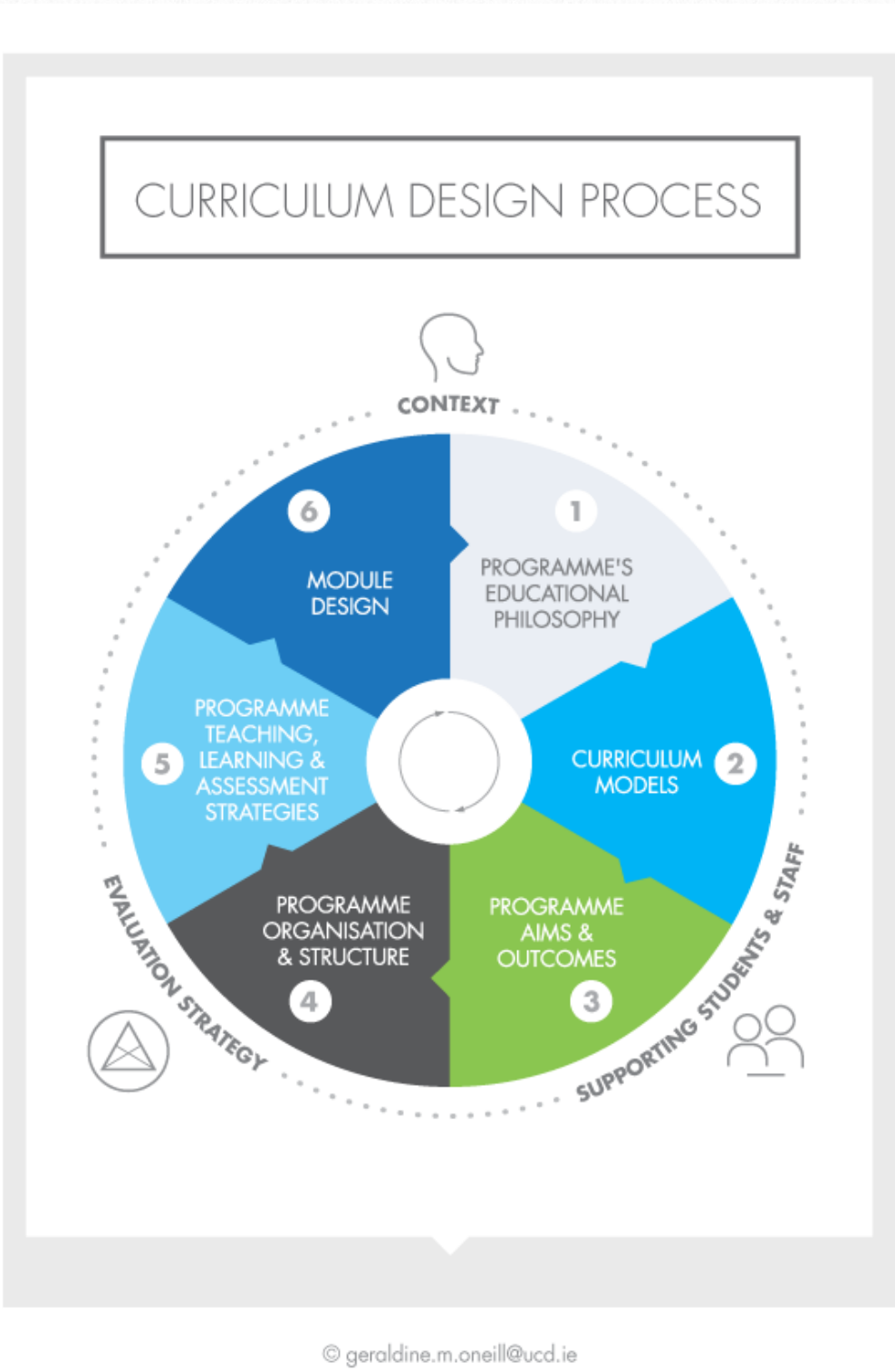
eBook

Curriculum Design in Higher Education: Theory to Practice



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Biography

Dr. Geraldine O'Neill is Senior Lecturer in Educational Development. She joined the UCD Teaching & Learning in September 2001. She has been involved in the strategic development of teaching and learning in University College Dublin (UCD) and has supported many institutional teaching and learning projects. Recently, she has been involved in institutional projects in the areas of programme design, assessment and blended learning. For teaching interests and research publications, see https://www.researchgate.net/profile/Geraldine_Oneill

Copyright

1. Introduction to the eBook

This chapter sets out the purpose, focus and structure of the eBook. It is also clarifies some of the confusing terms around curriculum design.

Welcome from author (Geraldine O'Neill).

UCD Teaching & Learning,
University College Dublin

Click here for link to YouTube video.

Purpose of the eBook

The purpose of this eBook was to collate and share many of the resources that I had written in the last few years on programme design, in particular the practical issues in planning and implementing a programme (course) design. There has been a wealth of web and literature resources on module (unit) design, but I had found a gap in the more complex task of programme design and how theory and models of curriculum apply in practice.

