

Quality management in an e-learning support unit: A case study at the University of Pretoria, South Africa

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Size of institution: 40 000 contact students, 16 000 distance students, 5 campuses, 3 000 faculty members

1. Background to case study

The University of Pretoria, South Africa, is primarily a face-to-face institution, offering degree and diploma programmes in nine faculties. This case study is located in the Department for Education Innovation (EI) at the university, a service department which was established in 1997. The Department for EI is responsible for teaching and learning support, academic staff development and education innovation. Within the Department for EI there is an E-Education Unit, which provides development and training support to lecturers with respect to e-learning projects.

The learning model promoted at the University of Pretoria is one of flexible, blended learning. The main teaching method is contact sessions which are supplemented by various other delivery alternatives and combinations, where appropriate, to enhance the learning situation, for example web-supported learning, stand alone multimedia, computer-assisted assessment, and audio/video materials. According to Laurillard (1993), a range or blend of teaching and learning media is likely to provide the most effective learning environment. Harris and Yanosky (2004) report that internationally, the use of *supplemental* e-learning is notably higher than pure distance e-learning, amongst both faculty members and students.

The Department for EI offers educational consultation services, as well as a team approach to the instructional design of electronic learning materials. Instructional design may be defined as “A process involving the systematic development of instructional specifications using learning and instructional theory to enhance the quality of teaching and learning” (www.heacademy.ac.uk).

2. Problem statement

As the demands on the instructional design team in the Department for EI escalated during the early 2000s, it became clear that a systematic approach was required in terms of managing e-learning projects. During the early years of the department, e-learning project managers had been appointed. At that time, they initiated the use of a standard project proposal and negotiated an annual amount of university seed funding to encourage the adoption of e-learning projects. This case study documents further efforts to formalise e-learning quality management in a higher education institution, namely:

- formalising the instructional design model in use;
- documenting the life cycle of e-learning projects; and

- adopting an ISO9000-cognisant¹ approach by implementing a formal, online process-based Quality Management System (QMS).

3. Roles and responsibilities

Role players in e-learning may be divided into three groups: stakeholders, clients and practitioners. They are the key individuals who support, contribute to, or use e-learning products and practices.

