

Real use research evaluation of an online essay writing module: Information literacy eLearning modules project

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This paper reports on a work in progress. Evaluative research findings for one module from the New Zealand Tertiary Education Commission (TEC) funded project, *Information Literacy e-Learning Modules* are presented. *Essay Writing with Readings* is the first authentic task-based online information literacy module to be piloted and trialed with students and staff. Evaluation of the usability and effectiveness of the module was conducted in 2006 in real use contexts as part of a class, and as a stand-alone resource. The aim of the project was to develop a range of on-line modules (11) over two years, predicated on the Australian and New Zealand Institute for Information Literacy (ANZIIL) standards of information literacy (Bundy, 2004), which are derived from standards developed by the American Library Association (2006). The modules are amenable to adaptation and use in a range of contexts, as well as accessible to diverse groups of learners. Broad findings from the evaluation of *Essay Writings with Readings* showed the module, in essence, as meeting the project aim. Participants strongly endorsed the module, which had relevance for users with a diverse range of backgrounds and experiences. The researchers also concluded that the module has potential for adaptation, development and customisation as a teaching tool. The research methodology which generated these findings was both quantitative and qualitative. The evaluation involved 23 participants, both staff and students, from university, polytechnic and college of education backgrounds. Refinements for the evaluation of additional modules are noted as the project proceeds into its second year.

Keywords: information literacy, online, essay writing, research evaluation

Introduction

Information Literacy e-Learning Modules project is funded through the TEC's e-Learning Collaborative Development Fund (eCDF). Launched as a collaborative venture between the University of Otago, Dunedin College of Education and Otago Polytechnic, it started out as a one year project and has recently been awarded funding for a further year. The aim of the project is to develop a range of online modules, predicated on the ANZIIL standards of information literacy (Bundy, 2004), and amenable to adaptation and use in a range of contexts. The project was conceived to address four main areas in the tertiary sector associated with information literacy learning:

- Barriers to tertiary study which can occur as a result of poor information literacy skills and the diverse needs of marginalised, mature and distance students;
- A shortage of high quality online information literacy modules which are reusable, portable and have pedagogical flexibility;
- A need for professional development opportunities for staff in the area of information literacy;
- A tertiary sector requirement for centrally maintained and managed, standards- conformant, online resources in this important foundation field.

The key goals for the two years of the project are to:

- Design, implement and evaluate eleven authentic task-based information literacy modules underpinned by the ANZIIL standards (Bundy, 2004);
- Design, implement and evaluate an online demonstrator system for selecting existing modules, as well as editing and publishing new modules;
- Develop modules which are reusable in a range of contexts and able to work offline, online or through a Learning Management System (LMS) or via a Shareable Content Object Reference Model (SCORM – definition at end of paper) 1.2 compliant player (Advanced Distributed Learning, 2004).

During the first year of the project, five authentic task-based information literacy modules were developed: Essay writing, Annotated Bibliography, Business Report Writing, Scientific Report Writing and NZ Information Sources. The six modules planned for development during the second year of the project are: Introduction to Information Literacy, Searching, Evaluating, Ethics, Digital Information Literacy and, Maori and Pacific Sources.

The first five modules have undergone usability testing and expert review during the prototype development, and the essay writing module has been piloted as part of a research evaluation project. Expert review regarding interoperability, SCORM compliance and adherence to ANZIIL standards has also been completed for the Essay Writing module.

Overview of the research evaluation project

The module *Essay Writing with Readings* is the first authentic task-based information literacy module to be piloted and trialed with students and staff in real use contexts as part of a class, and as a stand-alone resource. The content of the module is based around a real essay writing assignment used in a course and uses The Treaty of Waitangi as the topic. Evaluative research on the usability and effectiveness of the module was conducted between February and June 2006. The research participants were drawn from the three institutions involved in the project. A report, outlining the research process, has been prepared for the Tertiary Education Commission by the project’s Analysis and Evaluation Group (2006). It sets out the sequence of methodology and data analysis used in the research, and presents the derivative findings and recommendations.

The evaluation of *Essay Writing with Readings*, informed the development of four subsequent modules, sharing the same layout, navigation, graphic style, and modeling on authentic activities – see Figure 1. On this basis we feel it is reasonable to assume the approach used in the development of *Essay Writing with Readings* is likely to work in other contexts. Initial feedback from early trials of the additional modules supports this assumption. Evaluation of all modules will continue in the second year of this project.



