Online interactive learning tutorials: addressing plagiarism, referencing and graphical presentation

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Abstract

Student success requires flexible delivery of critical concepts in interesting and interactive formats. Three online interactive tutorials were developed and implemented in the School of Geography, Planning and Environmental Management, UQ. The Academic Integrity tutorial addresses key aspects of why referencing is important, the meaning of collusion and the consequences of academic misconduct. The Referencing tutorial demonstrates the specifics of referencing using the Harvard and Chicago styles and the Graphic Presentation tutorial incorporates information on the nature of graphics and how they should be used in academic writing. The seamless design of the tutorials incorporates linear navigation, meaningful contexts, learning by doing and a thorough testing of concepts. The tutorials have improved students' understanding of academic integrity, and how to reference correctly and present graphical information effectively and have eased the transition of students into their first year of study.

Introduction

First year students in transition may not be equipped with the necessary academic skills to perform well in their new discipline areas (O'Donnell et al., 2009). They may have inaccurate prior perceptions of the skills that are required and in some instances may need to unlearn certain practices (Johnson & Watson, 2004). Furthermore, staff may overestimate students' abilities in key areas (Tobell, O'Donnell & Zammit, 2008). A survey of staff in the School of Geography, Planning and Environmental Management (GPEM) at The University of Queensland (UQ) indentified that our teachers perceived academic writing to be a core skill and that students' abilities in this area needed to be improved. As a means of providing overt and proactive information to students to narrow the gap between student expectations and course, program or institutional expectations, three online interactive tools for improving the learning outcomes of students in the first year were developed and implemented. This paper briefly describes each of these tools, analyses their key components, how they are delivered, and identifies their impacts.

Overview of the online tutorials

Academic Integrity: referencing and avoiding plagiarism tutorial

Academic integrity and good practice are central to student learning. The ability to apply critical reasoning to issues through independent thought and informed judgement are key

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attributes that teachers seek to develop in their students. However, the occurrence of poor academic practices and plagiarism in educational institutions and workplaces has resulted primarily in the use of punitive measures that have addressed mainly the consequences of these poor practices (e.g. loss of marks, course failure and exclusion). In terms of content, there are many tutorials that address plagiarism, with most focusing on institutional rules and processes, but there are few which address the issue from the positive aspect of academic integrity and which engage students in considering a range of scenarios that they may face in both student and subsequent professional life.

The aim of the Academic Integrity tutorial is to develop a sound understanding of academic integrity and good academic practice so that students can apply and demonstrate academic integrity. It encompasses four sections: S1 "Academic Integrity" clarifies aspects of good academic practice; S2 "Working Together" explains the difference between collaboration and collusion; S3 "Misconduct and Consequences" examines the seriousness of misconduct; and S4 "Good Writing Habits" demonstrates good study habits for avoiding plagiarism, including time management and note-taking. The tutorial was developed, implemented and evaluated in GPEM from 2007 to 2009. It received international recognition with the awarding of the ASCILITE[1] President's Award for Excellence in 2009 and was re-developed for university-wide deployment in 2010 (~45,000 students). From 2011, the tutorial must be successfully completed (i.e. 100% correct responses) by all commencing UQ students.

Referencing tutorial

This tutorial addresses when and how to reference and has four sections: S1 "Introduction to Referencing" addresses core concepts of referencing and why it is important; S2 "Elements of Referencing" clarifies the key elements of citations and provides detailed instruction for a range of sources (e.g. books, book chapters, journals, web sites, government reports etc.); S3 "Harvard" and S4 "Chicago" provide information on how to format elements of referencing for bibliographic and in-text referencing for an author-date and footnote systems of citation. It was piloted in early 2011 and will be implemented in GPEM in semester 2, 2011.

