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LAHLAFI, Alison and RUSHTON, Diane

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Development, implementation and impact of active and reflective learning initiatives to improve web searching skills of international business students at Sheffield Hallam University, UK.

Diane Rushton *, Alison Lahlafi

Sheffield Hallam University, Sheffield, S1 1WB, United Kingdom.

Abstract

This paper discusses a collaborative initiative between a module leader and library staff at Sheffield Hallam University to address students' poor information literacy skills, with particular emphasis on web searching. It includes an analysis of the findings of a survey of students' information literacy skills and information seeking habits at the start and end of the module. The development, implementation and impact of active and reflective learning techniques embedded within an international business module are discussed, and the authors conclude that this type of collaborative initiative supports effective student learning and skills development.

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Keywords: active learning; reflective learning; information literacy; web searching; research skills; business students

1. Problem statement

Much has been written about the “millennium,” “Google” or “net” generation student, with their overreliance and overconfidence in Google and often shallow technology skills, (JISC, 2009; Williams et al. 2008; Oblinger and Oblinger, 2005). During module review at Sheffield Hallam University (SHU) for second year undergraduate international business modules *Managing in a Global Context* (full-time students) and *Globalisation and Business* (part-time students), concern was raised by the module team about students' ability to use the internet as an effective research tool for academic purposes.

2. Purpose of the project

This paper describes a project that developed and implemented active and reflective learning initiatives to improve web searching skills of second year international business students at Sheffield Business School (SBS), Sheffield Hallam University. The module leader acknowledged the need both to support students in the development of information literacy skills required for their academic research and to enable them to recognize the importance of

* Diane Rushton. Tel.: +44-114-225-5156

E-mail address: d.rushton@shu.ac.uk

good research skills as a graduate attribute required within the "global information economy" described by Global Knowledge Partnership in 2000.

3. Methodology

3.1. Collaboration between academics and librarians

The module leader recognized that working collaboratively with library staff would enable development of the Learning, Teaching and Assessment (LTA) approach to include a focus on improving students' ability to use the internet as an effective research tool, and to improve the use of quality academic databases subscribed to by SHU. A more detailed exploration of issues involved in a cross University collaborative approach has been written by the authors, Rushton et al. (2011). Library staff agreed that the module leader's desire for a collaborative approach would enable them to embed SHU's Information Literacy framework policy (2009). The work of Sloan and Porter in 2009, illustrates the importance of embedding and contextualizing academic literacy into modules and the authors believe the same is true for information literacy.

3.2. Literature Review

3.2.1. Student web searching skills

A review of the literature was undertaken to examine in more detail the issues around student web searching skills in the UK higher education sector. This confirmed that despite being able to use computers with confidence, students often display poor web searching skills, (Brown et al. 2003; Song, 2005; Williams et al. 2008; JISC, 2009). Google is seen to be the first choice of many higher education students seeking information for assignments, (Advic and Eklund, 2010; Dubicki, 2010; Song 2005). However, internet searching is seen to present problems to many students, "Research seems to be far more difficult to conduct in the digital age (...) students reported being challenged, confused, and frustrated by the research process, despite the convenience, relative ease or ubiquity of the internet," Head & Eisenberg (2009, p2). The lack of students ability to sift through and critically evaluate the mass of information on the internet is highlighted by Chowdhury et al. (2011) and Dubicki (2010, p375). "The information students collect is often questionable and they admit having a difficult time in selecting the best material for inclusion in projects. This is further aggravated by their lack of critical evaluation of the credibility of the material they have secured."

3.2.2. Information literacy skills of business students

Research focusing on business and management students mirrors these findings and corroborated the observations of the module leader and her team, for example, McInnes Bowers et al (2009) and Song (2005), with Leigh and Gibbon (2008, p153) stating: "We and many of our colleagues have grappled with the lack of student IL (information literacy), with the common experiences of (...) reading papers with no academic resources, receiving annotated bibliographies of references based predominantly on a Google search." The literature also shows growing evidence of the importance of information literacy skills to employers, (Lombardo and Miree, 2003; De Saulles, 2007; Cheuk, 2008; Ali and Katz, 2010). SHU's own graduate attributes refer to SHU graduates being equipped for 'learning and working in the digital age' (2010), and this is discussed in more detail in an earlier case study by the authors, "Enhancing graduate skills for a knowledge based economy," (2011).

