Case Twelve: Self-evaluation in the e-learning unit at the University of Pretoria

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'Meaningful change is brought about by individuals taking action to change their own situations, and making their practice more relevant to those they are serving.' (McNiff, 1996, p.xv)

Editor's introduction

This case study describes the processes and instruments used to elicit feedback from lecturers and students on the services and products of the e-learning unit at the University of Pretoria. It shows a particular 'evaluation technique' that can be used to enable 'learners, and other clients' to contribute to quality review, and therefore illustrates the quality criteria for **quality assurance**:

- 11.5 The provider engages in benchmarking and uses appropriate monitoring and evaluation techniques to gather and analyze data to use as a basis for setting priorities and planning for quality improvement.
- **11.8** Staff, learners, and other clients are involved in the process of quality assurance and quality review.

However, the case study also illustrates neatly (mainly in the kinds of questions that are asked in the student and lecturer feedback questionnaires in the attached appendices) the relevance of criteria that refer to the conditions necessary for successful use of e-learning - criteria relating to **human resource strategy**, **learner support**, and **management and administration**.

Staff development for design and delivery of e-learning:

8.6 Staff are trained, monitored, and supported for the specialized roles and tasks they perform, including the design, management and delivery of electronically offered programmes.

Student access to relevant technology:

7.17 Learners have access to the facilities (for example, libraries) and equipment that are necessary for their successful learning.

Orientation to and ongoing learner support for students involved in e-learning:

7.3 Learners are carefully oriented to the teaching and learning methods on the programme, particularly if electronic learning methods are used.

Development of learners' computer skills:

7.4 Where appropriate, the development of competence in the use of information and communication technologies is built into the learning outcomes of the programme.

Technical assistance:

7.18 Learners are provided with technical support for each educational technology hardware, software, and delivery system required in a programme.

Training in the use of the technology for both staff and students:

9.23 Staff and learners are trained in the use of the equipment, facilities, and communication and information systems.

Reliability of delivery using the selected technology:

9.20 In the case of electronically offered programmes, the provider ensures the reliability and predictability of a 'fit-for-purpose' teaching and learning delivery platform.

What is also critical is the importance of ascertaining the nature of the contribution that e-learning can make to the teaching and learning experience. E-learning does not automatically improve teaching and learning - there needs to be continual reflection on whether or not it does. The lecturer experience and satisfaction survey asks a number of questions that assist lecturers to reflect on whether or not e-learning 'adds value' to the learning experience.

Introduction

This case study describes part of a self-evaluation exercise carried out by the e-learning unit of the Department of Telematic Learning and Education Innovation (TLEI) at the University of Pretoria (UP), from 2001 onwards. The results reported here are part of a comprehensive effort to design and implement a formal quality management system for e-learning, back-grounded by an ISO 9000 approach to quality assurance (see Fresen, 2004). The goal of the self-evaluation exercise is to encourage reflective practice by academic and support staff so that the action-reflection cycle becomes habitual in every role player, in order to promote continuous quality improvement.

Background to the e-learning unit

Education innovation is a key strategic initiative at the University (University of Pretoria, 2002). TLEI is a service department which assists and supports academic staff in education innovation and the enhancement of quality in the design delivery and support of teaching and learning activities.

The term 'distance education' is sometimes used synonymously with 'online learning', in the sense of 'technology-assisted distance learning'. The preferred term in this case study is 'web-supported learning' (WSL), which implies that the Internet is used as a supportive

delivery medium to enhance and support the teaching and learning process. Web-supported learning is used in this case in a face-to-face context, rather than for distance education, in which the learner is separated from the provider in space and time. The University of Pretoria promotes a model of flexible, blended learning, which encompasses a range of electronic and face-to-face delivery mechanisms and support systems, using appropriate, cost-effective combinations of information and communication technologies (ICTs).

The e-campus of the University of Pretoria is an electronic extension of contact teaching and learning activities and other facilities and services. Student Online Services and Lecturers Online provide Internet-based platforms that enable students and staff to access an integrated educational environment from the campus or from their places of work or residence (TLEI, 2002). This infrastructure enables asynchronous access to preparatory, remedial, reinforcing and reference materials, interactive assessment activities, and administrative functions.

