



For students to learn effectively, it is vital for teachers to plan and design their courses well. Consequently, this issue of *CDTL Brief* looks at ways to promote successful **Curriculum Design**.

Designing & Planning a Successful Course: Bridging the Gap between Common Practice & Best Practice

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A successful course, one in which students learn what we educators intend them to in a meaningful manner, is the result of many factors. In my ten years' experience of advising faculty on educational matters, I have found that the 'successful' or 'outstanding teacher' is frequently the one who carefully conceptualises his/her courses and then organises these ideas into working plans and detailed course documents. These plans provide a foundation and a guide for instructional practice that is likely to lead to greater comprehensiveness, cogency, coherency and consonance.

In this brief article I want to suggest how university teachers can improve the conceptualisation and planning phases of instruction. I will do this by identifying how teachers can bridge the gaps between what I have observed as common practice when planning instruction with what some of the instructional design (ID) literature propose as best practice.

Why are there gaps between common practice and best practice?

Limited time and resources afforded to teachers in preparing courses are obvious reasons. However, more subtle reasons include problems with what is prescribed as best practice in the literature and how faculty perceive the task of teaching. The ID literature is becoming increasingly specialised; most course design material (e.g. Briggs, 1977; Smith & Ragan, 1993) is directed to the professional instructional designer, rather than the teacher/lecturer who, often with limited educational training, does the bulk of curriculum design

on any university campus. Clearly, instructional designers (myself included) need to work harder at helping faculty bridge the gap between instructional design theories and everyday academic practice by grounding these ideas in relation to the specific challenges teachers from different disciplines face. One instructional design text that seeks to do this is Ertmer and Quinn's *The ID CaseBook*, which presents ID ideas in the context of real world problems. CDTL's Professional Development Programme (PDP) also attempts to help faculty use pedagogical principles as a means for reflecting upon their practice.

David Kember notes another problem with the ID literature as a source for best practice:

I have become concerned that books classified as about instructional design generally show little cognizance of the research into student learning and contain little help which would help a teacher who wanted to design instruction which facilitated deep rather than surface learning. (Kember, 1991: 290)

This ignorance of research conducted on student learning is a legacy of older (and possibly outdated) instructional design models that unfortunately still shape much of what is done in higher education (Forsyth, et al., 1999). In this article I draw upon research that has its roots in how students learn (Ramsden, 1992). Such research is based upon constructivist views of the world and suggests that students learn most effectively when encouraged to construct their own understanding

rather than be expected to simply absorb information. This research emphasises the importance of actively engaging students, and expecting them to be responsible for their instruction. Thankfully these ideas are beginning to have an effect upon ID (Wilson, et al., 1995) and are redefining what is good practice when planning instruction (Gibbs, 1992; Evans & Honour, 1997; Wilson & Myers, 2000).

In the remainder of the paper I specify key questions teachers in higher education need to address when planning instruction.

What is the purpose?

In workshops and private consultations, I have asked faculty where they start when planning a new course. Typically the response is that they begin with organising their content (i.e. what topics they plan to teach and the sequence in which they will be taught). On the surface, this seems like a reasonable place to start. However, implicit in this organisation of content are assumptions about the purposes of the course; and unless these assumptions about the purposes are made explicit, the course runs the risk of failing to fit into the wider curriculum, as well as institutional and social context.

Asking questions like those following can help the lecturer to clarify the purpose of the course and better prepare the teacher to deal with various expectations:

- Who are the various stakeholders of this course?
- How does this course fit into the larger picture? Why would students be interested in this course? What function does it play in respect to society, the degree programme, etc.?
- Where does this course fit in a degree programme sequence: What came before? What comes after? What is the rationale for its position? Is this course foundational (i.e. an essential prerequisite for subsequent work), compulsory or optional?
- Who else is involved in planning and teaching? Who has overall responsibility?
- What weight does this course actually carry in the overall degree? How important is it *perceived* by staff/students?
- How is this course viewed in the institution?
- What is the prior history of this course?

Who is the learner?

The educational environment or context of learning is created through our students' experience of our curricula, teaching and assessment procedures. (Ramsden, 1992: 62)

Most teachers have notional views about their students. However, I have found that when these views are questioned, lecturers find it difficult to substantiate their claims with any reference to research they or others have done on their students. Planning for any course must include a credible understanding of the learner and how they are likely to perceive and respond to different instruction.