3.3. Active learning initiatives

Module leader and library staff recognized the need to focus on active and reflective learning methods to develop the information literacy skills of students taking the modules. Giving students a range of interactive activities within

a lecture and workshop setting it was believed would promote active engagement and foster active learning, (Cavanagh, 2011; Jacobson and Xu, 2004; Jones, 2007). As explained by Gunn and Miree (2012, p 22), "In library research sessions rich in active learning, delivery of explanatory content and demonstrations of research tools are minimized to allow maximum opportunity for students to learn from their own experiences." It was also believed that active learning would help counter delivery via a lecture; a teaching format which library staff felt was not conducive to information literacy skills development, (Cavanagh, 2011; Jones, 2007; Keyser, 2000). Due to large module numbers (100+), it was necessary to use a lecture at the start of the module. "How good is the web? Critically analyzing, selecting and using business information" lecture was jointly delivered by library staff and the module leader. The collaborative approach to this lecture gave context and validity to library staff. Examples used in the lecture were linked into international business and globalization issues throughout to improve relevancy for students, and web demos and a video clip incorporated to add variety to the learning experience. The range of activities and subsequent student feedback is analyzed in detail in an earlier article by the authors (2012). It included: paired exercise identifying business sources already used by students and identifying new sources; group work evaluating three different sources (newspapers, peer reviewed journal, Wikipedia); website evaluation checklist provided to support an activity where students evaluated Google results for a search on GATT (General agreement on tariffs and trade). As in the work of Corbett (2010), the authors hoped such an approach would make both internet and library research more approachable. The interactive nature of the session was welcomed by students evidenced by their written feedback at the end of the lecture: "Highly active and it kept me interested"; "Well presented! Good pace, tone and good activities to keep us interested"; "Informative, interactive, light and witty".

3.4. Reflective learning initiatives

Educational literature over the last two decades, Boud et al. (1985), Moon (1999) has discussed "reflection" in developing students' skills and competencies and fostering deeper learning. Moon (2002) suggests that reflection facilitates the diagnosis of core strengths and weaknesses, and the acquisition of a questioning approach. Boud (2000) and Rushton (2005) argue that self-evaluation is pivotal to developing lifelong learning. Quinton and Smallbone (2010) comment that "the ability to reflect on and analyze material in order to form reasoned judgments is central to critical thinking and deeper learning." The authors support these views and the rationale to our approach, of embedding reflection into the module, was the expectation that by engaging in reflective writing about their research skills the students would rethink their research strategies throughout the module and would use more scholarly resources within and beyond the module.

The module assignment following the lecture aimed to reinforce what students had learnt about web searching. Students were required to evaluate five web based resources on the topic of globalization, and to write a reflective piece on their own research skills and the use of the internet as a research tool. This approach followed the work of Edwards and Bruce (2002) who advocated using a post-research activity encouraging students to reflect on their search strategies. Students showed improved confidence and understanding of best practice in research, evidenced by their comments in their reflective piece: "My entire outlook on searching the internet and selecting sources of information has changed during this assignment, and I am confident it has improved my methods and understanding of using the internet as a research tool", "Despite previously believing that using internet sources was easy, I now realize that when attempting to find quality information and academically sound sources this isn't necessarily true". "The main thing I have learnt about my research technique is that it was wrong from the offset, trying to use conventional searches in Google is almost impossible. I have changed my entire outlook on searching the internet for sources of academia, my techniques and order of preferences have changed completely."

3.5. Survey of students' information literacy skills and information seeking habits

A short survey (see Appendix 1) was carried out at the start of the module to gather evidence about the level of student information literacy skills and information seeking habits. The following year, the same survey was repeated

at the start and finish of the modules in order to establish the level of student progression in these areas and the impact therefore of the module active and reflective learning initiatives. The three groups of students taking the modules were also compared to see if there are any significant differences between full-time (74 students), part-time (22 students), and international students (ERASMUS / Chinese – 27 students all full-time) taking the modules. The findings are discussed below.

4. Findings

4.1. Initial survey findings at start of the module

Initial findings from the survey undertaken at the start of the first lecture for the two modules in 2011 confirmed the module leader's concerns about poor web searching skills and over-reliance on the internet. They also showed generally poor usage and awareness of the range of quality library resources such as journals, international newspapers and international market research databases offered by SHU. Of the three groups, international students displayed the weakest information literacy skills.

When asked "Where do you first look for information for your assignment?" the most popular answer for all three student groups was Google. This was particularly the case for the international students – 68% plus a further 9% using Wikipedia. Full-time and part-time groups showed some tendency towards better sources with 39% full-time students using Google and an equal percentage choosing the Library Gateway (SHU's portal to quality library resources), and 14% choosing Google Scholar. Part-time students chose Google (37%) and Library Gateway (33%), and unlike the other two groups also liked more directed reading sources - textbooks / reading lists with 26% choosing this option compared to 8% full-time and 5% international.

The number of resources students stated they would commonly use in researching an assignment proved surprising to the module leader. She expected students to be using 20+ sources, however less than 5% of any student group chose this. The most popular response from all three student groups was 5-10, (58% for full-time, 44% for part-time and 27% for international). International students overall chose very low numbers, 14% chose 1-3, 41% chose 3-5, 27% chose 5-10.

When asked which databases they have used, the most popular reply was Mintel (UK market research database), (90% full-time, 78% part-time, 32% international), closed followed by Business Source Premier. Very few of these International Business students were using the international company / market research databases such as GMID, Mintel Global Market Navigator, and Nexis. For example GMID a key global market information database had been used by only 15% of full-time students, 22% part-time and 23% international. International students showed very low usage of databases with 50% saying they had not used any of the six databases listed.

Very few students knew what a peer-reviewed journal article is, and around one-third of full-time and part-time students and 86% of international students could not give any answer at all to this question. A small number of students thought that peer-reviewed meant reviewed by another student. Equally, few students could identify any journals they had used in previous assignments, 93% of full-time, 88% of part-time and 95% of international students did not give an answer, or stated they could not remember. Those who gave an answer identified Harvard Business Review and the Economist (less than 4% for each).

A range of answers was given to the question, "How do you decide whether a source is appropriate for your academic assignments?" The most popular answer was topic / relevancy. Part-time student showed greater reliance on recommended sources, 27%. Many students stated "don't know", (full-time 23%, part-time 15% and international 27%).

When asked "Do you ever use non-UK newspapers for international business research?", there was greater disparity between the groups, full-time and part-time predominantly answering no (72% / 74%) whereas 77% of international students answered yes. US papers were most used by all groups but the range included Chinese, Spanish, French, German, Vietnamese, Finnish, Italian, Indian, Austrian, and Asian. It is likely that the way the question is phrased encouraged international students using newspapers from their home country to answer yes, but one international student added the wise comment, "yes, depends on what country / market I am looking at".

The final question asked students where they would first look for market research on the clothing industry in China. Figure one below shows the percentage of students choosing each resource. Don't know / Google / Mintel were the most popular answers for all groups, although the full-time students seemed fully aware that Google would not be a good place to look for market research. International students again showed the greatest tendency towards internet use, but 45% could not give any answer at all. Very small numbers of students in any group actually gave a good answer i.e. one of the international market research databases such as GMID, Mintel Global Market Navigator or Business Source Premier. The popularity of Mintel is again stressed, with students not showing awareness that the SHU subscription has mainly UK only coverage - it does not cover market research on the clothing industry in China.

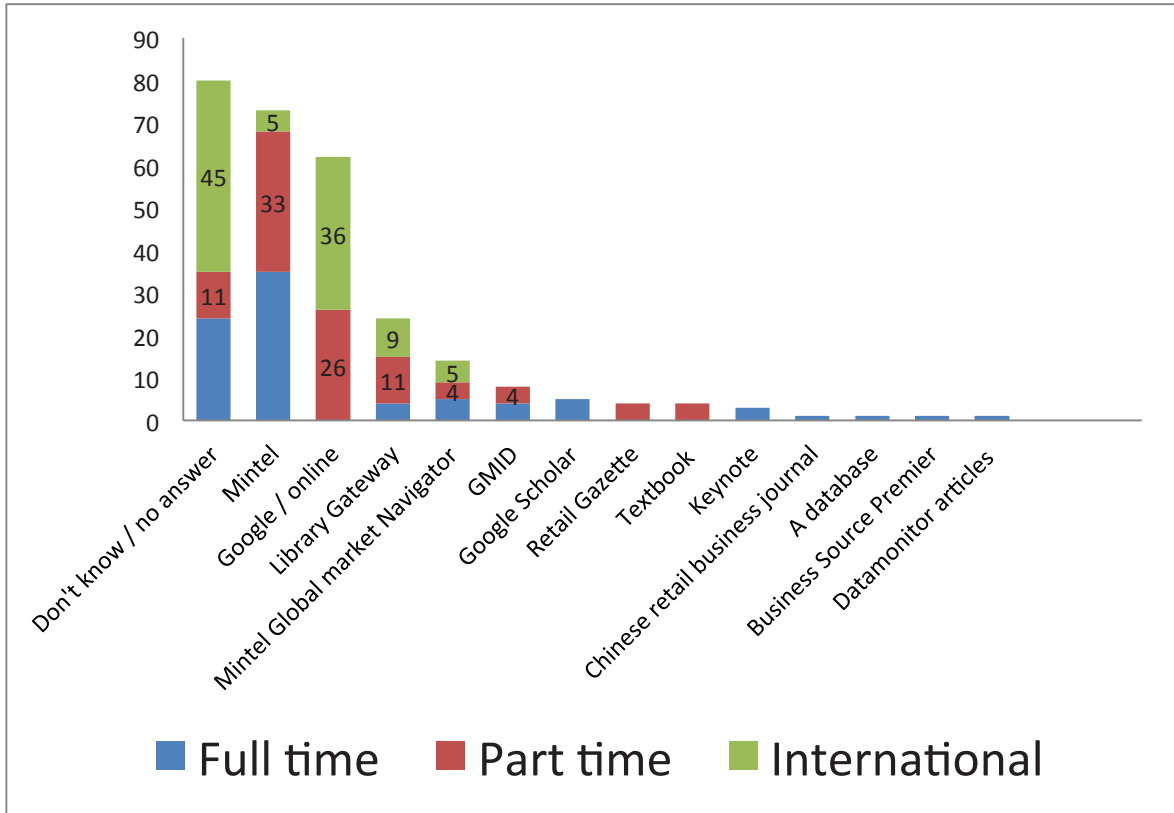


Figure 1. Graph showing range of answers to the question: Where would you first look for market research on the clothing industry in China?

4.2. Impact of the initiatives on student progression

In 2012, the same survey was used at the start and end of the module with a full-time student group (20 students) to try to ascertain student progression. Students showed a very similar pattern of skills at the start of the module to the 2011 full-time group, but by the end of the module had showed marked progression in the following areas:

- E Shift away from Google and textbooks as the starting point for research (reduced from 55% to 30%), with 80% selecting the Library Gateway at the end of the module. Some students gave more than one answer.
- E Improvement in understanding of the range of resources needed to research assignments. 45% of students increased the number of sources they stated they would commonly use in assignments. Overall, 65% stated they would use more than 10.
- E At the start of the module all students had used Mintel, but usage of two international market research databases was low. Usage increased substantially by the end of the module from 25% to 80% for GMID and from 55% to 95% for Mintel Global Market Navigator. At the end of the module 80% of students had increased the range of databases they now used, with 50% using all six databases.
- E 70% of students had been unable to state the difference between a peer-reviewed journal and a non peer-reviewed journal at the start of the module, 90% were able to correctly answer this question at the end of the module. The student who had believed at the start of the module that a peer-reviewed journal is “student approved” gave the much better answer, “peer-reviewed has been professionally and academically assessed”. At the start of the module, 95% of students could not identify any journals they used, and at the end 50% gave replies including, Research technology journal, China and world economy journal, articles from Emerald.
- E In answer to the question, “How do you decide whether a source is appropriate for your academic assignments?” the end of the module saw a much greater range of replies, with author / authority increasing from 5% to 45%, and peer-reviewed from 5% to 40%. An example answer, at start of the module gave “reliable, relevant” moving to a clearer answer at the end of the module, “Age, authority, accuracy etc”.
- E There was a significant increase in usage of international newspapers, at the start 25% used them, at the end 75%, showing less emphasis on US only papers, sources listed included, Bangladesh, Chinese, South African, Russian as well as US papers. Two students mentioned using Nexis UK (newspaper database).
- E At the start of the module, 80% of students had cited Mintel as the resource they would use to find market research on the clothing market in China, this number reduced to 30% at the end of the module showing some increased awareness in the geographical coverage of databases, with 30% citing Mintel Global Market Navigator at the end of the module compared with 5% at the start. Business Source Premier, Emerald and Datamonitor were also listed at the end of the module, but sadly there was no evidence of increased use of GMID, only 20% of students citing this at both start and end of the module.

In addition to carrying out the survey at the start and end of the module, the module manager also looked in detail at nine students (four UK full-time, three UK part-time and two (full-time) Chinese students) survey findings and compared these with the sources used to complete the final report for the module. All students showed better awareness at the end of the module about the number of sources they recognized they needed in researching an assignment. In all cases the actual number of sources used in the final report was much greater, students using between 25-37 sources in their bibliography, see figure 2 below.

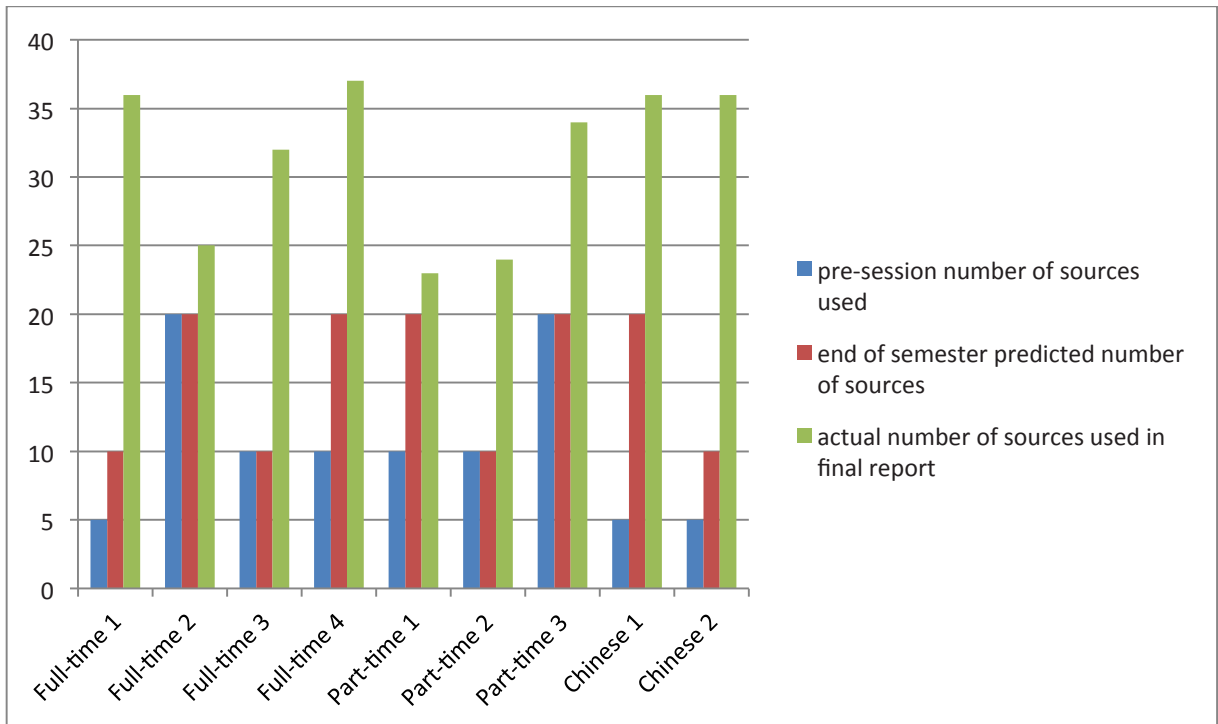


Figure 2. Graph illustrating the number of sources students stated they would use in researching an assignment