Learning management systems (LMSs) have emerged as one of many software systems available to deliver WSL. They are designed with a view to enabling enriched interactive educational communication on the web, and to offer enhanced support to instructors and students as they use the Internet as a medium for learning. The University makes use of the commercially available LMS, WebCT. WebCT offers the following functionality (WebCT(r), 2002):

- Provides access to information and resources;
- Establishes WSL communities;
- Enables electronic assessment; and
- Allows student tracking, self-paced learning and off-campus access.

Lecturers may choose to utilize WebCT at various levels of complexity. Many lecturers begin by using web-supported components at the lower level of simply providing information and resources. Part of the change management role of TLEI is to provide training and support in how to facilitate effective, collaborative and meaningful learning on the web.

Quality Criterion 8.6

Staff are trained, monitored, and supported for the specialized roles and tasks they perform, including the design, management and delivery of electronically offered programmes.

Student feedback

A crucial element in a self-evaluation exercise is student feedback.

In April 2001, the field of student feedback was researched and a student evaluation survey for WSL was developed, using ideas from Hannafin & Peck (1988) and Ramsden Quality Criterion 11.8 Staff, learners, and other clients are involved in the process of quality assurance and quality review.

(1991): the WebCT Experience Survey (see Appendix 1 to this case study). The survey was programmed in a shareware software package and implemented on Student Online Services, the campus-wide portal from where students access their web-supported courses. Completing the surveys is a voluntary activity for all students registered for at least one web-supported module. Since 2002 the survey has been administered at the end of each semester, namely in July and December. The following response figures were recorded.

Table 1: Number of respondents to the Student WebCT Experience Survey

	20	002	2003			
	Sem I	Sem II	Sem I	Sem II		
Number of respondents ¹	386	1 476	4 650	1 130		
Total number of WebCT students ²	10 000	14 000	17 000	20 000		
Response rate	3.86%	10.54%	27.35%	5.65%		

The findings from Semester I, 2003 are summarized here. A wealth of data was gained from the questions designed to provide information such as browser usage, access to technology and usefulness of library resources. The most encouraging findings were that 75% of technical problems were resolved within 24 hours and 66% of students found 'anywhere, anytime' learning to be convenient. Valuable information was volunteered in the open questions, which asked for positive points, negative points and suggestions for improvement.

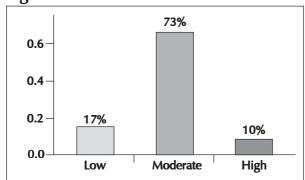
The questionnaire measures more than service and support to students. Items were written according to the following categories:

- a. Technical adequacy and technical support;
- Educational support (supportive resources and training);
- Affective domain (feelings and emotions of students);
- d. Interactivity (use of the communication tools in WebCT);
- Perceived learning;
- Lecturer involvement in facilitating WSL.

The first three categories were used to generate a Frustration Index (FI) and the last three categories were used to generate a Satisfaction Index (SI). These indices reflect respectively student frustration or satisfaction with their WSL opportunities.

The findings for the Frustration Index are shown in Figure 1. The percentage of respondents is on the vertical axis and reflected as a percentage on each bar. The levels of the frustration index were grouped according to the categories Low, Moderate and High. These are shown on the horizontal axis.

Figure 1: Levels of the Frustration Index



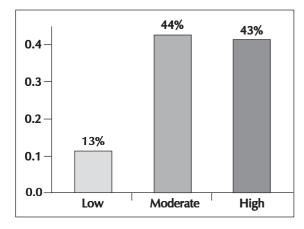
The Frustration Index shown in Figure 1 indicates that 83% of respondents experience moderate to high levels of frustration in their web-supported courses. This statistic is rather high efforts will need to concentrate on reducing levels of student frustration.

