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CURRICULUM DESIGN FOR FLEXIBLE DELIVERY – MASSAGING THE MODEL

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ABSTRACT

At the University of Wollongong undergraduate degrees will be delivered flexibly to a new satellite campus beginning in the year 2000. A training course is being developed for tutors who will work with students at the satellite campus. The course is to be highly flexible and model flexible delivery strategies.

This paper maps the influences of a flexible delivery framework on curriculum design through various design iterations. A model for the design of flexibly delivered courses is outlined.

1. INTRODUCTION

Gradual changes in tertiary teaching over the last few years have led towards more flexible modes of delivery which incorporate information and communication technologies (Moran, 1995; Tinkler, Lepani and Mitchell, 1996; Mitchell and Bluer, 1997). Educators are looking for a model for flexible delivery[1] that will provide a template for their curriculum design question – how to incorporate more flexibility into the existing curriculum to provide better access to that curriculum for a wider range of students.

The task of designing a new and innovative course is always a challenge. The challenge is greater when the course is to be flexibly delivered, as one Teaching Development Lecturer (TDL) discovered when asked to design a course for tutors who would be working at the new University of Wollongong satellite campus. This course aims to develop in tutors the skills and understandings needed to foster a positive learning environment for diverse student groups within flexible delivery mode. Few of these tutors would have any prior teaching experience either in traditional teaching methods or in the utilisation of educational technologies.

The course would need to model and teach strategies for teaching in both flexible and traditional modes.

Initially the TDL sought a flexible delivery curriculum design model. None seemed to be available so the TDL decided to use a model that had proved useful when previously designing effective academic development courses and Resource Based Learning modules (Bell, 1997). As a result of interactions with the Instructional Designer (ID) the TDL was to discover that this model was less than effective for flexible delivery. The challenge of finding or building an appropriate design model became as exciting as the challenge of designing the new course.

This case study is written from the TDL's viewpoint and offers an outline of (i) early decisions about curriculum models that were to prove inadequate (ii) the interactions between the TDL and ID that proved significant to the final course design and the development of the new curriculum design model and (iii) a curriculum model for Flexible Delivery that is grounded in design practice.

2. CHOOSING A MODEL FOR DESIGN OF THE COURSE

MODEL 1: 'OUTCOMES-BASED INTEGRATIVE' MODEL

The TDL initially made a judgement that in the absence of a flexible delivery model and because she believed the fundamental questions underlying curriculum design[2] (Ramsden, 1992) would still apply, she would use the model she had previously used for designing academic development courses and modules (see Figure 1).

