

TIPPING THE INFORMATION LITERACY BALANCE: THE ROLES OF TEACHERS IN PROMOTING INFORMATION LITERACY INTEGRATION INTO THE SENIOR SECONDARY SCHOOL CURRICULUM IN BOTSWANA

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ABSTRACT: *This paper is a synopsis of a doctoral dissertation done at the University of Kwa-Zulu Natal with the objective of investigating information literacy integration strategies into the curriculum of senior secondary schools in Botswana. The rationale of the study was firstly the persistent concern that undergraduate students enrolling into University of Botswana (UB) appeared to lack adequate IL skills and competencies. Secondly, secondary school teachers played little roles in promoting information literacy integration strategies into their specific subjects. The study applied the constructivist theoretical lens complemented by IL models and standard. Qualitative and quantitative research approaches were employed. Questionnaires and semi-structured interviews were used to collect data. A sample of 150 teachers responded to the survey. The findings revealed that senior secondary schools in Botswana did not have clearly stated goals of information literacy. Importantly, there is no national IL policy, guidelines or standards for Botswana secondary schools. The study also revealed that teachers relied heavily on traditional methods in developing IL skills that fell short of constructivist approaches. The study recommended IL integration into the curriculum of senior secondary schools including adoption of international best practices based on IL models/frameworks aligned with constructivist principles.*

KEYWORDS: *teachers, secondary schools; information literacy, integration strategies, constructivism, Botswana.*

INTRODUCTION

The topic of information literacy and the field of teacher/school librarianship have been under-researched in Botswana Jorosi and Isaac (2008). The concept of information literacy (IL) refers to an individual's ability to recognise information needs, find, evaluate, and use information effectively for problem-solving or decision-making ALA (1989). The revolution in IL and the emergence of the information society has become a global priority and it has changed the way people search, find and use information for personal, professional, and educational purposes Bernier (2007). Taylor (2006) asserts that educating students and equipping them with IL competencies is a goal that must be at the heart of the library programme in schools. The constructivist philosophy of education advocates for students to develop the ability to understand and use information to gain lifelong learning Taylor (2006, 1). However, the degree to which teachers can tip the balance in integrating IL into the curricula and teaching IL effectively to students remains a challenge in a Botswana Isaac (2002). The American Association of School Librarians and the Association for Educational Communications and Technology (AASL/AECT) (1998) posit that an information literate person is multi-skilled, having the technical application, and research abilities in addition to constructing knowledge and thinking critically. Teachers and school librarians in collaboration with the school principals are expected to teach, train, and improve IL skills and teaching strategies that may be relevant for students in the 21st century (AASL/AECT) (1998). Information

literacy skills can be taught generically across curricula (for example, by a school librarian) and specifically within the context of a learning area (by the teacher).

The Botswana Senior Secondary School Blue Print advocates skills such as problem-solving, critical thinking, communication, inquiring, teamwork and interpersonal skills to help students to be productive and to survive in the information society. Teachers are viewed as facilitators and guides rather than reservoirs of knowledge. Active learning (by doing) is promoted over passive learning (by listening) to improve education for life-long learning Republic of Botswana Vision, (2016), Republic of Botswana, Senior Secondary School Curriculum Blueprint (1998, 7-8). However, Maruatona (2005) observed that the teaching arrangement in Botswana schools is mostly anti-dialogic and is designed to stifle the potential of the learners to develop critical thinking in the programme taught. The integration of IL into the secondary school curriculum ensures the students to acquire relevant IL skills before joining the university was emphasised by Mutoroke (2009).

RESEARCH PROBLEM AND OBJECTIVES

Despite the fact that the government of Botswana through the Ministry of Education and Skills Development recognises the importance of IL in the senior secondary school curriculum, but there is no policy framework to guide its integration into the curriculum and implementation. Moreover, there is persistent concern that students leaving senior secondary schools to join university are not equipped with IL skills to effectively pursue undergraduate programmes. In particular, students have been found lacking critical thinking and problem-solving skills. Students are also reportedly weak in question formation, brainstorming, categorising, skimming and scanning skills, the use of search engines and databases, evaluation of online and printed material, internet, use of indexes, note-taking and ability to analyse or synthesise information when writing assignments Fidzani and Lumande (2007); Mutula, Wamukoya, and Zulu (2005).