The Frustration Index was investigated in further detail to ascertain the contributing factors. The following factors contributed to student frustration with WSL:

- Insufficient computers available on campus;
- Insufficient printing facilities available on campus;
- Extent of technical difficulties experienced;
- Insufficient support from the student CD-Rom;
- Inadequate student training in WebCT;
- An impersonal learning experience;
- Slow response from classmates;
- Feelings of annoyance and/or stress.

The findings for the Satisfaction Index are shown in Figure 2. The percentage of respondents is on the vertical axis and reflected as a percentage on each bar. The levels of the Satisfaction Index were grouped according to the categories Low, Moderate and High. These are shown on the horizontal axis.

Figure 2: Categories for the Satisfaction Index



It can be seen from Figure 2 that only 43% of respondents experience high levels of satisfaction. Improvement efforts will concentrate on increasing this statistic.

The following factors contributed to the Satisfaction Index:

- Feeling comfortable communicating via online tools;
- Feeling more freedom to express oneself than in a traditional classroom;
- Learning from the contributions of other students;
- Promoting one's ability to work as a team or group member;
- Promoting one's ability to plan one's own work;
- Experiencing an enriching learning environment.

Some of the qualitative responses to the open question about **positive** aspects of WSL highlighted the need for lecturer commitment and involvement, as seen from the sample

of student comments given below:

- Discussions with the lecturers and students;
- Contact with lecturers improved;
- Communication with lecturers is made easy;
- Can contact lecturers online;
- The online web has a great impact towards our learning;
- I learned to communicate more to the point and concise;
- It helped me to interact with my fellow student mates and lecturers;
- Learning is best communicating with other people;
- Long distance interaction between lecturer and students;
- Lecturer's and fellow students' contributions.

Lecturer feedback

Lecturer feedback was not formally gathered until 2004. During January 2004, pilot interviews were conducted with a group of 22 lecturers across various faculties, to obtain feedback from lecturers who have been involved in WSL for at least one year. The interview schedule was the Lecturer Experience and Satisfaction Survey, a mix of structured and open questions (see Appendix 2).

Quality Criterion

9.20

In the case of electronically offered programmes, the provider ensures the reliability and predictability of a fit-for-purpose teaching and learning delivery platform.

Quality Criterion

9.23 Staff and learners are trained in the use of the equipment, facilities, and communication and information systems. The factors which contribute to lecturer satisfaction with WSL are a sense of security which needs to come from technical reliability and technical support. Some strong reaction emerged with respect to major upgrades to the IT infrastructure, which occurred at the beginning of 2004. Despite timely notification, the extensive technological changes resulted in uncertainty and frustration among lecturers.

Staff and student training were mentioned as vital to ensuring the quality and success of WSL.

Online communication and interaction were recognized as providing benefits in the teaching and learning situation, but organizational and administrative advantages are more practical and quicker to achieve. Several responses reflected the difficulties with respect to the human element - getting the commitment of lecturers and motivating and encouraging students to participate actively in WSL.

Many positive comments were elicited on services rendered by TLEI, for example:

- I really enjoyed working with the team. You people make ME look good!
- Polite, knowledgeable, quick turnaround time, bends over backwards for clients.

- I am amazed every day by the outstanding, enthusiastic and helpful manner in which TLEI encourages, supports and leads us.
- Organized, involved, quick feedback provided.
- The instructional designer really helps us tremendously she is a valued team member.
- I believe that the instructional designers do not receive adequate recognition for their hard work!
- You were always a phone call away thanks for that.
- The dedication and outstanding support of TLEI staff members are highly appreciated.
- I have had excellent service. The instructional designer is always willing to help and extremely positive.

The responses to the Lecturer Experience and Satisfaction survey can be summarized as being overwhelmingly positive. There was strong agreement that the e-learning component adds value to the learning experience for students. Excellent support and service from TLEI are valued by lecturers.

Where there were reservations or qualifications to statements, these could be explained by the type and level of WebCT usage in a particular department. Some respondents indicated that they would like to refresh their knowledge of WebCT and engage in the use of WSL at deeper and more interactive levels.