The materials in this eBook have been drawn from my experience in Ireland as:

a Lecturer and Head of School of an occupational therapy programme in Trinity College Dublin, and more recently, as

an educational developer supporting academic staff in UCD Teaching and Learning, University College Dublin, working in collaboration with a range of disciplines in undergraduate and postgraduate face-to-face, blended and online programmes.

Figure 1.1 - University College Dublin

Focus of the eBook

This eBook, therefore:

- Focuses on curriculum design at the programme (not module) level,
- Incorporates face-to-face, blended and online curricula,

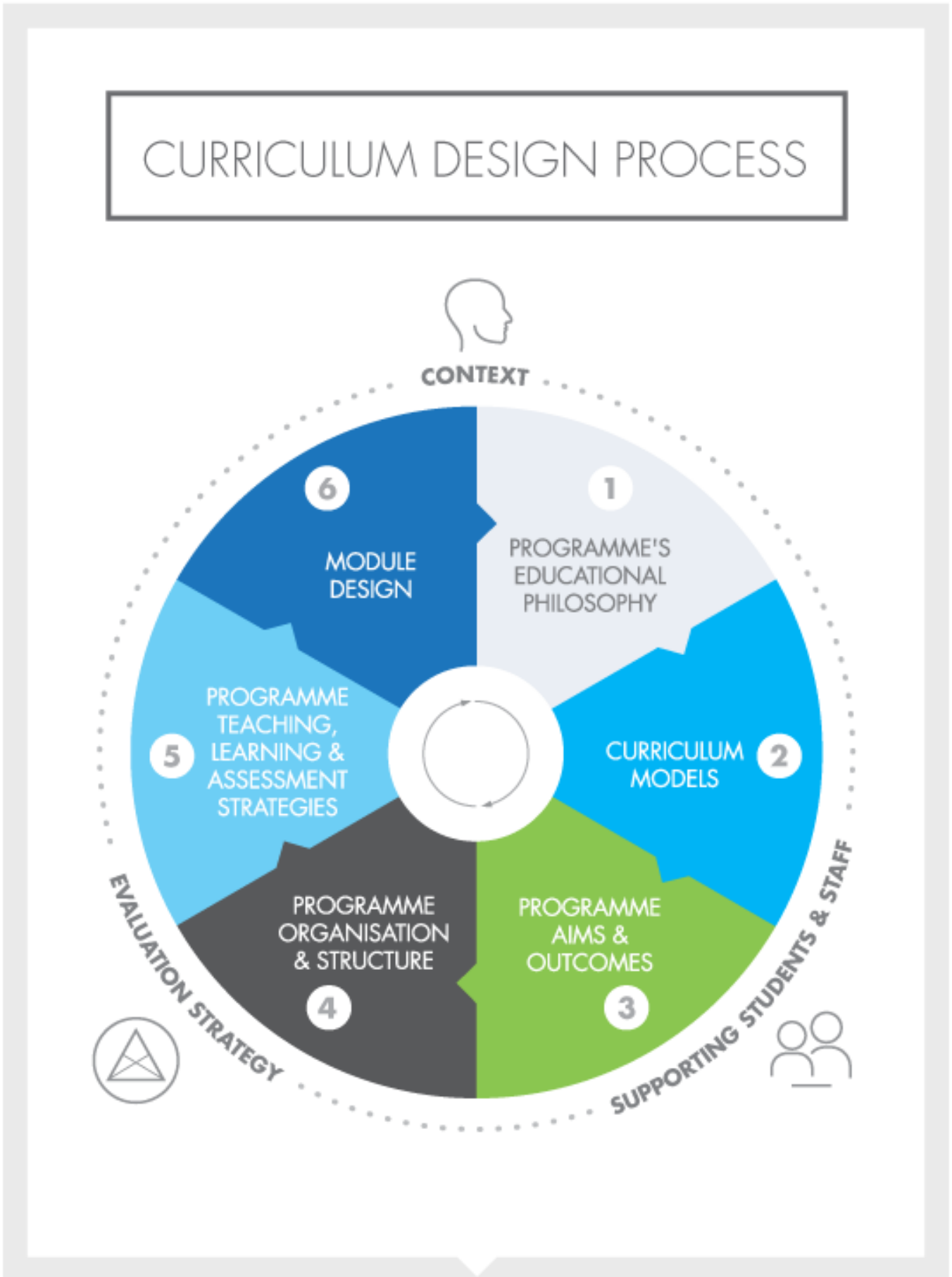
- Attempts to link theory to practice by giving some practical resources and/or exercises,
- Draws the author's experiences of working and researching into curriculum design in the Irish higher education sector,
- Is aimed at staff involved in curriculum design, including academic staff (faculty), institutional managers, educational developers and technologists, support staff, library staff and curriculum researchers,
- Is primarily drawn from literature and experiences in the higher education sector, however those in adult and further education may also find it useful.