Increasingly, university teachers are accepting the need to articulate learning objectives (i.e. statements of expected learning outcomes). But identifying the desired change in students implies an understanding of where the students 'are at'. Hence, part of planning a course must be about finding out information about the students (i.e. before the first class, look at entry scores, characteristics of previous cohorts, etc., or during the first contact, get to know the students, prior learning/understanding, motivation, preconceptions/assumptions about the course).

The conceptions of deep and surface learning are terms that describe how students respond to their learning activities (Ramsden, 1992: 78–85). If the aim of the course is to foster a deep approach to learning (one that is meaningful and rich), then teachers need to understand how students are likely to approach various tasks, and what can be done to make these tasks more attractive to students.

While planning is in part anticipating and articulating what the students may be like (and what we wish them to become), it is also about developing strategies (e.g. pre-course questionnaires, early assessment, class discussions and interviews) to check whether these assumptions and expectations are valid and accurate. The information gathered allows a teacher to be better prepared and flexible in making informed adjustments to instruction such that it meets the students' specific needs and desired course outcomes can indeed be achieved.

Which methods of instructions are suitable?

When I question university teachers about the methods they plan to employ in their teaching to facilitate the desired learning, the most common response is that they will 'give a lecture', 'run a tutorial' or 'administer a laboratory session'. When I probe further, I find that many lecturers believe and accept that these instructional settings embody standard and proven methods. Unfortunately, critiques of traditional lectures (i.e. teachers speak, students listen) suggest that while they still are useful in achieving certain outcomes (e.g. delivering information), they are by themselves largely ineffective in helping students develop the many complex skills associated with a higher education.

Lectures that incorporate methods that get students to discuss, perform specific types of thinking, actively take notes, reflect, etc. are generally more successful (Ramsden, 1992: Ch. 9).

Studies on innovative teaching practice show that lectures, tutorials and laboratory sessions are merely instructional settings that the teacher defines by incorporating various micro-instructional methods. While the choice of any method of instruction will be influenced by administrative and political factors, the primary determinate should be: given the students, what method will best facilitate the desired learning outcomes? Although each instructional setting has certain characteristics (e.g. number of students, size and configuration of a room), clever faculty have shown that these barriers can be surmounted. For instance, interactive discussions with large lecture groups are possible with careful planning in respect to physical and other constraints.

Various instructional methods¹ include traditional lecture, tutor-led discussion, computer discussion forum, buzz groups, role play, problem-solving groups, structured exercises, case study, project work, journal writing, experiments and demonstrations. Each method has certain accepted tenants and attributable outcomes. But part of the planning process is defining these activities in relation to the specific context for which they are to be used (e.g. thinking about how to incorporate the desired content and how students will participate in the learning activity). It is how a method is employed that will largely determine the types of outcomes that will occur.

Choosing whether and how to lecture and/or give tutorials entails more than just looking at the time allocated in a timetable. Besides doing some research and finding out about various instructional methods and then choosing those that will best facilitate the desired learning outcomes, it also requires embedding the concepts/skills that the instructor wants students to learn within these activities and incorporating these activities within a given instructional setting.

What assessment procedures are appropriate?

Most university teachers realise how critical assessment is in a university course; most acknowledge issues of validity and reliability are important (Warren Piper, et al., 1996). But what is often lacking in their planning is an appreciation of what measures need to be put in place to ensure validity and reliability beyond basic issues like nominating assessment methods, defining a task or question for students to complete,

1. For a more extensive review of different methods, see: Squires, 1994; Gibbs & Habershaw, 1992.

and allocating a weighting or marks for each task.

Other important considerations when planning assessment include:

- ability to articulate a rationale for using a method of assessment over another;
- understanding of how different assessments measure (and help teach) the various course objectives;
- awareness of how the different methods of assessment are likely to impact on students (the sum of the parts);
- establishment of criteria for assessing students' performance and how this criteria will be communicated to students;
- establishment of marking and grading procedures to minimise the effects of individual marker bias.

What is the best way to organise content?