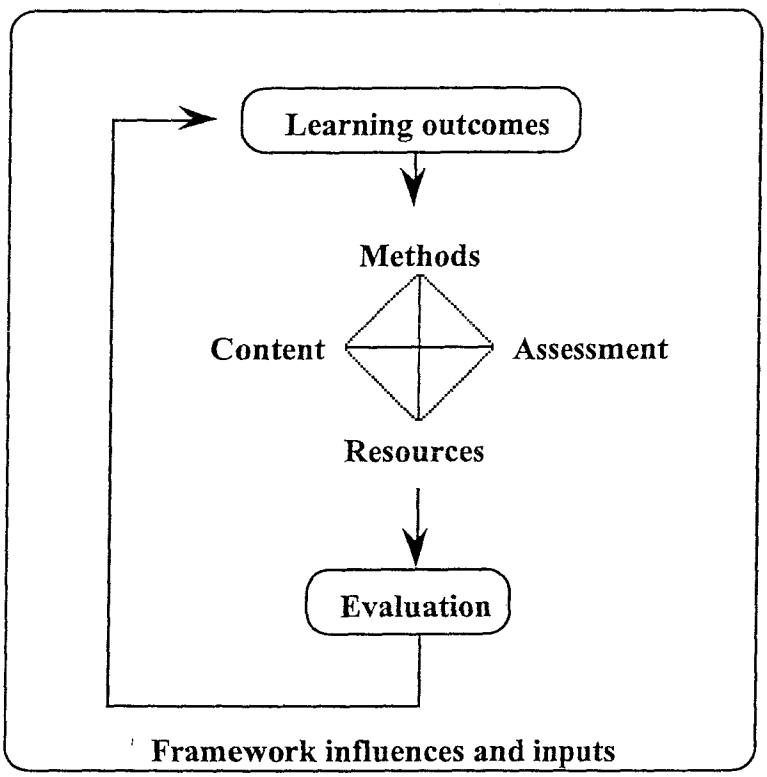

Figure 1: Outcomes-based Integrative Model – 1

The TDL refers to this as an 'Outcomes-based Integrative' Model. 'Outcomes-based' because the designer begins by defining desired learning outcomes in response to the question, *"What will the learners know, be able to do and/or value when they have completed the course?"* 'Integrative' because the next step integrates four major elements of curriculum design: content, teaching and learning method, resources and assessment. These are developed such that each influences the other rather than being developed in any particular order or in isolation from each other. Design of the course evaluation processes and instruments takes place after all other elements are designed. Design takes place within a spectrum of influences and inputs, ranging from the implementation of government education policy, through University graduate attributes, availability of resources, to the understanding that students exhibit a variety of learning styles. The model is based on two earlier models described below, the 'Linear Objectives' model and the 'Interaction' model, neither of which offers an accurate template for the design of university courses.

MODEL 2: 'LINEAR OBJECTIVES' MODEL

Tyler's original curriculum design model of 1949 (Brady, 1995) is often referred to as a 'Linear Objectives' model, see Figure 2. Tyler's model is linear in that learning objectives are specified first followed by explication of certain curriculum elements in the order shown. Note that 'Method' implies both teaching and learning methods and 'Evaluation' includes both assessment of learning and course evaluation.

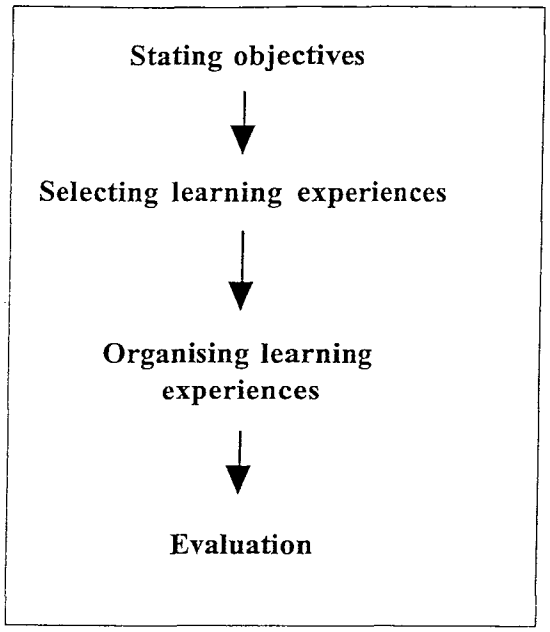

Figure 2: Linear Objectives model

MODEL 3: 'INTERACTION' MODEL

This model is referred to in the curriculum design literature as an 'Interaction' model (Brady, 1995) because all curriculum elements interact with each other during the design process, see Figure 3.

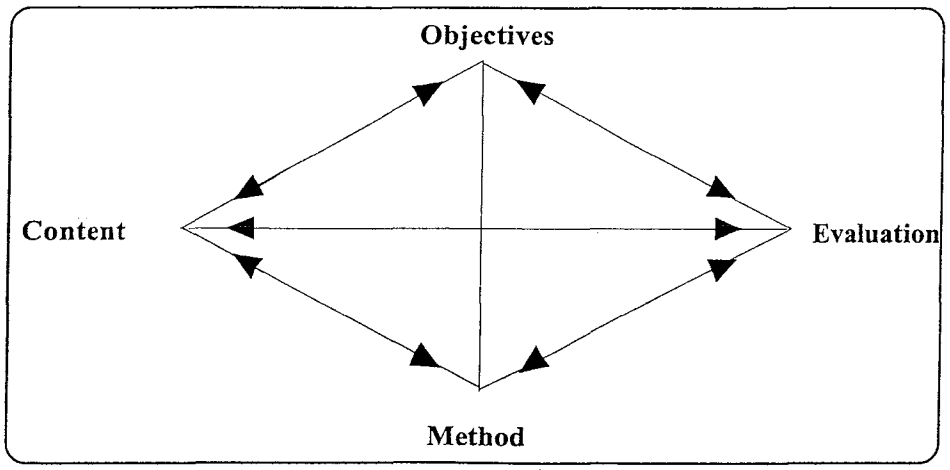

Figure 3: Interaction Model

The Interaction model specifies the same design elements as the Linear Objectives model however the design process can begin with any of the elements. Model 3 evolved from Model 2 through the realities of design practice in that the design of one element will influence and possibly change the design decisions for other elements. For example, method might be specified first but altered later as a result of an assessment decision. This model makes it possible to specify learning objectives after all other elements have been decided.

After deciding to use the Outcomes-based Interaction model, the TDL designed learning outcomes according to the course aim. At this early stage of the design process the first discussion between the TDL and ID took place.

