

A TEAM-BASED APPROACH TO THE PRODUCTION OF ONLINE COURSEWARE (CASE STUDY)

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Abstract

Formerly instructional systems design models have incorporated prescriptive linear phases of analysis, design and development, implementation and evaluation. While early adopters worked within these frameworks to develop online courseware, now in many institutions online development has been centralised within both support units and online learning management systems. This paper uses the development of 'Legal Frameworks' as a case study to describe the way that one such support unit has responded with a changed approach to courseware development within its teamwork processes. It describes how the experts worked across the project in a lateral formation, and how this has facilitated a shared understanding of the course design and implementation, for both the support unit and the academic.

Keywords

Instructional design systems, online courseware development, team based approach, online teaching and learning unit

Introduction

This paper is an account of the development involved in pedagogically re-engineering existing Commercial Law courseware from traditional face to face lecture theatre delivery to a fully online computer mediated learning environment. It discusses the effects of this process upon the courseware itself, and on the response of the development team in the Online Teaching and Learning Unit of the Business Faculty at RMIT University. The process led to innovation within the team approach to the instructional design and development model and facilitated the learning of new and necessary competencies for the academic in support of intended student engagement with the resultant online learning environment.

Changing approaches to online course development

Traditional Instructional Systems Design processes typically involve prescriptive phases of analysis, design and development, implementation and evaluation in a linear sequence (Dick & Carey, 1996). They are usually facilitated using standard sets of expert resources, namely, academic, educational designers and technical production experts.

Earlier developments in this field were usually taken up by the early adopters who became experts at delivering programs online, with 'lighthouse' projects, creating exemplars for others to follow. Unfortunately these often struggled as single unsustainable efforts within the larger institution. Over time,

the skills learned in the development are diffused across the institution and these early adopters can be credited with change within the University's approach. Ely (1990) lists availability of resources, availability of time, and evidence of knowledge and skill in users, as some of the conditions that facilitate the adoption, implementation and institutionalisation of educational technology innovations. Now within Universities we see the centralisation of online development support units and the evolution of central online learning management systems. Generational changes within this structure see us as support units responding with new strategies and instructional design architecture to suit larger scale projects set up specifically to support strategic, whole-of-faculty degree programs currently under development.

Many Universities have now created specialist online support development units. Jones and Sims (2002) describe a model where development cycles for online teaching and learning materials operate as an iterative process involving academics and support team on a 'before-during-after' strategy. This three-stage process involves a shared understanding between academic and educational designer. However the production phase is still seen as somewhat separate. The process described in the current paper goes further in the widening of the team to include multi-media developers as well as copyright and library support in a dynamically cohesive unit.

Whilst we as online support development units are evolving in this new structure, what of the academic suffering from the impact of change? Academics who have been using traditional and educationally sound teaching/learning paradigms such as the Higgins and Postle (1993) example of the Classroom situation are now facing demands from Faculty for substantial change. They are asked to work with the development units within these large scale projects to develop the same teaching materials to be delivered across a variety of platforms to a range of target audiences, such as in a Vietnam classroom with a local tutor, or global online delivery and flexible local delivery using some online components. These academics find themselves already in the future scenario suggested by Beaudoin (1998) in "A new professoriate for the new millenium", "...instructional content packaged in multimedia format by specialists, delivered online and augmented by guest faculty online,students choosing from curriculum at several different institutions to fashion their own program of study...".

How have we dealt with the change?

The key issue is flexibility – for both the academic, and us as online development units. Underpinning this flexibility is the provision of responsive pedagogical frameworks to suit learner needs.

Learners are much more than ever able to voice their educational needs, and online technologies are available to facilitate satisfaction of these priorities. The academic must now deal with structuring appropriate learning experiences for the learner, and to be prepared to adopt perhaps several different pedagogical frameworks within one set of learning experiences.

As instructional systems design professionals, we understand that we can better meet learners' needs by personalising our instructional design strategies and models. The substantial changes already implemented within the institution such as the Distributed Learning System (DLS) and other centralised support units indicate a response to the need for large-scale online developments. These system wide policies are interpreted on a local scale through the close collaboration between academic content providers and the development team. Being able to remodel instructional design strategies from traditional prescriptive models is paramount. Reigeluth (1995) even maintains that much of instructional design theory is no longer applicable in the current context of rapid change, global communication and high technology.

