducted by their libraries. The results indicated that 328 (49%) of students agreed being aware of the training, while 336 (51%) said they were not aware of the training. The 328 students who confirmed of being aware of

the training were asked to give their views regarding the effectiveness of the training. Out of 328 respondents, only 312 responded to the question, and the results showed that 148 (47%) were of the view that the training was effective, while 164 (53%) were of the view that the training was not effective. The reason indicated by students for effectiveness or ineffectiveness are shown in Table 2.

Table 2: Evaluation of and Reasons for the Effectiveness of Training in the Use of Library Resources (N = 312)

Effective		Not Effective	
Reasons	*Frequency*	*Reasons*	*Frequency*
Provides exposure to library users	89 (28%)	Time spend not adequate	133 (43%)
Provides adequate skills	59 (19%)	Programme not comprehensive	12 (4%)
		Lack of proper programme	7 (2.2%)
		Lack of practice	7 (2.2%)
		Unqualified instructors	5 (1.6%)

Assessment of the Effectiveness of IL Delivery Methods

Lectures: Lecture method is a common and widely teaching method used in different teaching settings. Lecture method is effective for teaching large groups and it becomes more effective when sufficient time is allocated. Some African universities, such as the University of Botswana, combine lectures with other methods to teach IL skills to students in stand alone general education courses.

The condition under which lecture discrepancy occurs is when IL is not taught as stand alone courses or allocated formal time slots in the main university academic timetable, with the result that IL lecture sessions take place outside the timetable on voluntary basis. Such condition means that there would be no assurance of students' regular attendance of the lecture sessions. Consequently, the acquisition of skills by many students is most likely to be inconsistent and incomplete. In order to make lecture method effective for IL delivery, the academic timetable should allocate adequate time periods for IL lecture sessions. Preferably also, IL should be taught as an integrated compulsory programme instead of being taught as stand alone and optional.

Orientation and Hands-on practice: Orientation undertaken during the first week of the new academic year is common in almost all university libraries. However, because of a number of limitations, orientation is not recommended for use to impart serious IL skills. The main purpose of orientation should therefore remain to orientate and familiarise new students with the general library services offered. On the other hand, hands-on methods are considered to be more meaningful, because they provide practical skills for using various resources such as CD-ROM and getting actual experience in using various information tools and computer applications.

However, the study found that this method is hindered by time constraints because IL is not allocated official time in the timetable. Instead, hands-on practice is acquired by students when individual students go to the library to search for some information or during voluntary sessions. Such a system does not ensure that all students acquire the adequate skills. Sufficient time for hands-on practice therefore needs to be allocated in the academic timetable.

Web page Tutorials: Web pages, especially interactive ones, are very useful for imparting IL skills. Students can use them to answer questions and follow some instructions that guide them to do some assignments. In the study, web page method ranked third among various methods used for IL delivery. However, among the four universities during the time of the study, only one university web site had a link to the library web page with IL information. Nevertheless, the information provided under that link was very limited; and therefore, it was unlikely that the information could make effective impact on students' IL skills.

In order to make this method more effective, libraries should provide comprehensive IL information on their web pages. In addition, efforts should be made to make those pages interactive. Such a system can enable IL instructors to monitor and get feedback from users who access the pages.

Seminars and Leaflets: Seminars could be effective if lecturers are compelled, as part of the university academic policy, to allow their students to attend IL seminar sessions when they are organised. However, this was not the case in the universities. As for leaflets, the study did not find any evidence to

indicate that they were being used purposely for transmitting IL skills.

In general, it can be concluded from the study's findings that the current IL programmes being offered in Tanzanian universities need to be more improved. New approaches are required in order to make them more effective for imparting the required IL knowledge and skills.

Toward Improving and Strengthening the IL Programmes

Current Awareness: Current awareness among information users is very important, in order to allow them become aware of various services that are available for them. The study found that 51% of the 664 students were not aware of IL training that was being offered. This was a clear indication of inadequate awareness by students, which also means that a considerable number of students are not benefiting from the available IL training. Lack of current awareness not only affects programmes such as IL, but also may affect other aspects, including utilization of various information resources licensed or subscribed to by the institution's libraries (Buschman and Warner, 2005; Kiondo, 2004).

Although the study found that libraries had a number of posters placed in different areas within the library, most of the posters were not directly intended to provide instructional directives to IL, as they were mainly intended to advertise, publicize, and make library users become aware of various academic, social and political issues such as HIV-AIDS, study and scholarship programmes vacancies, gender, and business issues, etc.

Current awareness for various library programmes such as IL can be harnessed by effective use of posters and leaflets placed on notice boards and at important points such as issue desks, main library entrances, and specific sections.

IL Teaching Scope: IL has borrowed from traditional practices in library instruction, bibliographic instruction and user education. However, unlike bibliographic instruction and other forms of instruction, IL embraces a combination of knowledge, skills and concepts that are learned over time, both in and outside the library (Galvin 2005). IL also underlies education as a whole and everything we do in libraries

and outside libraries to facilitate access to information (Bridgland and Whitehead 2004).

Thus, in order to make IL more meaningful in a way that extends its scope beyond former programmes (user education, library instruction and other forms of instruction), IL programmes should combine skills and competencies such as retrieving, assessing and evaluating, assimilating and creating new knowledge out of the synthesis of information from a variety of information sources. In this respect, skills in the evaluation of information need to be given as much weight as information searching

Involvement of Teaching Staff: Tendencies to confine IL activities within the library, as well as being entirely practised by librarians in isolation without involving teaching staff, are factors that lead to IL not being effective, and consequently, not receiving wide university recognition.