*TDL – ID INTERACTION #1

The ID asked the question:

> Why not use an Instructional Design model?"
>
> She indicated that an Instructional Design (ID) model could be more appropriate to the design of a flexibly delivered course. ID models specify learner characteristics and media decisions as fundamental curriculum decisions see for example Figure 4.

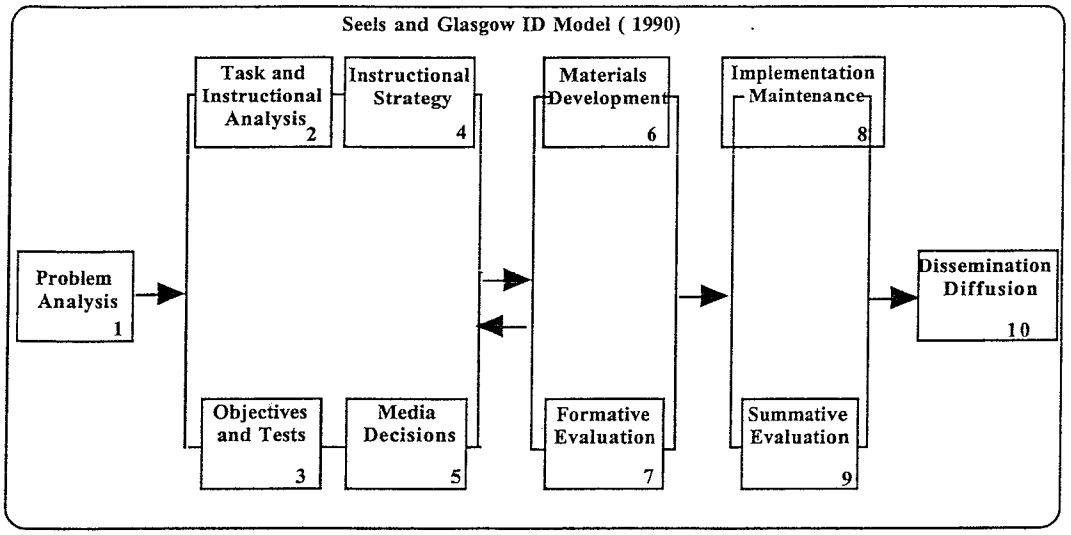

Figure 4: Seels and Glasgow model

TDL RESPONSE

The TDL explained that her conceptions of teaching and learning discouraged her from using a traditional ID model. She saw the choice of model is an epistemological one relating to the purpose of learning within the course. According to Mezirow (1991, after Habermas) knowledge may be conceptualised as 'instrumental, 'communicative', or 'emancipatory'. If knowledge is conceptualised as instrumental, for example participants are able to use a tool correctly and a set of observable behaviours is amenable to measurement for the purpose of assessment, then a traditional ID model would be appropriate. Where knowledge is communicative, that is where the learner constructs meaning, communicates this understanding in a social context and takes a deep approach to learning (Marton and Säljö, 1976) then, the TDL believed, a traditional ID model would not be appropriate.

The TDL saw another problem with traditional ID models in the specification of observable behaviours as the criteria for successful learning. One of the important characteristics of traditional instructional design is that "Test data {is} based on absolute standards of performance" (Seels and Glasgow, 1990). Yet a great deal of worthwhile learning is not amenable to observation or measurement (Stenhouse, 1975) and teaching only that which can be measured confines and trivialises knowledge.

A third problem for the TDL was in relation to the learning and instructional theory bases for generic instructional design models, specifically behaviourist psychology and information processing (see for example Seels and Glasgow, 1990; Gagné and Briggs, 1979; Winn and Snyder, 1996). These learning theories more appropriately underlie the teaching of set patterns

of required behaviour rather than complex cognitive and social learning such as learning how the use of electronic media affects the quality of communication within student groups. Educational psychology has yet to fully describe the cognitive processes that underlie such learning (Winn and Snyder, 1996). The ID agreed that there had been little change in instructional design procedures even though, since the 1970's, cognitive psychology has influenced some instructional design models. There is also some use of constructivist theory as a basis for instructional design (Jonassen, 1994) but again models are proving very difficult to design (Duffy and Cunningham, 1996). The ID and TDL came to the conclusion that instructional models with a cognitive theory base are not yet fully functional.

A fourth problem related to the inclusion of media decisions as a major element within the ID model. The TDL considered educational media decisions to be implicit in, rather than major elements of, curriculum design. Her concern was that the availability of media might become a driving force in curriculum design rather than a support for students in achieving their learning outcomes.[3]

***TDL – ID INTERACTION # 2**

> "You might find that media decisions will end up being more significant than appears, particularly in flexible delivery. Why are you using this Outcomes-based Integrative Model?"