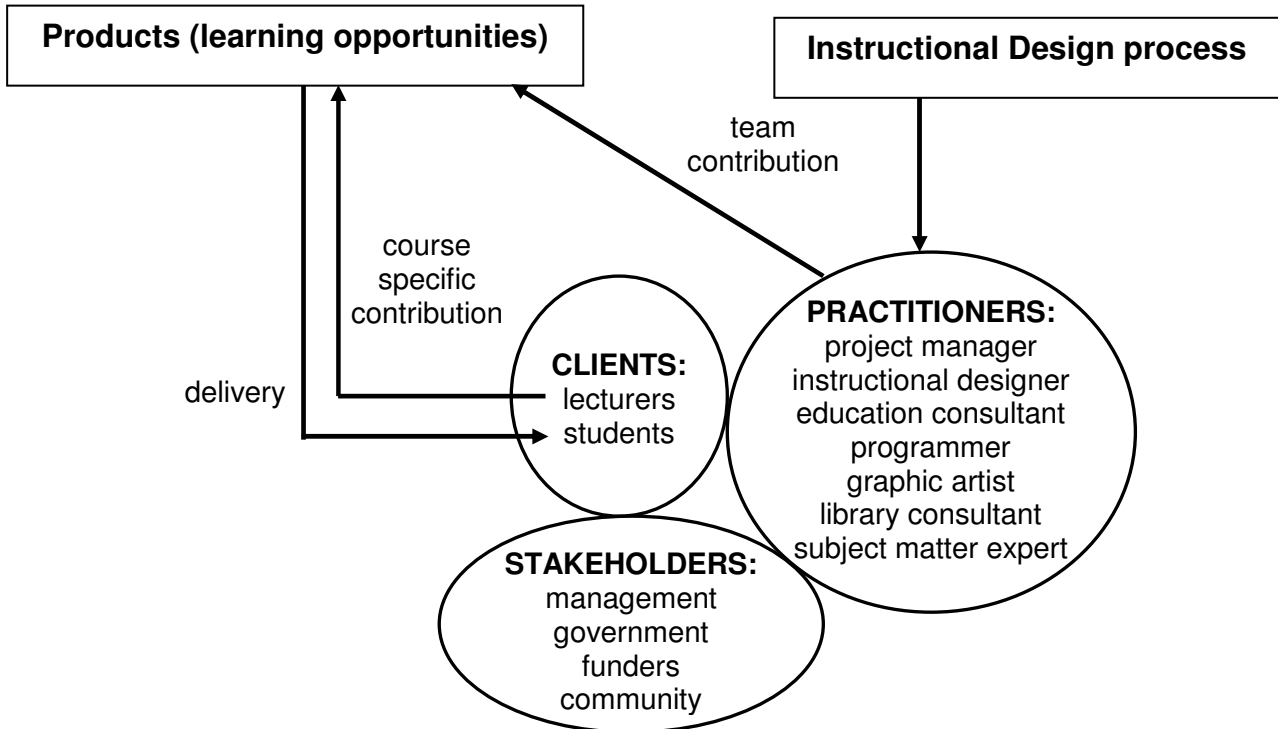


Figure 1: Role players in e-learning in terms of products and processes

Direct e-learning *clients* are the academic staff (lecturers) who wish to adopt education innovations in the form of technology-enhanced delivery and facilitation of learning materials. The ultimate clients are the students taking electronically enhanced courses that have been designed, developed and implemented by the e-learning practitioners. Stakeholders with an interest in the quality of e-learning are the management of the university, government quality agencies, funders (if applicable), and the broader community, such as parents and employers.

The *product* with respect to e-learning is defined to be the *learning opportunity*, which incorporates all processes, materials, skills and professional expertise required to develop, deliver and facilitate an e-learning course, in order to provide added value for students (Fresen & Boyd, 2002).

4. Budget

The provision of e-learning support and services, such as project management and instructional design, is fully subsidised by the management of the university. Certain services such as graphics, photography and video, as well as consumables, such as CDs, video tapes, DVDs etc., are charged at a competitive tariff. Academic departments may apply for a once-off allocation of seed funds to cover these costs, as well as to pay for external services such as language editing, technical editing, and/or translation of content. The costs are

¹ Recognising and adapting the many useful elements and principles behind ISO9000, without seeking ISO9000 certification.

estimated for each individual e-learning project when scoping the project and completing the project proposal. The project proposal and budget must be approved by the relevant school or faculty, since ongoing costs must be budgeted for after the initial award of seed funds.

A once-off payment to an external quality consultant was approved. She provided training workshops in the theory of quality assurance and she guided and facilitated the design and development of the formal online quality management system.

5. Instructional design model

The e-learning group was consulted in trying to agree on an appropriate *instructional design model* to follow. After consulting the literature, it was agreed that the classic ADDIE model (Analysis, Design, Development, Implementation and Evaluation) would be used for e-learning projects (Reiser & Dempsey, 2002). This model is neatly aligned with the typical “life cycle”-type of *project management model* (du Plessis, 2003) and the ISO 9000 model of a process-based quality management system (SABS, 2000). The ADDIE model was adapted to produce a Project Timeline (see Figure 2), which became the vehicle to illustrate the overall instructional design *process*. It consisted in the beginning of 15 steps, later compacted to 12, each of which was workshoped and brainstormed into a fully documented formal *procedure*.

6. Deliverables

The following deliverables materialised as a result of the formal quality management approach to e-learning projects:

- Instructional design “toolkit”, consisting of:
 - Project Timeline
 - Service Level Agreements for web-supported courses and multimedia products
 - Roles and Responsibilities document
 - Minimum requirements for web-supported courses and multimedia products;
- A full set of documented procedures based on an agreed template;
- An online QMS populated with procedures, models and diagrams, and supporting documentation such as policies, sign-off forms and checklists.

