

The teaching of information literacy skills in Botswana's
Community Secondary Schools
A study of Gaborone region

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Research paper

This statement certifies that the following paper is based upon original research undertaken by the authors and that the paper was conceived and written by the authors together. All information and ideas from others is referenced.

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Abstract

The study investigated the teaching of information literacy skills in select Junior Community Secondary Schools (CJSS) situated in the city of Gaborone, Botswana. Data were gathered from a sample of ten teacher librarians via face-to-face interviews with the aid of a five-question interview schedule. The key findings of the study were: (1) respondents had varying interpretations of what constituted information literacy skills, (2) a variety of skills were taught under the rubric information literacy skills; (3) by and large, the teaching of information literacy skills was done by teacher-librarians and subject librarians, (4) the main approaches in teaching information literacy skills involved library orientation and the use of the English Language Period, and (5) respondents cited the three challenges, namely, the absence of an office dedicated to school libraries, an exam oriented curriculum and shrinking financial resources.

Introduction

The past several years have witnessed a daily explosion of information resources and the consequent challenge of using these resources effectively and efficiently. This has also resulted in the rapid and growing importance of information literacy skills in the broad spectrum of the educational arena. The importance of information literacy skills is evidenced by the substantial professional literature that has been generated on the subject. Information literacy skills refers to a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information. Because the contemporary school environment is characterized by an over abundance of information available in a variety of sources and media, students are continuously confronted with the challenge of developing a cluster of abilities necessary to use information effectively. In other words, information literacy skills are now "must competency" for twenty-first students right across the globe and schools are

expected to institute tried and true strategies to integrate the teaching of information literacy skills in the curriculum.

Although there is a substantial body of research extolling the virtues of teaching information literacy skills, the vast majority of these studies focus on developed country context and very few tackle developing country situations. Consequently, we know very little about how librarians, teacher-librarians and subject teacher are doing to make information literacy skills an intrinsic feature of modern day school curriculums. Clearly, this is a gap in the literature that needs to be filled. The objective of this study therefore is to investigate the extent to which information literacy skills are being integrated into the curriculum in Botswana's community secondary schools, i.e. the enquiry seeks to establish the strategies that have been employed to implement information literacy skills competencies within the school curriculum.

Rationale for the study

The subject information literacy skills boasts an admirable four-decade history during which it has attracted a great deal of interest from both researchers and practitioners seeking to better understand; among other things, the value, the mechanics and effectiveness of information handling skills to students and teaching and learning in general.

However, although the impressive contributions of the extant literature are self-evident, the literature has two salient limitations. First, much of the research has focused on higher education students (e.g. universities, colleges and high school students, Herring, 1996). Second, the literature is dominated exclusively by studies that were conducted in developed nations such as the United States of America, the United Kingdom, New Zealand, Australia and Canada to name only but a few. To date, few studies were unearthed which focus on a developing country context and none were found that address the Botswana context. Considerable relevant research on business management in developing countries suggests that the two contexts (developed country context and developing country context) are radically different (see for example; Fubara, 1986; Mrema, 1987 and Elenkov, 1997 for a detailed discussion). As a result of the few studies on information literacy skills developing country contexts, we know very little about the subject as it obtains in these situations. Thus this study sought to address this lacuna in the information literacy skills literature

Review of literature

A thorough review of literature is beyond the scope of this paper for reasons of space and the considerable germane literature that exists on the topic at hand. Instead, we provide a selective review of literature with a view to contextualize our study.

According to several scholars, the concept of information literacy emerged in the 1970s and has since then been interpreted and described in many different ways by different researchers. Rader (1990: 20) defined information literacy as understanding the processes and systems for acquiring current and retrospective information, such as

systems and services for information identification and delivery, as well as the ability to evaluate the effectiveness and reliability of various kinds of information channels and sources, including libraries, for various kinds of information needs and also mastering certain basic skills in acquiring and storing one's own information in such areas as databases, spreadsheets, as well as word and information processing.

Hepworth (Hepworth, 2000a, 2000b) highlights two main approaches to information literacy that are evident: the most common tries to identify discrete skills and attitudes that can be learnt and measured and highlights works of Doyle (1992), and the Information Literacy Competency Standards for Higher Education (ACRL, 2000). The other emphasis the information literate mindset associated with how an individual experiences and makes sense of his/her world, the work of Bruce (1997) illustrates this approach. This analysis seems to reflect to some extent the approaches identified by Bruce (1997) and is described as the behavioural, constructivist and relational approaches to information literacy.