Conclusion

This case study shows that it is important to consider the needs and feedback of 'clients' at both ends of the teaching and learning endeavour, namely lecturers and students. Summative evaluation is an important part of the instructional design process (Smith & Ragan, 1993). It contributes one type of measurement to close the feedback loop and to inform the quality improvement cycle. Ongoing research in TLEI is now focusing on additional measures, both qualitative and quantitative, to evaluate the impact of e-learning and the return on investment for the University.

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Endnotes

- ¹ These are distinct individuals, since the survey was offered via a single link on Student Online Services and completed once by each individual WebCT student who chose to participate.
- ² These are distinct individuals, according to their student numbers.

Appendix 1: WebCT experience survey

Dear Student

We are evaluating the quality of the WebCT courses at the University of Pretoria. Please take 3 minutes of your valuable time to complete this WebCT Experience survey. We need to know if you had technical or access problems and how you experienced online learning in general.

Question 1 (You may mark more than one option)	
How do you gain access to a computer?	
☐ My own computer at home	V1
☐ My own computer in the residence	V2
☐ My computer at work	V3
☐ IT computer labs	V4
☐ Informatorium computer labs	V5
☐ Other computer labs on campus	V6
Question 2	
When you need to access a computer on campus, can you find one available?	V7
\square Yes, I always find a computer.	1
☐ I find it difficult to find an available computer.	2
\square No there is never a computer available.	3
·	
Question 3	
Do you make use of computer facilities on campus for your other University work (e.g. assignments, WebCT), apart from practical computer classes?	V8
Yes	1
□ No	0
Question 4 If so, for what purpose do you make use of campus computer facilities, besides for practical computer classes? (You may mark more than one option)	
☐ To read my e-mail	V9
☐ To access my WebCT course/s	V10
☐ To browse the Internet	V11
☐ To complete assignments	V12
☐ To compile my own notes	V13
☐ Not applicable	V14
Question 5	
Do you experience a sincere need for printing facilities on campus?	V15
☐ Yes	1
□ No	0
Question 6	
If so, do you find it easy to find a printing facility on campus when you need one?	V16
in 30, do you find it easy to find a printing facility on earnpas when you need one.	1
\square Yes, a printing facility is always available.	1

Question ((continued)	
Question 6 (continued)	3
☐ No, I can never find a printing facility. ☐ Not applicable.	4
□ Not аррисаоте.	
Question 7	
What is your gender?	V17
☐ Male	1
☐ Female	2
Question 8	
What is your age group?	V18
Younger than 21	1
□ 21-25	2
□ 26-39	3
☐ 40 +	4
	•
Question 9	
Approximately how many times per week did you log on to your web-supported course?	V19
Less than once per week (e.g. 3 times per semester)	1
☐ 1 to 5 times per week	2
\square 6 to 10 times per week	3
☐ More than 10 times per week	4
Question 10	
What was the approximate duration of your online sessions?	V20
1 to 30 minutes	1
☐ 31 to 60 minutes	2
☐ 1 to 2 hours	3
☐ More than 2 hours	4
Question 11	
What Browser do you usually use?	V21
☐ Netscape 3.0 or less	1
☐ Netscape 4.0 or later	2
☐ Internet Explorer 3.0 or less	3
☐ Internet Explorer 4.0 or later	4
☐ Konqueror (Unix)	5
☐ Mozilla (Unix)	6
☐ Other Browser	7
— Outer blowser	/
Question 12	
What type of technical difficulties did you experience? (You may mark more	
than one option)	1/00
□ None	V22
☐ Slow Internet access	V23
☐ UP network/server being down	V24
☐ My Internet service provider being down	V25

