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The pedagogical challenges of creating information literate librarians

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Abstract

Purpose – This study aims to investigate the challenges of developing information literacy (IL) competencies and approaches to overcome the challenges among library and information science (LIS) students in Iran.

Design/methodology/approach – Taking an exploratory approach, the study used semi-structured interviews to gather the data. Using the 2000 ACRL standards as a framework, the fieldwork questions were designed around the five areas of IL competencies. A total of 15 academics teaching 18 different LIS courses from six universities were interviewed. They were asked the challenges they faced in teaching these competencies and the approaches they took or suggested in overcoming the challenge(s). A thematic approach was used to analyze the data.

Findings – Some of the challenges for students mentioned by the interviewees were ambiguity about the discipline, inability to match subject relevance with appropriate sources of information and lack of familiarity with databases.

Research limitations/implications – This study is limited to LIS academics; studying students' reflections can bring broader perspectives to IL education in LIS programs. Owing to the nature of the design of this study, which is a single case study, the teaching experiences of IL are limited to the ones which emerged and were addressed in the context of the case. Although the case selection was made in a way that can be representative of the “general” in the “particular” bounded system of the case (Stake, 1998), studying more cases could certainly have brought broader perspectives to IL which could have been to wider contexts.

Originality/value – The results of this study contribute to our understanding of challenges in teaching IL in the LIS discipline, an area that has not been researched directly. This contributes to IL teaching in disciplinary areas and it brings new perspectives to the elements of IL teaching which emerged from the experiences of people who are directly experienced in the context of the discipline.

Keywords Iran, Undergraduates, Higher education, Information literacy, Library and information science education, Information literacy pedagogy

Paper type Research paper



1. Introduction

The importance of information literacy (IL) in any library and information science (LIS) programs is evident, and for this reason, IL is gaining a very high profile within LIS

education. Librarians have to be fully aware of the importance of IL as a concept, understand its relevance in contemporary societies and learn about the main aspects of teaching IL (Igun and Odafe, 2014; Grgić and Špiranec, 2013). Librarians as educators have a crucial role to play toward promoting, developing and inculcating IL skills among students (Whitworth, 2011; Maitaouthong *et al.*, 2012; Evans and Saponaro, 2012).

LIS students need to obtain information skills during every phase of their education to enable them to act as providers of IL (Grgić and Špiranec, 2013; Becnel *et al.*, 2014). To fulfill this role, they should have an appropriate education themselves. In Iran, as a developing country, IL has not been considered or implemented seriously yet. For most students at higher education institutions in Iran, IL knowledge and skills are very important, as most of them give evidence of deficiencies in terms of their information skills. In addition to the lack of planning and strategy for the delivery of IL, lack of infrastructure and proper access to information is a countrywide issue.

Using data from a study conducted in 2014 in six Iranian universities, this article describes the challenges which educators face in using the module outlines and curriculum to teach IL to undergraduate LIS students. It is clear that potential opportunities need to be considered by LIS programs in Iranian universities, and the challenges faced by LIS educators in teaching IL as well as the approaches in developing IL competencies in LIS students need be explored.

2. Information literacy context and background

A fundamental issue among information users is acquisition of adequate skills and knowledge (Machin-Mastromatteo and Lau, 2015), as it is very competitive for information users to be able to use information in the Global Information Age. IL creates awareness among individuals in terms of information practices effective in all aspects of life, such as personal, political and business life. According to Limberg *et al.* (2013), “information literacy can be approached as an object of teaching as well as an object of learning”. IL is both a common and an important learning activity within higher education (Budd *et al.*, 2014; Frank and MacDonald, 2016). Such knowledge and skills for the majority of students enroll at universities without knowing enough about basic library use and searching information skills, as well as information skills in general in a conceptual sense. The library infrastructures in Iran are inadequate; students are educated without adequate learning facilities. This situation is reported by several articles, including Amiri (2010), Davarpanah *et al.* (2010) and Derakhshan *et al.* (2014). Subsequently, little has Real Life experiences must be examined.

