
Open University Library: impact and effectiveness of information literacy interventions

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Introduction

The Library's Information Literacy Unit, launched in 2002, has produced an IL Strategy for the University and coordinates an ongoing work programme, including face to face training, the development of online materials, input into courses throughout the curriculum and stand alone online courses. The idea was to develop a tool of some kind which would enable us to measure the effectiveness of our various interventions, to allow learners to ascertain their level of skills and hence understand their development needs in this area, and also to help us to understand the needs of our learners (students and staff). We were also interested in possible research applications in the future.

Importance of the topic for the Open University Library

Information Literacy skills are particularly important in an institution where students are at a distance and nearly all library work is online. They need to develop the confidence to work on their own, and we also have to ensure that the 8,000 tutors who support them are similarly confident about their own skills. The latter is a particular challenge for the University and the Library.

Application of the Impact Implementation Methodology

What the service was trying to achieve

The role of the OU Library's Information Literacy Unit is to 'to promote and support the development of information literacy within the OU community both for lifelong learning and professional development.'

The unit is responsible for delivering a suite of Information Literacy training materials for OU staff and students, including SAFARI, an on-line tutorial in information skills, a programme of face to face training sessions for OU staff, and a stand-alone 12 week course. The Unit does have existing methods of evaluating the impact of these training materials, including usage and attendance figures and feedback from post-course evaluation (anything else), but none really provide an objective measure of impact.

Diagnostic testing was identified as one method to increase our understanding of the impact of ILU materials. Diagnostic testing can potentially provide data before and after interactions which can be analysed to calculate impact.

The aim of the diagnostic project was to design and develop an on-line tool to enable staff and ALs to assess their own information literacy skills and identify their development needs. The tool would also provide valuable data about the skill levels of staff and students, which could be used by the Library to study the impact of Information Literacy skills training over time. In future, diagnostic testing could be developed to measure impact before and after interventions.

Success criteria

Our major criterion for success was to develop a set of statistically robust questions which would test information literacy skills. We wanted to be able to deliver the questions online, to provide some instant feedback to the users and to point them towards reliable sources of help and information to address the gaps they had identified.

Evidence collected

We do not yet have any data – the questionnaire was only launched in February 2005. The data collected will be analysed and this should give us an initial picture of skill levels among students and staff. Over time we will be able to look for patterns and/or changes.

We also plan to develop our use of diagnostic testing to create pre and post questionnaires to identify impact of various Information Literacy events/services. For example we plan to develop a short questionnaire to assess participants' level of skill in areas before and after training interventions.

Methods used

The project focussed on ensuring the validity of diagnostic questions in order to deliver a sound assessment instrument. Validity refers to the extent to which the test measures what it is intended to measure. The development of questions for the diagnostic tool was an iterative process of design, testing, and revision. This process is detailed below.

Stage 1 – Development of Draft 1 of diagnostic questions

A set of original draft questions was developed based on the skills identified by the Library's Information Literacy Learning Outcomes (**Appendix 1**) at Level One. These learning outcomes had been developed to inform the development of Library learning materials such as the SAFARI tutorial and the MOSAIC (U120) short course in Information Literacy. It was extremely valuable to have a pre-defined set of Learning Outcomes to base the diagnostic questions on, ensuring that the diagnostic questions remained focussed on the key skill areas. At each stage in the development process reference has been made to the learning outcomes to ensure that each outcome is adequately represented within the test.

Multiple questions for each learning outcome were developed at this stage so that during the testing process the most effective questions for each outcome could be identified. Background reading on question design informed the development of the original questions, and

subsequent revisions. The most useful resources have been listed in the bibliography at the end of this report.

Stage 2 – Testing with Library staff

Draft One of the diagnostic questions was distributed to a small number of Library staff (approx 6) with mixed experience of information literacy. Participants were asked to complete the test, and were then interviewed to provide feedback. The purpose of the interview was to find out how effectively the results of the test reflected the actual ability of the respondent, and also to identify any problematic questions (e.g. questions that were unclear, questions that could have more than one correct answer). This proved to be a very effective method of obtaining feedback on the early drafts of questions, and the exercise was repeated once more with Draft Two of the test.

Stage 3 – Mapping Questions with Learning Outcomes

A learning outcomes mapping exercise to test the validity of the diagnostic questions was carried out with Draft Three of the questions. A group of Library staff with "expert" information skills was selected. Participants were provided with a list of the information literacy learning outcomes used to develop the test and the test questions in a random order, and were asked to map the questions to the appropriate learning outcome. Questions with a low score on the mapping exercise were reviewed to ensure that they were testing what we intended them to test.

Stage 4 – Analysis of User Data

The diagnostic test questions were sent with an introductory letter to a random group of 200 Associate Lecturers and 200 students. The response rate was 212, consisting of 122 AL responses and 90 student responses. The data collected from this survey was analysed with input from staff with expertise in this area from the Institute for Educational Technology (IET). The following analyses were carried out:

- analysed the facility (difficulty) of each question to identify questions that were either too easy or too difficult
- analysed the number of "no responses" for each question. A high number of "no

response” often indicated a problem with a question which might be that it was too difficult, or that the meaning was unclear

- analysed the performance of distracters (wrong answers) for multiple choice and multiple response questions. Distracters with low response numbers were identified and more effective replacements were devised
- IET staff assisted to perform correlations with the data to try to identify ineffective questions.

Stage 5 – Final Draft

The results of the analysis of user data, along with feedback from the earlier tests, were used to develop the Final Draft of the diagnostic questions.

A considerable amount of testing has been undertaken to inform the development of effective diagnostic questions. Work now needs to be carried out to evaluate the diagnostic test as a whole, from the user’s perspective, to ensure the success of the tool. This evaluation may lead to further development of the tool. Future developments we may wish to explore include splitting the test up into themed chunks, and working on the user feedback to ensure that it meets user needs.

Future Development

There is potential for further development of the diagnostic testing within the Library which should be explored, including the development of tailored tests for use within courses (one course is already doing this), or for a higher level test.

What has been learnt from participation

We welcomed the opportunity to share our experience of developing our ‘tool’ with colleagues from other institutions. While all the projects were different, the objectives and desired outcomes were remarkably similar. We would hope that others may like to make use of the tool we have developed and that we may be able to utilise some of their work in the same way. We would be interested in the collaborative use of our diagnostic tool to study the skills levels of different groups across the HE community and this could form the basis of future research.