Question 12 (continued)						
☐ Logon/registration problems	V26					
☐ Too much material to download	V27					
Attempted downloads were incomplete/aborted						
☐ Lack of technical support						
Some links in the course did not work						
Other	V30 V31					
Question 13						
How often did you experience technical difficulties of any sort?	V32					
Less than once per week (e.g. 3 times per semester)	1					
1 to 5 times per week	2					
☐ 6 to 10 times per week	3					
☐ More than 10 times per week	4					
Question 14						
How long did it take for technical problems to be solved?	V33					
☐ Half a day	1					
24 hours	2					
☐ 2 - 6 days	3					
☐ 1 week or longer	4					
☐ Never solved	5					
Question 15 To whom did you go to with your technical difficulties? (You may mark more than one option)						
☐ My lecturer	V34					
☐ The Telematic Learning and Education Innovation personnel	V35					
☐ Support at Student Online Services	V36					
My fellow students	V37					
☐ Client Service Centre	V38					
Question 16						
If you received the standard Welcome Student CD-Rom, what is your opinion of it?	V39					
☐ It's great.	1					
☐ It's reasonable, but needs improvement.	2					
∐ It's poor.	3					
☐ Not applicable.	4					
Question 17						
Consider the student orientation / training session for WebCT. (You may mark more than one block)						
\Box The session equipped me sufficiently to participate in my web-based course.	V40					
\square I could not logon during the session.	V41					
☐ I was still confused after the session.						
☐ I feel my basic computer skills are inadequate.						
☐ I think more student orientation is required.	V44					

Question 17 (continued)	
☐ I did not attend the session.	V45
☐ There was no orientation session for my WebCT course.	V46
Question 18	V47
I felt comfortable communicating via online communication tools.	V47
Strongly disagree	1
☐ Disagree	2
☐ Agree	3
☐ Strongly agree	4
☐ I don't know / Not applicable	5
Question 19	
Web-supported communication helped me to express myself more than I would have in a traditional classroom.	V48
Strongly disagree	1 1
☐ Disagree	2
☐ Agree	3
☐ Strongly agree	4
☐ I don't know / Not applicable	5
Question 20	
The lack of people's faces, voices and/or body language makes the learning experience	
impersonal.	V49
☐ Strongly disagree	1
Disagree	2
Agree	3
Strongly agree	4
☐ I don't know / Not applicable	
Question 21	
I became frustrated because my classmates were slow to respond to my e-mail and/or	
discussion messages.	V50
☐ Strongly disagree	1
☐ Disagree	2
☐ Agree	3
☐ Strongly agree	4
☐ I don't know / Not applicable	5
Question 22 I learnt from the contributions made by other students.	V51
Strongly disagree	1
☐ Disagree	2
☐ Agree	3
☐ Strongly agree	
☐ I don't know / Not applicable	5
— г don t know / Not applicable	5

Question 23	
Web-supported learning helped me to develop my ability to work as a team/group member.	V52
☐ Strongly disagree	1
□ Disagree	2
☐ Agree	3
☐ Strongly agree	4
☐ I don't know / Not applicable	5
Question 24	
Web-supported learning helped me to develop my ability to plan my own work.	V53
Strongly disagree	1
□ Disagree	2
☐ Agree	3
☐ Strongly agree	4
_	
☐ I don't know / Not applicable	5
Question 25	
I found the web-supported course to be an enriching learning experience.	V54
Strongly disagree	1
Disagree	2
☐ Agree	3
☐ Strongly agree	4
☐ I don't know / Not applicable	5
Question 26	
I experienced feelings of annoyance and/or stress during this learning experience.	V55
☐ Strongly disagree	1
□ Disagree	2
☐ Agree	3
Strongly agree	4
☐ I don't know / Not applicable	5
Question 27	1/5
I found the opportunities for 'anywhere; anytime' learning convenient.	V56
☐ Strongly disagree	1
☐ Disagree	2
Agree	3
Strongly agree	4
☐ I don't know / Not applicable	5
Question 28	
What were the positive aspects you experienced during your web-supported courses?	
(Please answer in point form and limit your response to a maximum of 4 points.)	
	V57
	V58
	V59
	V60

Question 29	
What were the negative aspects you experienced during your web-supported courses?	
(Please answer in point form and limit your response to a maximum of 4 points.)	
	V61
	V62
	V63
	V64
	V04
Question 30	
What suggestions can you make to improve your web-supported courses?	
(Please answer in point form and limit your response to a maximum of 4 points.)	
	V65
	V66
	V67
	V68

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Appendix 2: E-learning lecturer experience and satisfaction survey

Using electronic media in teaching is a different process and experience from conventional face-to-face teaching in terms of changes to pedagogy and the adoption of ICTs. The commitment and willingness of academic staff to adopt e-learning enables the University to respond to growing demands from students for electronic access and to maintain and improve the quality of learning effectiveness.

