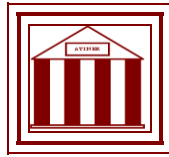


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**e-LEAT: A Tool for the Evaluation
of Online Learning Environments**

Rhian Pole

**Lecturer, Swansea Metropolitan University
Swansea, UK**

Karen Jones

**Principal Lecturer, Swansea Metropolitan University
Swansea, UK**

Stephen Hole

**Principal Lecturer, Swansea Metropolitan University
Swansea, UK**

Adam Fagher

**Research Student, Swansea Metropolitan University
Swansea, UK**

Athens Institute for Education and Research
8 Valaoritou Street, Kolonaki, 10671 Athens, Greece
Tel: + 30 210 3634210 Fax: + 30 210 3634209
Email: info@atiner.gr URL: www.atiner.gr
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**e-LEAT:
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Rhian Pole
Lecturer, Swansea Metropolitan University
Swansea, UK

Karen Jones
Principal Lecturer, Swansea Metropolitan University
Swansea, UK

Stephen Hole
Principal Lecturer, Swansea Metropolitan University
Swansea, UK

Adam Fakher
Research Student, Swansea Metropolitan University
Swansea, UK

Abstract

The ubiquity of computing, pedagogic approaches and an increasing need to become more cost effective presents opportunities and challenges to both education and information technology communities. The development of new sophisticated and omnipresent technology provides more flexible learning opportunities than ever before. Learning is no longer location specific, but instead individuals can learn anything, anywhere, at any time, a development termed e-learning.

Whilst some confine e-learning to the Internet, e-learning can be delivered through many forms of digital media including CD-ROMs, encyclopaedia disks, virtual learning environments (VLEs) and websites. Consequently, as a result of the wide range of courses and activities that are available, e-learning has become a key supporting tool in teaching and has influenced the way in which training is provided. Traditional approaches to learning incorporate teacher-centered strategies, however learning styles have evolved and become more student-centered; technology is enabling participants to configure and develop learning environments to match their own learning styles.

Despite the rise in popularity of e-learning, there is little evidence supporting the measurement of the success of these environments or even that they fully meet the requirements of the participants. Approaches to e-learning have typically focused on the use of technology to create more detailed and interesting learning environments with limited evaluation of system quality, success or even user satisfaction.

This chapter proposes an evaluation tool to assess the quality of e-learning systems in order to gauge their success and the level of user satisfaction they generate. The tool is a modified version of WebQual, an instrument used within the e-commerce sector to evaluate the quality of usability, information and interaction of websites. Unlike WebQual, the proposed assessment tool includes a section to evaluate the quality of the learning experience, from a participant perspective irrespective of their stakeholder status.

Keywords: e-learning, user satisfaction, learning experience, quality, assessment tool.

Contact Information of Corresponding author:

1. Introduction

In the early 2000s, in response to the growth in internet commerce and the problems that persisted as a result of poor web page production, Barnes & Vidgen (2000) attempted to tackle the issue of website quality from the customer perspective. They suggested that the effectiveness of websites and the benefits businesses can experience from adopting e-commerce strategies are reduced, due to issues that typically include incorrect/out-of-date information, poor navigation and broken links (Barnes & Vidgen, 2000). Vidgen *et al* (2002) purport that a general concern of any web development must be the quality of the website and the experience of the user, but add that quality and user experience are subjective and difficult to measure. To assist in such evaluation, Barnes & Vidgen (2000) provide the WebQual instrument, a technique to assess user experiences of web site quality on the basis of usability, design, information, trust and empathy.

e-learning has experienced a similar history to e-commerce but the quality issue is that of the online learning environment rather than web sites generally. e-Learning is defined by Stockley (2012) as ‘the delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material’. It is not restricted to the internet and can include CD-ROM, DVD, intranet and mobile phone technology. The combination of technology with education has resulted in a surge of technology enhanced learning and has seen e-learning become a key supporting tool, transforming the delivery of education and training (Clark & Mayer, 2003).