According to the Council of Australian University Librarians (2001:1) information literacy is defined as an understanding and set of abilities enabling individuals to “recognize when information is needed and have the capacity to locate, evaluate, and use effectively the needed information”.

Webber & Johnston define information literacy as efficient and ethical information behaviour involving the adoption of appropriate information behaviour to obtain, through whatever channel or medium, information well fitted to information needs, together with critical awareness of the importance of wise and ethical use of information in society. (Webber & Johnston, 2002).

Boekhorst (2003), from the Netherlands, finds that all definitions and descriptions of information literacy presented over the years can be summarized in three concepts:

- The ICT concept: Information literacy refers to the competence to use ICT to retrieve and disseminate information.
- The information (re)sources concept: information literacy refers to the competence to find and use information independently or with the aid of intermediaries.
- The information process concept: information literacy refers to the process of recognizing information need, retrieving, evaluating, using and disseminating of information to acquire or extend knowledge. This concept includes both the ICT and the information (re)sources concept and persons are considered as information systems that retrieve, evaluate, process and disseminate information to make decisions to survive, for self-actualisation and development.

Information literacy aims to help students to locate materials for particular assignments. It also enables them to develop the ability to make use of the library resources for their information needs. It includes a variety of programmes of instruction, education and exploration, to develop in students the skills to make effective, efficient and independent use of the information sources, library resources and services available to them.

Although the UK had a relatively solid strategy in the 1980s, developments in the 1990s remained quite modest. However, the increase in project-based work in the National Curriculum led to more pupil-centred, resource-based learning in schools and changed approaches to learning and teaching. Some structures were developed for the delivery of information skills and ICTs in the primary and secondary curriculum. For example, Herring (1996) proposed a 'PLUS' model that categorized information skills into four interrelated steps: Purpose, Location, Use and Self-Evaluation. Results of a study of the evaluation of the use of the PLUS model at Ripon Grammar School in England showed that pupils benefited from using a structured approach to project work and saw the model as a useful tool particularly in helping them to plan, organize, and reflect on their own work (Herring, *et al.*, 2002). Developments in the 1990s in the context of information skills in schools in the light of technological developments in the UK have been examined in more detail by Herring (1996).

Information literacy is important because there has been a shift from teacher centered learning to student centered learning (Lwehabura, 1999). The students are, therefore, supposed to make effective use of the library for the assignments given to them by their teachers. It is now clear that the time when students relied entirely on the teachers' notes, without supplementing them with other sources, has come to an end. Atton (1994: 310) says that "education at all levels is now striving to develop the independent learner through a student-centered style of learning". Developing an independent learner needs to be encouraged at all levels of education and in this regard the present researchers concur with Atton. The idea of independent learning must be encouraged from the early stages of learning.

Academic libraries have played an important role in information literacy developments in Europe. Information literacy initiatives in higher education have taken a variety of forms: stand-alone courses or classes, Web-based tutorials, course-related instruction, or course-integrated instruction. Most authors seem to agree that information literacy should be integrated into subject areas (Kemp, 1999; Joint & Kemp, 2000; Rafste, 2002; Town, 2002). Webber & Johnston (2000) differ from many other authors by advocating that information literacy can be treated as a discipline of study in its own right, rather than favouring the curriculum integration model.

There is also a shift towards increasing emphasis on faculty-librarian partnership and implementation of modern ICTs in delivering information literacy courses. There is a considerable experimentation with using ICTs in European higher education institutions in general, sometimes to improve the on-campus learning experience, at other times to deliver distance learning. The general picture is that in most cases institutions are now transferring from a period of rich and mostly bottom-up experimentation to a phase in which institution-wide use of ICT is being encouraged (Collis & Van der Wende, 2002). While the new ICTs are having a variety of direct effects on teaching and learning in universities, there are also a number of other important factors having major influences on higher education. The processes in implementing the Bologna Declaration are having an impact on the development of curriculum structures and quality control attitudes and procedures. The rise in lifelong learning and widening of access to higher education bring in new learners with different previous educational experiences.

