

# AN ALTERNATIVE TO BLACKBOARD™? STUDENT USE OF WEB-BASED TEXTBOOK TEACHING AND LEARNING MATERIAL

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## Abstract

This paper investigates the use of web-based textbook supplementary teaching and learning materials which include multiple choice test banks, animated demonstrations, simulations, quizzes and electronic versions of the text. To gauge their experience of the web-based material students were asked to score the main elements of the material in terms of usefulness. In general it was found that while the electronic text provides a flexible platform for presentation of material there is a need for continued monitoring of student use of this material as the literature suggests that digital viewing habits may mean there is little time spent in evaluating information, either for relevance, accuracy or authority. From a lecturer perspective these materials may provide an effective and efficient way of presenting teaching and learning materials to the students in a variety of multimedia formats, but at this stage do not overcome the need for a VLE such as Blackboard™.

## Introduction

This paper evaluates the experience of using technology in the form of a web-based textbook supplementary material in the context of facilitating student learning in the subject area of Operations Management. The use of the web-based textbook sites are similar to the use of Virtual Learning Environments (VLE) such as Blackboard™ in that they provide a platform for the use of multimedia material to assist in student learning activities. Whilst a VLE, however, generally requires material to be generated and placed on the web site by the tutor, a web-based textbook site provides extensive content and the tutor is simply required to select and organise this material as appropriate for their needs. Although studies have investigated the use of virtual learning environments in recent years (Greasley et al , 2004; Ho et al, 2008) and the use of web-based teaching materials (Karuppan, 2001) there is little evidence presented regarding the use of web-based textbook material. The main aim of the study described here was to establish the experience of web-based textbook material for students attending traditional face-to-face courses in the subject area of Operations Management.

The study will focus on the extensive library of web-based learning materials available on the 'WileyPLUS' web platform which accompanies the textbook 'Operations Management', 2nd edition authored by A. Greasley and published by John Wiley and Sons Ltd. Students can obtain access to the WileyPLUS system either by purchasing the text book which is packaged with a registration code or by purchasing a digital version of the textbook which essentially provides access to WileyPLUS without a printed book. Many other book publishers offer similar platforms such as Pearson Education ([www.pearsoned-ema.com](http://www.pearsoned-ema.com)) and McGraw-Hill ([www.mhhe.com](http://www.mhhe.com)). WileyPLUS is used in over 34 European Universities and by over 500,000 students. It is used for distance learning as well as face-to-face courses. The main aims of the WileyPLUS system are to administer and manage courses easily, automate the assigning and grading of homework, create media-rich class presentations, immerse and engage students in a structured, dynamic learning environment and offer students additional practice with instant feedback. To meet these aims WileyPLUS is organised around the essential activities performed in class such as to create class presentations using the online resources provided and to automate the assigning and grading of homework or quizzes.

## The Questionnaire Survey

The questionnaire devised for this project consisted of two sections of background information and experience of using the WileyPLUS system. The background information section contains information on respondent in terms of the age category, gender, year of study and module details. The experience

of the WileyPLUS section asked students to rate the main features of the WileyPLUS system on a Likert type system on a scale of 1 to 5. Additional questions were posed in order to obtain qualitative responses to the students' experiences of the WileyPLUS system. The questionnaires were only distributed in paper form during a lecture to avoid bias towards students who were more proficient and enthusiastic users of the WileyPLUS system. The total number of questionnaires returned in this pilot study was 32. Statistical analysis of the questionnaires comprised running frequencies of all responses, both in actual and percentage terms. All of the qualitative responses have been grouped into similar themes and the frequency of each theme has been counted.

## Results and Discussion

The questionnaire found that 44% of students had bought the textbook and 56% had not. Reasons for not buying the textbook were thematised into 'available for nothing in the library', 'too expensive' and 'available online'. The questionnaire also found that in terms of usage of the WileyPLUS system 44% of respondents indicated they had experience of the site and 56% indicated they had not used the website. Reasons for not using the site were thematised into 'forgot, no time', 'not needed, have the book' and 'unaware of how to access'. Those who indicated usage of WileyPLUS ranked their usefulness of its facilities as below (**Table 1**).

**Table 1. Experience of the WileyPLUS website**

WileyPLUS features	Mean Score (1 = not useful, 5 = extremely useful)
<i>Online Book (chapter text, exercises , further reading)</i>	4.00
<i>Online Book (chapter case studies)</i>	4.15
<i>Practice Quizzes</i>	3.85
<i>Interactive Gallery (Flashcards)</i>	3.75
<i>Video Clips</i>	3.54
<i>Animated Worked Example</i>	3.85
<i>Virtual Tours</i>	3.73
<i>Simulations</i>	3.75
<i>Test Banks</i>	3.83
<i>Learning Experience of WileyPlus</i>	3.77

It can be seen in the responses to the questionnaire that only 44% of students had bought the textbook for the module. The main reason for this given by the students related to the cost of the textbook and the use of alternative strategies to obtain the textbook at no cost by use of the library or use of the online version of the text supplied with WileyPLUS. This latter option, however, will not be available in the future as WileyPLUS will only be available with purchase of the text. At this stage it seems uncertain whether the text web materials will increase student interest in purchasing the textbook or whether the statement 'many of our students do believe that everything they need to know is on the Web and that it's all free' (Frاند, 2000) is true and a culture of not paying for content will mean students increasingly rely on free content such as library material and websites offering free learning material. The experience of using WileyPLUS also represents 44% of the student cohort (although not necessarily the same students as used the textbook as in this instance WileyPLUS access was provided to all students). Most students indicated they would access WileyPLUS at some point, maybe for revision purposes and a few students seemed to view the textbook as all they required for their studies. This may indicate that most students will use the supplementary materials provided at some point but may require some encouragement to do so during the delivery of the module.

In terms of their experience of the WileyPLUS site students were asked to score the main elements of the system on a scale of 1-5 in terms of usefulness (see **Table 1**). All elements received a score of at least 3.5 indicating that students value the range of materials provided in helping them understand the applied concepts covered in Operations Management. The highest scores were for the online book text (4.00) and the online chapter case studies (4.15). The popularity of the online version of the text may seem surprising if students already have the printed version. It may be expected that students would use the alternative media such as videos and virtual tours. There is evidence that the "Google generation" use, as first port of call for knowledge, the internet and facilities such as Google and

Wikipedia, rather than earlier generations who gained their knowledge through books and libraries (Rowlands et al., 2008). This is particularly significant because information seeking behaviour in a digital domain is often characterised by skimming through web sites (viewing one or two pages and then moving on), spending a large proportion of time on navigating web sites as opposed to viewing content and quickly browsing text for a few minutes rather than prolonged reading (CIBER, 2007). This may explain why students value an electronic version of the text in which they can use the web hyperlink method of navigation through the material. While the electronic text provides a flexible platform for presentation of material and provides advantages such as the ability for direct links to alternative learning materials such as practice quizzes and animated examples, there is evidence that the digital viewing habits outlined may mean there is little time spent in evaluating information, either for relevance, accuracy or authority (Williams and Rowlands, 2007).

## Conclusion

The use of web-based textbook material is growing with book publishers providing increasingly sophisticated and extensive supplementary materials to support tutors and students. These resources provide an interesting alternative to the widespread use of Virtual Learning Environments such as Blackboard™ which are populated with materials produced by tutors. What emerged from this preliminary study is that the students value web-based textbook supplementary materials such as video clips and practice quizzes, but what they value most is the electronic version of the textbook content. This preference may reflect the habits of the 'Google generation' but the literature does question the effectiveness of a digital rather than a paper-based teaching and learning medium. This study has focused upon the student perspective of the textbook material but from a lecturer perspective these materials may provide an effective and efficient way of presenting teaching and learning materials to the students in a variety of multimedia formats. The software also provides aides for formative and summative assessment such as test banks of subject-oriented questions. These systems, however, are unlikely to replace a VLE, such as Blackboard™, as the primary platform for presenting teaching and learning materials as they are only available to students who purchase the text in either paper or digital form.

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Example used with students attending traditional face-to-face courses in Operations Management.