

VALUE AND IMPACT OF LIBRARIANS' INTERVENTIONS ON STUDENT SKILLS
DEVELOPMENT

[Shortened title: VALUE AND IMPACT OF LIBRARY TEACHING ON SKILLS]

Sue Shreeve (lead author)

Faculty Librarian: Faculty of Business and Law

University of the West of England, Bristol

Coldharbour Lane

Bristol

BS16 1QY

Susan.Shreeve@uwe.ac.uk

Fax: 0117 32 82407

Jacqueline Chelin (contact for editorial correspondence)

Deputy Librarian and UWE Learning and Teaching Fellow

University of the West of England, Bristol

Coldharbour Lane

Bristol

BS16 1QY

Jacqueline.Chelin@uwe.ac.uk

Fax: 0117 32 82407

This article has not been published elsewhere. A formal report for the funders of the research (UWE) is available in the UWE Research Repository.

This work was funded as part of UWE's Learning and Teaching Fellowship scheme.

VALUE AND IMPACT OF LIBRARIANS' INTERVENTIONS ON STUDENT SKILLS DEVELOPMENT

Abstract

The research aimed to discover the perceived impact and to identify the value of four information skills teaching interventions within the curriculum in three faculties at the University of the West of England. Faculty and library staff interviews and student focus groups were used to gather evidence about the perceived impact of the interventions, to identify possible enhancements and to investigate the drivers and barriers to embedding information skills teaching within modules. Staff and students were positive about the structure, content and administration of the library interventions and the impact of librarians on the success of the sessions. The overwhelming majority of comments relating to the perceived impact of library interventions (84%) were positive and none was negative. One fifth of the comments noted a perceived increase in confidence in searching for information. Improved searching behaviour and development of new skills were reported. Where skills were assessed students were motivated to engage, particularly when marks were awarded. The librarian/faculty staff relationship and a desire to improve student engagement with library information skills teaching were key factors in driving the embedding and assessment of library interventions.

Introduction

Measuring library value and impact

As indicated by Poll (121), libraries have traditionally collected and presented basic data about the input into their services (funding, staff, collections, space, equipment) and the output (loans, visits, downloads, reference transactions). However, more recently, and along with other non-profit organizations, there has been a greater focus on libraries needing to

prove their value. Poll (123) defines value as “the importance that stakeholders ... attach to libraries which is related to the perception of actual or potential benefit; monetary value may be included”.

Oakleaf (18), in a research report on the value of academic libraries, reviews the quantitative and qualitative literature, methodologies, and best practices currently in place for demonstrating the value of academic libraries and identifies where gaps in this research occur. She observes that “there are no simple solutions to the challenge of articulating academic library value”.

Tenopir (6) groups value measurement into 3 categories: implicit value (measuring usage and assuming if the library is used then it is valued), explicit value (asking stakeholders about the value or outcomes attributed to their use of the Library Service), and derived value (value in monetary terms including Return on Investment). She describes two methods - critical incident (to show outcome) and return on investment - that can be used to measure and demonstrate explicit and derived value of academic libraries (6). Results from several studies that use these methods are described in the context of the Lib-Value project.

Tenopir explains that the Lib-Value Project was established to focus on the value, outcomes and return on investment of academic libraries and to publish models and web-based tools from phase three of its work that will help to calculate and assess value and return on investment. Tenopir argues that in “an age of continually growing digitisation, globalisation and abundant information, the value of academic libraries is greater than ever before” and that academic libraries “remain central to research and education as they ensure information access, foster innovation, encourage collaborative research and promote information literacy skills vital to the success of tomorrow’s leaders”.

According to Poll (124) the measurement of value has largely been carried out through impact assessments.

Markless and Streatfield (5) define impact as “the difference made to individuals or communities by a service” which, as Brophy points out, can be either positive or negative, short or long term, what was intended or something entirely different. The difficulties inherent in studying impact are widely acknowledged, e.g. by Payne et al, (176), Brophy, (44), Poll and Payne, (550). Brophy (46) describes the development of a model for assessing the Level of Impact (LoI) of a library service, while Markless and Streatfield (7), within their Impact Implementation Initiative, recommend a process model in which managers are encouraged to explore impact by looking for changes within their users in the areas of:

- Behaviour (doing things differently)
- Competence (doing things better)
- Levels of knowledge
- Attitudes (e.g. confidence, valuing librarians)

According to Poll (127), impact studies are particularly appropriate for demonstrating changes in skills and competences and higher success in research, study or career. The Library’s influence on a student’s success might be shown in the quality measures used by the university, such as high marks, retention and employment. Various methods could be used to answer the questions sought through an impact study, including “stories” about students’ personal experiences of skills development (128).

This links with a report from the University of Loughborough on evolving value for academic libraries. In this, Creaser and Spezi (3) assert that the drivers for collecting evidence of value are the desire to serve the community of users and the need to substantiate budget allocation claims. Although in the UK the latter is largely done through quantifiable evidence such as statistics, a more recent preference in the US is to use “success stories”. Creaser and Spezi (15) encourage librarians to collect testimonials, which, when collated, can provide a powerful body of evidence of value.

Wong and Webb (361), in Hong Kong, and Stone and Ramsden (546), in the UK, successfully demonstrated a statistically significant positive correlation between library resource use and level of students' academic performance. However, the conclusions drawn were not indicators that library usage and student attainment have a causal relationship. As Poll and Payne (547) acknowledge "The main problem of impact research is that influences on an individual are manifold and that therefore it is difficult to trace changes and improvements back to the library". Markless and Streatfield (75) also sound a note of warning, recommending that researchers "Try to be realistic about what can be demonstrably achieved ... cause and effect relationships are difficult to establish in the real world".

Embedding and assessing information literacy

The term information literacy espoused in this paper refers to the SCONUL definition (3) which asserts that information literate people "will demonstrate an awareness of how they gather, use, manage, synthesise and create information and data in an ethical manner and will have the information skills to do so effectively". This model defines the core skills and competencies (ability) and also the attitudes and behaviours (understanding) associated with information literacy. Bearing this in mind, the aims of the teaching interventions described in this research are to develop students' information skills (ie their ability) in order to help them to become information literate (ie by demonstrating understanding of how this impacts their learning).