7. Process followed

Task teams consisting of project managers and instructional designers were constituted to brainstorm and document each of the procedures in the Project Timeline. Task teaming is an accepted methodology for developing quality management and monitoring systems (Vinca, 2004). Each task team was asked to document their procedure, according to the agreed template, an example, and self-evaluation questions provided by an external Quality Assurance consultant. These *procedures* form the backbone of the online QMS and are available as *.pdf documents in the system, together with links to their relevant supporting documents (see <http://www.up.ac.za/telematic/quality/quality.htm>).

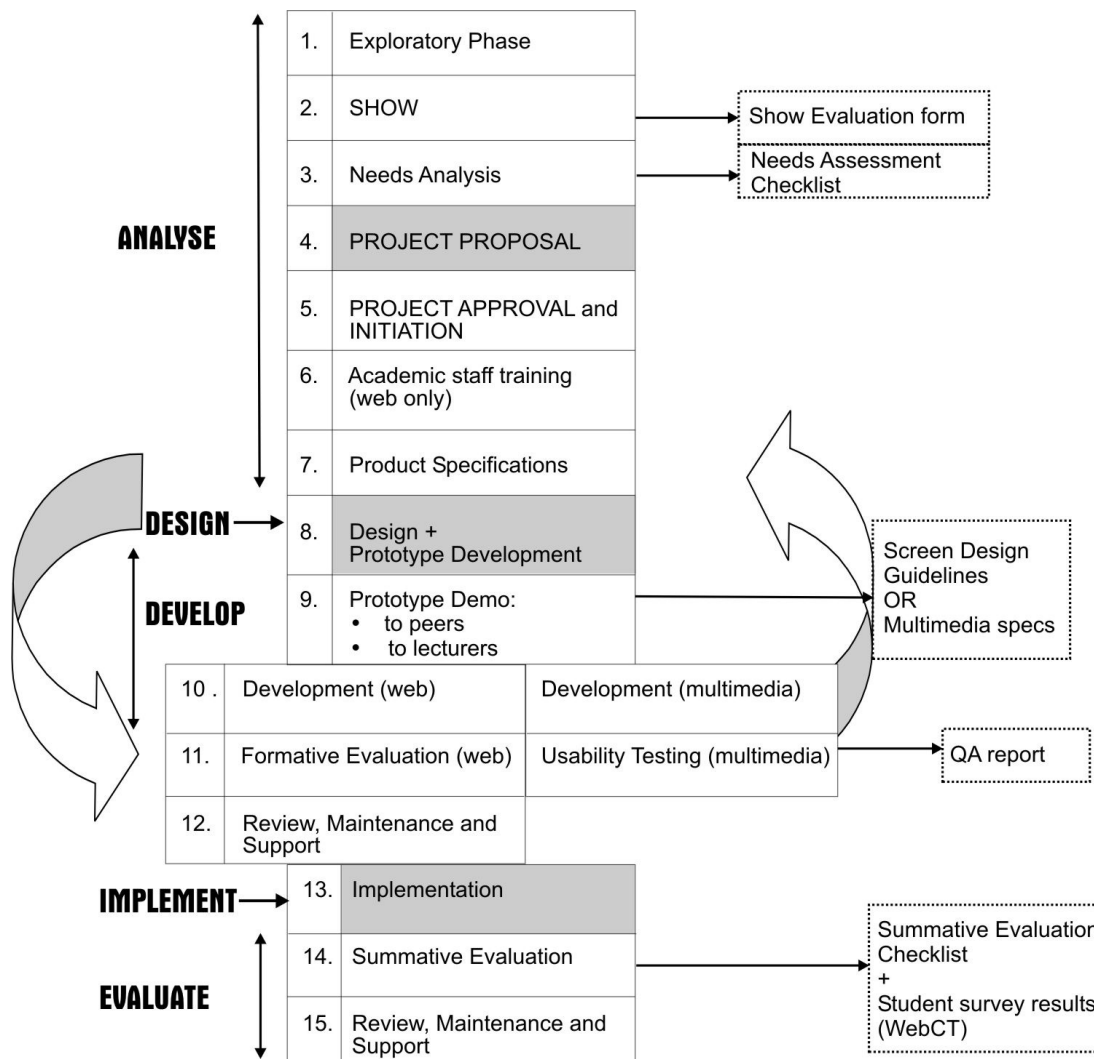


Figure 2: Project Timeline, based on the ADDIE model of instructional design

8. Challenges

The following challenges were encountered during this study (adapted from Fresen & Boyd, 2007):

- A significant length of time and effort was required to gather, formalise and agree on documenting the instructional design and quality management processes.
- Daily work load pressures made it difficult for the e-learning practitioners to prioritise time for the self-evaluation exercise in analysing what they do in terms of the instructional design process.
- There were inappropriate expectations, for example that a formal QMS would 'guarantee' improvements in the quality of e-learning products.
- The complex interrelationships between and variable inputs from role players (see Figure 1) complicated the attempt to implement quality principles and practices in the field of e-learning.
- There was some resistance to notions of 'process', 'procedure' and other ISO 9000 terminology, possibly because of its commercial connotation.
- Once implemented, the formal processes, procedures and documentation need to be maintained and kept up to date for both internal functionality and external visibility.

9. Lessons learnt

The following lessons were learnt during this study (adapted from Fresen & Boyd, 2007):

- The task teaming method resulted in a peer review, self evaluation approach, which had the added benefit of achieving ownership and consensus among the participants.
- Such a quality management and quality enhancement implementation should be treated as a formal project in itself.
- As in any formal project, adequate prioritisation, resource allocation and time scheduling, given other constraints, need to be ensured.
- The management team and participants should be engaged with 'up front', regarding their expectations and responsibilities.

10. User evaluation of the quality management system

User evaluation of the formal online QMS was requested from the instructional designers in January 2006 and their testimonies included the following comments:

"The Quality Management System has enabled me to understand project procedures much better. I was involved in the team of compiling some of the procedures and I have learnt how various procedures work. It was a bit confusing at the beginning when we started with the drafts of various procedures. In terms of Gartner's hype cycle, I think some people have adapted and are using QMS. I think QMS is on the Slope of Enlightenment. I can see the applicability and benefits of using QMS. If users put more effort into understanding the system, this could result in more enlightenment."

"I think the QMS at UP is now on the slope of enlightenment because the project has been in existence for a few years now and is being refined and improved on a continuous basis. The benefits of the QMS are:

- Excellent reference guide to all documentation
- One central place where updated versions of all documents are placed.
- System is user-friendly
- New staff may access the system and view all EI's processes and documentation in their own time and at their own pace."

"The QMS serves as a repository for just- in-time reference and standardisation of our current working procedure and processes for current staff. The value of it lies in the revision of the existing documents within the QMS. This provides the opportunity to re-evaluate our work processes and procedures. It has been accepted as the benchmark for services provided to clients."

"It gives a good work structure to the users (especially a new user of the system). It not only indicates the procedures to follow but there are also updated links to valuable resources while one is busy, planning, developing / evaluating a project."

"I started at the University and department after the development of the QMS. I found, as a new user, that it helped me a great deal to understand the processes and procedures already in place. I regularly use it to perform my daily tasks."

"I find the QMS a very useful tool, especially when new staff members join the department. Instead of spending hours explaining our processes, I can just refer them to the QMS. They know what's going on and feel a bit more self-sufficient from early on. I also use the system regularly to obtain the forms that we use in our processes."

11. Conclusion

This case study addressed the need to bring together principles of quality management, instructional design and quality management. It provides evidence that these domains can be successfully integrated, while at the same time streamlining and improving the operation of an e-learning support unit in a higher education institution.

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² This is a company, not an individual.