TDL RESPONSE

The strength of the Outcomes-based Integrative model lies in the driving force of its fundamental proposition *If you don't know what you want your students to learn, how can you know what and how to teach them?* and in the reality of curriculum design as an integrative process.

Learning outcomes articulate the concepts that are to be understood and the skills that are to be developed. Other elements are designed in an iterative manner, each acting on the other. It is difficult to change the learning outcomes as they are designed to meet the stated aims of the course and to provide teaching skills as required by the profession and the University. Tutors who demonstrate that they already possess these skills and understandings may be exempted from part of or the entire course so the fact that some participants may already have achieved the learning outcomes does not alter the course design.

3. USING MODEL 1 TO DESIGN THE COURSE

From course aims and learning outcomes the TDL designed a draft course outline. The workshop program appears in brief in Table 1.

Table 1

Brief Workshop Program, Course Design A

Week	Workshop Topic	Method
1	The Tutoring Role	Face to face workshop
2	Learning and Teaching - what works?	Video conference + Peer study
3	Tutoring - Reinforcing lecturer delivery	Face to face workshop
4	Presenting information - planned	Face to face workshop
5	Presenting information -impromptu	Video conference + Peer study
6	Facilitating discussion - Face to face	Face to face workshop
7	*Independent study week*	*individual*
8	Facilitating discussion - Electronic	Synchronous electronic discussion
9	Using the web for tutoring	Synchronous electronic discussion
10	Facilitating groupwork - Short term	Face to face workshop
11	Facilitating groupwork - Long term	Video conference + Peer study
12	Assessing Student Learning	Video conference + Peer study
13	*Independent Study week*	*individual*
14	Issues, Evaluations	Face to face workshop

*TDL – ID INTERACTION #3

> "What makes this course flexible when there is so much synchronicity? ... Why do all the participants have to be there at the same time? ... Can't you achieve more interactivity using media asynchronously?" ... "Does it need to be in a fourteen week format?"

TDL RESPONSE

The TDL response was to set about exploring her mindset on 'flexible delivery'. True she had programmed six of the workshops as face to face but she had also included videoconference and web-based discussion to make the course more flexible. She was pleased she had managed to incorporate the new technologies yet still maintain the lecturer/participant interactivity she believed to be critical for effective learning. She now concluded that her belief in the educational value of immediate human contact had restricted her use of media to the synchronous. She began to agree with the ID that asynchronous web-based discussion would offer a more flexible and effective learning environment than synchronous and that the weekly workshop structure was unnecessary and restrictive.

*TDL – ID INTERACTION # 4

> "What do you think these participants will need in terms of access?"

TDL RESPONSE

The original model included student needs and attributes within a framework of inputs and influences rather than as a curriculum element because within professional development courses for academics, the skills and attributes are clearly articulated by the profession. While participant needs may vary, courses such as this need to offer specific professional skills so even though students could receive recognition of prior learning through exemptions from sections of the course, the course itself would not alter according to participant attributes.

The ID's question was significant in enabling the TDL to reconceptualise the meaning of "student needs'. She had previously thought of these in terms of learning outcomes, for example what kinds of skills, knowledge, and attributes will participants need to develop? The term 'student needs' took on a new dimension related to their need for flexibility of access. This had not been considered in previous programs. After all, participants were generally on campus during weekdays and would receive time off from their teaching to attend workshops. It had made logistic sense to hold workshops at the same time each week. However if this course was to be truly flexible it needed to offer 24-hour access to participants.

4. A NEW COURSE DESIGN

The TDL worked with the ID to redesign the course (Figure 5).