Oakleaf advocates assessing information literacy not only as a means of being accountable to stakeholders, but as a way of demonstrating librarians' contributions to student learning, gaining feedback to improve librarian teaching, bolstering instructional program performance, and increasing student learning. Oakleaf (14) also states that "The best learning assessments are authentic, integrated, performance assessments focused on campus learning outcomes including information literacy".

Walton and Hepworth's longitudinal study of changes in learners' cognitive states during and following an information skills teaching intervention (467) "provides evidence for IL practitioners that assessment is an essential ingredient in facilitating successful learning and, as a consequence, an information literate student population". It was only through task completion that changed information behavior was fully evident (468).

Knight (19) maintains that the data resulting from assessments helps to strengthen librarian connections with faculty members, while Oakleaf (278) states that success in the assessment of information literacy can be leveraged to form collaborations, find funding, and champion change.

Lockerby et al. recommend that collaborative assessment results can also be used to reaffirm the importance of the information skills instruction to faculty and encourage new faculty members and departments to become involved with information literacy initiatives. While library literature includes examples of collaborative information skills instruction, Jacobsen and Mackey feel that few examples of collaborative information skills assessment actually exist.

Farber (231) notes that "from an educational perspective course-related instruction was the most effective" and that students are more likely to value information skills instruction when information skills are presented within disciplinary contexts. Koneru asserts that collaboration between librarians and faculty staff is an essential component of successful information skills instruction. Creaser and Spezi's survey (1) indicated that having library teaching that is embedded in programmes was felt to be highly valued by teaching staff in all three regions studied (UK, US and Scandinavia).

Creaser and Spezi (1) recommend that library managers "Document the processes and effective strategies for building partnerships with teaching and research staff, so that these can be replicated easily". Cooke et al. (26), investigating the perceived impact and value of

academic liaison librarians (ALLs) at Loughborough University, also discovered that there was scope to increase awareness of the range of services on offer.

The literature suggests a variety of other barriers to collaboration between faculty staff and librarians. The following have been collated by Cooke et al.:

- lack of recognition by faculty staff of the importance of teaching information skills and a belief that it is something students already know, will "pick up," or that cannot be taught (McGuinness)
- even when academic staff acknowledge the importance of information skills instruction, they may not make time to integrate instruction into their courses (Leckie and Fullerton).
- a perception by faculty staff that the production and dissemination of information is their role (Christiansen et al.)
- the physical separation of faculty staff from the library (Christiansen et al.)
- infrequent interaction between library and faculty staff revolving around "functional" matters with librarians viewed as reactive service providers (McGuinness)
- the ambivalence of some faculty staff towards closer library liaison resulting in an "asymmetrically disconnected" faculty-library relationship (Christiansen et al.)

According to Cooke et al., however, many faculty staff, however, recognise both the value of information skills instruction and the role of librarians in teaching such skills (26)). Clearly, academic staff attitudes vary widely in relation to IL collaboration, some hindering collaboration while others facilitate partnerships.

The University of the West of England (UWE) context

Librarians have been offering information skills sessions to students for decades. However, there are now various forces combining to change the environment further and to give cause for more critical reflection, analysis, action and evaluation of these interventions:

- increasing numbers of students studying part-time/at a distance
- increasing use of technology enhanced learning and social networking technologies
- the need to engage students early in their studies in order to aid retention
- the need to develop confident learners who can transfer their skills to a range of post-university futures

A number of UWE initiatives have offered a timely opportunity to focus on the further development of information skills:

- a review of all programmes and a “curriculum refresh” gave rise to more collaborative working between library and faculty staff to embed information skills appropriately into the new/revised programmes
- the introduction of a new academic integrity policy raised the need for co-ordinated efforts to develop students’ understanding of plagiarism and how referencing skills can help to overcome this
- the revitalisation of a specific UWE approach to reading lists (called Reading Strategies) raised awareness of the need to ensure students are equipped with the skills to find information beyond the reading lists they are given
- the introduction of a new Library Search facility changed the focus to the need for students to be able to evaluate resources effectively rather than just the ability to find them.

Taking account of various recent studies by Oakleaf and Creaser and Spezi and projects such as the Lib-Value Project, faculty librarians have been discussing how they might measure and evidence the impact of their activities on university strategies, and particularly how their learning and teaching interventions impact students’ skills development and academic achievement.

According to Oakleaf (13) “librarians can integrate library services and resources into high impact educational practices” such as first-year seminars, linking library resources into

course materials and collaborating on assessment design. Indeed, these practices are being implemented in pockets across UWE and were ripe for evaluation and assessment.

These initiatives share similar aims:

- To ensure that students can access and effectively use library resources
- To embed library content at the appropriate time and place
- To offer interactivity and the opportunity for reflection and assessment
- To recognise the importance of information literacy
- To provide accessible and inclusive opportunities by employing different methods and technologies.
- To empower students to learn independently

Creaser and Spezi's (1) research indicated that embedded library teaching was felt to be highly valued by teaching staff. Creaser suggests that academics can easily see the value of what librarians provide and the impact this has on the quality of the work they receive from students. In addition, it appears that the librarians' input into curriculum design is appreciated and generally well received by both senior managers and teaching staff. But was that the case at UWE and could we generate stories to add to the evidence of impact suggested in that study?

Project aims and objectives

The aim of this study was to discover the perceived impact and to identify the value of library interventions within the curriculum in developing information skills. The intention was to use this information, not only to influence UWE policy and practice, but to contribute to case studies ("stories") and to outline best practice that could be shared, as well as utilizing the models being created in other projects.

The project objectives were:

- To gather feedback on specific library interventions during 2012/13 to identify possible enhancements and to improve librarian teaching
- To analyse the perceived impact of specific library interventions on students' information skills development during 2012/13
- To define and promote the value of the impacts measured
- To investigate the drivers and barriers to faculty staff embedding library teaching within their modules with a view to recommending future processes and effective strategies to build on partnerships with faculty staff

The evidence gathered is being shared internally and externally and used to develop and inform future practice.

Method

The project involved evaluating the impact and identifying the value of 4 library interventions that were embedded within the curriculum of the Faculty of Environment and Technology (FET), the Faculty of Business and Law (FBL) and the Faculty of Health and Life Sciences (HLS). Feedback was also gathered regarding possible enhancements to these library interventions and the perceived drivers and barriers to embedding library interventions within their respective curricula.