Libraries become useless if the users do not make effective and efficient use of them. Lwehabura (1999) emphasizes the fact that lack of meaningful information literacy programmes in many high school libraries contributes to incompetence in the effective use of library resources.

Bundy (1998) is of the view that what is clearly needed to accelerate interest in information literacy by teachers at all levels of education is tangibility and proof that it makes a difference to short- and long-term learning outcomes. Adding to that, Todd (1996: 3) points out that students become constructive thinkers, ask appropriate questions, and see information from a range of sources. Information literate students restructure and repackage the information they find, to create and communicate ideas that reflect their own deep understanding.

In summary, we conclude this review by highlighting a few salient contemporary issues in the literatures on information literacy skills. Some of the current issues are: (1) the link between information literacy skills and academic achievement; (2) new roles for teacher librarians (3) the application of theoretical frameworks that guide educators and practitioners (e.g. the constructivist view) (4) the extolling of the virtues student/child-centered approach to learning.

Methodology

Research setting Background

Botswana is centrally located in the heart of Southern Africa. It is a landlocked country about the size of France or the size of Texas in USA. Botswana has undergone tremendous changes since its independence in 1966. Over the past three and a half decades, the country has transformed from being one of the poorest countries in the world to a middle income country with per capita Gross Domestic Product of \$3000. The country's economic accomplishment can be attributed to the exploitation of mineral resources. Revenue from the abundant drawing resources, complied with fiscal prudence have resulted in Botswana recording successive budget surpluses, thereby enabling the country to achieve rapid economic growth and making it the fastest growing economy in the world.

Consequently, the country has used the proceeds from mineral wealth to develop the education and social sectors. In 1985, the Government of Botswana embarked upon a major programme to increase the basic education in pursuit of UNESCO goals towards universal access to education. A result of this was that government has built a network of community junior schools, the number increasing from 33 in 1985 to 146 in 1991. Presently, the number of community junior schools stands at 209. In line with the recommendations made by National Commission on Education (1993) each school has a purpose built library which houses a variety of information materials although the dominant types of materials are books. Each library is managed by a teacher-librarian, i.e. a qualified subject teacher who also possesses a certificate in school library studies or lately, Bachelor in Library Information Studies. However, because of the paucity of graduate teacher-librarians trained since 1988, the vast majority of the community school

libraries are run by subject teachers without a library qualification, that is, a trained teacher who is given extra responsibilities to oversee the school library. The library is seen as an integral component of the curriculum and a collaborator in delivering quality education. Since the vast majority of the country's primary schools do not have libraries, the community junior school library plays a crucial role in introducing students to the world of libraries i.e. the CJSS school library has the responsibility to embed inculcate a library outline and also foster information library skills. The educational landscape painted above makes CJSS libraries a rich setting to investigate information literacy skills in Botswana.

Research Method

A review of literature reveals that a variety of research approaches have been used to investigate information literacy skills per se in different environments. These range from surveys to observations. Following Yin (1994) and other scholars, a qualitative method involving face-to-face (personal) interviews and telephone interviews were deemed to be the most appropriate data gathering tool. To this end, an interview protocol comprising of four questions was constructed and then internally pilot-tested with a small number of teacher-librarians who were students at the Department of Library and Information Studies taking the course *Organizing Information*, taught by the principal/lead investigator. Essentially, the students were asked to identify any ambiguities in the questions posed by the investigators. Results revealed the need for minor modifications. The final version contained the following questions:

- Briefly provide your interpretation of information literacy skills as practiced at
- List the competencies taught under information literacy skills
- Who teaches information literacy skills at your school
- What approach is used to teach information literacy skills at your school
- What challenges do you experience when teaching information literacy skills

Personal interviews were arranged and conducted with four respondents teacher librarians while the other respondents were asked the very same questions in the interview scheduled via the phone. Face to face interview sessions lasted approximately 30 minutes and were slightly detailed compared to their telephone counterparts. In the table, we present the results of the interviews.

Table 1: Respondents' profile

Name of T/L	Gender & age	Number of students	Years as T/L	Years as teacher	Highest qualification
Zina	F/34	840	0	11	DSE
Lobi	F/37	790	0	14	DSE
Lina	F/33	860	0	10	DSE
Rata	M/40	850	4	14	DSE+CLS
Bata	F/29	850	5	8	DSE+BLIS
Sela	F/21	790	7	10	DSE+CLS
Reba	F/40	790	8	15	DSE+CLS
Lala	M/28	860	4	9	DSE+BLIS
Sala	F/28	840	5	8	DSE
Yenda	M/36	840	7	16	DSE

The table above presents data about the respondents' gender and age, highest qualifications, and experience in teaching and as teacher/librarian. From the respondents, 7 were female whilst only 3 were only males. The average age of the teacher was 35 and the average year as a teacher and teacher/librarian was 4 and 11.5 respectively. Finally, the most frequent qualification was the DSE+CLS followed by those teachers with no library qualification.

What is your understanding of information literacy skills?

Unsurprisingly, this question elicited a variety of answers. The following are some of them:

- Library use and problem solving skills.
- Searching and locating information
- Sorting and presenting information
- Computer and information skills
- Use of various materials in the library
- Use of information in assignments
- Library and information literacy
- Skills in using and evaluating information
- Competence in information usage and knowledge of the role of the library
- Recognizing the role information plays and understanding the function of a school library

Taken together, the answers reveal differences in interpretation of the concept of literature. However, the actual interviews were a running thread of definitions, running across all the definitions i.e. despite the variability in definition, further clarification showed that each respondent gave an interpretation that was in the general habit of the literature on information literacy.

Information Literacy Skills taught

Information literacy skills are portrayed as a cluster of skills ranging from the ability to use information to the evaluation of a variety of information sources. To this end, the second interview question sought to specifically uncover the skills set that characterized information literacy in the respondent schools. The following statements present a portrait of information literacy skills taught in the sample schools:

- Finding information in a library
- Using the library as an integral part of learning
- Learning how to organize and use information in learning and beyond
- Finding information from sources/materials such as maps, atlases, videos and TV
- Doing research in the library
- Developing a library outline
- Solving problems using the library
- Learning the use of the library
- Learning how to conduct project work in the library
- Finding , sifting and integrating information from a variety using periodicals, encyclopedias and other materials

Interestingly, although respondents listed different skills, a close scrutiny of the skills reveals that they fall within the range of the skills set that define in an information literate person (Doyle 1994; Bruce 1994; Moore 1995). For example, we see problem solving, searching using skills being listed by respondents and the same skills feature in the qualities and abilities identified by Bruce (1994) and others.

Who teaches information literacy skills in schools?

A third interview question sought to unearth the individuals involved in teaching information literacy skills in schools. From the literature on information literature skills, three categories of staff are involved in teaching information literacy skills in:

- Teacher-librarian using hour
- Subject teacher using library hour and/or syllabus
- Combination of the above methods

All the participants were unanimous in saying that in their schools, the combined approach was used to deliver information literacy skills. Typically, the teacher-librarian began information skills with library orientation at the commencement of the term for new students. Then in the course of the term, more structured and focused use of the library followed from the teacher utilizing the mandatory timetable slot for the library.

Beyond that, teachers sometimes design classroom activities that involve the use of a variety of library materials.

How are the skills taught?

In schools the penultimate interview question sought to discover approaches employed by schools to impart information literacy skills to students. Responses from the participants elicited for approaches. Below, we describe them:

(a) *Library Instruction Lessons* - All the interviewees indicated that they imparted information literacy skills principally through library orientation instruction sessions offered mandatorily at the beginning of the year for new students i.e. form ones. Teacher-librarians, working in tandem/partnership with the subject teacher in the library committee are assigned a class to teach about the place and function of the library in the school. Also included here is the use of information packages for assignments.

(b) *Course Integrated Instruction* - Likewise, all respondents were unanimous in pointing out that another prevalent approach in teaching information literacy skills was the subject/course integrated project which has curricula components that involve the execution of a project within a library environment. In short, subject teachers design a project which whose completion requires that it be executed within the confines of the library, using a variety of information packages housed in the school media centre.

(c) *English period*: Also, the respondents undisputedly indicated that by and large, the bulk of information literacy skills were taught during the English language period. In all Community Junior Secondary Schools (CJSS), English language is mandatory taken by all students and it is also a requirement that one of the slots allocated to English language class should be used as a library period. Consequently, students pay a weekly visit to the library. During this time, a student is free to use his/her time to read anything in the library. Invariably students use this time to read novels. Thus, it can be argued that this arrangement/approach not only fosters reading skills but embeds a library culture

(d) *Ad-hoc library visits*: Half of the respondents said that ad-hoc i.e. unplanned and use of the library was a common feature when a subject teacher was unable to deliver teaching in class due to some unforeseen circumstances. Students would be sent the history for the duration of the lesson to do anything productive e.g. reading novels, magazines, viewing videos or finding information in the library.