Structure of the eBook: A curriculum design process

The structure of this book is based on a curriculum design process that I have developed as part of my experience and research on curriculum design (for example, O'Neill et al, 2014; Galvin & O'Neill, 2014; O'Neill & McMahon, 2012; O'Neill, 2010; O'Neill & Hung, 2010; Keenan & O'Neill, 2008). Figure 1.2 represents my interpretation of the curriculum design process, more recently influenced by online curriculum literature and practices. The components of this curriculum design process are not mutually exclusive and they directly influence each other. Although there is some level of sequencing in how they are addressed, as noted in my study on practices of educational developers (O'Neill, 2010), they are not strictly linear and in practice staff often dip in and out of aspects of the overall design. The process is circular and dynamic.

The chapters in this eBook are based on the curriculum design process components in this Figure 1.2.

Figure 1.2 - Overall Curriculum Design Process.



Language of curriculum

Use of the terms 'course, programme, module, unit'

'Programme' is regularly used to describe a completed series of learning units that leads to a qualification or award. However, this can often be described, by students and in some contexts, as the 'course'. To add to the confusion, 'course' can also be used where 'module' is used in the modular system, as a 'unit' of credit-bearing study that is part of a programme. Therefore, when communicating to a wider audience, it is important to clarify how these terms are used in your context.

Definition of the term 'curriculum'

The term 'programme' and 'curriculum' are also used interchangeably, where curriculum is often used to describe a wider conceptual process and context. In the UK, Fraser and Bosanquet (2006) highlighted that staff working in higher education have very different understandings of the term 'curriculum, as various as:

- The structure and content of a unit (subject)
- The structure and content of a programme of study
- The students' experience of learning
- A dynamic and interactive process of teaching and learning

(Fraser & Bosanquet, 2006).

In the USA, Lattuca and Stark (2009) in their extensive work on curriculum, highlighted that staff used similar breakdowns of this term.

This lack of a shared understanding of the term 'curriculum' can be problematic when staff gather together to do shared curriculum design activity. Therefore, Lattuca and Stark (2009) advocate that a useful framework for all curriculum stakeholders is the use of the concept of an 'Academic Plan', which focuses on the planning process. This includes eight elements, 1)Purposes, 2)Content, 3)Sequence, 4)Learners, 5)Instructional Processes, 6)Instructional Resources, 7.)Evaluation, 8)Adjustment. They highlight that the plan is done in the sociocultural context. Therefore their model is titled *Academic Plans in Sociocultural Context* (Lattuca and Stark , 2009, p29). The ele-

ments in Lattuca and Stark's model has strong similarities to the components of the curriculum I have laid out in Figure 1.2.

This idea of a planning activity is emphasised in the commonly used term 'curriculum design' and this is:

> *is generally understood as a high-level process defining the learning to take place within a specific programme of study, leading to specific unit(s) of credit or qualification.* (JISC 2014, p2)

Curriculum design has often been used interchangeably with the term curriculum development. Ornstein and Hunkins (1998, p17) describe that:

> *Curriculum development encompasses how a curriculum is planned, implemented, and evaluated.*

Summary

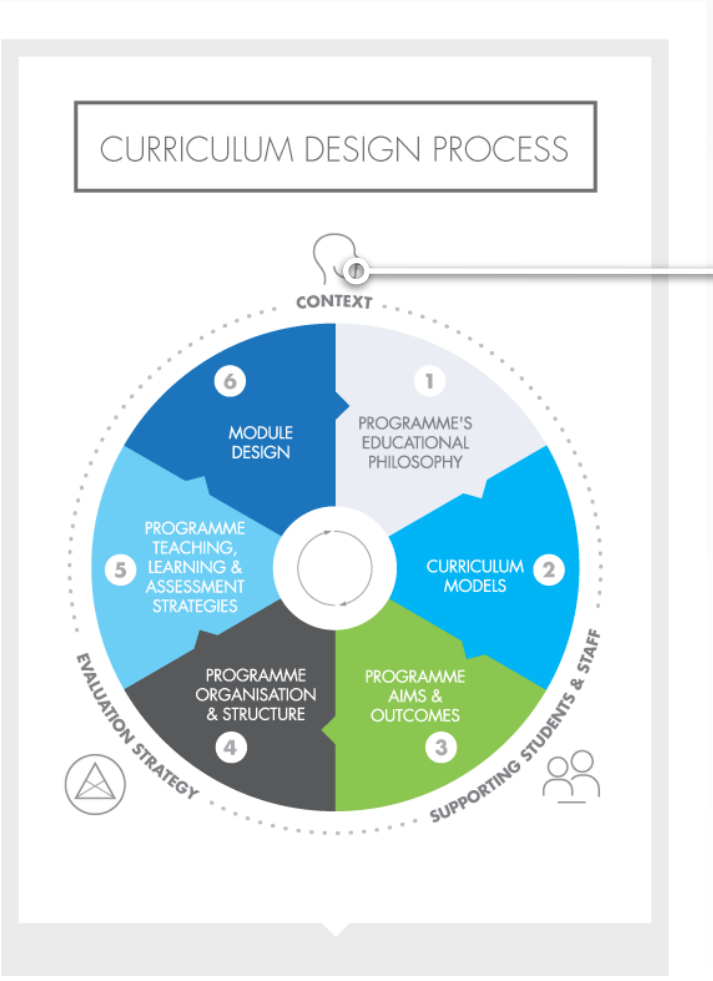
This eBook attempts to provide a balance between the theory and practice in the design of higher education curriculum. It presents a visual overview that may be useful in understanding the curriculum design process. This visual overview maps out the chapters in this book. The language of curriculum design can be confusing and care is needed when working in different contexts and with different stakeholders.