1.1. e-Learning Environments

According to Kanninen (2009, p.V) an e-learning environment can be defined as the ‘software which acts as a platform where learning material is shared.’ Another variation of the term e-learning environment is ‘the hardware and operating system supporting e-learning delivery [which] can vary in complexity and style’ (Government of Western Australia, 2012). Hu *et al* (2009) state that e-learning environments are ‘more convenient and source saving to build, compared with the traditional learning environments which can provide flexibility’. The e-learning environment is where participants are able to communicate and share material, or alternatively the environment is the *venue* where everything happens. The environment provides the learner with a variety of tools to suit his or her needs and enhance the learning experience.

There are many types of e-learning environment such as: virtual learning environment (VLE), managed learning environment (MLE), personal learning environment (PLE) and social learning environment (SLE).

A VLE is a ‘software system designed to support teaching and learning in an educational setting. It also...provides online tools for assessment, communication and uploading of content’ (University of Kent, 2012). In addition, Dong & Li (2005) suggest that a VLE can be a virtual conference, virtual classroom or virtual seminar which enhances the learning experience as

the information should be relevant and the participant can access the information at anytime from any place.

MLEs incorporate the elements of VLEs but also interact with the whole range of systems that contribute to learning such as the student record system. While the term MLE is rarely used (Joint Information Systems Committee, 2003), the VLE can be seen as a subset of the MLE. The MLE manages the learning with the help of technology to enhance the relationship between all the stakeholders, whereas, the VLE focuses on the tools such as communication and uploading of content.

A PLE, alternatively can be defined as ‘tools, communities and services that constitute the individual educational platforms users use to direct their own learning and pursue educational goals’ (Educause, 2009). There is a shift in focus from a learning environment that simply hosts course materials, to ones created by individual learners to meet their own needs. Attwell (2007) contends that the PLE is not just a software application, but instead a new approach to learning.

The internet offers many social tools that could be used as a part of a social learning environment (Kadle, 2010). A SLE can be defined as ‘a place where individuals and groups of individuals can come together and co create content, share knowledge and experiences. [They can] learn from one another...[which can provide social interaction]...between participants and tutors. In another words a SLE doesn’t manage, control and track users but rather provides an open environment for them to work and learn collaboratively’ (Hart, 2009). A SLE is much more than just a social network as it provides a wide range of functionality and supports the integration of tools for users (Hart, 2009; Kadle, 2010).

1.2. *Quality Learning Environments*

Despite the rise in popularity of e-learning, approaches to it have primarily been born out of advances in technology. There is little evidence supporting the measurement of the success of these environments or that they fully meet the needs of the learners. Pole & Jones (2009) contend that VLE resources can be more *available* to learners without necessarily adding *value* to the learning. Consequently, there is a need for guidance to assist developers in the creation of quality learning environments that assure user satisfaction.

Jain (2001) contends that the word ‘quality’ has different meanings under different circumstances. He defines quality as ‘the degree to which a product meets the requirements of a customer’ (Jain, 2001, p.1). Or simply, ‘the fitness of a product or service for its’ intended use.’ Gray *et al* (2000, p.207) provide a few typical descriptions of what is quality; ‘we recognise it when we see it’ ‘keeping the customer satisfied’, ‘excellence’, ‘high standards’, but adds that there is no common and agreed definition of quality due to different people’s perceptions. Thus in order to assess quality it is necessary to consider the participants’ perceptions.

1.3. WebQual

Vidgen *et al* (2002) contend that a general concern of any web development must be the quality of the website and the experience of the user. However, given the subjective nature of quality and user satisfaction it can be difficult to measure. To overcome this problem Barnes & Vidgen (2000) created the WebQual instrument to provide a technique to assess web site quality.