Prescriptive linear models have involved the flow of content development to run from the content expert at the start of the process, to the educational designer then finally to the production unit (Dick & Carey, 1996). Resources are used in a process driven model to create online courseware to the final product stage. The model has been relatively effective in an ad hoc manner and has been appropriate to low-level development. Now however, we see distinct disadvantages in terms of:

- inefficient use of expertise
- difficulties in managing communication between teams in the development phases, resulting in inconsistencies in end product

- duplication of efforts in creation of learning objects

The model becomes unmanageable due to its complexity in the handling of multiple concurrent projects.

This linear model also reinforces traditional boundaries around the skill sets, for example, the content providers, the educational designers, and the multimedia producers; creating the effect of working with a silo approach during the development process. Communication is difficult, misinterpretations of design or instructional strategy often necessitate reworking, and there can be bottlenecks at various phases of the process. Finally, the product can end up not meeting the team's expectations.

The development team

Our approach has now changed to involve the skills sets across the project, for the life of the project, with experts becoming members of a dedicated team coming in and out of the various development phases as needed. This means that the process becomes lateral, rather than linear, and the courseware development passes through the hands of the entire team as a mixed group of experts, rather than from one set of experts to the next. Typically these experts are educational designers, academic content provider, multimedia production team, library support, learning support and copyright services. Relationships are established between these experts, who are able to watch other experts at work. In this way cross-fertilization of ideas occurs, and the design process develops from a shared understanding. The diagram below represents the members of a typical online development team, their interaction with each other, and the resultant shared understanding of the project.

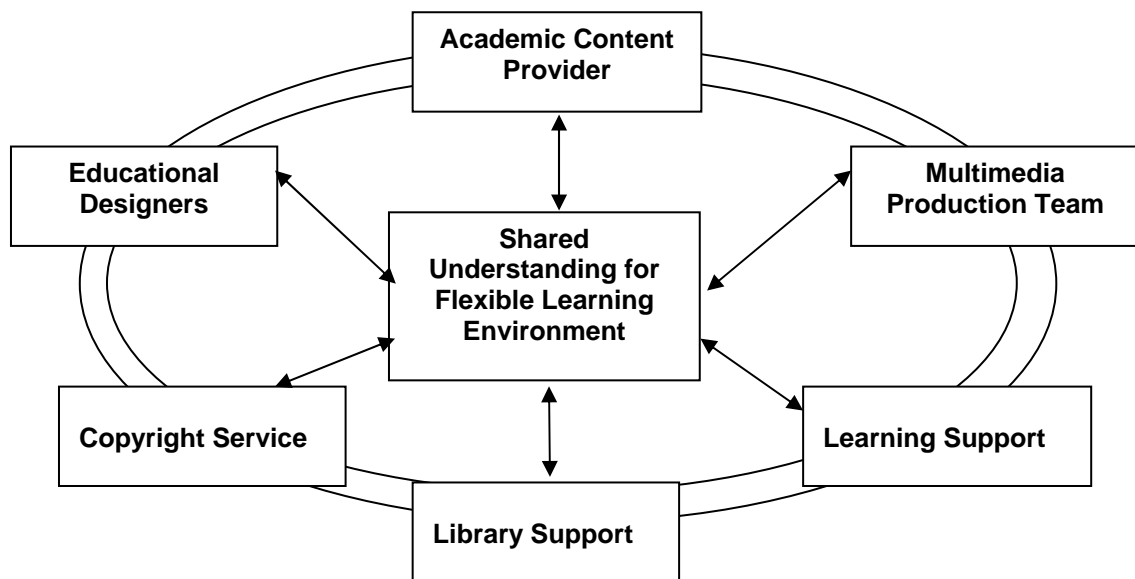


Figure 1. Online development support team members.

Team roles

The role of each team member now becomes much broader than that of deliberately working inside their own skill set. The members are required to contribute across the courseware development as a project, and to work generally towards educating each other and the academic. This in turn becomes a 'side' benefit, as the academic is guided in effective teaching and learning online. Their new skills are then transferred to the student in terms of creating learner autonomy, enabling support, and guidance (Herrington & Oliver, 2001). The academic feels a strong sense of ownership of the courseware, and subsequently welcomes deeper engagement with learners. As an author, the academic is keen to obtain feedback from the students and to test the effectiveness of the online learning materials. There is a sense of experimentation and discovery. While the entire team is involved throughout the development phases, a strong relationship between the key educational designer and the academic is crucial to the success of the project.

Coupled with the change in the team-based approach, is the development of and adherence to templates and design standards. This allows far greater control over consistencies in courses belonging to a program, and reduces development time in the production area, giving more time in the project for considered response to course needs.