The objectives of this study were (1) to examine the strategies of IL delivery in senior secondary schools in Botswana, and (2) to ascertain the roles teachers play in promoting IL in senior secondary schools in Botswana.

THEORETICAL BACKGROUND

Both interpretive and positivist paradigms underpinned the study. Constructivist theoretical model complemented by IL models such as the Information Search Process (ISP) model Kuhlthau (2004), the Big6™ Information Problem-Solving Eisenberg and Berkowitz (1990); and the *Information Power: Building Partnerships for Learning* frameworks of the American Association of School Librarians and the Association for Educational Communications and Technology (AASL/AECT) (1998) were used as the theoretical lenses.

Gordon (2009, 39) asserts that strategies that promote active learning have the following common characteristics: (1) students are involved in a class beyond listening; less emphasis is placed on transmitting information and more on developing the skills of the students; (2) students are involved in higher order thinking such as analysing, synthesising, and evaluation; (3) students are involved in activities like reading, discussion, and writing; and (4) greater emphasis is placed on the exploration of student values and attitudes. There are various related studies that have used constructivist approaches Herring (2010); Walczak and Jackson (2007); Sharkey (2006); Hart (2006).

LITERATURE REVIEW

The fundamental goal of IL is to develop critical users of information Taylor (2006). Yaacob, Iskandar, and Jusoff (2011, 1) state that educators bear an enormous obligation in the twenty-first century to equip students with IL skills while pursuing their education, and extending it further into their workplace, and developing life-long skills. The constructivist approach is at the centre of teaching IL skills, especially cooperative, authentic, collaborative, independent and lifelong learning Kuhlthau (2001). The learning activities are characterised by

active engagements, hands-on activities, inquiry, problem-solving, investigations, experimental design and collaboration with others Fox (2001). Students acquire knowledge using the necessary information, depending on other people (teachers, partners, parents, society) to guide, help, collaborate and communicate under certain circumstances (social and cultural backgrounds) Liu and Sun (2011, 228).

Barak and Shakhman (2007, 11) studied issues in science instructional practices and found that the teaching of science subjects was based on traditional approaches. They pointed out that the teaching of science subjects must shift from traditional schooling to more constructivist-oriented instruction. The authors listed critical thinking, problem solving, independent study, and decision making as skills that must be fostered if science education is to meet students' needs. Other studies also found constructivist teaching methods to be beneficial to a variety of underserved populations Knapp (2013). John Dewey in the 1930s and Benjamin Bloom (1956) as the main proponents of constructivist approaches have challenged teachers to leave their pulpits as sages on the stage to become guides on the side. Tabulawa (1997) argues that many teachers in Botswana secondary schools were trapped in an endless examination preparation cycle and see student-centred teaching methodologies as luxuries they can ill-afford. Classroom instruction remains predominantly teacher-centred and authoritarian with passive students engaged mainly in recall learning.

Information literacy models that are predicated on constructivist pedagogy include Kuhlthau's Information Search Process (ISP) model Kuhlthau (2004); Kracker (2002), Big6™ model- (Eisenberg and Berkowitz 1990), and Herring's PLUS model Herring, Tarter, and Naylor (2002; Herring (2004). IL models promote problem-based-learning and a student-centred inquiry process that aims to develop skills that are appropriate for lifelong learning Newman (2005). The AASL/AECT is the backbone of IL programmes at the secondary school level. Its aim is to ensure that students and teachers become effective users of ideas and information and advocates for the move from a teacher-centred and textbook approach to teaching and learning that is student-centred and information/resource/inquiry-based AASL/AECT (1998, 2). These models have been derived from research using observation of students who have been successful in completing academic assignments such as term papers, oral reports and multimedia presentations Callison and Preddy (2006, 36).

In Africa despite some IL research Vander Walt (2005); Jiyane and Onyanha (2010); Jorosi and Isaac (2008), there is paucity of firmly rooted IL programmes in schools Those IL programmes that exist are fairly new and only came into existence within the past decade Jacob, (1995). In Botswana, for example, there are limited meaningful information literacy programmes and projects to enable learners exploit the available information resources effectively Mutula (2010); Mutoroke (2009). In contrast, the literature presented here seems to suggest that developed world integration of IL into the curriculum is a well-planned and collaborative exercise between the teacher, subject teachers, students, parents, school principals and policy makers Keith (2007).