Important factors contributing to the satisfaction of lecturers involved in e-learning are opportunities for effective online interaction with students with diverse backgrounds and interests, as well as opportunities for leadership, research, publications, recognition, collegiality and professional development (Lorenzo & Moore, 2002). Ongoing staff training and development are essential to ensure staff readiness for online teaching and ICT developments (Oliver, 2002).

Please contribute to our research by completing this survey to establish the extent of lecturer involvement and satisfaction with e-learning and the associated support services at the University of Pretoria.

Department:									
Programme:									
Delivery medium:	WebCT Multimedia								
Project Leader:									
Date:									
Overall effectivene	ess of the WebCT course	or Multime	edia	a progra	mme	e ('e-le	earning	COI	mponent')
		Strongly disagree	Di	isagree	Neu N		Agree		Strongly agree
In my opinion, the e-learning component adds value to the learning experience for students.									
The e-learning component promotes active learning / problem-based learning / learner-centred activities.									
I used the e-learning in my administrative	component to support me tasks.								
I found that the e-lea supported me in the	rning component facilitation of learning.								
Rank these online tools according to:		Discussion		e-mail		C	Chat (Calendar
Frequency of your use of the tool: 0=never; 1=seldom, 2=monthly; 3=weekly; 4=daily									
Your opinion of the to 0=useless; 1=supp	ool's usefulness: ortive; 2=indispensable								

My overall evaluation of the worth of this e-learning component in enhancing the teaching and learning experience:	A Excellent	B Very Good	C Good	D Poor	E Un- acceptable
What do you perceive as the worth or value of t	he e-learnin	g componen	t?		
	High impact	Inter- mediate	Web Page Design	WebCT Designer	Facilitation of e-learning
Which WebCT or facilitation training course/s did you attend?					
Did you attend each training course before, during or after you presented your module? (b=before; d=during; a=after)					
Learning outcomes					
	Strongly disagree	Disagree	Neutral N/A	Agree	Strongly agree
The e-learning component contributed to the achievement of subject specific learning outcomes.					
In what way?					
The e-learning component provided meaningful assessment opportunities.					
In what way?					
The e-learning component enhanced the learning experience due to instructional design features, e.g. activities, chunking, resources, interaction.					
In what way?					
Problems experienced					
What problems did you as a lecturer experience in	the design a	nd developn	nent of this e	e-learning co	omponent?
What problems did you as a lecturer experience in	the facilitation	on / presenta	tion of this e	-learning co	omponent?
Benefits experienced					
What benefits did you as a lecturer experience in	the design a	nd developr	nent of this	e-learning o	omponent?
What benefits did you as a lecturer experience in	the facilitation	on / presenta	tion of this e	e-learning c	omponent?

Overall evaluation

Might there be lessons learnt from this implementation that could be shared for future use?

What effect or impact has this e-learning component had on teaching and learning in your department?

Quality of service from Department of Telematic Learning and Education Innovation and AIS

In the interests of continuous improvement, please rate the service you received from the following units:

				,		Ü
Project Management	A Excellent	B Good	C Satisfactory	D Poor	E Not applicable	F Unaware of service
Education Consultancy	A Excellent	B Good	C Satisfactory	D Poor	E Not applicable	F Unaware of service
Instructional Design	A Excellent	B Good	C Satisfactory	D Poor	E Not applicable	F Unaware of service
Graphics	A Excellent	B Good	C Satisfactory	D Poor	E Not applicable	F Unaware of service
Information Service (AIS)	A Excellent	B Good	C Satisfactory	D Poor	E Not applicable	F Unaware of service

Other comments related to service and support provided for e-learning: