

Learning Information Literacy Skills Through Library Instruction: An Irish Higher Education Case Study of First Year Students

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ABSTRACT

First year students in the Galway-Mayo Institute of Technology (GMIT) participate in a mandatory Learning & Innovation Skills (LIS) module to ease the transition from second to third level education. To complement this module the library offers four standalone library instruction sessions which aim to provide students with the key competencies to learn information literacy (IL) skills. There is significant existing research on information literacy and evaluating library instruction internationally, however, a lesser amount is published on the Irish perspective. Using a mixed method case study, the objective of this research is to examine GMIT's experience of learning information literacy skills through library instruction. The research is GMIT specific but is valuable to the wider audience; it proposes to expand on prior higher education information literacy studies. The research does not endeavour to analyse library instruction beyond the four sessions delivered to compliment the LIS module. Furthermore the study is not attempting a retrospective analysis of the sessions, or a generalisation of all library instruction within the institute. The research will be the first in-depth analysis of the library's elements of GMIT's LIS module. The research gives significant insight into learning information literacy skills through library instruction and will help with future developments of the library instruction sessions. The findings indicate that students benefit from library instruction sessions; however a more progressional approach to teaching information literacy may be more beneficial than the method currently employed.

KEYWORDS: Information Literacy, Library Instruction, Information Skills, First Year Students, Higher Education.

INTRODUCTION

First year students in GMIT participate in a compulsory Learning & Innovation Skills (LIS) module to ease the transition from second to third level education and to assist in developing learning skills to meet the needs of third-level study. In addition to the LIS module the library offers four separate library instruction sessions which aim to provide students with the key competencies to learn information literacy skills. Academics choose whether their students participate in the library instruction sessions that complement the module.

The primary aim of this research is to investigate if first year students who participate in library instruction learn information literacy skills. Related to this aim are two objectives, namely, 1) to determine if there is direct evidence of enhanced learning arising from the four distinct library instruction sessions that supplement the institutes LIS module and 2) to obtain feedback for the development of the library's instruction sessions. Employing student and lecturer perspectives, this research proposes to contribute to research investigating the importance of information literacy.

The LIS module aims to develop the study skills required to adjust to third level education, in addition to encouraging students to become independent learners. There are six learning outcomes for the LIS module: 1) Analyse time management skills; 2) Appraise different learning styles and apply appropriate learning strategies; 3) Engage in creative problem solving and work as an effective group member; 4) Appraise appropriate and available information sources applicable to particular contexts; 5) Demonstrate ability in academic writing and referencing sources of information; 6) Apply the basic principles of critical thinking/problem solving and communication skills. The four library instruction sessions that aim to assist in achieving these learning outcomes are: 1) An introduction to information sources 2) The online library 3) Citation and referencing 4) Copyright and plagiarism. The instruction sessions strive to help students achieve selected learning outcomes and develop the skills

required to be information literate. The sessions seek to facilitate students in recognising the significance of academic integrity, appraising information sources, understanding how to avoid plagiarism and referencing using the applicable style, thus equipping them with the skills needed to become independent learners.

A review of the literature will evaluate prior research on information literacy in higher education. The literature to date on information literacy is extensive; however, an appraisal of Irish literature is somewhat limited. The literature review will critically consider key secondary sources relating to this research, comprising Irish studies from McGuinness (2003, 2006, 2009) and Hegarty & Carery (2010). A single case study methodology, using the triangulated, mixed method approach, consisting of an online student survey and academic interviews will comprise this small scale exploratory research. The survey is designed to determine if first year students learn information skills from library instruction. The survey will be supplemented by academic interviews to give an insight into academics awareness and perceptions of information literacy.

This is the first examination of the relationship between library instruction and developing information literacy skills as part of GMIT's LIS module. The results will provide information on student information literacy skills, in particular in relation to the learning outcomes of the LIS module. In addition, the results will assist the library in developing current sessions in order to provide effective information literacy skills. The scope of the study is restricted to current first year students enrolled in GMIT for the survey and academic staff teaching on the LIS module for the interviews.

LITERATURE REVIEW

Information literacy is not a new idea; however, it is still very current. Information literacy is described as “the set of skills needed to find, retrieve, analyze, and use information” (American Library Association, 2000, p. 1).

There is considerable literature on librarian and academics attitudes to information literacy, in contrast there is less published on student understandings. This review will detail information literacy in higher education, initially with a global perspective, then focusing on Ireland.

GMIT library does not currently perform information literacy assessments; a short multi-choice feedback form is distributed to gauge student views on the individual sessions delivered as part of the LIS module. These forms, although not analysed as part of this research, give an idea of the number of students partaking in the library sessions of the LIS module. The rationale for not including the feedback forms as part of this research is that the questions do not reveal information on the relationship between library instruction and developing information literacy skills. The forms provide thoughts on approaching the length of the session and the quality of the course, and are evaluated independently.

Fain's (2011) literature evaluates five years of assessment data from students at Coastal Carolina University. The findings suggest that there was improvement between the library skills assessment pre and post-tests, demonstrating that returning to prior assessment data can identify significant changes in information literacy skill development. "Library instruction, as part of the overall first year experience, contributes to the early stages of information literacy development" (Fain 2011, p. 118). Samon also applied pre- and post-tests in her study of information literacy learning outcomes and found that assessment of information literacy "correlates identifiable learning outcomes within the established information literacy rubric" (2010, p. 209).

Many studies support the need for information literacy assessment, ascertaining that assessment outcomes can be used to develop library instruction (Oakleaf & Kaske, 2009, Samson, 2010, Chen & Lin, 2011, Daugherty & Russo, 2011). Librarians need to evaluate students' information literacy; the information collected from evaluations can then be used to improve library instruction (Oakleaf & Kaske, 2009). In addition, the data can be used to promote the value of library instruction outside the library (Pan, Ferrer-Vinent & Bruehl, 2014). Libraries need to update the library sessions to

suit their students and reflect current information needs (Black, Crest, & Volland, 2001).

Key contributors writing in the area of students' perspectives of information literacy are Gross and Latham (2007, 2009, 2013). Their paper entitled 'Undergraduate perceptions of information literacy: defining, attaining, and self-assessing skills' (2009) investigates user interview data on student experiences with information and the research process. Gross and Latham conclude that information seeking is focused on outcome rather than the skills that underlie the ability to achieve the required result (2009). In their 2013 study, Gross and Latham revealed that a single exposure is inadequate in gaining competence in information literacy. An earlier study by Heather (1997) on students' perspectives found that students valued information, and established that library instruction is fundamental in developing the skill of locating information and should play a part in obtaining an undergraduate degree.

Research at The University of Hawaii at Manoa by Lebbin (2005) aimed to discover student views on learning information literacy skills through a learning community and the long-term value of the instruction to their education. Lebbin found information literacy instruction useful, noting students used their learned information literacy skills outside of information literacy classes. This study adds valuable student perception to the literature – “a perspective that contends the learning community environment offers a valuable context for information literacy instruction and has a positive impact on undergraduate education” (Lebbin, 2005, p. 217).

Howard writes that “Information literacy should be part of a bigger academic skills agenda rather than standing alone” (2012, p. 78). The LIS module in GMIT is delivered to first years across disciplines. Librarians contact, and are contacted by, academics who select the sessions they consider most beneficial to their students. The structure of the LIS module demonstrates that learning information literacy may not be a consideration for all academic staff. As such, some students may be denied access to library instruction through the LIS module. Howard's (2012) case study describes how Leeds University

faculty integrated information literacy throughout the curriculum, because they recognized that information literacy is a component of a larger set of academic skills. Enlisting all GMIT academics to incorporate student information literacy instruction would be a welcome development. After feedback is obtained, and speculating that changes are needed to develop the focus of information literacy instruction, librarians and academics may collectively develop the library's contribution in the LIS module. Successful library instruction requires collaboration from academics and students (Black, Crest, & Volland, 2001 & McGuinness, 2006).

Academic discourse on information literacy in Ireland is largely addressed by Claire McGuinness (2003, 2006, 2009). The focus of McGuinness's research is information skills training in higher education institutions in Ireland. The research is approached from the perspective of the information specialist rather than the experiences of the student. The purpose of this research is to examine if first year students, irrespective of discipline, who participate in library instruction, acquire information literacy skills. Drawing conclusions from 'information skills training practices in Irish higher education', McGuinness finds that 77 percent of academic librarians who have some involvement in information skills training consider it is "very important" or "absolutely essential" to their jobs (McGuinness, 2009).

Further studies on information literacy in Ireland are provided by Hegarty and Carbery (2010). Their study concentrates on designing an information literacy course specifically for nursing students in their institute. Those who took responsibility for designing an information literacy programme in Waterford Institute of Technology (WIT) based the programme on introducing first year students to the main library resources so as to avoid the occurrence of information overload (Hegarty & Carbery, 2010). The pilot programme implemented in WIT reported low attendance in non-compulsory classes. GMIT observes comparable low attendance to library instruction sessions delivered external to the LIS module; which are typically non-compulsory. The purpose of establishing library instruction into the LIS module is to compel students to learn information literacy skills through library instruction.