WebQual consists of a total of 23 questions, in five sections: usability, design, information, trust and empathy. Respondents are asked to rate the quality of the web application on a scale of 1 to 7 (1 being poor and 7 being excellent) for each of the questions. An ‘importance ranking’ of each question is also required to ensure that the most and least important aspects of the system are identified and measured.

Once the responses to the WebQual questionnaire are obtained they ‘are presented and analysed, leading to the generation of WebQual Index of website quality’ Barnes & Vidgen (2000, p.298). The WebQual Index is implemented to show how much usability, design, information, trust and empathy affect the customers’/users choices whilst on a website. This illustrates to the designers which of the five components of the WebQual tool, if any, have more or less of an effect on the users’ choice and thoughts. In an example evaluation of bookstores by Vidgen *et al* (2002), shown in Figure 1, it is likely that the first mover advantage and the strength of the Amazon brand has significantly strengthened the perception of trust for Amazon over other online alternatives. However, the true benefit of WebQual is the ability for comparison and the identification of weaknesses, such as for example the lack of trust in the alternatives.

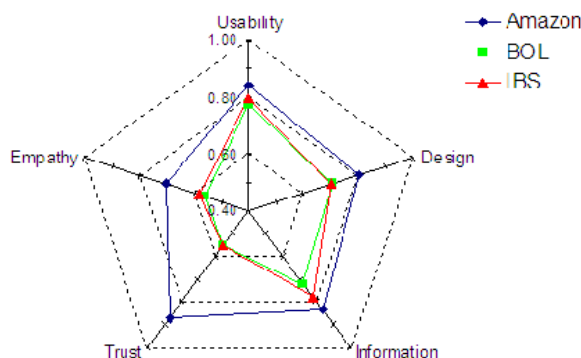


Figure 1. WebQual: Evaluating Amazon (Vidgen *et al.*, 2002)

However given that e-learning is not constrained solely to the internet and that the types of learning environment, developer and user can all vary greatly, WebQual has limited value in assessing their quality. An assessment tool is required that understands the diverse nature of the learning environments to ensure learners have a quality learning experience.

This research extends the work of Barnes & Vidgen (2000) and proposes the e-Learning Experience Assessment Tool (e-LEAT). The questionnaire approach of WebQual has been modified to create an enhanced tool that

provides a systematic approach for assessing learning experiences in online learning environments (see Appendix One). e-LEAT has been designed to assist developers in on-going improvements and to enhance the quality of learning experiences.

2. Research Methodology

The aim of this research was to develop an assessment tool for evaluating the learning experience of online learners. In accord with this aim a phenomenological philosophy was adopted, to understand participant's perceptions on the quality of learning environment's rather than scientific measurement (Collis & Hussey, 2009). This allowed for a 'bottom-up' or inductive approach to generalise from observation to theory (Saunders *et al.*, 2009, p.346).

A case study strategy conducted within one university was considered appropriate and was selected for this research. However, due to ethical issues, it was necessary for the organisation to remain anonymous.

To gather people's perceptions of the factors that affect the quality of learning experience, the primary data was collected using semi-structured interviews, questionnaires and focus groups, which gathered qualitative and quantitative data. By adopting mixed methods the quality of the research was enhanced (Saunders *et al.*, 2009). As the research was attempting to evaluate the quality of learning environments and was directed towards the educational sector, a number of lecturers and students from within the higher educational sector were involved throughout the data gathering process.

Opinions on the elements believed to be fundamental to learning in online learning environments were obtained from lecturers and learners using questionnaires distributed throughout the university. Three semi-structured interviews were conducted with lecturers. Each participant was guaranteed anonymity in the study. Each interview lasted approximately half an hour and allowed the interviewees to answer in their own words. Furthermore, following the first iteration of development of the e-LEAT tool, focus groups enabled the full evaluation of each of the questions, to assess their suitability and identify potential modifications, errors and omissions from the e-LEAT questionnaire. A mixture of lecturers, an e-learning professional and learners were involved in the focus group.