It was established in this study that the involvement of teaching staff in IL activities was very minimal, as only 8.7% of the librarians indicated that teaching staff were involved in teaching or designing content for IL programmes, as compared to 82.6% of the respondents who indicated that IL was undertaken by library staff. Further to this, 72% of librarians were in favour of IL being taught by librarians, the main reason being the IL expertise possessed by librarians. On the other hand, the librarians mostly regarded teaching staff as lacking IL skills.

However, the involvement of teaching staff in IL activities has been cited and emphasized by many authors as a factor that brings success in conducting and delivering IL programmes. According to Asher (2003), collaboration between teaching staff and librarians is essential for effective IL development, planning and delivery of training. This sort of collaboration also serves other purposes, including fostering the sharing of ideas and expertise. Collaboration provides opportunities for exposure to different pedagogies, new teaching and learning techniques, and enables colleagues to become familiar with each other's fields. Also, collaboration allows the two professional groups to contribute their expertise and specialised knowledge to the university curriculum (Hunt and Birks 2004). According to Carlson and Miller (1984), as cited by Hardesty

(1995), "no matter how hard librarians work, without the cooperation and support of teaching staff, IL programmes will be unsuccessful or severely limited." Collaboration, alliances and co-operation between librarians and other educators are the keys to the integration of IL within the total education process (Doskatsch 2003). In other words, IL should have a university wide outlook and acceptance. This situation requires the inclusion and collaboration with teaching staff in all activities pertaining to IL.

Successful IL programmes involving librarians and teaching staff have been reported in other African universities like the University of Botswana and the University of South Africa (UNISA). See for example Yeboah (1999), and Machet and Behrens (2000). It is therefore important for librarians in Tanzania to collaborate with teaching staff, in order to avoid certain negative consequences that may arise from lack of collaboration. For example, it is likely that most of the teaching staff would be reluctant and skeptical to support IL as a university wide education activity if they are not involved in any form. Librarians should therefore avoid envisaging IL as a library preserve that is only fit to be practised by librarians alone. Instead, efforts should be taken to craft IL programmes that are recognized as part of the educational strategy for the entire university, and practiced in collaboration with teaching staff.

Librarians should recognise that although they are experts in IL and other information issues they should be ready to invite the teaching staff to participate in IL activities as long as they are available and are willing to do so. It is in this way that IL can acquire a university wide recognition.

Hands-on Practice: Although the study found that hands-on practice was one of the methods used for imparting IL skills, the lack of opportunity for hands-on practice was among the inadequacies in programme delivery cited by student respondents. This problem results from two conditions: inadequate time allocation, and inadequate number of PCs for hands-on practice. Practical skills can be gained through using various facilities such as CD-ROMs and Internet-connected PCs to practice searching for information from various information sources. In order to achieve the most effective learning environment for IL, according to Blakeslee, Owens and Dixon (2001), the practical context is important

in order to reinforce theory. Librarians therefore need to address the importance of allocating adequate time for hands-on practice, in order to create more room for effective acquisition of IL knowledge and skills among students.

IL Assessment/Evaluation: Hunt and Birks (2004) contend that assessment of student outcomes in IL is most effective when multiple measures are applied. Hunt and Birks (2004) point out further that, as opposed to the old model of teach then test, IL is best assessed for both process and product. Such an assessment helps to give evidence in terms of the library's contribution regarding students' learning that result from gaining IL skills (Rockman 2002). Without producing evidence of what is taking place in IL activities, it will be difficult to justify the importance of IL; hence, the prospects of IL being integrated into the mainstream curriculum and/or requests for funds to run IL activities are most likely to meet stiff opposition from university administration and their structures.

Conclusion and Recommendations

The study established that librarians in the four universities provide some form of information literacy instruction, using a combination of methods including orientation, lectures, hands-on practice and web-page. However, this instruction is not effective enough in fostering the required information literacy knowledge and skills among students, because it is affected by a number of factors including inadequate time, inadequate resources, and lack of clear IL policy. Because there is no official time allocated for IL within the university timetable, IL sessions are undertaken out of librarian's concern, and are attended by students voluntarily. IL problems in the universities under study emanate mainly from lack of IL policy to guide its activities. It is for this reason that IL is treated as a voluntary activity. According to Ojedokun and Lumande (2005), the consequence of IL not being integrated into regular courses and not being timetabled compromises the effectiveness of IL, both in terms of theory and hands-on practice because, IL is not accorded its due importance. As far as this study is concerned, it can be concluded that IL is not yet adequately recognized in the universities as an important learning activity.

In order to improve IL programmes and make them more effective, the more aggressive proactive approach is needed, especially from librarians. Librarians need to promote widespread and deeper recognition of IL in the universities by raising awareness among students, teaching staff, and other institution stakeholders on the importance of information literacy in facilitating teaching, students' formal education, and life-long learning. Sensitization seminars, leaflets, posters and comprehensive IL information published through the university or library website can be used to serve this aspect.

In addition, the following should also be considered:

- Librarians should make efforts to ensure that they involve teaching staff in IL activities, including teaching and designing or proposing IL programme content.

- More current awareness on the existing IL programmes should be strengthened, so as to increase the number of students who can attend them on voluntary basis as they do now.

- IL should be allocated with adequate time and resources, in order to create adequate opportunity to balance cognitive/theoretical sessions and practical skills during hands-on practice. This is taking into consideration that effective IL learning environment is not only influenced by the context of a discipline, but is also influenced by a practical context that reinforces theory. Adequate practice time also reinforces active learning processes among students.

- Evaluation and assessment of IL should be improved, in order to ensure that there is a proper mechanism for evaluating and assessing each teaching method being used.

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