Figure 1: Screen shot of module layout

A key target for the second year of the eCDF 423 Information Literacy e-Learning Modules project, as a whole, is the provision of an online system which will allow modules to be edited. We anticipate that in this way specific issues around context, treatment of subject material and so on can be addressed by teachers themselves who wish to repurpose the modules for their own students. A research study will be undertaken in the second year of the project to see if this occurs.

This article about the evaluation research project provides a synopsis, and covers the methodology, results and discussion about the findings and conclusions.

Methods and results

The research methodology which generated these findings was both quantitative and qualitative. It involved 23 research participants, both staff and students, from University, Polytechnic and College of Education backgrounds. A dual methodology allowed both descriptive and interpretive information to be gathered using a combination of observation, Likert scale questionnaires and interviews which afforded opportunities for triangulation. Data gathered from the participants enabled the researchers to build a profile of the users in the study (age, gender, ethnicity, language, computer experience, institution and status, study area), and ascertain their eLearning needs and previous experience with essay writing. Researchers also investigated user expectations of the module, their overall impressions, and asked for their critique of features they liked and did not like and suggestions for improvement. Specific features of the module relating to content, effectiveness for learning, instructional design and navigation were also investigated.

Findings from the evaluation of *Essay Writings with Readings* showed the module, in essence, as meeting the project goals, and strongly endorsed the module, which was welcomed by staff and student users in University, Polytechnic and College of Education settings. The findings show the module as:

- 1 Having relevance for users with a diverse range of backgrounds and experiences. This diversity encompassed age, gender, specialist field of study and prior exposure to information technology;
- 2 Rich in potential for adaptation, development and customization;
- 3 Being especially welcomed, by tertiary staff, for its potential as a teaching tool.

The researchers found that participants' perceptions of their own e-learning needs reflected diversity of prior experience and future career aims among the participant sample. Over half of all responders rated their skills in retrieving, analysing and applying information as elementary or traditional or, in two cases, both elementary and traditional. A majority of the group with self-rated, elementary or traditional skills also felt challenged by the demands of today's e-Learning environment.

Overall, participants rated the module favourably, (average rating 3.5 on a scale from 0 to 4.5) – see Table 1. Additionally, the content of the module *Essay Writing with Readings* was analysed across several dimensions (participant profile, general comments and recommendations offered by participants, self-perceptions of e-learning needs for the preparation and writing of essays, overall rating of the module, perceptions of the specifics of the module's content, instructional design, navigation and effectiveness of the module as a learning tool).

Research participants responded to the items listed in Table 1 on a four-point Likert scale, with a "4" response indicating strong approval or agreement and a "1" response indicating strong dissent. In the tabulated data pairs, the first figure gives the mean score for the tabulated item, and the second figure gives the mode. Means of 3 or more and modes of 3 or 4 suggest broad approval or agreement, among responding participants, for the item concerned. Means of less than 3 suggest a degree of negativity, at least among some responders, regarding the item. The listing sequence in Table 1 ranks the items in order of overall mean affirmation or approval among responding participants.

As well as information gleaned from the rating of the module content, participants also offered suggestions for further improvement. For example, a fifth or more of responders, in questionnaire comment or during interviews, suggested that referencing also include formats other than APA. Along with high ratings of the content, most aspects of instructional design present in the *Essay Writing with Readings* module were also perceived favourably. For example, "important concepts are highlighted,

visual layout is appealing and design elements rated highly". However, 27% of responders made no evaluation of sound and narration in the module. Because of technical difficulties, these participants had not been able to access the module's audio material at the time of evaluation. Responders who did offer evaluation of the module's audio elements differed widely in their perceptions and evaluations of the audio facility. The visual elements of the module, on the other hand, were appreciated warmly by most responders.

As well as measuring participants' perceptions overall about the module, their opinions about the content and instructional design, and aspects of navigation and effectiveness for learning were also obtained. Response data showed that, overall, users felt able to move freely through the module, and overall, that the module was effective as a tool for learning. They found primarily, that the design enhanced understanding of concepts, and that learning activities were interesting.

Table 1: Participants' overall ratings of the module essay writing with readings - Response means/modes, based on a four-point likert scale (n = 22)

Items	All responses	College student	Polyt student	Univ student	Staff	Female	Male	Students aged 31+
Overall usefulness and effectiveness of module	3.55/4	3.33/3	3.80/4	3.43/3	3.75/4	3.56/4	3.50/4-3	3.50/4
Effectiveness as an aid to processing information, preparatory to writing an essay	3.50/4-3	3.50/4-3	3.60/4	3.29/3	3.75/4	3.56/4	3.25/3	3.50/4-3
Ease of use	3.50/4-3	3.33/3	3.40/3	3.86/4	3.25/3	3.44/3	3.75/4	3.33/3
Relevance to user need	3.45/4	3.83/4	4.00/4	3.14/3	2.75/3	3.44/4	3.50/4-3	3.83/4
Effectiveness as an aid to applying information, preparatory to writing an essay	3.45/3	3.17/3	3.60/4	3.29/3	3.75/4	3.39/3	3.75/4	3.33/3
Enjoyable	3.23/3	3.50/4	3.20/3	3.00/3	3.25/3	3.28/3	3.00/3	3.33/4
Effectiveness as an e-learning aid specific to preparing an essay on the Treaty of Waitangi	3.23/3	3.50/4-3	3.60/4	2.71/3	3.00/3	3.39/3	2.25/3	3.67/4
Effectiveness as an aid to locating and retrieving information, preparatory to writing an essay	3.18/3	3.00/3	3.00/3	3.14/3	3.50/4-3	3.11/3	3.50/4-3	3.17/3

While feedback was mostly positive, there was a lot of constructive suggestions made as well. The findings of the research also indicated there are some aspects of the module requiring attention. For example, module length and volume of material covered could be addressed by streamlining the content, and re-sequencing of material to create a more effective conceptual flow through the module. Additionally, participant responses suggested that supplementing the module's structured approach with a choice of more open-ended learning experiences would be beneficial. These might relate both to the module's information literacy-related content and to its contextual exemplar, in this case *The Treaty of Waitangi*. The points can easily be addressed by use of the online editor for customisation, which will be available later in 2006.

Conclusions

Overall, the module was well received by the 21 participants, students and staff from university, polytechnic and college of education settings, who took part in the research evaluation project. The results indicate that the module has relevance for users with a diverse range of backgrounds and experiences. Users varied in age and gender as well as in their field of study and prior exposure to information technology. Participants saw the potential of the module for modification and development in real use contexts. The module was especially welcomed, by tertiary staff, for its potential as a teaching tool.

The methodology proved effective in generating relevant data which was amenable to analysis and triangulation. Project goals such as reusability in relation to SCORM and adherence to ANZIIL standards were not addressed as part of this research, and have been reported elsewhere. Refinements of the research design which will be borne in mind for the evaluation of future modules include: Trialing modules with both broadly selected participants and specific user groups, for example students studying specific types of course, to see whether patterns suggested among the randomly selected sample are verified in specific contexts.

However, it should be noted, that any participant concerns about the module sprang, not from a substratum of disapproval, but from a strongly positive sense of the module's potential. Precisely because research participants enjoyed and valued the module, they were, without exception, fluent and free with constructive and critical comments. They saw the module as something to be welcomed, as a venture worthy of development with a view to wide implementation. Most participants inquired, with positive interest, about the module's future path, and expressed an explicit wish to be kept informed. The flow of participant suggestions testifies to the module's fundamental health. The findings from the research evaluation of the *Essay Writing with Readings* module will inform modification of the first five modules developed as well as development of the six additional modules in the second year of the project.

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Definitions

SCORM is a collection of standards and specifications adapted from multiple sources to provide a comprehensive suite of e-learning capabilities that enable interoperability, accessibility and reusability of Web-based learning content.

Acknowledgements

Special thanks to members of the Analysis and Evaluation Group (AEG) who assisted with advice and review: Sarah Stein, Philip van Zijl. Also staff and students from the three participating institutions (Dunedin College of Education, Otago Polytechnic and University of Otago), who contributed to the research project.

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Please cite as: Coburn, D., Hegarty, B., McDonald, J., Keen, D. & Ritson-Jones, W. (2006). Real use research evaluation of an online essay writing module: Information literacy eLearning modules project. In L. Markauskaite, P. Goodyear, & P. Reimann (Eds.) *Proceedings of the 23rd Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education: Who's Learning? Whose Technology?* (pp. 137-142). Sydney: Sydney University Press. <https://doi.org/10.65106/apubs.2006.2886>

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