In this way RMIT is moving towards a state of institutional preparedness for responding to new markets, and our Instructional Systems Design strategies are becoming more flexible for implementation and design.

Case Study: Legal Frameworks

In order to illustrate the outcome of working within this new structured team approach, we present a case study of a traditional on campus lecture theatre delivery of a course, namely the commercial law course “Legal Frameworks” being put forward as a first iteration fully online learning environment.

Background

Legal Frameworks is one of a suite of courses in the University’s ‘whole-of-faculty’ Bachelor of Commerce degree program that is breaking new ground in program design and delivery. The degree is delivered in fully online mode, and facilitates flexible and rapid modification to meet location specific requirements and delivery modes (Lines & Muir, 2001).

The team responsible for managing the program design process represents staff from all Schools and includes support services staff from Libraries, and the Learning Skills Unit within the RMIT Business Faculty. In addressing the Bachelor of Commerce design challenge, the team has consulted widely with RMIT and external stakeholders. Planning and research consultants have been engaged to maximise the breadth and quality of stakeholder input into the development of the program.

About the course

Legal Frameworks introduces students to the structure and role of the legal system and basic business and commercial laws. Many of the students enrolled in this course will not have studied any law previously. It is expected that students will develop skills in legal reading and reasoning, in the identification and analysis of legal issues in business situations, in the use of legal problem solving skills to analyse issues, and the ability to communicate effectively with legal practitioners. Broadly, the learning experience consists of:

- effectively researching electronic databases and Internet resources relevant to law, and extracting relevant information,
- developing an appreciation of aspects of the legal framework within which businesses operate,
- exercising skills in legal methodology in selected areas of commercial law,
- understanding the underlying principles of commercial law and how to apply them in appropriate situations,
- participation in discussion via the Internet.

Students analyse legal problems in relation to relevant legal concepts and present arguments that are supported in legally appropriate ways. As this may be the students’ first experience of legal argument, they will be developing these skills initially and will progressively gain confidence and expertise. Case study demonstrations provide a ‘safe’ starting point with complexity and independence building throughout the semester. Guidance is provided in the form of access to resources that explain legal terminology and concepts, and resource materials and practice in developing legal reading skills.

Commercial Law as taught in Law Schools has usually emphasised the continuing development of skills in legal methodology. This has generally been achieved by emphasis on the long-established teaching resources of a textbook, legislation and sometimes casebooks to convey the main principles of substantive law. The major assessment is an examination, which consists largely of problem-type questions. To successfully answer these questions, the student is expected to develop the intellectual skills necessary to

analyse a legal problem or case, ascertain the relevant legal issues, apply the relevant law (case citations) and consider the applicable legal arguments (Herzberg, Jones & Lipton, 2001).

As Kunkel (2000) states, now that much legal information is readily available online, business law teachers are able to shift their focus from simple knowledge of legal rules to critical thinking and more sophisticated analysis and application of legal rules in a business context. In this sense, use of the Internet allows scaffolding of “deeper” research and learning. This emphasis on learning as a process of personal understanding and meaning making which is active and interpretive, lies in the domain of constructivism, where learning is viewed as the construction of meaning rather than as the memorisation of facts (Herrington, Oliver, Herrington & Sparrow, 2000). The key to successful teaching and learning in law is the provision of support and strategies in critical thinking and analysis applicable in the business world.

The academic content provider

Given the responsibility to discover and carry the key to successful teaching and learning in law, the academic approached the start of the development of Legal Frameworks with much apprehension, (“*Why me?*”) and felt ill equipped to prepare course material for online delivery. As a result she arrived into the team with pre-conceived ideas about the delivery of instructional materials online and what students should expect to be doing in the course.

Subsequently, through initial interactions with the educational development team, the academic realised the extent of new competencies she would be required to learn and practice in order to meet the needs of the new online teaching and learning paradigm (Herrington & Oliver, 2001). The academic must now learn to be advisor, counsellor, assessor, facilitator, technician and manager to deal with what Berge (1995) says are new aspects of the changing nature of role of the academic.