University faculty are very skilled at defining and conceptualising subject content, as well as selecting relevant parts of the discipline and 'chunking' it into smaller segments necessary for instruction. More challenging, at least for some teachers, is to think and organise their content in broader terms (i.e. what is the relevance of this material and how does it relate to students' future professional career, or figuring out ways of helping students appreciate the course as a whole rather than discrete parts). Another challenging aspect when organising content is integrating with the method of instruction (e.g. developing case studies, creating examples, analogies). Sometimes, this requires looking at content in ways that are different from the disciplinary orthodoxy.

Organising content also requires some anticipation as to how students will interpret this information. When planning, teachers should assume that just because they present some information does not mean students will understand it as intended. Hence, sometimes content will need to be organised into multiple representations to ensure students that have different styles of learning can have a better appreciation of what it is they are meant to learn.

What should be evaluated?

Many university teachers unfortunately see evaluation as an imposition (something the university requires of them) rather than as a means for improving teaching practice. Hence, instead of being considered in the planning phase of a course, evaluation is commonly thought about and acted upon towards the end of a course. However, those that see evaluation as an integral part of the teaching and learning process will

identify, in their planning, any ideas they wish to try out and evaluate. They will point out instances where data can be collected and analysed and where results can be fed back into the teaching cycle. In this way, an action research and action learning approach to the improvement of instruction can be facilitated (Zuber-Skerritt, 1993).

Why develop course documentation?

Good planning for a successful course requires continuous reflection, not just thinking momentarily about relevant issues. To facilitate this type of reflective practice, some institutions have encouraged faculty to develop elaborate course outlines² that require teachers to address the range of issues touched upon in this paper. An example of a detailed course outline can be viewed at: <http://www.tedi.uq.edu.au/downloads/e1267out.pdf>.

Such documents offer the university and students a rich and more detailed overview of a course, and also afford teachers concrete platforms for building upon the hard work they have done previously in planning the course. These documents, if developed because of teachers' interest in improving their teaching, will remain a living and working document. It can provide direction as teachers wade through the details and challenges of teaching and administering a course. It also can be the means for recording a teacher's development and maturation and stands as evidence of teaching quality.

Conclusion

A successful course is unlikely to be the outcome of a teacher simply spending an hour or two writing a course outline or carefully reading the course textbook (though both are worthwhile planning activities). A great course is more likely the result of a long continuous effort of thinking, researching and reflecting upon the issues of what is the purpose of the course, who are the learners and what constitutes learning, what methods of instruction are suitable and how do you implement them in a given context, what assessment procedures are appropriate, what content should be included and how should the course be evaluated. By recording these ideas in a document, they can be shared with colleagues, students and other stakeholders so that they too can contribute to further planning and development of the course. Consequently, the gap between best practice in planning and individual practice is not an unbreachable chasm, but merely a journey one can take to improve the quality of teaching and learning in any university.

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2. Course Information Documents: see Forsyth, et al., 1999.

Curriculum Design & Implementation: THE BASICS

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In view of the abundant literature on the subject, this article aims to highlight important points and issues in curriculum design for lecturers with no previous training in education.

For most of us without a background in education, a curriculum often means a sequence of lectures, teaching timetables, examination sessions and grading. Occasionally, a curriculum can also turn into a turf battle with different departments vying for increased teaching hours for their particular discipline.

But a curriculum is more than just sequences of lectures and timetables. According to Kern, et al. (1998), a curriculum is “a planned educational experience”. Hence, the main intention of curriculum design at the tertiary level is to foster the academic development of students. Once a specific group of students is identified for whom the curriculum is to be designed, the purpose for the curriculum design can then be made clear from the outset. To carry out curriculum design and implementation successfully and to prevent conflicts of interests, it is also vital that a coordinator is appointed and full institutional support be made available.

If a curriculum is to be “a planned educational experience”, then curriculum design and implementation should follow a sequence of steps that operates like an upward and downward spiral with a robust feedback system for the adjustment of each step. Curriculum planning can be divided into 6 steps:

1. Identification of the Faculty/institution’s mission and the needs of its stakeholders

This is the crucial first step as it is important to understand the mission of the Faculty for which the curriculum is designed. For example, the mission of a Faculty of Medicine is to train doctors to deliver health care services to society. Consequently, curriculum developers must know and understand the needs of curriculum stakeholders (i.e. students, faculty members, university administrators, professional bodies, government, etc.) that will determine the type of graduate profile the Faculty wants:

- possesses a sound scientific basis to practise Medicine;
- possesses high clinical competence;
- possesses critical analytical skills;

- is capable of self-directed & life-long learning;
- possesses good communication skills;
- is compassionate and ethical.