2

Context of Higher Education

This chapter explores the influence of the context in the higher education curriculum. The curriculum is highly influenced by the social, physical, economic and cultural environment. This chapter presents examples of these environments, acknowledging that these will change over time and between contexts. For ease of explanation the chapter is divided into programme/ discipline, institutional, national and international contexts.

Context of Higher Education



Context: International, National, Institutional, Programme/Discipline

Chapter 2: Context of Higher Education

The curriculum is highly influenced by the social, physical, economic and cultural environment. In addition, Stark's study in the USA found that 'staff beliefs' were the first part of what she called her 'contextual filter model', however:

> *In the process of course planning, however, these assumptions are 'filtered through' and modestly affected by, various influences in the college context.* (Stark, 2000, p430)

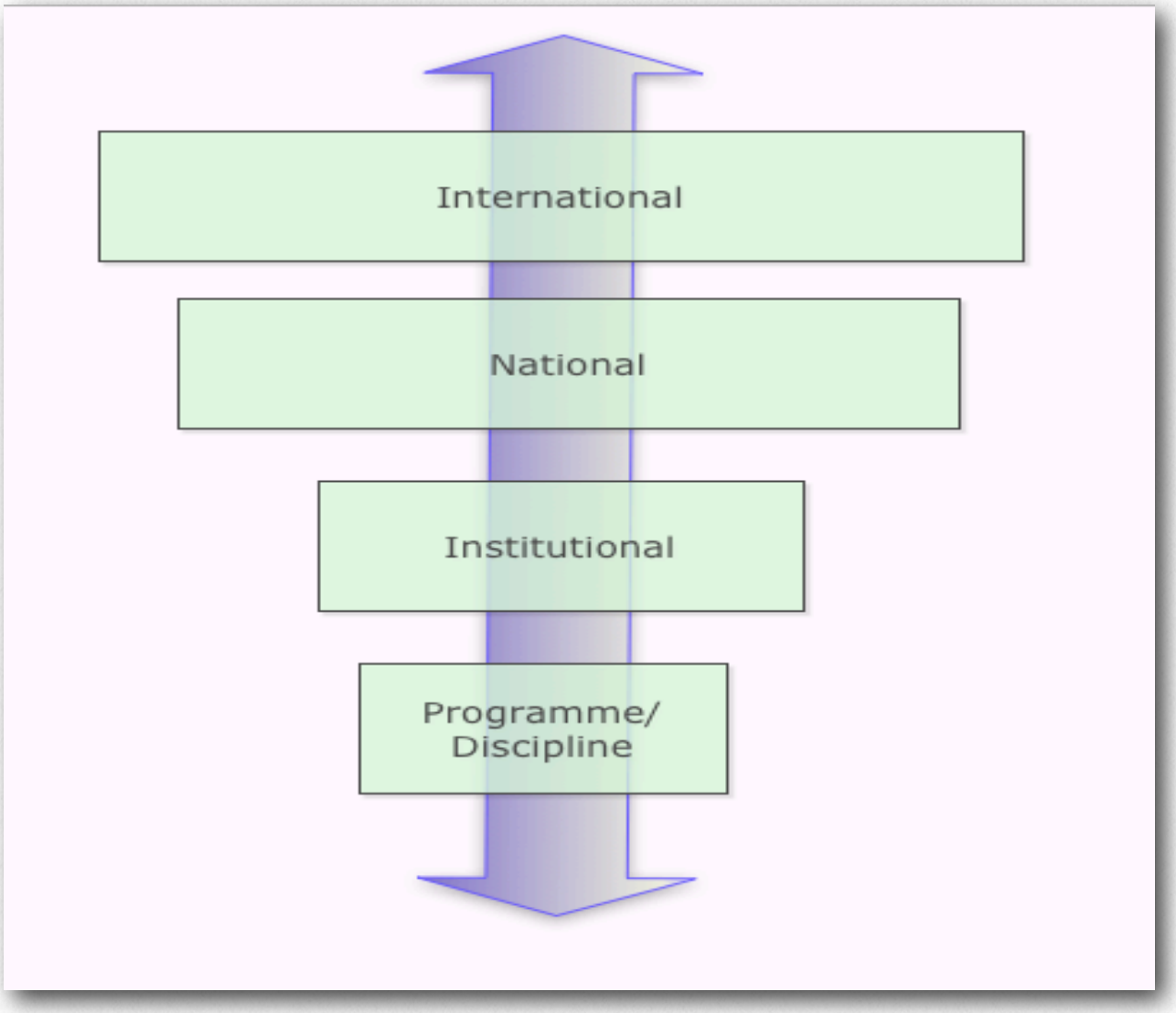
She goes on to describe how context strongly influences what is incorporated into the curriculum, in particular in terms of the students characteristics. Her study identified nine key contextual filters that influence staff decisions (See Table 2.1).