Challenges encountered in teaching information literacy

The final question was aimed at discovering some of the challenges that teacher-librarians encounter when they deliver information literacy skills in schools. Below we report some of the frequently cited challenges:

Lack of a central office to support school libraries

All respondents decried the lack of a central office dedicated and mandated to support school libraries was a big impediment to the teaching of information literacy skills in community secondary schools. They went on to say that there were no “best practices” which could be emulated by teacher-librarians and other stakeholder groups who are striving to embed information literacy skills. Also, the school library is seen as not vital in an examination-oriented curriculum. Similarly, all the respondents indicated that the Junior Certificate (JC) curriculum was heavily oriented towards examinations i.e. while espousing resource-based learning, it tended to emphasize the passing of the examinations by recommending specific textbooks from which exam and answers would only be acceptable. This, they said discouraged the use of other sources of information and heavily encouraged sole dependence on prescribed textbooks themselves.

Shrinking Resources/Doing more with less

Likewise, all the respondents pointed out that, over the past few years, the education sector had consistently experienced reduced budget and that severely impacted on the functioning of the school library. For example, the book fee, an amount given to each student for the purchase of books has been reduced from P30.00 to P20.00, thereby affecting collection growth. Similarly, last year’s devaluation of the pula by 12.5% seriously eroded the purchasing power of the Pula and the recent surge of the domestic inflation to 18.5% has worsened an already bad situation. Other challenges cited by 4 respondents were:

- Resistance to collaboration by subject teachers
- Lack of support from teachers and principals
- Lack of knowledge/understanding by teachers

Discussion

The purpose of this research was to investigate the teaching of information literacy skills in selected Community secondary Schools of Botswana. What interpretations, teaching approaches, and challenges emerge from the study? Respondents in the study had a variety of interpretations about what constitutes information literacy skills. Answers to the question “what is your interpretation of information literacy skills” ranged from the research skills and the use of the library to using information when writing assignments. Taken as a whole, the respondents indicated that a clear understanding of information literacy skills and were articulate in expressing their conceptions of the topic but there was no single interpretation of the concept.

Respondents in the study teach a variety of activities under the umbrella term information literacy although they tend to be largely traditional user education (bibliographic instruction) activities. When analyzed as a whole, these activities embrace a mixture of information use, evaluation and basic information retrieval. However, unsurprisingly, critical thinking and problem solving do not appear in the cluster of skills that are taught in secondary schools in the study sample. Nonetheless the overall range of skills taught in the study sample are consistent with those reported in the literature.

With respect to the actual teaching, information literacy skills are taught by teacher librarians, with subject teachers making a modest contribution during the English Language lesson and assigned project. This result is consistent with in so far as teacher-librarian and subject teacher involvement are concerned. Several studies suggest that the key players in the teaching of information literacy are teacher-librarians, school media officers working in tandem with subject teachers.

The approaches involved in teaching information literacy skills in this study vary. However, the dominant ones are: library instruction, English Language period with course-integrated instruction as a runner-up to the above two. Extant literature does not report any studies from which comparisons can be drawn.

Finally, most respondents in the study unsurprisingly report challenges that dog the teaching of information literacy skills. All respondents cite lack of a central office to support school libraries, exam-oriented curriculum, and financial cutbacks as serious impediments to the smooth teaching of information literacy skills. This is understandable but no literature was found that could provide comparative data.

Conclusions

The study reported herein fills in void in the literature on information literacy skills. From our review of literature albeit selective, it is the first exploratory probe into the teaching of information literacy skills in Botswana's Community Secondary Schools and in a developing country context. As such, the study broadens our understanding of information literacy skills by presenting field-based evidence from an environment hitherto unexplored. The insights gained from this study have the potential to benefit further research by pointing at areas to be followed future studies. Accordingly, our study recommends that further research should be conducted in different parts of Botswana and the regions of Africa. This would enable a more composite national and pan regional picture to emerge which in turn will enrich extant literature.

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