A recent case study completed in University College Cork (UCC) examined information literacy education for undergraduates (Conrick & Wilcox, 2013). The authors conclude that their programme for information literacy received positive feedback, and that continued collaboration with academics is central to the information literacy instruction. Further research in UCC examined the information behaviour of PhD humanities students undertaking an accredited information literacy course. The purpose of the research was to investigate how library instruction can better assist students, by carrying out a questionnaire to get an improved understanding of students' information behavior. Madden found that their information literacy skills module had benefits for students, stating the module needs to be continually evaluated to ensure relevance (Madden, 2014).

From this review of the literature on information literacy it is evident that a substantial amount of work has been carried out by libraries to assist learning information literacy skills through library instruction. The research methodology will discuss how GMIT's experience of learning information literacy skills through library instruction was examined.

RESEARCH METHODOLOGY

This research employed a mixed method case study. The case study is institute specific but endeavours to provide learnings for future research. A case study allows for experiences to be measured under real conditions in order to make generalisations. Case study research "produce an in-depth analysis of phenomena in context, support the development of historical perspectives and guarantee high internal validity" (Gagnon, 2010 p. 2). Using a triangulated approach to the research, the data gathering techniques exploited are the literature review, an online survey and one-to-one interviews. Using multiple methods to gather data while conducting primary research strengthens the research (Hesse-Biber, 2010). Additional sources of secondary information gives further understanding to the subject. The data analysis, in addition to the literature review, will give increased reliability and

validity. The tasks include collecting primary data, analysing the data, and presenting and reporting the results.

Considerable literature on information literacy with reference to Ireland encompasses case studies (Hegarty & Carbery, 2010, Conrick & Wilcox, 2013). CONUL's (2011) research 'integrating information literacy into the curriculum' comprises fifteen case studies presenting an Irish perspective on what has thus far been accomplished in embedding information literacy into the curriculum in Ireland. One of the main ideas to arise from the 'BILI: Building Information Literacy in Ireland' research was the value of embedding IL programmes in the curriculum (Connolly et al. 2013, pp. 41-42). The practice in GMIT requires all incoming first years to complete the LIS module; however the library components of the module are not mandatory; they are determined by academic staff. The library sessions do not undergo assessment by librarians; the complete module is graded by means of departmental continuous assessment.

The first research method was an online survey. This quantitative method of research allows for the collection and analysis of data. The survey used close-ended questions, which are more likely to produce complete answers, which are straightforward to analyse (Picardi & Masick, 2013). This confidential and anonymous survey was open to 1677 current first year students in the Institute's Galway campus. Participation was voluntary and consent to participate was indicated by an introductory statement in advance of the survey questions. 83 first year students completed the short online survey which included questions focused on the library instruction sessions for the four library components of the institutes LIS module. The survey was easy to administer and aimed to assist in determining if students learn from the library sessions complementing the LIS module. The percentage uptake was very small (4.95%). An implication of this low response rate is that the results may not be representative of all first year students. Higher response rates are more reliable, therefore for future research, good practices need to be considered to maximise response rates prior to data collection (OCED, 2012).

The second approach to this research was semi-structured interviews; conducted with academics involved in the LIS module. Semi-structured interviews allow for informal two-way communication. Academics (n=10) gave signed informed consent to participate in a brief interview, either over the phone or in person. A flexible schedule of questions relating to the research goals emerged, however, opting for an informal and semi-structured open approach was selected to maximize lecturer input. Specific questions were asked to ensure relevance to the research and to allow for comparisons between participants. This method allowed detailed quantitative and qualitative to be obtained from each interview.

RESEARCH ANALYSIS

The following section examines the results of the primary research, firstly concentrating on the data contributed by students in the survey, then the interview responses offered by academics involved in the LIS module.

The student survey results show that 90.36% of respondents participated in the LIS module. Figure 1 shows how students rate their information literacy skills, with over 50% rating their information literacy skills as good, and lower than 4% stating none. Interestingly, a question asking how students would rate their information literacy skills was the only question with a 100% response rate; this would suggest that all respondents are familiar with the term.