Table 2.1 - Contextual Filters that Influence Curriculum Decisions (Stark, 2000)

Student characteristics Student goals External influences Program goals College goals	Pragmatic factors Pedagogical literature Advice available on campus Facilities and opportunities

These different and other contextual filters can be divided into the International, National, Institutional, Programme/Discipline contexts which influence the curriculum planning process (Figure 2.1).

Figure 2.1 -The Programme/Discipline, Institutional, National, International Context



The difficulty of understanding contextual influences is that they are constantly changing and are unique to the programme, time, place and the persons involved. Therefore the next sections are only some examples of these contexts at one point in time.

International Context: The Global World

The international context is ever changing. The concept of preparing students for a more complex changing world is forefront for many programme teams.

The University of Edinburgh have put together a very recent resource which highlights this changing world and how academic staff might respond to it (see practical resource). A recent comprehensive publication on *'The shape of things to come: higher education global trends and emerging opportunities to 2020: Going Global 2012'* by the British Council (2012) highlights some of the key contextual challenges in international higher education. They summarise some of the key higher education opportunities for global engagment, in particular:

Practical Resource

See the University of Edinburgh's series of public lectures on 'Our Changing world' (2015), including the role of academic staff in meeting these challenges. They highlight issues such as climate change, infrastructure for global health, medical issues, ethic, sustainable technol-

- International student mobility
- Size and growth of domestic education systems
- Transnational education (TNE)
- Academic international research collaboration
- Business international research collaboration.

As programmes attract international students and students from diverse backgrounds, there is a growing need to design the curriculum for the needs of a diverse student population. In parallel with this growing diverse student group, both the British Council report (2012) and Hall and Thomas (2005) note that there has been a growing relationship between Higher Education and employers:

> *the purposes of higher education and its relative importance..., linking education closer to the world of work ...has become an increasing focus of attention.* (Hall & Thomas, 2005, p69)

Planning for employment in the curriculum however is not that simple, as the job of today may not be there tomorrow. Michael and Boalraj (2003) describe that in the USA

> *it is widely believed that today's graduate will change profession many times before their retirement. It is also widely believed that some of these professions have not yet been created. Consequently, higher education leaders have intensified their emphasis on interdisciplinary curricula and their call for joint degrees.* (p131)

The economic environment greatly impacts on the nature of the higher education curriculum, but the level of investment in higher eductaion can vary greatly internationally. Asplund (2008) in *Education Economics* describes that

> *there is currently broad agreement on investment in tertiary-level education being a crucial factor for employment, competitiveness, growth and social cohesion. Notwithstanding this, there are still significant differences across*

countries as to the effort they exert to promote such investments. One explanation of these differences relates to the burden this creates on public expenditure coupled with varying possibilities to resort to private funding. (p 261).

The development of clearly articulated graduate attributes, both at the discipline level and the generic skills level, has been growing across curricula internationally.

D'Andrea and Gosling (2010) summarise some of the international trends in higher education as: a diverse student profile; globalisation; flexibility in modes of delivery; marketisation; funding; accountability. In addition, the Bologna process and Erasmus students are examples of impacts on curricula at European level.

National Context (Irish)

Practice Resource

Some Irish policy websites to refer to include: HEA website; IUA Website ; IUQB website : The National Forum for Enhancement of Teaching and Learning.

The recent Irish economic crisis has had a strong influence on the resources in Irish Higher Education; paralleled with an increase in student numbers entering Irish education, there has been an increase in class sizes and more widespread use of other support teaching staff, i.e. graduate teaching assistants (O'Neill & McNamara, 2015). Similar to the international context there has been a growing use of technology in the student and staff learning experiences. Traditionally, there have been groups in Irish society that are under-represented in higher education, e.g. students from lower socio-economic groups, students with disabilities. This issue of equity has been a high priority for the HEA (2009) and *the National Office for Equity of Access to Higher Education* aims to improve access for particular target groups (HEA, 2009).