In Iran, the problem was clearly caused by the lack of familiarity with IL as a concept. Subsequently, it was also clear that teaching approaches were required to equip Iranian students with IL skills and knowledge for their future lifelong learning skills. The challenges faced by educators in Iran, particularly the information professional, remained to put into practice effective approaches that would achieve IL competencies among students required in the information age.

3. Libraries and information studies education in Iran

A review of LIS education in Iran indicates that formal training and education started in 1954. With the establishment of the first university in 1943, the University of Tehran, the first academic library was founded and an urgent demand for librarians was created. In the autumn of 1966, the Library Science Department was established in the Faculty of Education (Hayati and Fattahi, 2005). After the revolution of the Islamic Republic in 1976, the curricula were restructured and LIS departments increased from 7 to 20. The number of

universities offering LIS programs increased dramatically from 1997 until 2011 to keep LIS education at the forefront for strategic reasons. In 2005, some governmental universities established PhD programs to develop research programs.

LIS modules and curricula at the undergraduate level have been scheduled on the foundational basis that it generally takes four years to complete a bachelor's degree and award students with a certificate. The bachelor program includes LIS subjects, as well as other basic and specialized optional courses on LIS. The Bachelor of LIS degree consists of 132 credits and normally can be taken in eight semesters.

4. Information literacy education in Iranian universities

Using IL as a strategy for teaching and learning has been in place in Iranian educational institutions since 2006 (Fatemi, 2010). Various rubrics including hands-on practice, stand-alone lectures and orientation programs offer instruction to students on how to use information and find the information they need. Because attending these sessions is on a voluntary basis, occasionally academics request librarians to give instruction on a particular aspect of information. However, IL instruction was still confined to tours and bibliographic instruction, which is a far cry from digital literacies (Fatemi, 2010).

In general, current IL instruction in Iran is weak in terms of its effectiveness in imparting IL competency skills and knowledge (Yari, 2012). The following reasons led to this ineffectiveness:

- there is no IL training for instructors to equip them with certain skills;
- not all students are motivated to attend the sessions; and
- information skills sessions are not linked to course offerings.

As observed by Derakhshan *et al.* (2014), the issue of IL not being integrated into regular courses or curriculum clearly compromises its effectiveness. In the current study, for example, the majority of educators confirmed the ineffectiveness of IL instruction being given.

5. Research methodology

This study sought to explore the challenges of teaching IL in the context of undergraduate LIS programs in Iran. It took an exploratory case study approach because the nature of the data was qualitative.

A case study is considered as an empirical research that investigates a phenomenon within its real-life context (Yin, 2009), and in which the investigator aims to provide an in-depth description and analysis of the case (Creswell, 2013). It was identified as appropriate for this study, as it aimed to explore the challenges of teaching IL in some real LIS programs to the development of IL competencies in LIS students. As discussed below, findings emerged from interviews with LIS educators and the challenges they faced in teaching of 18 LIS modules. They were asked to reflect on their teaching experience and explain whether and how they engaged students in developing the IL competencies. Then, they were asked about the challenges they faced in doing this.

The analysis reported in this article is of data collected as part of a wider exploratory study; in this article, the following research questions were answered of participants:

RQ1. What challenges do LIS academics face to support the development of the five main areas of IL competencies among the LIS students, as future librarians?

RQ2. What are the approaches used by the academics to overcome these challenges?

5.1 Selection of cases for study

Six LIS undergraduate programs were selected in this study; these were taught by departments in governmental universities which were pioneers in LIS education. The teaching experiences of IL were identified as key constructs for this study. This guided the researcher to adopt an embedded single case study design, as this study's focus is on two units of analysis in the context of a single case (Yin, 2009). This design helped the researcher explore a wide range of challenges that educators face in teaching IL in the program.

5.2 Selection of key informants

Fifteen educators were interviewed in this study. Two main criteria were used to select these key informants:

- (1) accessibility to the educators; and
- (2) modules with different orientations or subject areas.

This included 15 LIS educators who had experience teaching 18 modules in six different universities. The diversity in the educators' educational and professional backgrounds resulted in rich data. The researcher was provided with a data set through a wide range of perspectives on challenges in teaching IL.