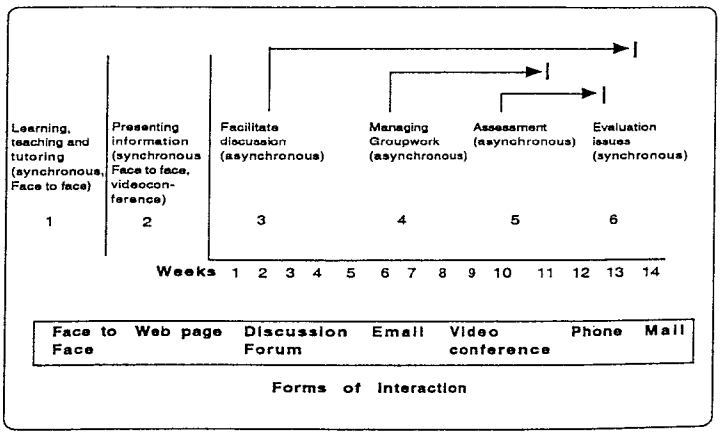

Figure 5: Course Design B

Six topics are covered in the course. The first two are presented as face to face workshops that cover theory and practice of teaching and learning, and presentation skills. The early face to face workshops provide a comfortable learning environment that matches participants' prior teaching and learning experiences. They learn some face to face skills and are eased into use of the electronic media, including videoconference. From then on the new course makes good use of asynchronous discussion in its design. Three workshops begin at intervals however each is through the medium of asynchronous electronic discussion. Participants working in pairs take over moderation of discussions under the guidance of a TDL and ID for the duration of the course. The final topic and close of the course is a face to face workshop. Forms of interaction are email, phone/fax, mail and the electronic discussion forum. During course implementation, participants work with a peer in their own action learning program, referred to as a Teaching Development Program, gaining feedback on their tutoring skills from the students and from a colleague.

5. A FLEXIBLE DELIVERY MODEL

The reader may discern that a theoretical model was emerging from practice during the course design. The influence of participant needs for flexible access meant that media decisions became a major curriculum element, integral to teaching method, learning activities and assessment as will be seen below. Media decisions also influenced the design of the assessment and course evaluation procedures.

The assessment schedule was reduced to two tasks. The weighting on course participation was increased to 50% because (a) it would be possible to record and monitor the quality of discussion and (b) participants would now be taking more responsibility for moderating most of the discussion themselves. Authentic assessment (Nightingale *et al*, 1996: 138) would therefore be possible.

An unexpected outcome of putting media decisions at the forefront of design was the increased opportunity provided for experience-based learning. The opportunity for participants to gain experience as web-based moderators was a direct result of the decision to use asynchronous discussion in order to provide more flexible access.

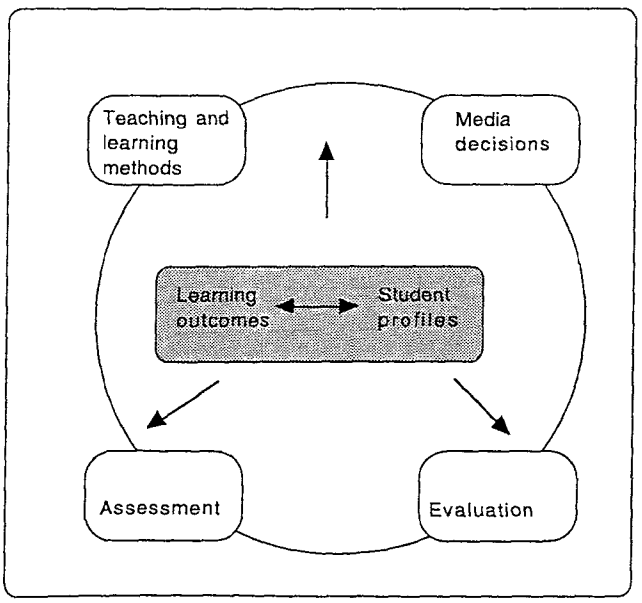

Figure 6: Flexible Delivery model

From the emerging Flexible Delivery model outlined in Figure 6 it can be seen that Learning Outcomes still drive design however these are considered along with student needs. Media decisions are included as an integrative element.

6. CONCLUSION

The Flexible Delivery curriculum design model, which has emerged from these deliberations about the design of a flexible tutor's training course, provides a template for further course development.

The writers believe there is no one curriculum model that should be prescribed for flexible delivery design but that this is an advantage in that creativity is more likely to flourish when designers are not locked into a rigid method. A number of the existing more general models may be adapted for flexible delivery however in order to determine the appropriateness of a model it is essential to consider the theoretical platform and the educational principles on which that model rests to ensure a sound framework. The model described here has emerged from practice and is offered as a useful addition to the available models for curriculum design for flexible delivery.

7. ENDNOTES

[1] Flexible delivery is an approach to teaching and learning which increases access to education for a wide range of students by offering greater student control over time, place and pace of study. Technology, where appropriate, is utilised to support communication and access to information, to move towards a more student centred approach to teaching and learning. The most appropriate delivery medium, (eg a lecture, a video or a book), can be chosen to meet the needs of students, and interaction can be facilitated through face-to-face contact or through supporting technology such as videoconference, phone, fax.

[2] What do I want my students to learn? How should I manage teaching and learning? How can I find out whether they have learned? How can I estimate the effectiveness of my teaching?

[3] Note the absence of teaching technologies and student requirements as decision areas in curriculum planning in Warren Piper's 1993 DEET report on Quality Management in Australian Universities.

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