There has been a growing interest in Ireland and internationally on how to support students in transition to and within higher education, i.e. the first year experience, graduate entry, from face-to-face to online, etc.

Over the last two decades, there has been a legislative requirement for Higher Education institutions to carry out quality assurance. The Universities Act, 1997 was the first piece of legislation to specifically set out the responsibilities of the universities in rela-

tion to quality assurance *(IUA/IUQB (2007) A Framework for Quality in Irish Universities: Concerted Action for Institutional Improvement).*

The recent creation of the *National Forum for the Enhancement of Teaching and Learning* will have a growing influence on the quality of higher education curricula. This has been in addition to the influence of discipline support groups, educational developers networks *(EDIN),* educational technology networks *(ILTA).*

Institutional Context

Each institution has their own social, historical, economic and political contexts. These impact on how the curriculum is developed locally. The modularisation of Irish higher education has allowed for the development of student mobility and choice in learning; however, it has also had an impact on how staff struggle to develop building blocks within the curriculum. In a study of two Irish institutions, the local policies and procedures that had grown out of this approach had some negative impact on curriculum sequencing:

> *some of these structural and policy challenges were related to issues such as schools not having much input into the first year of the curriculum, flattening of stages, students coming into modules from multiple routes, and a lack of structure in elective modules. (*O'Neill et al, 2014, p7).

Other local drivers can impact on the curriculum. In my own institution, UCD, in response to the national drivers, recent strategic projects have included: Focus on First Year; Inclusive Learning; Research Informed Teaching; Assessment ReDesign; Blended Learning in Large Classes.

Practice Resource

UCD's strategic *Assessment in First Project* highlights some approaches and a collection of resources for this aspect of the transition to 1st Year Undergraduate (Focus on First Year Project).

Figure 2.2 - Institutional Context

(Image courtesy of UCD Media Services)

These strategic projects in turn can influence curriculum design in Schools and programmes.

Programme and Discipline Context

Resources at School/Department and programme level also influence the nature of the programmes, for example, the nature and number of staff teaching on the programmes. In addition, many programme are strongly situated in the discipline and cognate discipline context. There is a 'growing recognition over the last decade of the importance of maintaining strong, yet permeable, disciplinary boundaries in higher education' (O'Neill & McNamara, 2015, p7). This is also advocated by some key writers in this area (Becher & Trowler, 2001; Neuman, 2001). However, there is also a cautionary view that the professions of today are not the professions of tomorrow and that programme teams also need to explore inter-disciplinary connections. As a way forward from this tension, Trowler suggest that the 'family resemblances concept allows us to adopt a view of disciplines which is not restrictive' (Trowler, 2013, p6).

In Summary

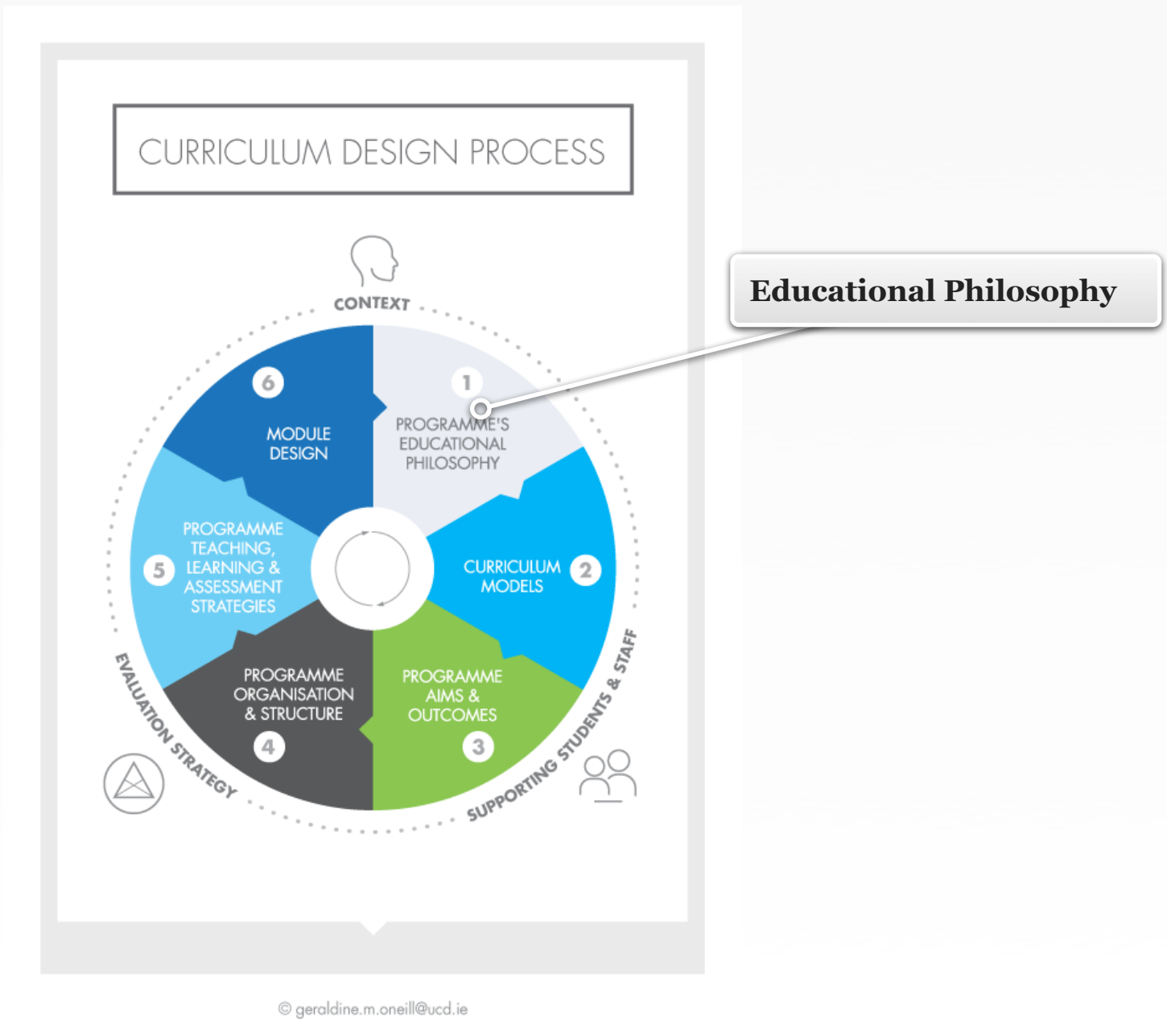
The programme/discipline, institutional, national and international contexts influence the curriculum planning process. In planning for curriculum change it is important to be aware of these changing contexts.

