

**THE COMPETENCIES REQUIRED FOR EFFECTIVE
PERFORMANCE IN A UNIVERSITY E-LEARNING
ENVIRONMENT**

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A thesis submitted for the degree of Doctor of Philosophy of the University of New England

May 2009

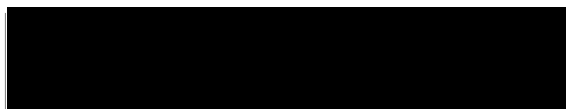
Dedicated to Mum and Dad and to the memory of my Grandparents.

CERTIFICATE

I certify that the substance of this thesis has not already been submitted for any degree and is not currently submitted for any other degree of qualification.

I certify that any help received in preparing this thesis, and all sources used, have been acknowledged in this thesis.

Signature _____



ACKNOWLEDGEMENTS

First, and very much foremost, I am indebted to my supervisors, Dr Chris Reading and Dr Sarah Stein. Their friendship, support, guidance, attention to detail, patience, and good humour were instrumental in the completion of this thesis. Words cannot express how grateful I am for their efforts.

I would also like to thank the following people in particular for their support:

- The student and staff participants who gave their time to be involved in the study.
- Associate Professor Catherine McLoughlin for guidance and supervision during the early phases of this thesis.
- Associate Professor Rosemary Callingham for advice and assistance with the Rasch analysis.
- Dr Ted Redden for advice and assistance on statistical analysis.
- Associate Professor Don Hine for advice on factor analysis.
- Dr Bev Croker for proofing and editing the thesis.
- Dr Genevieve Noone for assistance with the referencing.
- Mr Don Parsons for assistance with setting up the web-based survey.
- Professor John Pegg, Dr Scott Dickson, and Dr Peter Fletcher for their general advice and support.
- My colleagues at the School of Education and the Teaching and Learning Centre who either cared enough to ask how the thesis was going or were tactful enough not to ask when it wasn't.

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ABSTRACT

As a means of redressing the lack of learner-centred research in the field of e-learning, the current study set out to identify the competencies required for effective performance in a university e-learning environment. To achieve this, the study was implemented in two phases. In Phase One of the study, the Hybrid BARS methodology was used to identify the performance dimensions and competencies considered essential for e-learning. In Phase Two of the study, the performance dimensions and e-learning competencies identified in Phase One formed the basis of a web-based survey. The purpose of the survey was to gather the perceptions of student and staff stakeholders of the relative *importance*, *difficulty*, and *preparedness* of the e-learning competencies.

In Phase One of the study, 58 e-learning competencies were identified, 22 of which were either related specifically to technology or had been reconceptualised for the e-learning context. The remaining 36 competencies encompassed a range of practices considered to be essential for learning within a social constructivist paradigm in general. Six of the e-learning competencies identified were new or substantially different from what had been identified previously in the literature.

Student and staff ratings of the *importance*, *difficulty* and *preparedness* of the e-learning competencies indicated the competencies were not of equal status and could be ranked hierarchically. Statistically significant differences were identified in the ratings of the *importance*, *difficulty* and *preparedness* of the e-learning competencies but no definitive statement could be made about the nature of the relationship between them. Student and staff stakeholders held similar perceptions of the relative *importance* of the e-learning competencies, however student and staff perceptions of the relative *difficulty* and *preparedness* of the e-learning competencies were shown to be significantly different.

Results from the study indicated that students found learning in e-learning environments developed in accordance with social constructivist principles to be challenging. Evidence suggested that staff struggled with these principles as well. One of the main conclusions drawn from the study, was that both students and staff need to be apprenticed into a culture of social constructivism in order for the affordances of e-learning and social constructivism to be fully realised.

INTRODUCTION

This study evolved out of concern for the relative paucity of learner-centred research in the area of e-learning – an area that has been viewed as highly learner-centred. As a newly employed ICT Education lecturer in a university with a high proportion of off-campus students, I found myself having to do much of my teaching online. Having come from a secondary teaching background, teaching at a distance was new to me. There was a great deal to learn and it soon became apparent that the challenges I faced in my new position were very similar to those being faced by the university sector in general; namely, how to implement high quality e-learning environments with very little underlying theory or research available to guide best practice.

A general survey of the literature raised two issues. Firstly, much of the e-learning research tended to focus upon the technology, the environments created by this technology, and the nature and roles of educators using the technology to deliver instruction (Oh, 2003). Secondly, there was an absence of scholarly research focusing on both the learner and the preparedness of learners for e-learning environments (Parnell, 2003). Research that had been done was largely anecdotal or lacked empirical rigour.