Graphical Presentation tutorial

While there is an abundance of online material addressing how to write an essay or research paper, the gap that this tutorial fills is in providing clear instruction and interactive activities on the key features of graphic presentation (including maps, images, photographs, graphs and tables). It has five sections: S1 "Overview of Graphic Presentation" addresses what graphics encompass, how to use them effectively, issues of integrity and misrepresentation of data and customising graphics; S2 "Graphs and Diagrams" provides clear instruction on the elements of graphs and diagrams, their types and uses; S3 "Tables" encompasses when and why tables are used and formatting conventions; S4 "Maps and Images" looks at their essential features, types and uses; and S5 "Incorporating Graphics into Academic Writing" examines how to include graphics in written documents. This tutorial complements the existing tutorials and was piloted and then implemented in GPEM's largest first year class in 2011.

Technical design

The tutorials have been designed to interface seamlessly. They have the same clear and refreshing *interface design* that appeals to first year students (Fig. 1). Images reflect the

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diversity of students within our institution. The layout is uncluttered with interesting text to engage the reader and yet maintain a serious tone reflective of the issues being presented.
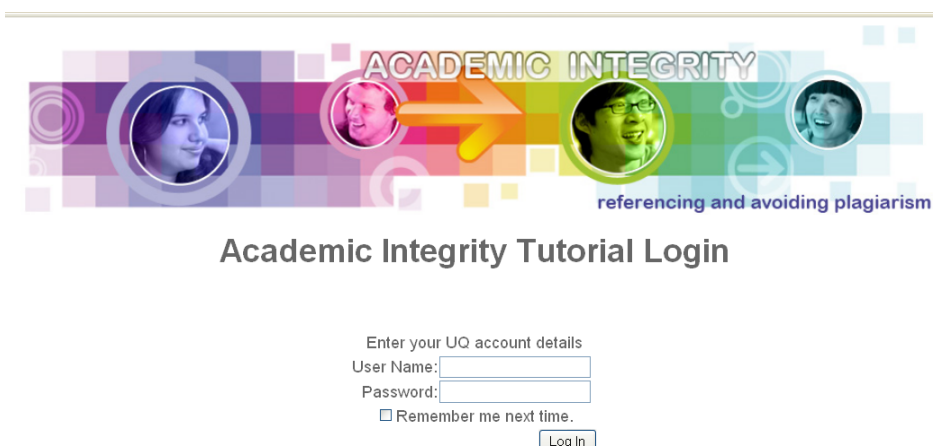
Figure 1. Example of tutorial design encompassing interesting layout, colour and style

The presentation of information is mainly by means of a two-part screen containing stimulus material (e.g. resources and demonstrations) on the left, and instructions and interactive activities on the right (Fig. 2). Thus different sections of the screen are assigned to specific purposes (Alessi & Trollip, 2001) and this remains consistent throughout each of the tutorials to facilitate student interaction and ease of use. The screen separation also assists sight-impaired users. The various sections of the tutorials are clearly identified at the top of the screen and students can move quickly and easily to the various components of the tutorial. Later tutorials also have a progress line at the bottom of the screen for ease of navigation. The tutorials' content incorporates visually stimulating images, and the examples used for instructional purposes reflect the cultural diversity within the school and university. There is sufficient, but not excessive, instructional text, clearly indicated transitions between screens and sections, and language suitable for first year students.

Figure 2. Screen layout, incorporating resource information (left) and instructional and interactive exercises (right)

The tutorials have linear *navigation*. Students complete several exercises, receive immediate feedback with a learning focus, and can have multiple attempts at the exercises. The tutorials are self-paced, allowing students to enter and exit at any time. An underlying database records and saves users' progress, meaning that students do not have to repeat questions

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when they log back in. The pedagogical purpose of this linear navigation is to build on the concept taught, apply concepts, and test concepts. The web advantages of the online tutorials allow users to access them at any time and any place, with minimal file or download size requirements, and obtain secure login. It also allows for a backend database to record statistics showing student achievement and tutorial attempts on a local server, and for ease and cost-effectiveness of upgrading the information or developing the tutorial or database.

