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Chan, L. et al (2002) *Budapest Open Access Initiative*. New York: Open Society Institute. <http://www.soros.org/openaccess/read.shtml> (Retrieved 22 January 2007)

The Information Literacy Resource Bank: re-purposing the wheel

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Abstract

This paper outlines the aims and methodology of the Information Literacy Resource Bank (<http://ilrb.cardiff.ac.uk>) project. The Resource Bank has been developed to help meet the challenge of embedding information literacy into the taught curriculum at Cardiff University. It contains “bite-size” interactive tasks, images, diagrams, cartoons and short tutorials which each focus on a particular information literacy topic. Hosted on the University’s web pages, they can either be used *in situ* or downloaded and inserted into the tutors’ own resources in BlackBoard, PowerPoint or even printed handouts. The intention is that the learning objects are suitably granular for integration, as required, within different teaching environments and are adaptable to the many different approaches to embedding information literacy. After describing the background and development of the Resource Bank, the authors evaluate, through case study examples of their use, whether the resources are truly re-purposable and whether the resources can be regarded as a successful source of support for embedding information literacy into teaching programmes.

Keywords

Information literacy; Higher Education; Learning objects; Blended learning; Online learning

1. Introduction

The Information Literacy Resource Bank (<http://ilrb.cardiff.ac.uk>) is a collection of “bite-sized” learning objects created by Information Services at Cardiff University. This paper will discuss the concept behind the Resource Bank and how it was developed. Examples of its use will provide an early stage evaluation of whether this approach offers a successful source of support for embedding information literacy into the taught curriculum.

1.1 Why create the Information Literacy Resource Bank?

Cardiff University’s Learning, Teaching and Assessment Strategy includes an action to embed information literacy into all taught programmes of study. Using the *Information Literacy Competency Standards* created by the Association of College and Research Libraries (ACRL, 2000) as a framework, Information Services is supporting Schools by liaising with academic staff at programme-level and delivering tailored training for students at the point of need.

The BlackBoard Virtual Learning Environment is now being used by most Schools at Cardiff University and, although face-to-face teaching is still the principal method of delivery, BlackBoard offers opportunities to encourage blended learning. In early 2005 Information Services embarked on a project to expand the provision of e-learning resources on information literacy for academic and library staff. Our aim was to facilitate the process of embedding by providing ready-made information literacy teaching materials which could be adapted to face-to-face, blended or online delivery.

The challenge was to develop a product which would complement our tailored approach to embedding information literacy into each curriculum. Instead of providing a complete information literacy teaching package, the project opted to create a bank of learning objects which would offer interactive or attractive visual content which staff could incorporate into their own teaching materials as appropriate. We took our definition from Joint Information Systems Committee (JISC) that a learning object is:

“a structured, standalone resource that encapsulates high quality information in a manner that facilitates learning and pedagogy. It can be any entity, digital or non-digital, which can be used, re-used or referenced” (JISC, 2003.)

We identified that small learning objects such as images or individual exercises would be the most adaptable.

1.2 Developing the Resource Bank

To ensure we focused our project on topics where teaching resources were most needed and therefore most likely to be used, we prioritised areas for development through consultation rather than by working systematically through the ACRL Standards. Information Specialists consulted with their Schools to identify ideas and level of demand for topic areas or specific types of learning objects. The most popular requests from academic staff were for resources which could help them teach students how to cite references and avoid plagiarism. The starting point for the project therefore was to create materials for the ACRL's final standard, on using information ethically. Library staff were keen for resources which could live-up their teaching of search techniques and evaluating the quality of information sources, so these were our next priority.

The project received funding from the University's Teaching and Learning Committee for a backfill appointment to release Dr Ian Bradley, Information Specialist - Learning, to provide technical expertise in html, JavaScript and Flash. To facilitate the development process, tools which allow non-technical staff to create learning objects were also used. For example a "fill in the blanks" citing references activity was developed using the Hot Potatoes freeware and several database demonstrations were created using the screen capturing tool, Macromedia Captivate. We have also added tutorials on specific information resources produced by Library staff using the database tutorial authoring package developed by the INFORMS/INHALE project (Brook et al., 2003). The accessibility of the learning objects for disabled users was considered throughout the project and where appropriate alternative versions have been provided.

To ensure that we could gather a critical mass of learning objects in a cost and time effective way, we have been keen to collaborate with external partners. We have shared the learning objects we have developed and in turn been able to customise excellent materials developed elsewhere. Resources have been exchanged with Birkbeck College who are currently developing suites of information literacy learning objects for specific subjects. The Open University have generously given permission for the project to re-purpose Section Five of their SAFARI tutorial on evaluating information into learning objects (Open University, 2006). Some of the open source materials available from the University of Washington Library's Research 101 tutorial have also been incorporated (University of Washington Library, 2005). In addition to this interactive content we have sought to add entertaining images to the Resource Bank and have purchased licenses for information literacy related cartoons from *CartoonStock* (2007) and other sources.

2. Information Literacy Resource Bank

2.1 Contents

The Information Literacy Resource Bank now contains learning objects which range in length and interactivity from images to short tutorials which incorporate interactive exercises and quizzes. They can be used *in situ* from the Resource Bank web site, downloaded for use in handouts and PowerPoint slides or incorporated into BlackBoard modules.

The contents are still growing but there are currently learning objects available on the topics of citing references, evaluating information, plagiarism, search techniques, using databases and using Voyager, Cardiff University's library management system. The resources on the website can be browsed by these topics or by category, as listed below.

Demonstrations

Developed in Flash or by using Macromedia Captivate, demonstrations in this section include animated Boolean venn diagrams and short Flash animations explaining how to use databases, how to cite from a book and how to take notes. These are particularly suited for incorporating into e-learning materials or presentations in class.

Images and Diagrams

This section consists of pictures, labeled screenshots, flowchart diagrams and cartoons. These static images can be used to enhance a wide range of teaching materials such as handouts, PowerPoint slides and web pages.

Quizzes and Activities

These are the most interactive of the learning objects. Included are various exercises such as a “compile the reference” activity whereby students must assemble different parts of a reference into the correct order and quizzes which allow students to test their understanding of plagiarism. These activities are best used online but they have also been made available to download as Microsoft Word documents so that they can be used in lessons where computers are not available.

Tutorials

As a topic is completed, the individual learning objects are also brought together as a short tutorial, with structure, navigation and instructional text. These tutorials are intended for those academic staff who want off-the-shelf resources which can be simply unpackaged into their BlackBoard courses. The tutorials are also available for students as self-help resources on the Information Services web pages. INFORMS tutorials created by library staff are found in this section of the Resource Bank.

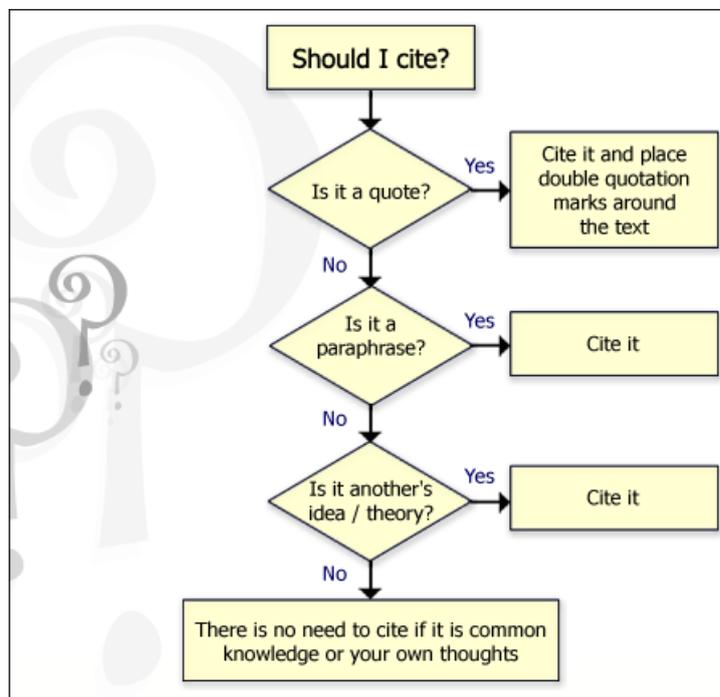
2.2 Are the resources truly re-purposable?

Given the objectives of the project, its success can best be measured by how much use is made of the learning objects and, in particular, how well they can be re-purposed to different media and learning outcomes.

The first learning objects created were on *Citing references* and, at the time of writing, they have been available for between four and six months. As they have had the greatest opportunity to be used, this paper will use the *Citing references* resources as its case study to observe how the learning objects can be repurposed.

One of the simplest resources is the “When should I reference?” diagram (**Figure 1**). This flowchart clarifies whether use of a particular piece of information needs a citation. Four Information Specialists working with Schools as diverse in subject as Computing and Biological Science have used the diagram in either PowerPoint slides or a handout when teaching students how to cite references.

Figure 1: When should I reference?



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The e-learning development officer in the Law School is developing online resources on writing in law using the CourseGenie software. The diagram will be embedded into the materials which will be offered on BlackBoard to all Law students and adaptable by other Schools where students need to write law-based

essays. The diagram can also be seen in the APA citing references tutorial, available on the Information Literacy Resource Bank as well as on the Information Services self-help guides webpage.

The diagram has, therefore, been used in a range of formats within teaching materials. Another more novel, and unexpected, purpose for the diagram has also emerged. Seeing that many students were struggling to understand when to cite a source they were using, the site librarian for the University's Trevithick Library repurposed the diagram into a poster which she displays in the library. In addition she produced A5 leaflets to take away which have proved popular with students. Interest has been shown by academic staff wishing to distribute the leaflet in class which in turn has led to opportunities to promote use of the other resources in the Information Literacy Resource Bank. The poster, meanwhile, has proved popular and three other libraries have adopted the idea. This flowchart diagram therefore, although simple and non-interactive, has proved to be very re-usable and re-purposable.

As well as static diagrams and illustrations, interactive learning objects were created on the citing references topic. Activities include entering citations in a piece of text, writing a reference from information on a book's title page, and drag and dropping sections of a reference into order, as well as multiple choice quizzes.

The interactive tasks have been used as a point of reference and further reading by information specialists on handouts in information literacy sessions and Personal Development Planning materials. Academic staff similarly are pleased to have a resource to which they can refer students. A lecturer in the School of Biosciences who had been alerted to these resources by an information specialist who suggested he integrate them into his teaching materials for a writing class, noted that the resources are "very useful indeed!" and that they would also be used in his formative feedback.

"I have been marking a large number of Year 1 essays that have deficiencies in referencing, so I'll add that link in future to my comments."

The quizzes and activities are particularly useful for introducing additional interactivity into classroom teaching. These have already been used within information literacy workshops for fourth year engineering students as well as in citing references training sessions delivered to first year Optometry and Pharmacy students. The Business information specialist has inserted the Word versions of two of the exercises in a workbook to help dissertation students start their literature review. Other information specialists have expressed their intention to use these resources to liven up their future teaching sessions.

In addition to using these interactive exercises as a learning activity, they can be used for formative assessment. In the School of English, Communication and Philosophy, for example, a lecturer is planning to incorporate these learning objects into a year one module to ensure that all students have received training on referencing and plagiarism.

"I think we would want to embed the information within a BlackBoard module and then either adapt the quizzes and exercises as assessment in BlackBoard or have the students complete a paper version during a seminar."

Even with the more interactive resources, therefore, users will want to repurpose the content, adapting them to other formats, in this case Blackboard, where the students can be tracked and the marks recorded, or converted into paper format.

The original Harvard citing references resources have already been adapted into the APA format for Psychology. It is planned that they will also provide the basis for learning objects on the OSCOLA system for law citations, to be developed during the summer of 2006. Dialogue with other law schools indicates that there is significant interest in sharing our resources once complete as there is little e-learning material currently available for OSCOLA. However, several law librarians have noted that a general tutorial would not be suitable as their law school has adapted the OSCOLA rules. These Schools are looking forward to taking our bite-sized interactive exercises and quizzes, to plug into their own existing text-based tutorials which are tailored to their own School's needs. This illustrates the philosophy of our project: to provide high quality granular learning objects which can be seamlessly integrated into all kinds of teaching materials and fulfil many different purposes.

3. Conclusion

Usage of the Information Literacy Resource Bank so far indicates that it will be a useful source of support for academic and library staff in embedding information literacy. As demonstrated, the resources are flexible enough to be seamlessly integrated into the whole range of teaching materials and subjects.

In addition to continuing to add more learning objects, our focus is now on promoting the Resource Bank more widely to academic staff. A front page article has been published in Information Services' newsletter and we are producing leaflets and postcards. Information Specialists will be promoting the Resource Bank as they discuss future information literacy teaching with teaching staff in the academic Schools.

The usage and impact of the Resource Bank will continue to be evaluated and we anticipate that demand will rise as information literacy teaching is delivered during the autumn semester of 2006. We also have plans for an evaluation of a number of the learning objects by students, both in Cardiff University and in two other institutions.

The learning objects are available for use outside of Cardiff University and so if readers are interested in using, sharing or collaborating with us to develop new resources please contact us.

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