5.3 Crafting data collection instruments

Semi-structured interviews were used to explore the phenomena under study that academics face in teaching IL. The researcher used a scenario-based interview approach, trying to situate the interviewees in some sort of scenarios and prompting them to talk about their experiences in particular modules which they were teaching. To guide the interview and explore the subject of IL in LIS, the ACRL standards competencies were used to divide the interview questions into five areas. The interviews averaged 1 h and 30 min in length. The following questions were asked:

- Q1. In which module are students expected to do a project assignment?
- Q2. What challenges do you face in teaching them to define their project assignment?
- Q3. What challenges do you face in helping them or supporting them to develop their topic?
- Q4. What approaches do you take or suggest to overcome these challenges?

The participants were asked to focus on their teaching experiences of LIS, and within that context, they were asked to reflect on the challenges they face in teaching these competencies. To answer to these questions, the LIS academics were asked to think of a specific course they teach and reflect upon their experiences. As a result, a wide range of challenges in teaching IL competencies emerged as qualitative research data.

5.4 Data analysis

A grounded approach was taken to analyze the data in this study. Three phases recommended by Glaser and Strauss (1967) were followed to analyze the data:

- the data were codified in the form of some themes for each area of IL competencies;
- some memos reflecting the researcher's interpretation to each code were added; and

- using evidence for each group of teaching experiences and challenges in each area of IL competencies, a narration for each of them was written.

Data collection and analysis were done simultaneously. This deepened the researcher's insights into the phenomenon under study (Eisenhardt, 1989). Owing to the embedded design of the study, the challenges to teaching IL emerged from different perspectives, as they were obtained from a wide range of units of analysis. In other words, first, each unit was explored to identify statement(s) which represented each competency, then the data gained from different units were compared in a cross-search pattern. The researcher focused on the data from interviews in the five areas of IL competencies as follows:

- (1) challenges in teaching determining information need;
- (2) challenges in teaching searching and locating for information;
- (3) challenges in teaching evaluating information;
- (4) challenges in teaching using information ethically; and
- (5) challenges in teaching using information for specific purpose.

6. Findings

Educators faced more challenges in teaching the first area of IL competencies, which is "determining information needs".

6.1 Challenges and approaches in teaching competency in "determining information needs"

The study identified a lack of understanding of LIS (as a discipline) as one of the barriers that affects effective implementation of this competency. Because such lack of awareness affects the academic abilities of students, it creates disappointment and stress. Students think librarianship is merely about dealing with keeping books in a library and providing them for people who visit the library and do not see the profession as dynamic. Thus, librarians are seen as gatekeepers of information. In general, students' perception of LIS has been affected by beliefs about library and library materials. Most of them are not optimistic about making LIS as a profession and just want to pass the modules and obtain a university degree:

They are not familiar with LIS as a discipline and also its services and this causes disappointment and anxiety which in a way makes them unable to identify their information needs.

It is recommended that educators should change students' perception of LIS through connecting them with LIS activities, illustrating social aspects of LIS profession and assisting them to obtain employment to overcome challenges in developing this competency.

The gap between the way of learning in schools and what is expected for students to perform at the university level emerged as another challenge. The "teach to test" model of learning used in most schools has often been criticized. This lack of ability in defining information needs may be because of the old educational system which is "content-based" rather than process-based:

Students have to memorize the subject materials and sit for exam to get a high score. They graduate from school with this approach which makes it difficult to help them to define their information needs.

The importance of having the proper teaching style and traditional methods of delivery to effectively develop IL competencies has been stressed by Whitworth (2012). In the present study, educators do not follow the same way or same approach each time they teach. Some of the educators tend to act more passively, rather than using innovative approaches to engage students in defining information needs. Basically, they use a module outline to teach. Not all educators are creative and make the curriculum more up-to-date for the students. There is a need to use more up-to-date teaching approaches.

Teaching methods and styles were identified as a challenge for effectively addressing the concept of the user and his or her information needs:

You know, the more I think about it. . . in my head, I am criticizing those students for not doing it [defining their information needs], but maybe it is not a fair criticism because some educators do not apply appropriate teaching methods to involve students in defining their information needs.

There is a need to shift from the traditional view of teaching as content-based and teach-to-test to inquiry-based teaching, problem-solving, research-based teaching and “Journal Clubs”. However, engaging students in journal clubs instead of relying on textbooks might be an effective way to develop ideas for their research projects. For example, students could find a paper in their subject area of interest and email it to their classmates and then discuss it in the form of a presentation.