The academic in this case was given time release from other duties to develop content for Legal Frameworks. As she says, “*the funding for release from teaching is very important. Initially I didn’t think so and I did juggle teaching and developing for a while - however if there are no other urgent commitments then there is NO excuse for not getting on with the work required- having the funding for time release ensures that there should be no “bitterness” about being overworked or not completing tasks.*”

Building a shared understanding

Within this working environment, it was essential to develop the required level of communication and good working relationships between the content provider and the project groups. Jones (2002) emphasises the importance of collaboration between academic and non-academic experts involved in flexible courseware development. The main building blocks in this process are to identify clients, provide leadership and build rapport within the team. It was critical for us to establish who communicates with the content provider (the academic or sessional staff member) as practice has shown that one major hurdle is to elicit the appropriate content within the timeframe prescribed by the project plan. The academic showed no hard feelings towards the team in their expectations of her role in her statement “*I wasn’t too concerned about the technicalities of the website, that’s why we have specialists and LISTEN to their ideas. Spend your time developing the content and materials you want to appear on the website. That is the academic’s prime responsibility*”.

While we can establish formal mechanisms for the content material being provided, we have found that it is the informal conversation with the academic that elicits 'clues' by which the educational designers and producers can interpret the intent of the academic’s desired teaching and learning environment for subsequent inclusion of narratives, illustrations or activities. The trick behind developing this rapport is for the academic to have the confidence that the educational developer and multimedia producer are able to translate his or her concept into an effective online environment. As Aldred, Sinclair and Smith (2002) point out, this is essential dialogue between experts. This informal but important connection between team members is often fostered through the use of synchronous online technologies such as ICQ, enabling dialogue around certain current aspects of courseware development, (for instance) say between the instructional designer and multimedia creator during the ‘construction’ of an interactive model, enhancing the opportunity for shared understanding of the product and its intent.

The course development

The initial material packages from the academic were in the form of PowerPoint lecture overheads. The remainder of the content existed as tacit knowledge delivered verbally in lecture rooms. Much of the course was based around a prescribed law text which presumed that the students had some knowledge of legal research, including case citations and legal databases. The inclusion of a major legal researching module involving the efforts of the library team was of significance as a support resource for students. The academic felt that she would spend some time considering the materials to put on the site, *“do you need every detail and fact written on the site if there are reliable texts containing the information and which the students can utilise?”*

Initially the instructional intention was to mirror the face-to-face lecture experience by recording content (so the academic wasn't far away from 'talking at the students as the expert' comfort zone), which could be packaged into streaming media for students to listen to and take notes from. An alternate strategy soon evolved after realising this was not an effective learning experience. The lecturer noted.. *“boredom is a factor in classes but also with websites, it's important to work with the IT people to develop a site that utilises a range of resources and involves the students in a number of activities”*. The recorded audio was subsequently transcribed into overview text for students, forming the underpinning content online. The audio was limited to establishing and concreting the social presence of the academic, being used as an overview introduction to each module, and a welcome message to the course.

The basic componentry of the course evolved into module text, an audio 'social presence', case-based tutorial questions, and review questions. The instructional content was structured using facts, concepts, procedures, processes, and principles in law.

Content was then 'chunked' into linearly sequential modules – a particularly useful exercise in forming detailed instructional sequences around key topics. Once this was established and reflected in a Study Organiser (learning guide), the mapping of learning activities and associated assessment items were aligned. From here the academic began to take control of the course, using a layered approach to development. There were several 'passes' through the structure, enabling the development of a shared understanding of the project with the rest of the team, *“time lines are important for the academic AND the IT specialists - miracles don't happen at short notice”*.

The courseware is based on lockstep linear progress through modules based on general key topics, which are explained relationally. Interface design was important. We used a clear design with straightforward navigation pathways so the learner does not have to waste valuable time learning how to find his course material. We have used Schlegel's (1996) nicely articulated argument for a clean, simple interface design solution!

A key consideration in the design of the instruction was to give students support and strategies in developing critical thinking and analysis which would be vital in the business world. Learning activities were based on legal issues in authentic contexts - and the provision of "scaffolding" to enable novices to operate meaningfully in realistic environments. The development team relied on a variety of learning resources and media for flexible delivery of content and asynchronous discussion forums for interactions with learners.

A range of opportunities for formative assessment was incorporated into this course. Students need feedback early on their legal reading abilities, use of legal language and understanding of the structure of legal information. Opportunities were created for early problem identification and analysis to be reviewed and revised in the light of feedback.

The Outcome

As the courseware developed, the academic became more involved with the concept of the final product. She saw how the student as end user/learner would need to engage with the content and learning environment, and as a result was much more in tune with the impending relationship between her as instructor/facilitator and her students. She therefore was able to contextualise the teaching and learning experience and make strong and realistic connections within the online learning environment, and is greatly looking forward to the interactions in the coming semester.

Figure 2 below is a representation of one of the module pages within the online learning environment. The courseware is supported on the DLS via a Blackboard Courseinfo shell, and enables students to manoeuvre around the courseware, engage with the discussion forums, input to the online notepad (designed to form part of the student learning journal) and if necessary run off a printer friendly version. General Announcements area gives the academic the opportunity to post a general broadcast to the student group, and in turn, students can check here for updates, before negotiating the learning material.



Figure 2: Module page, Legal Frameworks online.

The courseware has been sequenced by week, and timetabled to indicate to students where they should be at any point in the semester. Reminders are posted for coming assessment items, and help is never far away. The interactions between the academic and students will have greater depth due to the involvement of the academic in the total design process, and a potential benefit of this is that the feedback from students and peers will go into future enhancements of the courseware at the next iteration.

Iterative development is also a major consideration, with initial prototypes being built to ‘test’ the water before completion of the entire course. First iteration learning environments are generally created as providing functional and necessary componentry for effective online teaching and learning. With second and subsequent iterations, development can be enhanced with each generational change. The development team has a strong sense of ongoing duty of care towards the maintenance and management of these courses on the DLS.

Evaluation

This course, as with the entire suite of Bachelor of Commerce courses, undergoes both a formal approval process and an ongoing informal review throughout development. The institution’s Program Quality Improvement Process (PQA) advocates ongoing cycles of improvement, and provides accreditation criteria to provide a framework for program design, implementation and currency.

Formally, at Program level these criteria relate to the needs for the program, educational design, equity, management, resources evaluation and maintenance, and stakeholder requirements, and closely follow PQA strategies and resources. At course level, ‘better quality’ is achieved through quantitative and qualitative methods of gathering and analysing data to inform successful improvement of courseware.

Increasingly, the use of discipline experts to review instruction provides useful insights for the accuracy and currency of instruction and learning outcomes. These experts can examine and comment on appropriate use of sequencing and synthesising, technical terminology and instructional materials for effectiveness, as a form of external moderation and validation of online materials.

More informally, through the development phases of courseware building the shared understanding of team members as previously described, contributes greatly to intuitive quality assurance mechanisms. This is achieved through working together with draft versions of the course, building first prototypes, and encouraging peer feedback from reviews of prototypes. The educational designer takes time to speak to the academic with a focus on the learner's interaction with the online learning environment. Bostock (1994) states that "whereas a system's evaluation in the past tended to focus on learners' success in performing the criterion task, cognitive techniques seek to uncover thinking processes as they interact with the material." Through this discussion between development team and academic, tools are developed - such as self-assessment tasks, which provide an "audit trail" of students' learning path through the learning episode. Other qualitative methods of assessment involve the respondents giving free form responses. These enable the collection of rich data and are ideal for exploratory evaluation activities to identify issues students may have.

Conclusion

The development of the online courseware for Legal Frameworks demonstrates the benefits of a new team approach. Whereas previous online courses had been subject to a linear process of content writing, then educational design, and then multimedia and Web production, in this case we adopted a collaborative team approach from the beginning. The academic content provider came into the project with a concept of translating face-to-face lecture material directly into an online environment. After sharing ideas and enthusiasm with the educational design and development teams, she re-conceptualised the course material. Online modules provide an audio overview, summaries of learning outcomes, links and references to print and external online resources, as well as problem-based scenarios around which students construct their understanding. The library support team worked with the copyright permissions team to contribute an extensive legal research and learning support module. The actual design of the interface was facilitated by the development of design templates, which gave a common look and feel to courses throughout the degree program. While it is still too early for extensive student evaluation, the peer and quality review teams have given enthusiastic support, and other academics have been keen to adopt similar ideas.

The creation of a working environment where team members could communicate ideas and come in and out of the project at all stages as necessary was a big advantage. As the academic said once the courseware had been uploaded to the learning management system, "*It was a great learning experience and I would do it again tomorrow (I am not sure the IT group are ready for that ...)...*". Overall, the online development team felt that its achievements were not only the creation of an effective online learning experience for the Legal Frameworks students, but also that success lay in the formation of the relationships, the evidence of new skills in teaching and learning, and the creative, sustainable response to the change in institution level directions.

The process of moving to teach in an online environment requires careful change management. Academics must adapt to new ways of working, which involve collaboration with others outside their discipline area, as well as communicating with people who speak a different, technical language. The approach described in this paper is one that has provided a successful exemplar. Later online course development projects are building on these experiences to forge a shared understanding amongst all participants, and an improved learning environment for online students.

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