- FET Library Online Workbook (LOW)
- FBL Legal Methods Building Legal Information Skills (BLIS) activity
- FBL Criminal Law teaching
- HLS Critical Appraisal Skills Problem-based Learning (PBL)

(See appendix 1 for further details).

These interventions help to scaffold the student learning in various ways, as recommended by Walton and Hepworth. FET LOW, for example, offers clear instructions and set questions to be answered which helps enable students to create their own meaning and hence engender learning (461). The HLS intervention offers a group orientated and problem based approach where the practitioner guides rather than leads the process and the popularity of which, inevitably, depends upon the previous experience and learning style of the students (470).

Data collection

The data was gathered via student focus groups, one for each library intervention.

Support from the module leader and use of the virtual learning environment aided recruitment of focus group participants. Students were emailed via Blackboard about the opportunity to volunteer and Amazon vouchers were used as an incentive. Support from Student Representatives was also helpful in encouraging participation.

During the focus groups, guiding questions were used (see Appendix 2), based on Markless and Streatfield's Impact Process Model (7), and a desire to gather feedback to improve librarian teaching. Quantitative data was also collected in the form of feedback from students regarding their perceived level of confidence (on a 1-6 point scale) before and after the library intervention. The focus group discussions were recorded.

One-to-one interviews were also carried out with faculty staff who led modules within which the library interventions occurred. A total of 4 one-to-one interviews were held, from a pool of 12 potential staff. During the interviews, guide questions were used (see Appendix 3), also based on Markless and Streatfield's Impact Process Model (7), with a view to investigating the drives and barriers to embedding library teaching, gathering feedback to improve teaching and checking whether the teaching had any particular impact on black and

minority ethnic students, students with disabilities or male students, in particular. The interviews were also recorded.

Several of the lecturers had not been present when the library intervention was initially embedded within their module, so one-to-one interviews were also carried out with faculty librarians who had been instrumental in setting up each of the library interventions, in order to gather further feedback regarding the drivers and barriers to embedding the library interventions. The interviews were recorded.

Ethical issues

In keeping with ethical recommendations, all participants received a Participant Information Guide prior to participating in the project and signed a Consent Form.

Although this topic was not “sensitive”, anonymity was guaranteed within the report. However, verbal permission was obtained from the staff interviewed to link their comments to their academic department for the purposes of comparison, even though it was explained that this would reduce their anonymity.

Data analysis

The recorded focus group discussions and staff interviews were transcribed and comments were then colour coded by broad theme:

Theme 1 - Structure content and administration of the library intervention

- Positive comments, including timing
- Neutral, developmental or negative or comments, including timing

Theme 2 - Perceived impact of the library interventions

- Positive perceived impact in terms of change in behaviour, competence, level of knowledge or attitude

- Neutral perceived impact in terms of change in behaviour, competence, level of knowledge or attitude observed
- Negative perceived impact in terms of change in behaviour, competence, level of knowledge or attitude

Theme 3 - Motivation of students to engage with the intervention

Theme 4 – Drivers and barriers to embedded teaching

Once coded, Microsoft Excel was used to compare comments and to look for similarities, themes, and also divergence in attitudes and opinions. Comments for each library intervention were further classified by topic. The topics chosen are listed below:

Theme	Topic
Course Positive or	Structure
Course Developmental	Administration
	Content
	Time
	Level of difficulty
	Look and feel
	Future library input
	IT
	Librarians
Impact Positive or Impact Neutral	Competence (do things better)

	Behaviour (do things differently)
	New skill - evaluation
	New skill - referencing
	New skill - transferable
	New skill - truncating
	New resources
	Not yet used
	Attitude - librarian
	Attitude - confidence
	BME
	Motivation
	Administration
	Librarian
	Relevant content
	Peer recommendation
	Structure
	Attitude
	External factors
	Timing
Drivers and barriers to embedding teaching	Librarian/faculty staff relationship

	Attitude – importance of IL
	Ease of scheduling
	Ease of implementing
	Curriculum refresh
	Improve student engagement
	Best use of resource
	Librarian initiated
	Academic staff initiated
	Evolution of previous librarian teaching
	Essential for course structure/content
	Evidence of library teaching success
	Lack of awareness
	Attitude - IL skills not relevant
	Attitude - IL skills already developed
	Attitude - one point of delivery
	Staff time and workload
	Curriculum time
	Lack of librarian/faculty staff forum

Results

Theme 1 - Structure, content and administration of the library interventions

One of the objectives of the research was to gather feedback on specific library interventions to identify possible enhancements and to improve librarian teaching. As observed by Creaser and Spezi (1), embedded library teaching was found to be highly valued by teaching staff. In general, both the faculty staff and the students interviewed gave positive feedback regarding the structure, content and administration of the four library interventions, covering areas such as:

- The methodologies used and content relevance

“The methodology... I think that was the best way to be taught really ... I loved that it was practical”. (HLS student)

“I thought that what the Library provided was really good ... [The librarian] put together some worksheets that were specifically aimed at the [assignment] questions that we were giving to the students ... it was a really good way of getting [the students] off on the right foot.” (FBL lecturer)

- The impact of the librarians on the success of the session

“... you have friendly librarians who run the session, they are very accessible, they make it clear to the students they can come and ask for advice at any time, which I think is excellent...” (FBL lecturer)

“Yes, it was all very well facilitated, it was nice [the librarian] came to introduce it ... if someone different comes in and tells [the students] something ... they think “This is different! We must pay attention now!”” (FET lecturer)

- The look and feel of the library intervention material

“It was very well structured” and “...it was ... easily set out, in different categories, I didn’t find myself getting muddled up in it, so it was good...”. (FET student)

- The availability of library intervention material online after the session for students to access at their convenience

“... the fact that [BLIS] materials are then available online, so [the students] ... can organise their own time ... it works extremely well”. (FBL lecturer)

- The timing of the library interventions

“[The library teaching] fits very nicely with the lecture on systematic review.” (HLS lecturer)

- The availability of library ‘clinics’ or ‘catch-up’ sessions to assist students after the library interventions

“[running library clinics] was ... picking up the stragglers, but also I think, as you are researching ... you don’t understand how to look for something very specific and ... that is too focused to cover in that workshop, so being able to go and ask those questions [at a library clinic] is important.” (FBL lecturer)

- The level of difficulty of the content

“I liked that we went through our questions and [the librarians] ...helped you to know how to research things ... most of the resources ... I had never used before, so at the start it was quite difficult, but ... with the help of the librarians...” (Criminal Law student)

However, there were areas highlighted by comments where enhancements could be made including:

- Breaking the material down into more manageable chunks
- Making the FET LOW assessment test more challenging
- Updating the look and feel of the FET LOW
- Offering “refresher” repeated library sessions to enable students to refresh their IL skills.

The general success of the embedded library interventions meant that three of the four lecturers interviewed were happy to suggest other modules where the future embedding of library teaching could have a positive impact on student skills.

Theme 2 - Perceived impact of the library interventions

As suggested by Creaser and Spezi (15), the comments collected do provide a powerful body of evidence of the perceived value of the library interventions. The interview and focus group questions that were developed, based on Markless and Streatfield's (7) Impact Implementation Initiative, were successful in eliciting such comments. The overwhelming majority of comments relating to the perceived impact of the library interventions (84%) were positive and none was negative.

Perceived positive impacts included:

- Improved confidence

"... [I was] not confident at all before ... it has actually been a few months since the session but yet to say I am still confident, being able to research, very helpful session." (Criminal Law student)

"I can look at the key words in a research title or subject and be able to confidently use it for the search." (HLS student)

- Altered attitude towards librarians

“I’ve ... learnt that there are actually librarians to help you here ... you can actually contact [the librarians] and they do understand how to research Law in the way we are doing it. So I was quite surprised, I didn’t know.” (Criminal Law student)

- Altered behaviour in terms of less use of Google and Wikipedia and use of new resources, including a variety of reliable library sources

“Usually all I would have would be Google and Wikipedia and [the library teaching] showed me how to find the specific books that are appropriate to the topic I am looking for and that is very helpful as it is much more reliable ...” (FET student)

“... you can definitely see [that the students’ research skills have been affected] in their research trails ... the people who have attended [the library teaching] ... have invariably used a better selection of material.” (FBL lecturer)

- Learning new and transferable skills such as:
 - evaluation of resources
 - referencing
 - search skills including truncation of search terms
 - legal research

“ ... I think [my ability to evaluate resources] has changed ... being confident, knowing which resource is more trusted than others ... appreciating why they are trusted and why they are not ...” (FET student)

“Yeah, I think it definitely helped me, it ... showed how to find a book and reference it or ... know what shelf it is on ... Before I didn’t know but I knew after”. Criminal Law student

“... I had only ever done Harvard [referencing] before, so I did really appreciate the Library session as it was the introduction of how to use OSCOLA.” (Criminal Law student)

- Improved competence in terms of:

- knowledge of which databases to use when
- improved use of search terms
- finding more relevant results
- finding results more quickly and easily
- better handling of results

“Now I know how to put in the search words, synonyms, the truncation, that sort of stuff, it is easier to search now, I don’t have to spend hours searching.” (HLS student)

“I do understand the search engines better, yeah and how to search better and make sure it is more specific, rather than having extremely large [sets of] results.” (Criminal Law student)

“... before ... I had a problem on how to export some of the papers I got after doing the search on the databases ... but after the training I knew how to add those papers to folders and to export them.” (HLS student)

“... this [library teaching] obviously helps in terms of knowing where to look.” (FET student)

- Several comments from both students and staff supported the idea that library interventions can teach students skills that they will use in other areas of their study, in their career or in their wider lives, including research skills generally, legal research skills and coping in an online environment.

“[During the BLIS library session the students learn]... really important core skills ... and if they don’t have that core skill they are not going to be able to function as lawyers basically ... I think there is a high level of [information literacy skills] being transferable ...” (FBL lecturer)

“... even if you are going to be searching on a website or Google, you know how to go around it ...” (HLS student)

“In terms of research obviously ... through your career, as long as you keep the basic principles in mind of knowing where to look, you can take that with you.” (FET student).

Theme 3 - Motivation of students to engage with the library interventions

The following factors were perceived to increase student motivation to engage with the library intervention and need to be considered when designing and administering library interventions:

- Assessment of the skills learnt during the library intervention, particularly when marks were awarded

“That percentage they put on the test is a good incentive definitely” (FET student)

“... students seem to be more motivated if they know they are going to be assessed, theoretically they should all be interested in the subject for its own sake, but in the real world ... that will increase their motivation and attendance dramatically.” (FBL lecturer)

- Various factors involved in the administration of the intervention including:
 - Promoting the session using Blackboard and lecturers
 - Communicating clearly the value of the session to students prior to the session (particularly any peer recommendation)
 - Timing of the session earlier in the term when students are very engaged
 - Monitoring attendance
- Tailoring the session so that it is relevant to the students

“[The library teaching session questions] encourages [students] to actually focus as well in tasks, they know they are going to be studying either one of those questions” (Criminal Law student)
- Including a practical element so that students can try out their newly learnt skills in a supportive environment

“... [the thing I liked best about the session was that] we actually did it ... we were given the topic and we were guided through searching different databases.” (HLS student)

“The [librarians]... were really approachable ... and we’d all have to do [questions] and they’d come round to make sure everyone was on the right track, so that was nice, that was good”. (Criminal Law student)

Theme 4 - Perceived drives and barriers to embedding library teaching

Three of the four library interventions had evolved from previous library teaching where a close librarian/faculty staff relationship already existed and many of the comments elicited by the research indicated that the presence of a good librarian/faculty staff relationship was key to the successful embedding of library interventions. Creaser and Spezi (1) recommend that library managers document the processes and effective strategies for building partnerships with faculty staff, so that they can be easily replicated. Some of the successful strategies at UWE have included:

- Attending regular faculty meetings (and requesting invitation to such meetings if necessary)
- Arranging annual meetings with Programme Managers
- Running IL skills refresher sessions for faculty staff
- ‘Librarians on Tour’ – librarians base themselves in a faculty corridor so that there is the opportunity to engage in conversation with passing staff and students
- Targeting new academic staff through ‘Welcome’ emails to promote the help available through the library and to invite them to meet with the library team
- Running IL skills training for new staff
- Involvement in induction sessions for new module leaders

Changes to university governance such that librarians and module leaders rarely encountered one another at faculty meetings was recognised as a barrier to building this essential librarian/faculty staff relationship. Librarians welcomed the prospect of the reinstatement of Faculty Board meetings in academic year 2013/14.

In addition to the librarian/faculty staff relationship, the following factors were also perceived to **drive** the embedding of library interventions:

- Initiation by the relevant subject librarian
- Curriculum refresh or development providing an opportunity for collaborative working between library and faculty staff to embed information skills appropriately into the new/revised programmes

“I think the new curriculum has probably got something to do with the fact that ... it was really opportune ... to introduce something very practical, giving the students an opportunity to practice what they had just learned, and it all fitted together really well”. (HLS librarian)

- The need to improve student engagement

“... [approximately] one half of the students that could have come on the [previous library teaching sessions] with us did. So really [the FET LOW] was looking to see if we could get a better return rate on that.” (FET librarian)

- Evidence of library intervention success being made available to faculty staff so that they are aware of the library offering
- The need to make the best use of library staff resource and so to be creative in the way that IL literacy skills are developed

“We are doing quite a lot and our staffing has stayed the same ... but back in 2010 it was cut quite considerably, so it is about us being creative in the way we reach our students ... trying to be more efficient in how we use our time and resources.” (FBL librarian)

- Faculty staff appreciation of the importance of IL skills

“I think the need for a Law student to be able to go online and find Legal resources that are specific for a Law degree is essential ... a real core skill for every Law student” (FBL lecturer)

- The ease of implementing and scheduling the intervention on the part of faculty staff

“I know [the faculty librarian] and everyone spent a lot of time putting it together, but from my point of view it is great, it was there ... [the librarians] do all of the work ... all the marking and put the assessment up and that kind of thing“ (FET lecturer)

- Initiation by a member of faculty staff with a specific idea for a course structure/content that will only work with librarian support
- External factors such as the requirements of the legal regulatory bodies that law schools involve their subject librarians in legal research training

This research has identified the following **barriers** to embedding IL skills teaching:

- Faculty staff attitude that students already have IL skills or don't require them for their particular subject area

“I think there is that expectation, and I probably have similar expectations in a way, that [students] should know how to use a Library and just get on with it, go to the Library and they don't!” (FET lecturer)

- Faculty staff attitude that IL skills teaching should be delivered at a single point within the curriculum

- Lack of staff time and large staff workloads

“... we need to organise ourselves in advance and ... [time] gets eaten up ... if you wanted to embed some more Library stuff into your module, you have to think about it really in advance and I think the big barrier to that is workload and time” (FBL lecturer)

- Lack of awareness of the library offering

“I don't know if [staff] do [know about the option of involving the library]” (Criminal Law lecturer)

- Lack of curriculum time

Conclusion/discussion

The research supported a number of the views expounded in the literature and which library staff had suspected were valid but needed further proof.

The view that embedded library teaching was highly valued by teaching staff (Creaser and Spezi, 1) was certainly found to be the true in the cases investigated at UWE. This was supported by the fact that the perceived value of the interventions was wholly positive.

Indeed, students were keen to articulate their positive experiences which linked clearly with the knowledge, friendliness and approachability of librarians. In effect the librarians were doing what Walton and Hepworth recommend (468) and demonstrating that they recognise the uncertainty inherent in students and providing interventions that aimed to help them to gain confidence.

The students and staff both appreciated the efforts to tailor the sessions to the students' current academic studies which supports Farber's (231) claim that students are more likely to value the sessions when they are presented within the disciplinary context. Indeed, motivation and the inclusion of IL skills in assessment is clearly a key factor in engaging students as evidenced by Walton and Hepworth's study which asserts "that motivation deserves greater emphasis in IL teaching and learning" (462).

The fact that 3 of the 4 module leaders involved were happy to suggest other modules for further embedding of library skills teaching is consistent with the view of Lockerby et al. that the outcomes of such collaborative endeavours can lead to new faculty members becoming involved with these initiatives.

The view of Cooke et al. (26) that many faculty staff recognise the value of IL instruction was endorsed by the staff at UWE and particularly those in the Faculty of Business and Law where improvements in students' work has been noted.

The relationship between faculty and library staff was found to be instrumental as an entrée into collaborative work on embedding and assessing students' IL skills and the positive outcomes, as Knight (19) indicates, can be leveraged for building closer links.

Unfortunately, a lack of time, as indicated by Leckie and Fullerton, was acknowledged by staff at UWE as an impediment to embedding library interventions. The perception is that time (i.e. space) is needed within the curriculum as well as for undertaking the necessary collaborative work.

As McGuinness suggests, the research found that there were nonetheless some staff who felt that students might not need specific instruction and should know how to use a library and its resources. Furthermore, if academics do recognise the need, they might have an outdated

view of library staff as reactive service providers and not be aware that librarians can fulfil this purpose.

To address the less positive aspects described above, it is important to promote the proactive role of librarians and their ability to offer valued benefits such as embedded skills teaching, without causing a lot of extra work for academic staff. The experience at UWE indicates that librarians need to be vigilant to any opportunities that provide the ability to enter discussions with faculty staff for developing new ways of developing student skills. The record created from this research is providing evidence to persuade the more skeptical.

Limitations and strengths of the research

Although it is not possible to make generalisations about the perceived impact of library interventions and the perceived drivers and barriers to embedding library interventions beyond UWE, the data collected from the interviews and focus groups has helped to validate the findings of research on library interventions in the UK and beyond.

Many of the outcomes of the research provided information about the changes to students' feelings, perceptions and intentions, e.g. improved confidence and altered attitude towards librarians. Not so many of the outcomes indicated specific observable changes to behavior – although less use of Google and improved competence in various areas of searching were evident in the sessions.

It was interesting to hear the detailed and personal views of interviewees. The main problem encountered was finding a time to interview busy staff. It would also have been helpful to gather feedback from staff who had not yet embedded library interventions within their modules as to the reasons for this. In future study, data could be gathered from a wider number and range of staff by means of a questionnaire based on the responses of those

staff who were interviewed in this study. This would enable verification of the interview findings and capture of a broader range of views.

Students within the focus groups were very vocal and it was interesting to hear their opinions. However, it was very difficult to get students to volunteer, despite the incentive of Amazon vouchers and the assistance of the Student Representative Co-ordinator. As a result only a small number of students contributed to the study, although there was diversity amongst those who did volunteer with males and females, UK and international students all volunteering:

- 4 in the FET focus group
- 3 in the Criminal Law focus group
- 3 in the HLS focus group

Furthermore, we were unable to encourage any students to attend the BLIS focus group, despite offering to re-schedule the session which 4 student volunteers failed to attend. Even the option of answering the questions by email for the same reward failed to elicit any response. The views expressed within the focus groups are therefore fairly narrow and further study is needed to investigate whether the opinions shared ring true for the broader student body. The use of a questionnaire based on the initial findings of the focus groups could be used to gather feedback from a broader number and range of students.

The timing of the focus groups could also have been improved to increase attendance. During the semester in which the research began, two of the modules in which library interventions were embedded had completed. The time-frame for contacting the students was also very narrow due to the approach of the summer term when students are less frequently present on campus. It is planned in the future to obtain feedback from students

sooner after they receive their library intervention although not so soon that they have not had time to assimilate/reflect upon its impact.

When scheduling the focus groups we were also aware that the timing chosen could affect the type of students that volunteered. For example, the time chosen for the HLS focus group was more difficult for the part-time members of the cohort to attend as they were not already on campus. Time and resource limitations made it impossible to run more than one focus group for each intervention.

The current study, however, was funded by a UWE learning and teaching grant which means that the outcomes will be promoted widely to all academic staff.

Recommendations

- Enhance, expand and develop any current library interventions for different discipline/curriculum areas, ensuring that these interventions are embedded at selected points throughout the curriculum, reinforcing and developing student skills at all levels, and evaluated appropriately.
- Follow up on the interventions and try to identify whether the students concerned achieved higher marks for demonstrating skills relating to information literacy such as better referencing, use of higher quality resources, etc.
- Develop a university information literacy policy that requires embedded and assessed IL interventions on large core modules, where possible, citing the evidence from this research and continuing to gather (qualitative) evidence of impact.

- Take opportunities afforded by changes within the University to initiate teaching collaborations with academic staff, including learning and teaching projects/fellowships.
- Write up and publish these case studies to add to the “stories” supporting evidence of value and impact of library interventions embedded within the curriculum.

Assess whether the embedded interventions reduce students’ use of the library’s enquiry services or raised the level of their enquiries.

- Employ an information behaviour framework to assess the sustainability of different types of intervention (e.g. online social network learning) on cognition, building on work by Walton and Hepworth.

References

Brophy, Peter. "The development of a model for assessing the level of impact of information and library services." *Library and Information Research*. 29.93 (2005): 43-49. Online.

Christiansen, Lars, Stompler, Mindy, Thaxton, Lyn. "A report on library faculty relations from a sociological perspective." *Journal of Academic Librarianship*. 30.2 (2004): 116-121. Print.

Cooke, Louise, Norris, Michael, Busby, Nial, Page, Thomas, Franklin, Ginny, Gadd, Elizabeth, and Young, Helen. "Evaluating the Impact of Academic Liaison Librarians on their User Community: A Review and Case Study." *New Review of Academic Librarianship*. 17.1 (2011): 5-30. Print.

Creaser, Claire and Spezi, Valerie. *Working together: evolving value for academic libraries*. Loughborough University and SAGE, 2012. Online

Farber, Evan. "Faculty-librarian cooperation: a personal retrospective." *Reference Services Review*. 27.3 (1999): 229-234. Print.

Jacobson, Trudi and Mackey, Thomas P. *Information Literacy Collaborations That Work*, New York. Atlanta: Neal-Schuman Publishers, 2007. Print.

Knight, Lorrie A. "The role of assessment in library user education." *Reference Services Review*. 30.1 (2002): 15-24. Print.

Koneru, Indira. "Strategic and Collaborative Approaches for Fostering Information Literacy via an Information Portal." *DESIDOC Bulletin of Information Technology*. 26.6 (2006): 3-12. Print.

Leckie, Gloria and Fullerton, Anne. "*The Roles of Academic Librarians in Fostering a Pedagogy for Information Literacy*." Detroit, Michigan: Association of College and Research Libraries, 1999. Online.

Lockerby, Robin, Lynch, Divina, Nelson, Elizabeth and Sherman, James. "Collaboration and information literacy: challenges of meeting standards when working with remote faculty." *Journal of Library Administration*. 41.1/2 (2004): 243–253. Print.

Markless, Sharon and Streatfield, David. "Gathering and applying evidence of the impact of UK university libraries on student learning and research: a facilitated action research approach." *International Journal of Information Management*. 26 (2006): 3-15. Print.

Markless, Sharon and Streatfield, David. *Evaluating the impact of your library*. 2nd ed. London: Facet Publishing, 2013. Print.

McGuinness, Claire. *Information and IT Literacy: Enabling Learning in the 21st Century*. London: Facet Publishing, 2003. Print.

McGuinness, Claire. "What faculty think: exploring the barriers to information literacy development in undergraduate education." *The Journal of Academic Librarianship*. 32.6 (2006): 576–579. Print.

Oakleaf, Megan. "The information literacy instruction assessment cycle: a guide for increasing student learning and improving librarian instructional skills." *Journal of documentation*. 64.4 (2009): 539-560. Print.

Oakleaf, Megan and Kaske, Neal. "Guiding questions for assessing information literacy in HE". *Libraries and the Academy*. 9.2 (2009): 273-286. Print.

Oakleaf, Megan. *Value of Academic Libraries: A Comprehensive Research Review and Report*. Chicago: Association of College and Research Libraries, 2010. Online.

Payne, Philip, Crawford, John, Fiander, Wendy. Counting on making a difference: assessing our impact. *The Journal of Information and Knowledge Management Systems*. 34.4 (2004): 176-183. Print.

Poll, Roswitha and Payne, Philip. "Impact measures for libraries and information services." *Library Hi Tech*. 24.4 (2006): 547-562. Print.

Poll, Roswitha. "Can we quantify the library's influence? "Creating an ISO standard for impact assessment." *Performance Measurement and Metrics*. 13.2 (2012): 121-130. Print.

SCONUL Working Group on Information Literacy. *The SCONUL seven pillars of information literacy core model for higher education*. London, SCONUL, 2011. Online.

Stone, Graham and Ramsden, Bryony. *Library Impact Data Project: looking for the link between library usage and student attainment*. Huddersfield, University of Huddersfield Repository, 2012. Online.

Tenopir, Carol and Kaufman, Paula. *The Lib-Value Project: Value, Outcomes and Return on Investment of Academic Libraries*, 2012. Online.

Tenopir, Carol. "Beyond usage: measuring library outcomes and value." *Library Management*. 33.1/2 (2012): 5-13. Print.

Walton, Geoff and Hepworth, Mark. "A longitudinal study of changes in learners' cognitive states during and following an information literacy teaching intervention." *Journal of Documentation*. 67.3 (2011): 449-479.

Wong Shun HR. and Webb, T. D. "Uncovering meaningful correlation between student academic performance and library material usage." *College & Research Libraries* 72.4 (2011): 361-70. Online.

Appendix 1 – overview of the 4 library teaching interventions

FET library online workbook (LOW)

An online tutorial was designed to teach first year students within the Faculty of Environment and Technology (FET) the information literacy skills needed to get them started with academic study.

Although the Workbook was available to all students, it was primarily designed to be embedded within the teaching and assessment of specific core modules, covering as many first year students within FET as possible, and was intended to replace face-to-face teaching which was inefficient (high non-attendance) and not assessed.

It was introduced to students by a subject librarian in a 15 minute section of a timetabled lecture in conjunction with the module leader, and released to them via their module's VLE page. The final assessment, a 12 question multiple-choice questionnaire, was also released to them via Blackboard, on a specific date, with a 24 hour window for completion. The final assessment was worth between 6 and 14% of the module mark, and as it was entirely possible to get a score of 100% (and many did), students were encouraged not to throw away these marks.

The tutorial used a variety of pedagogical methods and delivery styles, enabling students to practice and share the techniques being taught using subjects related to their core module, to discover the differences and limitations of different resources, and to test their learning with short exercises at the end of each section.

86% of students on the core modules completed the assessment (compared with 46% of expected students turning up to face-to-face classes the previous year), with most of those scoring 70% and above, indicating more engagement and positive learning than we had previously achieved.

We also wanted to know what the students thought of the experience, and so as part of the assessment we asked what they felt was the most useful thing they learnt, and what didn't work so well. From this we received overwhelmingly positive comments, with some students listing virtually every section in response to the 'most useful thing they learnt'. The 'didn't work so well' responses have provided us with some areas for improvement and tweaking, but no-one indicated that they didn't enjoy it, or resented the time they had to spend on it.

Comments about the most useful parts included:

- "The art of searching effectively over the internet"
- "Wide range of learning types employed, including...videos"
- "How to improve my search results and also how I can decide whether information is reliable and good enough to use"

Anecdotal follow up with the module leaders has indicated that the quality of the literature being referenced in the associated written assignments has improved when compared with students at the same stage in previous years, and hopefully this will therefore support the students' learning of the topic and their ability to continue successfully through the course.

[Emma Delaney, Faculty Librarian: Faculty of Environment and Technology.]

FBL Building Legal Information Skills (BLIS)

The integration of information literacy skills into summative assessment takes place in the core first year Legal Method module within the Faculty of Business and Law (FBL). Building Legal Information Skills (BLIS) comprises a set of online tutorials covering core areas of competency for the first year undergraduate in law. The tutorials were originally created using Course Genie and later Wimba Create.

Each of the six units stands alone and students can work through the set independently and in any order once the foundation module on 'Database Search Strategies' has been completed.

Within the framework of the Legal Method module (delivered in semester 1) students are scheduled to attend their first seminar workshop in the library PC labs. The PC labs accommodate 50 students and seminar groups are scheduled to fill the lab.

One of the law librarians and one member of academic staff facilitate a one hour workshop where students are introduced to BLIS and the first assessment in Legal Method. The focus of the workshop is entirely hands on with students starting the BLIS modules in a supportive environment where any queries can be fielded straightaway. This is usually the first time students have used the VLE to access module information and students link to BLIS from their module pages rather than the law library web pages. The embedding of BLIS within the course content on the VLE reinforces a message of integration between library and Law School.

The assessment follows at the end of November. The assessment software on the VLE is used. All 40 questions are multiple choice to allow for automatic grading since the cohort for 2011/2012 numbered over 400. The test comprises 30% of the module mark for the students.

Feedback was provided to students in the form of a PDF document, with solution and working for every question. Each answer was linked to where the student should have acquired the knowledge, e.g. "See page 34 of your Legal Resource Book or the BLIS Case Law Tutorial".

[Julie Hamley, Faculty Librarian: Faculty of Business and Law.]

The integration of information literacy skills into the undergraduate first year Criminal Law module within the Faculty of Business and Law (FBL) aims to develop the information literacy skills introduced during the Legal Method module (via BLIS) and to embed the teaching in the socio-legal research associated with the Criminal Law assessment. The topic of the Criminal Law assessment is within an area of criminal law subject to reform. The learning module was created within the library's Web content management system.

These pages direct the students to useful sources which will help them to plan and direct their research and to complete their coursework assignment.

Within the framework of the Criminal Law module (delivered in semester 2), students are scheduled to attend one of their seminar workshops in the library PC labs. The PC labs accommodate 50 students and the seminar groups are scheduled to fill the lab.

Two of the law librarians lead a two hour workshop where the students are introduced to the Criminal Law Learning Module material. The students have already received their Criminal Law assignment topic and have been allocated groups (of 5 students) in which to work on their assignment. The workshop takes the form of the law librarians demonstrating a variety of research resources interspersed with the students working through a series of research exercises directly relating to their research topic. Students link to the Criminal Law Learning Module from the Criminal Law module pages within the VLE and the PowerPoint slides from the session are later made available via these pages. Follow-up library surgeries/clinics are run to support the students with specific research queries which arise as they work on their assessments.

Feedback was provided to the students in the form of a Word document on the VLE with the answers to the research exercises and research hints and tips.

[Julie Hamley, Faculty Librarian: Faculty of Business and Law.]

HLS use of problem/enquiry based learning

Problem-based Learning (PBL) is a technique used extensively amongst health and social care (HSC) academics within the Faculty of Health and Life Sciences (HLS) as a student-focused pedagogy. HSC subject librarians were keen to develop a more interactive style of teaching information literacy (IL) and introduced PBL, in the second and third years, giving students an opportunity to practice searching the databases using a quasi real-life case study or scenario. One of these sessions was embedded within the 'Critical Appraisal Skills' module.

The librarian explains the 90-minute lesson plan and then asks students to form groups of 3 and assign roles to themselves:

- searcher or seeker (who types out the searches)
- scribe (who makes notes on the worksheet)
- spokesperson (who feeds back to the whole group at the end)

The case study or scenario (problem) is introduced and accompanying worksheets distributed. Several different scenarios are used in each session, but it is arranged so that at least two groups are working on the same scenario so that they can compare searches, results, difficulties etc. at the end. Traditionally, only one generic trigger is used which students then interpret as they wish. Case studies are devised by liaison with academic colleagues to ensure that they are relevant e.g. based on previous student dissertations.

The students then have 30 minutes to tackle the problem. There are three stages:

- Brainstorming the topic for at least 5 minutes, thinking about concepts, keywords, synonyms, search strategies etc., noting words but not actually searching.

- Search the databases to find relevant research papers. The librarian walks round and acts as facilitator, offering advice with keywords, subject headings, etc. and observing how the students work in quasi real-life scenarios.
- After 30 minutes, the students should be ready to feed back. The spokespeople summarise what they did, why and how, and explain any difficulties and how they resolved them. The librarian can use the whiteboard to write up concepts and keywords and can also use this opportunity to reinforce any learning outcomes, i.e. explain any advanced search techniques, remind students about RefWorks (reference management software) or personal accounts. This stage should be as interactive as possible. It is important to ensure that each group contributes to the discussion.

Each session was evaluated and the feedback was positive. The students enjoyed working in groups and a lot of peer learning was observed. Most groups really liked the scenarios and interesting discussions took place during the brainstorming phase about problems that had been encountered. The librarians also enjoyed delivering these sessions and found them challenging yet also satisfying.

HSC students are not directly assessed on what they learn during these sessions, although it is expected that they will apply the skills learnt during the completion of their dissertation.

[Caroline Plaice, Faculty Librarian: Faculty of Health and Life Sciences.]

Appendix 2 – student focus group guide

- *Demonstrate on screen the library 'intervention' to remind students what we are discussing or show worksheets for HLS 'Critical Appraisal Skills library session'.*

- *Check all have attended the library teaching session/completed the library teaching material*
- *Students read Participant Information sheet and complete Consent Form*
- *Define: resources = sources of published information in print or electronic form*

Having attended the library teaching session/completed the library teaching material:

1. What did you like the most about the teaching session/material?

2. What did you like the least about the teaching session/material?

3. In what ways could the teaching session/material be developed and improved?

4. Did you feel that you received the teaching at the best time for your module?

5. Do you feel that your research skills have improved since the teaching?

- If so, how?

- Has it affected the way you approach researching a topic?

- Which, if any, resources do you use now that you didn't use before?

6. Have your feelings about researching changed?

- If so, how?

- On a scale of 1-5 how confident did you feel about researching a topic before/after the teaching?

- Which aspects of researching, if any, do you now feel more confident about?

7. Has your ability to *evaluate* resources (judge how accurate/current/ authoritative/objective/ relevant etc. they are) changed?

- If so how?

- *E.g. would you choose to use different resources now compared with before the intervention? If so why?*

8. Did the library intervention help you to learn skills that were particularly helpful for your assessment/dissertation? - *If so, which?*

9. Do you feel you've learnt anything more from the library intervention which you haven't yet mentioned?

10. Did having these skills assessed motivate you to engage with the intervention?

- *Did anything else motivate you to engage with it?*

(For HLS, 'Did your approaching dissertation motivate you to engage with the intervention?')

Or 'What motivated you to engage with the intervention?')

11. To what extent do you think this learning (or these skills) will impact other areas of your study or working life?

Appendix 3 - staff interview guide

- *Demonstrate on screen the library 'intervention' to remind staff what we are discussing or show worksheets for HLS 'Critical Appraisal Skills library session'.*
- *Check all are aware of the library teaching/training session even if they haven't been heavily involved in scheduling/developing the session*
- *Staff read Participant Information sheet and complete Consent Form*
- *Define: resources = sources of published information in print and electronic form*

Having embedded a library teaching session/library teaching material within your module:

1. What were the drivers to embedding the library session/material?

- *value of embedding?*

- *communication with library staff?*

- *value of FET Librarians on Tour?*

- *status of library staff/partnership?*

2. Did any one factor make it particularly easy?

3. What are the barriers to embedding a library session/material?

- *do all staff know this is an option – awareness of library products and services?*

4. Did any one factor make it particularly difficult?

5. How do you think these barriers might be overcome?

- *library welcome email/BB staff induction module?*

6. What do you like the most about the teaching session/material?

7. What do you like the least about the teaching session/material?

8. In what ways could the teaching session/material be developed and improved?

9. Did you feel that the teaching was delivered at the best time for the students?

10. What do you think motivated the students to engage with the intervention?

In your opinion, once students have attended the library teaching session/completed the material:

11. Do you think that it affects the students' research skills and how do you evidence that?

- *have they improved? Can they do anything better than before the teaching?*

- *have they changed how they approach research? (do they research any differently?)*

- do they use resources they didn't use before the teaching/training?

- has it changed the students' ability to evaluate resources? If so, how?

12. [If you know] has the students' level of confidence improved and how might this be demonstrated?

13. [If you know] to what extent do students transfer the skills/knowledge they have learned to other tasks (modules, assignments, searching for employment, etc.)?

14. Have you noticed any particular positive (or negative) effects, e.g. in terms of engagement and achievement, on black and minority ethnic students, students with disabilities or male students, in particular?

15. Do you have any ideas for extending the scope of library integration within your module or within other modules?