Another challenge to emerge from the interviews with educators was the fixed nature of the LIS education system. This view was expressed particularly by some educators, whose enthusiasm for developing this skill can be attributed to the lack of flexibility within the LIS education system:

We (educators) are restricted to the module outline and don’t have enough authority to do a number of changes in terms going further than module outline to involve students with defining their information needs. (Figure 1)

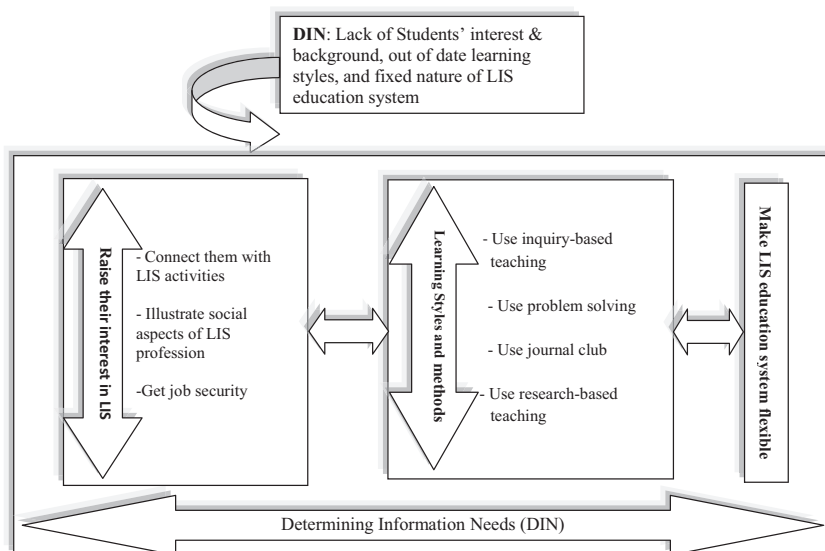


Figure 1.
Challenges in
teaching
“determining
information needs
(DIN)”

6.2 Challenges and approaches in teaching competency in “locating information”

Many of the educators interviewed acknowledged that students are not able to match subject relevance with sources. They stated that students do a search on the topic, then go through the results, and if some results are not related, they ignore these. However, the strength of matching subject relevance with sources lies in students’ knowledge of the topic area as well as reference sources:

[...] students just start looking for materials that refer to those words listed in the topic, because they don’t know their topic area well, as an example; their topic is “social media”, they just look for that and don’t know “facebook” is part or subcategory of social media.

Connecting students with reference sources to find appropriate information could be effective in locating their information. This belief points to an assumption that “Article Indexes” can be a good example of reference sources which lead to primary sources.

A perceived lack of IT literacy among students is another problem that affects locating information. While instructional opportunities on technology may exist, if students are not attending classes regularly, success will be limited.

The low level of interaction with databases appeared to be another challenge in locating information in students. While the databases are considered as important sources of information, most of the students do not know databases related to their discipline. Some of the educators believe that the lack of skill in locating information may be because of students’ unfamiliarity with databases which focused on their discipline. The idea of running workshops on introducing different information databases to students was suggested to overcome this challenge.

Lack of individual responsibility in locating information is viewed by educators as a striking challenge. In particular, personal interest in the subject area is considered as a critical determinant in locating information:

I think students can find any information if they have individual responsibility. “Web” is a good source that students can go through that and find any information that they need.

In their view, the problem was that many students were not sufficiently enthusiastic in locating information (Figure 2).

