

Understanding Disciplinary Differences: An Insight into Selecting Effective e-Learning Approaches

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ABSTRACT

This poster presents research into ways in which electronic based methods can be used in teaching. Specifically it wishes to examine how appropriate techniques and technologies may be selected, tailored and combined for effectiveness, based on disciplinary differences.

The research reviews existing literature, surveys existing practices and research into new techniques which may be adopted for electronic learning. It also analyses quantitative and qualitative data gathered from interviews with students across a number of academic disciplines.

Categories and Subject Descriptors

K.3.1 [Computer Uses in Education]: Computer Uses in Education – *collaborative learning, computer-assisted instruction (CAI), computer-managed instruction (CMI), distance learning.*

General Terms

Human Factors

Keywords

e-learning, disciplinary differences, higher education.

1. INTRODUCTION

In education many different approaches are used to support student learning. These typically include a core of lectures, presentations and tutorials coupled with a variety of different approaches such as discussions, readings, tests and practical exercises.

Research has indicated [1, 2, 3] that some specific techniques may be more appropriately applicable than others. In particular, approaches used for teaching and studying '*hard pure*' subjects (such as sciences) may be considerably less effective if applied to the teaching and studying of '*soft applied*' subjects (such as social sciences).

In addition the range of appropriate and effective methods varies according to the academic level and the prior experience of the learner. These observations may offer the designer of electronic based educational resources some guidance and insight when designing and implementing e-learning materials and solutions.

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2. COMPUTER APPLICATIONS

Computers may be used both for complete e-learning courses, or to provide components of a '*blended learning*' programme. Typically one might have to select from a wide range of e-learning components such as text, tutorials, simulations, discussions, quizzes and practical exercises etc. An understanding of the types of approaches most suitable for a given discipline, when combined with an analysis of the strengths and weakness of particular e-learning approach, might be used to assist in the optimal design of an entire course or program and even recommending the extent to which the course should be '*e-learning*' or '*blended*'.

2.1 Electronic Learning Techniques

Although there are many different specific e-learning applications our initial analysis is based around five key application types shown in table 2.1 below.

Table 2.1. Key e-learning application types

Application Types	Variety
Computer Based Presentation	
Computer Based Learning Materials	Static Material
	Interactive Material
Conferencing and Communications	Synchronous
	Asynchronous
Computer Assisted Assessment	Diagnostic
	Formative
	Summative
Simulated Environments	

3. REFERENCES

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