ROLE OF TEACHERS IN PROMOTING IL

In the education arena, teachers' qualifications, experience, knowledge of subject areas, and pedagogical skills radically influence student learning. Todd (2001) asserts that the role of teachers is essential for IL initiatives to be successful. These roles must be cultivated through ongoing planning, dialogue, and classroom practice. The primary role of a teacher is to engage students in inductive, hands-on activities, group work, and reflection to promote critical thinking, self-evaluation, and the integration of knowledge across core subject areas Vavrus et al. (2011). Thompson and Henley (2000, 92) further point out that teachers are responsible for designing units or lessons that fulfil both curriculum and IL goals and objectives. Teachers must be equally involved in the integration process of IL in the curriculum so that they can see the connections and how the skills help students' learning Taylor (2006, 41).

The IFLA/UNESCO (2002) school library guidelines stipulate the role of teachers in promoting IL and maximising the potential of the library services to include the following:

- develop, instruct and evaluate students' learning across the curriculum;
- develop and evaluate students' information skills and information knowledge;
- develop lesson plans;
- prepare and carry out special project work to be done in an extended learning environment, including the library;
- prepare and carry out reading programmes and cultural events;
- integrate information technology into the curriculum; and
- make clear to parents the importance of the school library.

In the context of Botswana, the role of teachers in promoting IL in secondary schools has been a subject of debate (Jorosi and Isaac 2008) because of their full-time role in teaching, and overloaded school curriculum.

METHODOLOGY

The study was conducted in Gaborone, the capital city of Botswana. Twelve senior secondary schools (four public and eight private schools) were investigated. Senior secondary school teachers in Gaborone were selected using probability and non-probability techniques. The quantitative approach, which is predicated on the tenets of the positivist paradigm, enabled the researcher to describe the research participants' views on IL integration strategies in secondary schools in Botswana accurately. Understanding social behaviour involves understanding how people define and interpret their particular social situation, that is, how they construct the social realities in their natural environment Creswell (2009, 21). One hundred and fifty out of 277 teachers responded to the questionnaire. The Israel's model (1992) was used to calculate and determine the sample size of the teacher. Out of a population of 900 teachers, a sample size of 277 teachers for all the schools was determined. Table 1 below lists the distribution of teacher sample sizes per school, and the total population of the school librarians and school principals. The school names are given in pseudonyms.

Table 1: Sample size per school

Schools/Institution	Teachers	School Librarians	School Principals
1. PUB1	41	1	1
2. PUB2	42	1	1
3. PUB3	42	1	1
4. PUB4	41	1	1
5. PVT1	11	1	1
6. PVT2	10	1	1
7. PVT3	17	1	1
8. PVT4	17	1	1
9. PVT5	19	1	1
10. PVT6	17	1	1
11. PVT7	9	1	1
12. PVT8	11	1	1
MoEandSD	-	-	-
TOTAL	277	12	12

Key: PUB – Public School; PVT – Private School

The survey questionnaires, as well as interview schedules were used to collect data from teachers. The analysis of data using SPSS allowed the researcher to explore and describe patterns in the study. Microsoft Excel was used for generating simple tables. Content analysis was used to analyse the open-ended responses

to the questionnaires. According to Teddlie and Tashakkor (2009, 263); Creswell and Plano Clark (2011, 203), triangulation methods of data analysis enable quantitative and qualitative data analyses to be integrated into a study.

To achieve validity and reliability, the survey questionnaire and interview schedule were created and developed from previous validated and tested instruments: AASL/AECT (1998); Kuhlthau (2004); Eisenberg and Berkowitz (1990). Other similar and related studies include those of Dotan and Aharony (2008); Onen (2011); Rojtas-Milliner (2006).

The Government of Botswana, Ministry of Education and Skills Development and respective school principals granted permission for the research. Respondents gave informed consent and the study complied with the University of KwaZulu Natal research ethics protocols.

FINDINGS AND DISCUSSIONS

Demographical profiles of the respondents

A total of 150 (one hundred and fifty) male and female teachers of equal gender distribution responded to the questionnaires; 99 teachers were from the private schools and 51 from the public schools. The majority 76% of teachers were in their thirties and forties, consistent with a young and energetic workforce. Sixty-nine percent of teachers held bachelor's degrees; 24% masters' degrees and only 7% possessed diploma qualifications.

Strategies used to deliver IL

Most of the teachers relied heavily on traditional methods of teaching based on prescribed textbooks and requiring students to memorise material. Some teachers, however, reported deploying constructivist approaches by encouraging students to learn critical thinking and problem-solving skills and thus allow students to investigate and solve real-world problems. But 64% of teachers never gave assignments that would make students use the library. Some 73% preferred to give notes to students rather than let students summarise and make their notes. Most respondents 67% always gave students what was expected to be learnt in a topic and then reminded them of what they should know. Table 2 represents views of teachers about IL teaching strategies.

Table 2: Strategies Used to Deliver IL by Teachers (N=150)

Strategies Used to Deliver IL	Always	Never	Don't know
i. Give assignments that make students use the library. (*C)	28%	64%	8%
ii. Rely only on prescribed textbooks for teaching. (*T)	49%	43%	8%
iii. Provide students with notes always. (*T)	52%	42%	6%
iv. Photocopy materials to students as recipients of knowledge. (*T)	47%	47%	6%
v. Let students summarise and make own notes. (*C)	20%	74%	6%
vi. Completing course content is primary goal on lesson plans. (*T)	63%	29%	8%
vii. Make students raise hands to ask questions or give answers. (*T)	66%	27%	7%
viii. Allow class activities to be student-centred. (*C)	55%	38%	7%
ix. Classroom activities demonstrate multi-cultural diversity (*C).	62%	30%	8%
x. Test students for comprehension of information taught. (*T)	59%	33%	8%

xi.	Always sit or stand in front of the class "Sage on the Stage" (*T)	37%	54%	9%
xii.	Foster motivation for students to explore content taught. (*C)	48%	44%	8%
xiii.	Allow students access to primary & secondary for assignment. (*C)	53%	40%	7%
xiv.	Allow students dialogue with teacher & each other in classroom. (*C)	60%	33%	7%
xv.	Give students what is expected to be learnt and remembered. (*T)	67%	26%	7%
xvi.	Encourage social negotiation as part of the learning process. (*C)	65%	28%	7%
xvii.	Facilitate group interactions "guide on the side"(*C)	55%	38%	7%

Key: Constructivist (*C); Traditional (*T) strategies

The reluctance of teachers to adopt constructivist approaches to teaching can be attributed perhaps to the fact that they are required to cover the entire Botswana General Certificate of Secondary Education (BGCSE) curriculum that is constructed around textbooks and they also deal with large class sizes (forty-five or more students in public schools), thereby logistically hindering variations in methodologies. Teachers are therefore left with little room for innovations in their teaching approaches and instead they rely on lecturing in their classrooms, with little time devoted to discussions or inquiry-based learning that constructivist approaches promulgate. Furthermore, the present educational system in Botswana is examination oriented, which is used to determine if students continue to higher institutions of learning and beyond in their careers. The knowing of factual information to pass an exam, therefore, takes precedence over life-long learning. Teachers receive the curriculum sealed with the Teacher's Guide to implementing them. As Tabulawa (2009) puts it, "the curriculum is teacher-proof".

CONCLUSION AND RECOMMENDATIONS

Conclusions

The findings revealed that teachers were moderately enthusiastic about IL, but the extent to which they adequately promoted it through teaching in the classroom remained uncertain. Significant numbers of teachers relied on traditional methods of teaching using prescribed textbooks that require students to memorise material learned. Few teachers used some teaching strategies such as facilitating group discussions which encouraged active learning and feedback on the learning process. The study revealed that most teachers did not have the competence to teach IL. The application of the constructivist methodology is constrained by various issues such as lack of IL resources and high student to teacher ratios particularly in the public schools.

Recommendations

The stakeholders in the secondary school sector should work together to develop national IL policy frameworks to guide the integration of IL into the curriculum. The University of Botswana and Colleges of teachers' education should also be involved because they are at the core of higher education in Botswana. Additionally, the Government of Botswana should expedite the provision of ICT infrastructure especially Internet connectivity in all senior secondary schools.

An innovative IL pedagogy should be developed by teachers, librarians and curriculum developers that are predicated on IL models such as the Big6™ (Eisenberg and Berkowitz 1990), the Information Search Process Kuhlthau (2004) and Information Power: Building Partnerships for Learning guidelines of the American Association of School Librarians and Association for Educational Communications and Technology AASL/AECT (1998) which espouses student-centred-learning.

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