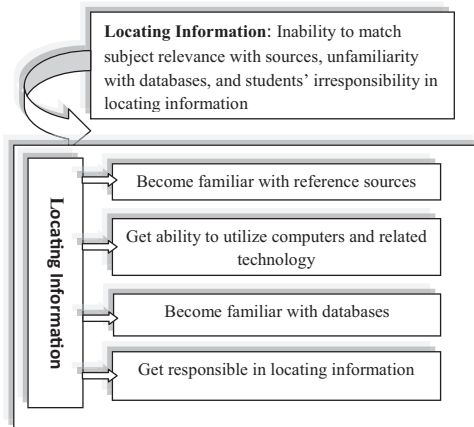


Figure 2.
Challenges in
teaching “locating
information”

6.3 Challenges and approaches in teaching competency in “evaluating information”

One of the more obvious challenges to developing the evaluation skill was the belief that the extent to which students equipped with this skill depends almost on the module outline rather than on the quality of the instructions which are available to explain the module. Thus, failure to evaluate information is viewed as a consequence of outdated module outlines. Students can obtain the evaluation skill if they put it into practice during the course of their education: “Well, I think if they are not able to evaluate the information and sources, it is because the module outline is out-dated, therefore the instructional opportunities don’t work”. The lack of evaluation skills on the part of students has made it remain an undiscovered competency for some educators. Educators’ own understanding of evaluation skills presented as a learning curve for developing this skill in students: “[. . .] Well, not all the educators are equipped to evaluate skill. I believe that some of them do more “copying and pasting” rather than evaluate information and its sources critically”. To empower educators to overcome such challenges, there is a need for retraining sessions for LIS educators.

The data analysis indicated that not all educators expect students to evaluate information and its sources. However, the key aspect of this belief was that undergraduate students do not require evaluating information and its sources. They are just expected to successfully complete the project and have no need to go through each process of IL to produce a particular end result.

The consequence of this belief is that the evaluation skill has not yet become a priority for all educators:

What is important for me in undergraduate level is methodology. I just want them to get familiar with the process of doing project as part of the module. I don’t care whether they have got the main idea from information gathered or not.

However, evaluating information is an interpretive skill which helps students develop this competency.

Developing the evaluation of information skill among students depends on students’ own motivations and interests: “I think if they are not able to evaluate information, it is because they did not get motivation and interest to evaluate information”. Failure to evaluate information is viewed as a function of students’ personal motivation and interest in developing his/her evaluation skill. The idea of motivation and interest to obtain this skill is viewed as a strong indicator:

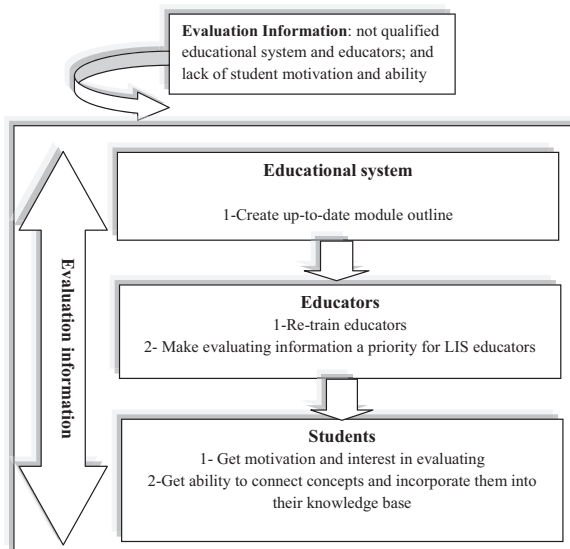
Well, they have facilities, internet connection with high speed; but they don’t want to get the competencies including evaluating information, what students want is to complete their research paper or assignments in a way to satisfy their educator. I can teach them but I can’t make them to learn.

Students are not able to make the connection between concepts and recognize the interrelationships among the concepts to incorporate information into their knowledge base:

[. . .] the most important problem that makes it difficult for students to evaluate information is that students’ ability in recognizing the relationship between concepts and combine them into their knowledge base. In order to evaluate information should be able to find different aspects of a concept and find the similarities with other concepts and come up with a useful primary statement.

If students would read their subject materials, this would help them to learn concepts, make connections between concepts and then combine them into their own knowledge base (Figure 3).

Figure 3.
Challenges in
teaching “evaluating
information”



6.4 Challenges and approaches in teaching “using information ethically”

Lack of students’ familiarity with using information legally and ethically emerged as a negative influence on educators’ approach to pedagogy: “unfortunately, they are not familiar with ethical use of information in both the print and electronic environment and they are not trying to do so”. This makes educators to consider the belief that students “intrinsic motivation” should be constructed to engage students to obtain information legally. Thus, educators expect students to understand the issues which related to copyright and fair use of information: “Students are not familiar with ethical use of information and more often do plagiarism”.