While validity is high under the phenomenological research philosophy, the case study approach lacks reliability due to the inability to repeat the findings in a different organisation. However, Gummesson (2000) contends that it is possible to generalise from one situation to another if the behaviours of those studied are fully understood, which was made possible by using multiple data collection methods. Thus the issues identified as being critical to learning within the university can be considered representative of learners in other organisations.

3. The Design of an e-Learning Experience Assessment Tool

The questionnaire approach of WebQual was used as the starting point for the development of e-LEAT. Originally it was considered that only a minor modification to WebQual was necessary and the approach adopted was to simply add an additional sixth element titled 'learning'.

The Encyclopedia Britannica (2012) defines learning as 'the alteration of behaviour as a result of individual experience. When an organism can perceive and change its behaviour, it is said to learn'. Rogers (2002, p.85) adds that 'learning is the interaction of the learner, the context, the kind of learning task and the processes involved'. Zhang *et al* (2004) concur adding that e-learning is restructuring the way people learn, where the learner becomes an active participant in the learning.

Although the term learning is well defined, to create the statements to evaluate learning in the assessment tool it was necessary to understand learners perceptions of the factors that enable learning. Data from the questionnaires and interviews was analysed for trends and the following themes emerged as being essential by lecturers and learners for a quality learning experience.

- Collaboration
- Feedback
- Interaction
- Motivation
- Flexibility
- Engagement
- Downloadable Content

These themes formed the basis of the additional nine statements that were added to the learning element of the modified tool, as shown in Figure 2.

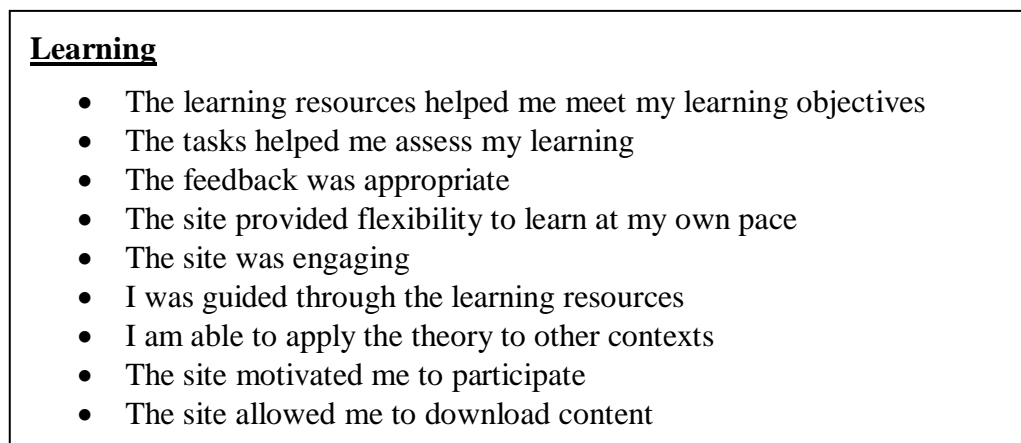


Figure 2. e-LEAT - Initial Learning Statements

However, through the focus groups it became evident that the simple modification of WebQual was insufficient. Some of the questions included lacked the required focus and a much greater modification of WebQual was necessary to enable its application in evaluating e-learning experiences. This resulted in a further iteration of the e-LEAT design. The whole e-LEAT

questionnaire can be found in Appendix One and will be discussed further in the following sections. The six sections of e-LEAT are: usability, design, information, trust, empathy and learning.

3.1. Usability

Section 1 of e-LEAT relates to the usability of the learning environment. Elliot (2007) suggests that usability is a measure of how easy an interface, such as a web page in a browser, is to use. Nielson (2012) adds that ‘usability is a quality attribute’ for assessing ease of use. Alternatively, the more holistic definition of usability given within the ISO9241-11 (1998) standard is accepted widely;

‘Usability is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.’ ISO9241-11 (1998)

Thus, in this context usability is not just considered in terms of ease of use, but what the user can achieve and how much satisfaction they will gain from doing so (Sandom & Harvey, 2005). Quesenbery (2011) suggests that there are five dimensions of usability, which are referred to as the 5E’s (Quesenbery, 2011).