This absence of learner-centred research concerned me. As a high school Computing Studies teacher I taught a topic on computer-based systems. One of the central themes of this topic was the failure of many computer-based systems due to designers not giving adequate consideration to the users of the system. A review of the e-learning literature indicated to me that many of us in the university sector were building and implementing e-learning systems that often failed to consider the needs of the learners.

A passage in an article by Arif (2001) caught my attention:

As a starting point, is the student well prepared for using the computer technology? Then, is the student competent in using the Web for accessing course content and navigating through it easily? Moving towards educational concepts, is the student well equipped for self-assessment and judgment to adapt new directions in learning? Finally, the ultimate question, is the student ready for a change in the old studying techniques to the new ones? (p. 37).

Although, Arif had described in broad terms the competencies students required for e-learning, what were these competencies specifically? This seemed to be a fundamental, yet critical question and one worthy of further investigation – thus, the broad research question of the current study was born:

What are the competencies required for e-learning?

Initial investigations showed the literature on e-learning competencies to be largely anecdotal and often focused upon what students needed to *be* or *have*, rather than what students needed to be able to *do*. Taking this observation into consideration, two parameters were set for the study. Firstly, to be valid, the e-learning competencies had to be identified in an empirically robust and systematic way. Secondly, to be useful, the e-learning competencies had to be expressed in observable and measurable terms.

To begin this process, three preliminary investigations had to be undertaken. Firstly, an appropriate definition of e-learning had to be derived for the study. Although one author had argued “E is for Everything” (Thompson, 2007, p. 160), this was not the best definition for a study of this type. What was required was a definition of e-learning that would identify the scope of the study, but would not restrict the application of the identified e-learning competencies to a wider context. Secondly, as the e-learning competencies had to be developed in accordance with a particular learning theory, an appropriate learning theory for informing e-learning practice had to be identified. Although my personal conceptions of learning and teaching in e-learning environments had been largely shaped by the social constructivist paradigm, was this the most appropriate learning theory to inform e-learning practice? Thirdly, to establish that the study would add to the knowledge base in this area, it was necessary to determine the e-learning competencies that had been previously identified in the literature. Discussion of all three of these investigations is provided in Chapter One of this thesis.

In Chapter Two, the focus shifts to the discussion of competencies in general. Firstly, definitions of competencies are reviewed and a rationale for adopting an integrated view of competencies is presented. Two related techniques used to identify competencies known as the Behaviourally Anchored Ratings Scale (BARS) and Hybrid BARS are examined. A rationale for using Hybrid BARS as the process for identifying the e-learning competencies is then provided. Chapter Two concludes with the presentation of the Research Questions for the study.

In Chapter Three, the planning for the research is presented and discussed. The chapter begins by examining aspects of the study context including: faculty organisation, staff and student population, and a description of the e-learning environment in operation at the time of the study. In this chapter, the research plan is presented. This study was divided into two separate phases with each phase having a differing objective, making use of a different set of participants. For this reason, the results for the two phases are presented separately in subsequent chapters of the thesis. Chapter Three concludes with an evaluation of the research plan with regard to the issues of validity and reliability.

Chapter Four provides a complete description of Phase One of the study. The four stages of the Hybrid BARS process implemented in this phase are described and discussion of the e-learning competencies identified using the Hybrid BARS process is provided.

In Chapter Five, results are presented for Phase Two of the study - the external validation of the e-learning competencies and the survey of stakeholder perceptions. Discussion of these results is given in Chapter Six.

In the final chapter, Chapter Seven, the possible limitations of the study are discussed followed by a summary of the findings. The chapter also considers the implications for e-learning, the study site, and the Hybrid BARS methodology. Finally, the thesis offers a number of recommendations for future research.

Significance of the study

This study is important because it identifies and analyses competencies students require for e-learning at university-level. Results from this study add to a knowledge base considered to be lacking in this field of e-learning inquiry. Literature dealing with e-learning competencies has tended to focus on global traits with the emphasis on what learners need to *be* rather than what learners need to *do*. Systematic studies in the area of e-learning competencies with any form of empirical rigour still remain rare (de la Teja & Spannaus, 2008). As a consequence, very little is known about the actual competencies e-learners require, the associated level of importance and difficulty of such competencies, and the preparedness of students in executing them. It is hoped that this study will assist the experience of e-learning for both students and staff and lead to more positive learning outcomes through the improved creation and implementation of university e-learning environments.