3

Needs Analysis and Educational Philosophy

The starting point of a programme design is both a) the consideration of the need for the programme and b) the development and articulation of a set of values and beliefs that the programme team aspire to, i.e. a programme educational philosophy. This chapter gives some advice on how on how to approach both of these points.

Educational Philosophy



Chapter 3: Needs Analysis and Educational Philosophy

Getting Started

At the very initial stage in considering a new programme, one might ask oneself: *Is there a need for this new programme (or a significant change to an existing one)?* Among others, Diamond (1998) describes this as carrying out a 'needs analysis'. He provides in his practical curriculum design book some useful questions to consider in a needs analysis of a programme. For example:

Practice Exercise

Consider some of the questions present by Diamond (1998) using *Diamond's needs analysis form* (Appendix 1)

- What are the needs of society in which your educational programme exists?
- Is the programme a College/School priority?
- Is there a solid base of academic expertise in the College/University to support the programme?
- Is there sufficient resources to succeed with a new programme?
- What feedback do you have from current students and other stakeholders about existing curricula?
- What information do you need to gather for a programme proposal form

Many institutions now provide support to carry out market surveys, needs analysis and give financial advise on the feasibility and sustainability of new programmes. This is a vital step before work is done on the development of the programme. With the increase in the number of online programmes students now have more opportunities to study anywhere in the world, this can challenge the viability of many new and existing programmes.

Educational Philosophy Development

Having gathered evidence that there is indeed a need for a new (or revised) programme, it is important to draw together the programme team to consider/discuss

your views on how students learn best in this context, i.e. a programme's educational philosophy, sometime referred to as a 'vision and values statement' (Toohey, 2000b; Stark, 2000; O'Neill, 2010). Having an educational philosophy statement at the beginning of a programme can communicate to students and academic staff the rationale for particular teaching, learning and assessment approaches. O'Neill et al (2014), in their research on curriculum design in Irish higher education, highlighted that the lack of a common educational philosophy impacted on programme sequencing and coherence.

What is an Educational Philosophy (Vision and Values)?

An educational philosophy, is a statement agreed by a programme team that sets out, for example, the programme's:

- purpose(s);
- education and subject/discipline/professional values;
- the nature of the learning environment for students;
- the key approaches to teaching, learning and assessment.

The main characteristics of the statement are that it

- has been discussed and negotiated by the key stakeholders in the programme team;
- Is a concise and accessible paragraph(s) placed early in curriculum documentation (6-8 sentences, 1-2 paragraphs approximately);
- Is written in clear language for the key audiences, including prospective and current students, staff, employers;
- Is dynamic and can be modified as the programme team and context changes over the years (UCD Curriculum Review Project, 2015).

Why compose an educational philosophy?

The process of writing will assist your programme team:

- To dialogue and articulate your individual educational and subject/ discipline/professional values;
- To negotiate and agree a shared vision and some common values.

The outcome of the process will:

- Inform a more coherent choice and sequence of programme outcomes; content; teaching, learning and assessment approaches in the programme;
- Assist in the transparency of the programme's key vision and values to students and other stakeholders **(**UCD Curriculum Review Project, 2015)

An exercise to assist in the development of your educational philosophy. Prior to writing your educational philosophy; it is useful to gather information to inform the new or revised programme (see practical exercise).