Pedagogical design

Two key categories of affordances of e-learning were employed in the tutorials, namely static/instructive learning opportunities, such as definitions and explanations, and productive learning through an emphasis on "learning by doing" (Bower, 2008). Several key principles of effective instructional design (Anderson & Elloumi, 2004; Carrol, 2002), which facilitate learning, are reflected in the design of the tutorials including: relevant contexts which help learners to construct new knowledge from existing knowledge; new knowledge is demonstrated to the learner; learning is enhanced by doing; students are required to apply the new knowledge; and the learning is self-paced.

Evaluation

The Graphic Presentation tutorial was piloted and evaluated in a large first year class within GPEM in 2011. The Academic Integrity tutorial has been accompanied by a three year evaluation within GPEM (2007-2010) and prior to the university-wide roll out of this tutorial, comprehensive testing and evaluation was undertaken incorporating observing 25 students as they completed the tutorial in a controlled laboratory setting. The evaluators observed student progression through the tutorial, noting whether students were reading the text or merely clicking buttons, how they navigated through the various activities, and how long the tutorial took to complete. Students also were interviewed to assess the relevance, interest, effectiveness and user interface of the tutorial. The tutorial was piloted in four classes from different faculties and students were pre and post-surveyed in 2010.

The GPEM evaluation involved surveying students before and, approximately six to eight months later, after completing the tutorial. The results indicated improved student knowledge of what constitutes plagiarism, when and how to cite sources (Peterson et al. 2009), the seriousness of plagiarism and its consequences. They also had an enhanced understanding of collusion. Student Focus Groups identified the key strengths of the tutorial as its clear and relevant information on referencing styles, collusion, collaboration and plagiarism, its good design, relevant language, ease of operation and their sense of relief in now understanding how and when to reference and what constitutes good academic practice. Academic staff from all faculties at UQ also were invited to test the tutorial. Comments from staff included:

> "I just walked through the tutorial ... I think it's great, especially the section dealing with collusion over group work – an issue that is not well understood by many students. Also fantastic that it points students at the resources that will help them if they are under assessment pressure and tempted to plagiarise. It will help me a great deal that there is such a tutorial in place and that it is compulsory for students to complete ...".

> "I have just worked through the new academic integrity tutorial and it is great. I spotted no obvious errors and it will really help to emphasise ethical practice. I wanted to email to signal my strong support for this initiative. I coordinate and teach heavily into our first year archaeology courses and understand how confusion about plagiarism is both widespread and currently difficult to overcome without use of significant class time - which of course cuts into tuition of other

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issues. The tutorial's design allows students to really think through and engage with authentic problems, which we all know is the most effective means of teaching, so it will make an impact. I sense among many students a real desire to understand these issues more deeply and also a strong commitment to ethical practice. So, this is fantastic and the sooner it is compulsory the better".

Conclusion

Students transitioning into the first year have been a focus for GPEM and UQ. Our flexible delivery of three online tutorials has successfully raised awareness of the meaning of plagiarism (including collusion) and its seriousness, and enhanced students' skills in referencing and effective writing incorporating graphical presentation. These skills provide life-long advantages for our students, and set a consistent standard for all students and hence greater equity in relation to assessment procedures. The overwhelming effectiveness of the tutorials and their flexible delivery mode produce enhanced learning outcomes for students. The design of the tutorials allows for easy expansion to other areas of importance.

References

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Session plan

1. Brief overview of presentation structure.
2. Activity - Have you ever been in the position of marking students' work and paused to wonder at their skills in displaying academic integrity? Form group of 3-5 with neighbours and identify your main issues/problems in relation to academic integrity/plagiarism. (This may raise issues related to trends, student skills/issues, staff issues, institutional issues, and the role of technology).
3. Explain the project team's process to address the issues.
4. Demonstrate the Academic Integrity tutorial and respond to questions throughout. Invite participants to log in and work through the tutorial.
5. Present the evaluation results.
6. Activity – how are your institutions/programs responding to the issue of academic integrity for first year students? Is there a role for online interactive tutorials?

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