2. Needs assessment of the learners

This step is often neglected. Once the potential students are identified, their needs must be assessed, because curriculum developers must be aware of the learners’ strengths and weaknesses. Therefore data on student characteristics are needed (e.g. entry level of competence, ability to meet the prerequisites of the programme, individual goals and priorities, personal background and reasons for enrolling, attitudes about discipline and assumptions about the programme).

3. Establishment of the curriculum’s goals and objectives

This is an important step as goals and objectives determine the instructional philosophy and thus guide the selection of the most effective learning methods. Moreover, the learning objectives will also determine the design and selection of assessment instruments and procedures. As clear and well-written objectives are absolutely necessary to define the focus of the curriculum, faculty members in charge of curriculum design must be formally trained in writing instructional objectives.

4. Selection of educational strategies

The selection of educational strategies must be based on three main principles. First, the educational methods must be congruent with the learning objectives. Second, the use of multiple educational methods is preferable to a singular method, as the curriculum should respond to the challenges of the multitude of students’ learning styles and varied educational objectives. Finally, the curriculum designer and implementer must verify the curriculum’s feasibility in terms of material and human resources.

5. Implementation of the new curriculum

Designing the curriculum is the most exciting and

creative part of curriculum development. However, the ultimate goal is not to design the best and ideal curriculum, but to put it into practice successfully. The many conditions and requirements for successful execution include the promotion of faculty members' ownership of the process of curriculum implementation and the allocation of adequate resources. Unequivocal support from the highest academic authority must be secured before starting to put a new curriculum into operation. Following the first phase of implementation of the new programme, a formal assessment must be carried out in order to adjust the process and to establish a link between institutional goals, courses and curriculum.

6. Evaluation and feedback to improve the curriculum

Although evaluation of the curriculum is the last step in this practical approach, it is not necessarily the final action. The evaluation data collected must serve as criteria for adjusting the curriculum to the goals of the programme or the mission of the Faculty. The most important message here is that a curriculum must be

evaluated, corrected and go through repeated levels of innovation because it is not a static system. Feedback from teachers, tutors and students must continuously be taken into serious consideration so as to enhance the learning outcomes for the students.

In conclusion, a curriculum is an academic plan. It is a total blueprint for actions where:

- a. the objectives, aims and outcome of the curriculum are clarified;
- b. the processes to achieve these are identified;
- c. the ways to measure whether success has been achieved; and
- d. systematic review and adjustment are also part of the plan.

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Practical Steps in Designing a Curriculum to Promote *Critical & Creative Thinking*

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This article provides an outline of the practical steps involved in developing a curriculum to promote critical and creative thinking, what I will refer to as a *thinking curriculum*. The approach presented is the result of more than three years of applied curriculum development work in promoting thinking. While the main emphasis has been in the area of higher technical education, the framework is sufficiently transferable to all curriculum areas where thinking is essential to effective learning.

I want to first emphasise that curriculum planning—whether primarily focused on developing competence in thinking or otherwise—must fully align the central components of learning outcomes, instructional methods and assessment. For example, the instructional methods must be those most suitable for developing the types of learning indicated in the learning outcomes. Similarly the assessment methods must assess the

content knowledge, cognitive processes and other attributes defined by the learning outcomes.

The following are the key steps in designing a curriculum to promote critical and creative thinking. All steps must be thoroughly planned, but it is not essential to conduct the development process in a linear manner.

Step1: Identify a valid and operational model of thinking

There is no shortage of models and theories of thinking (e.g. Marzano, 1988; Perkins, 1985; Swartz & Parks, 1994). Indeed, it could be argued that the plethora of perspectives and terminology confuse rather than aid educational planning and, in particular, teaching. However, without a clear conception of what we mean by thinking, it is unlikely that we will plan, teach or assess it systematically.