Undergraduate university students come from many types of families, with different cultures, which makes it difficult for some of them to understand legal issues surrounding the use of information. They argue that the lack of understanding of legal use of information to family culture and preuniversity education suggests that students should get familiar with the ethical use of information use in school.

Another challenge emerged from the data analysis was that students do not have an ID and password to obtain information legally. It is apparent that it is challenging to get approved password and other forms of ID for access to information. Once the ethical use of information is understood, students should be provided with password and ID to access to information. This access helps them to obtain, store and disseminate the needed information legally:

“[...] however, students are not able to obtain information legally and I think this is because they don’t have password and forms of ID to get information”. Students need to be provided with approved passwords and other forms of ID for access to information (Figure 4).

6.5 Challenges and approaches in teaching competency in “using information for a specific purpose”

Data analysis revealed that educators link the problem of a poor submission rate of short papers or minor essays to the students’ reluctance to use information for a specific purpose.

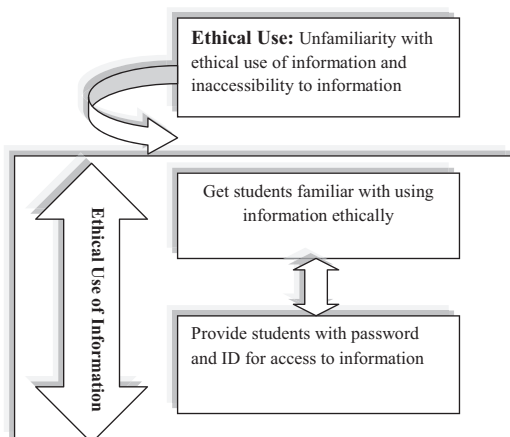


Figure 4.
Challenges in
teaching "using
information ethically"

"Well, undergraduate students are reluctant to submit or publish a short paper and they just use information to satisfy their lecturer to get a mark." This attitude has a direct link with the educational system which just encourages students to obtain a passing score. It follows that students should be encouraged to use information to write short papers and be provided with some guidelines.

The educators' belief that students come to use information for specific purpose through paraphrasing centers on the concept of "putting into practice", which is predicated on the notion of providing students some opportunities to learn how to paraphrase. However, the data analysis shows that a majority of the students were not able to integrate new information with the prior one and make quotations or paraphrase them in a manner that supports the purpose of the product:

It is challenging for students to paraphrase the texts to support the storyline. They just try to pick the texts from different sources and then match it with each other, while they should manipulate the texts, transfer them into the new context, and create coherency to support the purpose of the essay or what else.

As part of university policies, universities need to publish handbooks which cover how to paraphrase and use quotations. Paraphrasing and using quotations effectively are the competencies that have been identified for LIS students (Figure 5).

7. Discussion

IL is an essential competence for the LIS students. Its contribution in formal education is widely recognized, but it is now also acknowledged as a vital ability for LIS students in contemporary information-rich organizations. The present study investigated the challenges of developing IL competencies in LIS students by examining the challenges that LIS educators face in teaching IL in six universities and exploring the approaches to overcome the challenges.

Literature on LIS students' IL status indicates that there is an insistent IL problem among the students. Some of the challenges on IL skills were because of four factors, namely, lack of a solid IL program, lack of IT facilities, lack of proper planning or implementation and lack of support for the programs. These four factors can be summed up as a policy issue related to the integration of IL skills into the curriculum. Rodriguez *et al.*

(2015) points out that curriculum integration of IL is rooted in such factors. According to Fatemi (2010), a different set of IL problems occurred during the bibliographic instruction era. The lack of skills was still reported and the advent of information technologies (ITs) further complicated the type of skills needed by librarians. The ITs required appropriate facilities, proper planning and support from the librarians; therefore, the IL problem had become much more complicated, as the librarians also needed to be trained to give the IT support needed. This problem, as Abdi and Bruce (2015) mentioned, is that university policy on IL is constantly being reinvented.

Clearly, there has to be an overarching reason for the apparent lack of IL skills reported in the literature. To understand the root cause of this phenomenon, it is important to revisit the conclusions made about IL skills (Rasoulabadi, 2010; Lysiak 2013) to understand the status of IL of students in higher education.

As mentioned in this paper, IL is a worldwide problem which needs a concerted effort to combat it. Ford and Hibberd (2012) emphasized that self-perceived learning may be a potential barrier to student engagement with IL skills. Researchers have written about this phenomenon and they have concluded that IL is not only a set of short-term tasks or list of skills to accomplish but also made up of a broad spectrum of contexts (Forster, 2015; Howard, 2012). Some authors also noted that there is a lack of planning to IL programs (Beetham *et al.*, 2009; Carncross, 2015). Other researchers maintain that technology is the root cause of failure to master IL skills. Still more researchers think that “a more radical challenge to IL practices is underway” (Beetham *et al.*, 2009).

The results showed variety in the challenges in teaching IL, which reflected themes in the literature which affect the development of IL. Almost all LIS programs lacked an IL policy coupled with the need for adequate training into disciplinary activity, although some IL rubrics were being practiced in some disciplines. IL development in LIS discipline has received less attention in the literature (Blumer *et al.*, 2013) but could be connected with a recent Iran initiative to develop IL skills in some disciplines.

8. Conclusion

Overall, the study managed to address the challenges and approaches to overcome the challenges to the development of IL competencies among undergraduate LIS students. The results presented in this article show that it is important to take purposeful efforts to overcome the challenges in teaching IL to develop information-literate students as future librarians. As Virkus (2007) notes, teaching IL to LIS students requires an extensive knowledge of pedagogies.

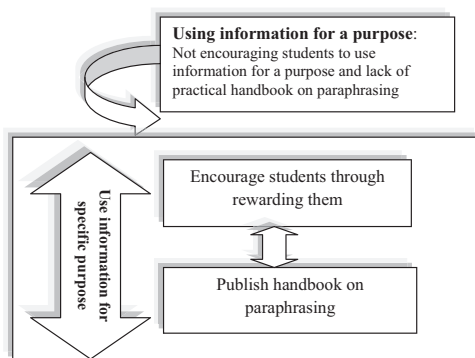


Figure 5. Challenges in teaching “using information for specific purpose”

A number of challenges have been discussed and placed on a continuum which reflects the range of barriers in developing IL skills. The findings reveal that LIS students do not have a clear understanding of LIS and, consequently, they are not connected with LIS activities. Connecting them with LIS activities, illustrating social aspects of LIS profession and obtaining job security are approaches that have been recommended by educators to overcome this challenge. Additionally, educators must revise the notion that learning to be information-literate means shifting from teacher-centered teaching to student-centered learning (Maybee, 2015). They need to develop a critical consciousness about involving students with information, by supporting “problem-based” learning (Dash, 2015) or what Keene *et al.* (2010) calls “a problem solving education”. With this shift, LIS academics facilitate both LIS students’ own learning in IL and these students’ learning of how to facilitate others’ IL (Virkus, 2007).

The notion of retraining educators featured strongly in educators’ comments to overcome the challenges in teaching IL skills. To meet these challenges, educators should spearhead the potential opportunities in their institutions to make sure that IL is integrated into the LIS curriculum. The effectiveness of IL instruction is tackled through the establishment of strong links and partnerships within and across the educational system and teaching staff.

Having identified the importance of addressing challenges, the current study suggests a number of approaches to overcome the challenges to develop IL competencies in LIS students:

- to change students’ way of viewing a problem;
- to acquire the knowledge needed in finding information;
- to obtain the skills needed in finding information;
- to make connections between concepts and their knowledge base;
- to identify ethical use information behavior; and
- to gain the needed knowledge on paraphrasing.

This study is limited to LIS academics; studying students’ reflections can bring broader perspectives to IL education in LIS programs. Owing to the nature of the design of this study, which is a single case study, the teaching experiences of IL are limited to the ones which emerged and were addressed in the context of the case. Although the case selection was made in a way that can be representative of the “general” in the “particular” bounded system of the case (Stake, 1998), studying more cases could certainly have brought broader perspectives to IL which could have been to wider contexts.

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