- Effective – how complete and accurately the work is completed.
- Efficient – how quickly the work is completed.
- Engaging – how well the user is drawn into interaction with the interface and the level of satisfaction from its use.
- Error Tolerant – how well errors are prevented and the level of support to assist users recover from mistakes.
- Ease to Learn – how well learning is supported initially and throughout the lifetime of the systems use.

Figure 3. The 5Es’s (Quesenbery, 2011)

In understanding usability it is apparent that each of these factors should be present in equal balance. However, Quesenbery (2011) identifies that some factors are more important than others, depending on the situation; for example efficiency and easy to learn would be a primary concern for a call centre system, while a web site would need to be engaging and efficient, as illustrated Figures 4 and 5.



Figure 4. Balanced Usability Factors (Quesenbery, 2011)



Figure 5. Unbalanced Usability Factors (Quesenbery, 2011)

While the fundamental requirement of any e-learning environment is to provide learners with access to learning materials, the approach to usability must be appropriate. In accord with Quesenbery (2011), it may be suitable for some environments to have an unbalanced approach to usability, for example, advances in technology have been the focus of many e-learning environment developments that they can be very engaging and learners are captivated. However, care must be taken when problems are not addressed that can adversely affect user satisfaction. The questions in Section 1 of e-LEAT attempt to identify usability issues by including all five dimensions in the questions, however if there is an unbalanced approach and it is appropriate the ‘importance ranking’ will reduce its weighting and hence give a true reflection of the level of usability in the environment.

3.2. Design

In traditional information system development, design initially focuses on the structure of databases or writing program code. However, in the development of an e-learning environment, solutions are fundamentally visually oriented that the developer must appreciate and understand the elements of interface design in order to develop a successful solution. There are a vast number of guidelines available to improve interface design, such as the Ten Design Heuristics by Nielsen (2005) or Williams & Tollett’s Page Layout Guidelines (2001, cited by Vidgen *et al.*, 2002). However given that PLEs and SLEs may not go through a formal design process, e-LEAT does not recommend any specific guidelines, but advocates that good design practices are incorporated into the interface design. Thus the section on design in e-LEAT focuses on how the site looks, but is not that dissimilar to the original WebQual. Learners are asked to evaluate the environment in terms of its aesthetic appearance, if the image it conveys is professional, the logical organisation of learning materials and the extent to which the environment helps improve the learning experience.

3.3. *Information*

In systems development, information analysis involves the production of a requirements specification through a detailed investigation of the system requirements relating to the information and process needs. However, this approach only considers the development from a system perspective and does not address the issue of curriculum design. The ability to create effective curriculum designs is an integral part of the teaching requirement and what makes good curriculum design is a matter of debate (Reece & Walker, 2003). Consequently, given the differing perspectives of systems developers and educationalists, it is necessary for e-LEAT to take a much more fundamental view. The focus of all the questions in the information section is on whether the site provides the desired information, such that it is accurate, up-to-date, contextualised, categorised, free from errors and concise (Davenport & Prusak, 1998).

3.4. *Service Quality*

Barnes & Vidgen (2002, p122) define service quality as 'the quality of the service interaction experienced by users as they delve deeper into the site and is embodied by trust and empathy'.

3.4.1 *Trust*

Due to the increasing vulnerabilities associated with being online, including phishing attacks, security issues, viruses, etc., users are less likely to use websites that they do not feel are trustworthy (Geddes, 2010). However, given that many e-learning environments are organisationally orientated, trust does not play such a major part in the success of the learning experience as it would in online commerce. Consequently, e-LEAT considers trust in terms of how safe it feels to upload and download data; the level of confidence users feel that their personal information is stored securely; and that the environment will be available when the learner needs it.