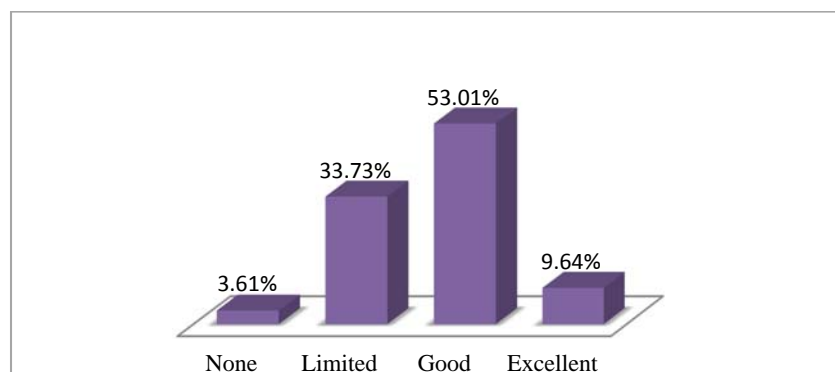


Figure 1. How students rate their information literacy skills.

Respondents indicated which of the four standalone sessions they participated in by ticking all that applied; the highest participation rate was the online library session (Figure 2). Typically this session covers searching the library's resources using the discovery service and an introduction to library databases. Just over 30% of respondents knew that MultiSearch is the library's default search; all non-participants in the LIS module answered this question incorrectly. Respondents were asked what is meant by full text in library database search results, 58.44% of those who participated answered correctly, slightly above the 50% correct response rate for non-participants. The next placed session is the introduction to information sources, 85.54% of respondents correctly answered that a primary source is an original document, indicating that students are aware of information sources.

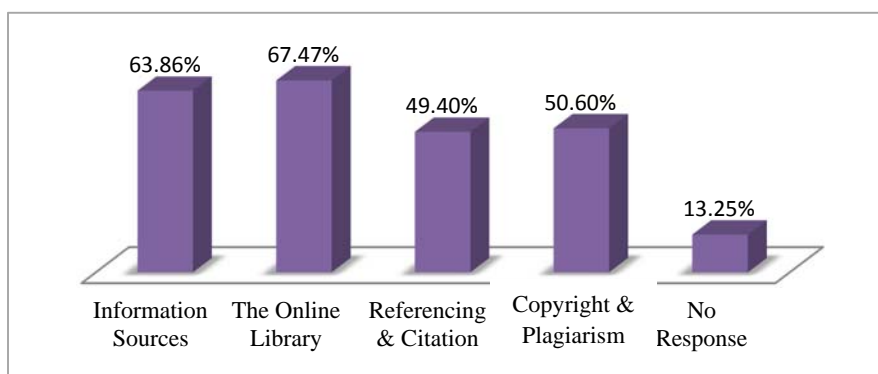


Figure 2. Library instruction sessions students participated in.

93.51% of respondents who participated in the LIS modules recognized what plagiarism is (for those who did not participate 83.33% responded correctly). 96.10% of participating students know the importance of evaluating information read on websites.

The limited results of those that did not participate in the library components of the LIS module (7.23%) show that 50% recognized that you can photocopy 10% of the total number of pages in a book under copyright and 50% were also aware what full text in a library database means. The eight respondents who rated their information literacy skills as excellent all took part in each of the four standalone library instruction sessions. Nevertheless, not all

displayed flawless information literacy skills, as there were a number of incorrect responses (Figure 3). It has been recognized that students with lower level skills overestimate their performance while students with higher levels are inclined to underestimate their skills (Gross & Latham, 2007).

Library's default search	Primary sources	Evaluation	Plagiarism	Copyright	Full text in library databases
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
25%	87.5%	100%	100%	62.5%	50%

Figure 3. Summary of correct answers offered by students who rated their information literacy skills as excellent.

The purpose of the survey was to discover if students who took part in the library instruction sessions for LIS learn information literacy skills. The survey had a low response rate of 4.95%, with 83 survey responses from a cohort of 1677 first year students. With such a low response rate using non-probability sampling there is no evidence to suggest that the sample is representative of all first year students. Nevertheless, the results are valuable, as this small scale initial research gives an insight into students' awareness of information literacy. The results will contribute to improvements of the library instruction sessions which will benefit all students.

The academic interviews revealed some familiar findings which are consistent with the review of the literature. All participants were aware of the concept of information literacy and described the need for information literacy skills in higher education, believing these skills to be very important for both them and their students. 90% could define information literacy effectively and 70% considered themselves information literate, with a rating of 7 or over (with 10 being excellent). All academics reported the need for information literacy skills

in higher education, with 70% believing that the library instruction sessions benefit students (20% non-response). All academics interviewed were aware of the four standalone library sessions available to supplement the LIS module. 60% stated that the library instruction sessions adequately cover information literacy skills, while 30% believe the sessions are of an introductory nature, there was one non-response (10%).

A key outcome of the interviews concentrates on collaboration. 90% of those interviewed believe that information literacy instruction should be a partnership between academics and librarians. Black, Crest and Volland affirm that building relations with faculty is fundamental for establishing collaboration between academics and librarians for information literacy instruction (2001, p. 216). This area requires investigating as the number of registered first year students is considerably higher than the number of students returning evaluation forms after participating in LIS library instruction sessions. Participation is less than 45% when based on the number of feedback forms collected, counting each session collectively. Participation is much lower when taken separately, with the copyright and plagiarism session displaying the highest attendance at 21%.

A number of academics believe that information literacy skills develop over time, noting instruction sessions should be delivered to coincide with assignments. Many communicated that their own information literacy skills developed with repeated practice over time. Over half stated that information literacy instruction sessions should be ongoing, deeming a refresher session in the second year beneficial, in addition to further instruction as students' progress through higher education. The introduction of formal assessment for information literacy skills may increase participation and improve engagement.

The quantitative interview method allowed for a more personal approach to researching information literacy skills with less limitations than the quantitative survey method. A number of factors influencing student levels of information literacy skills became apparent in the analysis of the interviews, namely attendance, engagement and frequency of library use. Attendance at the library instruction sessions does not signify engagement in the sessions.

Students need to value information literacy and they may engage more if sessions are delivered on a need to know basis and formally assessed.

Only 30% of academics had confidence that their first year students, in general, make sufficient use of the library and its resources. Student needs to use the library and the resources to practice their information skills. Few academics could recommend approaches for promoting the library or indeed for marketing the LIS library instruction sessions. Suggestions for promotion included a library open day at the start of term for new and returning students. 40% believe promotion should be targeted at staff, suggesting information skills sessions for staff, inferring that it's challenging to get students to participate in the sessions if academics are not committed. One respondent stated that library staff should train lecturers so they can pass information onto their students, whilst another indicated that it is very hard to get students interested without engagement from lecturers'.

CONCLUSIONS & RECOMMENDATIONS

As discussed in the literature review, learning information literacy skills through library instruction is standard practice. The LIS module is dedicated to incoming first year students, however, it is evident from the literature examined and interview comments that information literacy instruction should not just be for new students: it must continue past the module delivered in the first year. Information literacy instruction should be made available on demand for all students regardless of year or ability. The library must support the view that students learn to become information literate over time; we should be open to help students learn and develop their information literacy skills at any time.

All academics interviewed in this research volunteered to participate, all of whom were aware of the concept of information literacy. It is worth considering that those who did not participate may be unaware of the concept. They may not deem information literacy skills important, or could feel that librarians should not be teaching these skills. Librarians must seek to

collaborate with academics to improve students' information literacy skills, which are essential to lifelong learning. The need for collaboration is evident from the literature; going forward we must strengthen relationships between academics who are actively involved in the LIS module. The challenge is convincing those that do not connect their students in the sessions to collaborate. Such collaboration will benefit students in acquiring information literacy skills, thus amalgamating librarian and academic proficiencies. Increased collaboration will make it more likely that the library instruction sessions will be integrated fully in the LIS module; increasing participation.

Recommendations from academic interviews on library instruction include less theoretical and more practical sessions, delivered to coincide with student assessments. It was remarked that many of the skills presented in the sessions are not exercised until students' progress to the second year, by which time the skills are forgotten. It is essential that academics strengthen the skills learned in the library sessions by requiring students to find, use, evaluate and reference information through a variety of sources once they enter third level education. Information literacy skills are not achieved in a one off module at the beginning of a student's first year; although a one off module is valuable, students progressively become information literate through experience and practice. McGuinness' paper on what faculty think, found that students gradually become information literate through participating in one or more of eight prevailing learning situations which include library-based instruction, research methods courses, information exercises, computer skills, feedback from academics on assignments and through general direction from academics and library staff (2006, pp. 576-577).

The results show that weaknesses exist in the information literacy skills of the students who participated. Nevertheless, the sessions provide an introduction to information literacy skills and it is clear from the academic interview analysis that students do benefit from the library sessions. A more progressional approach to teaching information literacy skills may be advantageous, allowing students to continually develop their skills, rather than experiencing information overload as incoming first year students. It is evident that the sessions need to be constantly reviewed, updated and improved to

keep the instruction effective, relevant and inviting. Future analysis of the library instruction sessions could be expanded by using the pre- and post-testing method; increasing the sample size would be fundamental to any further research. The library could introduce strict assessment tools to more accurately measure the level of information literacy skills developed through participating in library instruction sessions. The ambition is to embed the library instruction sessions currently offered to complement the LIS module into each GMIT programme to benefit all students.

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