There was also an increase in the number of databases used and a good range of quality international journals (many peer-reviewed) being used, for example: *International Studies Review Journal*, *European Management Journal*, *Journal of Chinese Economic and Business Studies*, *International Journal of Productivity and Performance Management*, *International Review of Applied Economics*, *International Journal of Management and Enterprise Development*, *The Economist*, *Business Week*. The module leader was also encouraged that students had gone beyond the most obvious business sources to use sources related to industry sectors, for example, *Oil and Gas Journal*, *Energy Weekly News*, and *Health Service Journal*. It was interesting to note that although part-time students in the survey said they would use databases more, only one of the three part-time students studied in detail acknowledged using databases in their bibliography (four including GMID) for their final assignment. This area merits further investigation.

It was positive to see increased evidence of usage of international news sources. The surveys of the 20 full-time students had shown use of a wider range of international news sources, and some shift away from US only sources. The more detailed analysis of the nine students showed there was still a predominantly US focus - *Washington Times*, *Pittsburgh Post-Gazette Journal of International Affairs*, *The Washington Quarterly*, although *Russia Today*, *China Daily*, *Kenyan Daily Nation* were cited by students. This area merits further reinforcement by the international business teaching team to encourage students to have a global perspective on the global business environment. The survey findings will be explored in detail by the library staff that deliver information literacy induction and first skills workshops to first year business students in order to try to address some of the evident weaknesses earlier on.

5. Conclusions and recommendations

The module leader and library staff believe that active and reflective learning initiatives have had a positive impact on the web searching skills of international business students. This is supported by survey findings, student written feedback after the collaborative lecture and workshops, and students' reflective writing and final reports. However, research by Epp (2008) suggests that to reflect deeply and critically is not intuitive to some students and lecturers, and some resistance was encountered to the reflective element of the assessment from one lecturer and a small number of students. This is not an unusual reaction as Moon (2004) comments, some staff and students believe reflection is 'touchy-feely'. Therefore we recommend that in any adoption of reflective writing lecturers and students need support and guidance and there should be a clear understanding of the purpose and the expectations of the reflective writing.

Using active learning in lecture based classes is challenging because of numbers, fixed seating and student expectations that in lectures they are passive. It is also time consuming to develop and tailor innovative and effective learning activities for a lecture based setting. Despite this, we believe that embedding information literacy into the module is the most effective way of improving student web searching skills and that active learning engages students, " All good – more group work than normally experienced! Thanks," (student written feedback at end of lecture).

Our initial aim was to improve the web searching skills of students for academic purposes, as we recognised the importance of web searching skills to students' academic success and hence employability. By changing to an active and reflective learning approach, in which our students engaged with the subject through researching, reading, writing and reflecting we believe we have enabled them to be more effective learners and graduates with impact, as corroborated by one of our students (written feedback), "All of this will not only greatly help me when it comes to researching my other assessment tasks but will be a skill which stays with me forever."

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Appendix 1*Survey questions*

1. Where do you first look for information for your assignments?
2. How many sources would you commonly use in researching an assignment? (Choice of 1-3, 3-5, 5-10, 10-20, 20+)
3. Which of these databases have you used? (Choice of Emerald, Mintel, Mintel Global Market Navigator, Business Source Premier, GMID, Nexis UK).
4. What is the difference between a peer-reviewed and a non peer-reviewed journal?
5. Which peer-reviewed journals / non peer-reviewed journals have you used in the past for your assignments?
6. How do you decide whether a source is appropriate for your academic assignments?
7. Do you ever use non-UK newspapers for international business research? If so, which?
8. Where would you look first for market research information on the clothing industry in China?