3.4.2 *Empathy*

In relation to service quality, empathy relates to the ability to understand the thoughts and feelings of users, especially how the site makes the user feel (Powazek, cited by Cohen, 2003). In e-learning this is especially true, for example, the extent to which a learning environment simply makes information available or the learning experience it creates (Powazek, cited by Cohen, 2003). The sense of personalisation, the level of community the environment supports and the ease with which learners can communicate with each other are considered intrinsic parts of empathy within e-LEAT.

3.5. Learning

The learning component in Section 6 of e-LEAT focuses on the extent to which the environment supports a positive learning experience, however during the focus groups, the feedback was very clear in relation to the original statements proposed. Most participants believed that the wording of the statements was such that learners would have difficulty responding, as it was unclear exactly what was being asked. Consequently, in the subsequent iteration of the design, the themes were largely maintained but the wordings were revised. The revised statements relating to learning are given in Figure 6.

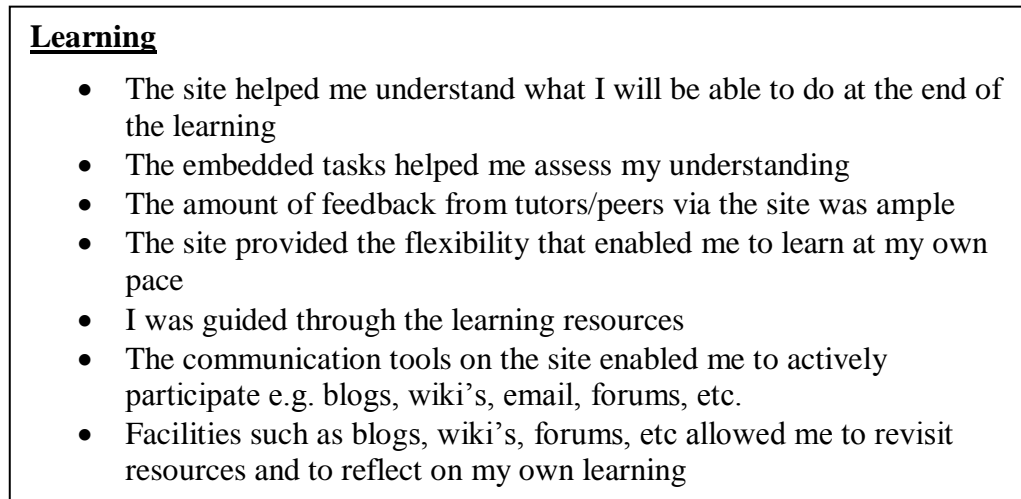


Figure 6. e-LEAT - Learning Statements

The statements were considered to reflect the original findings of the interviews and questionnaires more appropriately.

4. e-LEAT – An e-Learning Experience Assessment Tool

e-LEAT consists of a total of 30 questions, in six sections: usability, design, information, trust, empathy and learning.

Like WebQual respondents of the e-LEAT questionnaire are asked to rate the quality of the learning experience and the importance ranking on a scale of 1 to 7 (1 being poor and 7 rating as excellent) for each of the 30 questions. The strategy of importance ranking of the questions ensures that the true quality is identified, whereby it possible for a question element such as 'the site conveys a sense of personalisation' to score highly in the learning environment, but if it has limited perceived importance to the learner in the learning experience it is reflected in the weighted results.

The weighted score is calculated by multiplying the scores given for a statement by the importance attached to it by the learner. To calculate the e-LEAT Index the total weighted score is indexed against the total possible score (i.e the total importance is multiplied by 7; and the total weighted score is

divided by the result). This indexed score generates the e-LEAT Index of e-Learning Experience Quality.

$$\text{e-LEAT Index} = \frac{\text{Total Weighted Score}}{(\text{Total Importance} * 7)}$$

5. Conclusions & Future Work

The aim of the research was to develop an assessment tool for evaluating the quality of e-learning experiences within e-learning environments.

The data provided by the questionnaires, interviews and focus groups enabled the development of e-LEAT. While the focus groups have enabled thorough evaluation of the included questions, further testing of e-LEAT is necessary to demonstrate the validity of the tool.

The assessment of quality in e-learning environments is in its infancy, though it is anticipated that this study will open the debate for the evaluation of participants learning experiences, with the implementation of the developed tool e-LEAT. This will demonstrate the level of usability, design, information, trust, empathy and learning that users perceive an e-learning environment offers.

For the future it is intended that e-LEAT will become an integral part of the e-learning environment development process, to assist developers with on-going evaluation and improvements; to facilitate learning, not in spite of the environment but because of it.

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Appendix One - The e-Learning Experience Assessment Tool (e-LEAT)

1. Usability									The extent to which a site is easy and intuitive to operate.
1. I find the site easy to learn to operate									Includes built-in step-by-step instructions for tasks.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
2. It is clear how to interact with the site									
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
3. The site works correctly in my preferred Web Browser									The pages correctly load, display, navigate, etc
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
4. I find the site easy to navigate									You were able to find what you were looking for.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
5. I find the site easy to use									You can find and do what you needed to accomplish.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
6. I feel satisfied when I use the site									
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
2. Design									How the site looks.
7. The site has an attractive appearance									Using the site is a nice experience.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
8. The learning materials are arranged in a way which helps you learn									
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
9. The site conveys a professional image									
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	

10.	The site helps create a positive learning experience for me									The features of the site improves the learning experience.
	Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
3. Information										Does the site provide the desired information
11.	Provides accurate information									The information provided is correct
	Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
12.	Provides up-to-date information									The information is not outdated, using current sources.
	Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
13.	Provides information relevant to my learning and does not include topics that are peripheral or completely unrelated.									
	Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
14.	Provides information written in a style which is easy to understand and includes use of good examples									
	Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
15.	Provides information at the right level of detail									The information provided is focused on the learning topic(s). It is not too broad or too detailed.
	Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
16.	Presents the information in a variety of formats e.g. text, tables, video, etc.									The format of the information improves your learning experience.
	Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
	Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	

4. Trust										Is the website secure
17.	It feels safe to upload and/or download data									That the upload/download of data is secure from viruses, hackers, etc.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
18.	I am confident that my personal information is stored securely									That the measures in place protect your personal details.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
19.	I feel confident that the information will be available when I need it									Access is available 24/7 with minimal downtime.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
5. Empathy										Focuses on the care and individual attention to the learner
20.	The site conveys a sense of personalisation									That the content is adjusted to the learner
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
21.	When I use the site I feel part of a community of users									That you feel part of a group of likeminded individuals, who can offer mutual support
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
22.	Makes it easy to communicate with other learners									The site enables communication
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
6. Learning										The extent to which the site supports a positive learning experience.
23.	The site helped me understand what I will be able to do at the end of the learning									
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
24.	The embedded tasks helped me assess my understanding									
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
25.	The amount of feedback from tutors/peers via the site was ample									Learner improvement was possible through feedback on performance by the tutor/peers
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>		
26.	The site provided the flexibility that enabled me to learn at my own pace									Through 24/7 access you were able to manage

Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	your own leaning
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
27.	I was guided through the learning resources								The content and tasks within the sites were designed to be attempted in a particular order.
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
28.	The communication tools on the site enabled me to actively participate e.g. blogs, wiki's, email, forums, etc.								
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
29.	Facilities such as blogs, wiki's, forums, etc allowed me to revisit resources and to reflect on my own learning								
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Overall									
30.	Use of the site enhanced my learning								
Evaluation	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	
Importance	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	N/A <input type="checkbox"/>	