Practice Exercise

Informing your educational philosophy: Data gathering

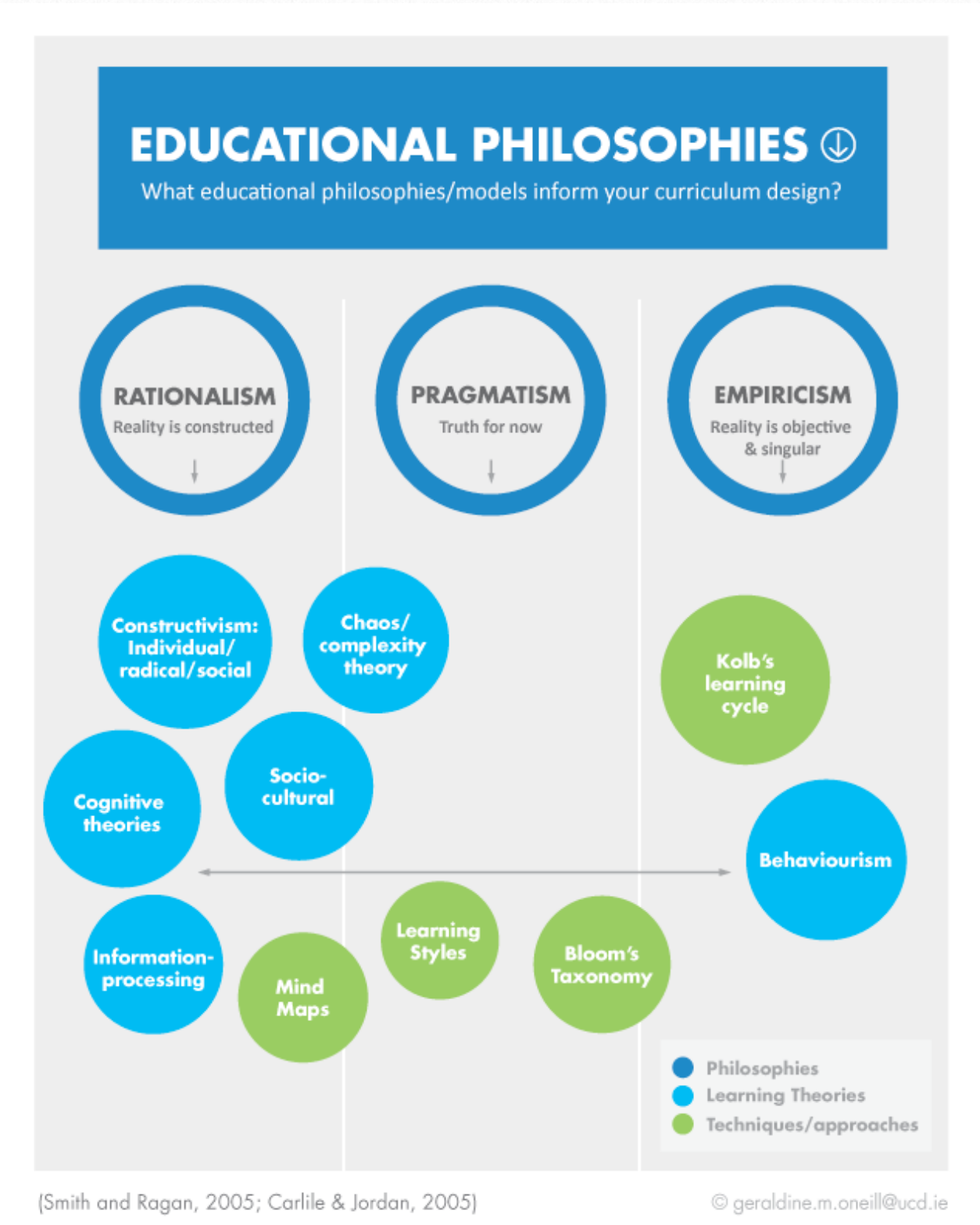
Task:

a) Gather the relevant existing and/or gather any additional data needed to inform the statement, for example, student focus group feedback , ISSE (Irish Survey of Student Engagement) results for the programme, CAO applications, employer feedback, Graduate Destination surveys, external examiner reports, Quality Review/ Professional Accreditation reports, professional body reports, etc.

b) Synthesise the key fnding for this data, and use this to inform your educational

Based on this information, your educational philosophy requires both individuals and a programme team to consider the vision and the values in your programme. You may be interested in the broader philosophies of education as set out by Smith and Ragan (2005), i.e. rationalism, pragmatism or empiricism (Figure 3.1) or the learning theories as presented by Carlile and Jordan (2002) in a very readable and commons copyright resource (See Figure 3.1 also).

Figure 3.1 - Educational Philosophies, