

## Chapter 2

# Development and Evaluation of a Generic Re-Purposable E-Learning Object on Data Analysis

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### EXECUTIVE SUMMARY

*This case describes the development of a re-purposable learning object for higher education. There is evidence of an increasingly diverse student population in UK higher education, where the sector is currently faced with re-positioning itself in order to meet the challenges of higher education in the 21st century. This has resulted in a new emphasis in education on supporting the learner, in collaboration with peers and tutors, through a lifetime of education, both within and outside the classroom. These factors, together with personal experience in teaching students data analysis have been instrumental in the formation, by the authors, of the conception of the Analyse This!!! learning object described in this case study. In June 2008 Analyse This!!! was successfully launched, and it is hoped that it will prove to be a useful resource for students and staff alike, across many different subject disciplines and across different institutions.*

### INTRODUCTION

E-learning requires continual evaluation and updating in a way that emphasizes 1) the goals of the organizations and 2) the goals of the users. Case studies are an effective method for the assessment of e-learning in terms of practical guide and points

of good practices, whilst also addressing potential pitfalls to avoid. As such, the case study proposed here provides a practical guide to the development of a re-purposable e-learning object, 'Analyse This!!!' and is pertinent to the areas of e-learning and mobile learning.

Analyse This!!! is a free online tutorial, created by the Centre for Research in Library and Informa-

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tion Management (CERLIM) at Manchester Metropolitan University, and funded by LearnHigher (<http://www.learnhigher.ac.uk/analysethis/>), to help students develop data analysis skills for coursework studies, projects, and dissertations. It includes quantitative and qualitative data analysis, with some practical examples and advice on effectively analysing data. The project team identified that research methods and data analysis is included in a wide range of subject disciplines taught by many staff across Manchester Metropolitan University and could relate to a specific piece of assessed course work, supervision of project work, support given for dissertation writing and for students undertaking post-graduate degrees by research. It was apparent that whilst the theoretical and practical aspects of data analysis are more generic in nature and can therefore be transferred across subject areas, subject context was seen as important in underpinning the students' understanding and application for their particular area of study. By developing a re-purposable learning object, staff are able to adapt it according to different subject disciplines, student requirements, and level and type of study.

The motivation for developing the learning object was driven by the increasingly diverse student population in UK higher education, where the sector is currently faced with re-positioning itself in order to meet the challenges of higher education in the 21<sup>st</sup> century. In addition, the team was influenced by the new emphasis in education on supporting the learner, in collaboration with peers and tutors, through a lifetime of education, both within and outside the classroom.

The authors view this as the beginning of their work in this area. Consultations with students and staff have raised a number of issues which they would like to explore further, such as enhancements to the learning object in terms of increased interactivity through the use of screen shots, audio files and video clips. They see this as an ongoing evaluation process, which can be updated and repurposed accordingly in a way that emphasizes the goals of the organizations and users.

The case study described in this chapter will firstly discuss the contextual drivers which brought about the development of Analyse This!!! (student diversity, pedagogical theories and e-learning) before providing a practical approach to developing successful e-learning materials. It will describe how, having identified a need for a generic learning object following liaison with stakeholders (staff at MMU and LearnHigher), a prototype was developed and evaluated with further stakeholder groups (students and staff). Accessibility and usability issues will be discussed and the case study will show how feedback from stakeholder groups was used to refine and improve the learning object, and how important decisions were reached as to the final delivery - as a generic and re-purposable e-learning object, with the possibility of delivery via mobile devices.

## **BACKGROUND**

### **Student Diversity**

The UK higher education sector is currently faced with re-positioning itself in order to meet the challenges of higher education in the 21<sup>st</sup> century. In addition to the widening participation agenda, changing social contexts are contributing to a greater diversity of students entering higher education. Drivers of this change include legislative change (for example, the UK Disability Discrimination Act) and new forms of pre-entry qualification (especially the introduction of Curriculum 2000, the shifting emphasis towards parity of esteem for vocational qualifications and, more recently, the 14-19 diplomas) are also impacting on the nature of the student body. The dramatic growth in student numbers as a result of these changes has led to an increase in students from non-traditional and previously underrepresented groups (Callender, 2003; Laing, Chao, & Robinson, 2005). The widening participation agenda of the movement from an elitist to 'massification'

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