For summary purposes in this article, thinking can be usefully conceived in terms of the following interrelated *types of thinking* represented in the table below:

expected that students would be able to ‘predict possible legal outcomes in the event of a breach of contract’. Consequently, the following types of thinking are

Types of Thinking		
Creative/Divergent Thinking	Metacognition	Critical/Convergent Thinking
<ul style="list-style-type: none"> • Generating many possible options • Generating a variety of types of possible options • Generating originality in possible options 	<ul style="list-style-type: none"> • Monitoring, evaluating and revising own thinking 	<ul style="list-style-type: none"> • Analysing components and relationships in a system • Comparing and contrasting options • Making inferences and interpretations from data • Evaluating the relative worth of options

These types of thinking are essentially the cognitive components of problem solving. Problem solving is typically the well-orchestrated use of these types of thinking. As problems become more complicated and open-ended, greater is the range of types of thinking involved as well as the competence level in using them.

Whatever model or framework of thinking you employ, it must be clearly understandable to the stakeholders involved and practical in application. I have seen many approaches to promoting thinking fail for the simple reason that the framework and terminology is simply too complicated and not understood by practising teachers who have to implement it in their everyday teaching activities.

Step 2: Identify the types of thinking to be incorporated in the learning outcomes

Learning outcomes (objectives) identify what a student should be able to do as a result of a course of study. If objectives are largely written in terms of ‘define’, ‘list’, ‘state’ or ‘describe’, then there is little opportunity to promote thinking into the curriculum.

In order to identify the types of thinking to be incorporated in the learning outcomes, it is necessary to firstly identify the real-world tasks that students would be expected to do on successful completion of that particular curriculum (typically a module). In other words, there needs to be a refocusing of the curriculum in broad competency terms.

From this basis, you can focus attention on how the content of a module actually translates into real-world applications. Having done so, you can then identify the types of thinking that underpins competence in these activities. In order to achieve this, a useful technique is to ask the following question:

How would a highly competent person think in the effective execution of this activity?

For example, in a business law module, it might be

important in competent task performance for this module:

- Analyse the components of a contract.
- Compare and contrast the expected and actual behaviour of defendants.
- Make inferences and interpretations concerning the behaviour.
- Evaluate the possibility of specific outcomes.

In using this approach, you can identify the types of thinking that are naturally part of effective learning (i.e. actual competence in real-world performance). These can then be written as learning outcomes.

Step 3: Identify the key areas of subject content

In a thinking curriculum, emphasis should be on knowledge which focuses on the key concepts, models and principles essential for providing understanding of the topic being taught and meeting the learning outcomes. Knowledge becomes a resource to be used for purposes of meaningful application.

Step 4: Identify instructional methods and learning tasks to promote thinking

This is perhaps the most straightforward step to plan, but can be difficult to apply in practice. We have moved a long way towards understanding the important components of the pedagogy essential for promoting thinking and meaningful learning. As Marzano (1992, p. 2) points out that: “Over the past 3 decades, we have amassed enough research and theory about learning to derive a truly learning based model of instruction.” Most apparent is the recognition that thinking is an active process, which requires a pedagogy that is interactive and collaborative. A wide range of active learning methods and techniques are, therefore, essential for developing students thinking. These require a high level of teaching competence.

Step 5: Design authentic assessment items to assess types of thinking

Assessment is fundamentally important in terms of affecting what and how students learn. As Ramsden (1992) stresses:

From our student's point of view, assessment always defines the actual curriculum... Assessment sends messages about the standard and amount of work required, and what aspects of the syllabus are most important. (pp. 187–8)

A thinking curriculum must give strong emphasis to the assessment of the types of thinking stated in the learning outcomes. A variety of methods (including multiple-choice questions) can be effectively employed to assess thinking. However, thinking is most authentically assessed through activities that require students to display specific types of thinking in applied contexts.

For example, performance tests, projects, case studies, presentations, simulations and workplace assessment can be effectively used for assessing thinking. These more authentic forms of assessment will direct both the learning process for students as well as the instructional focus for teachers. In this way, as Perkins (1992, p. 176) suggests, "Teaching, learning, and assessment merge into one seamless enterprise."

Summary

In this short article, I have only been able to provide a key point summary of the main steps involved in designing a curriculum to promote critical and creative thinking. However, I hope that it communicates the essential curriculum development process involved. Finally, I must emphasise that any curriculum offering only becomes alive to students in the learning environment of the school or college. The act of teaching and the ethos that contextualises learning are paramount in the thinking curriculum.

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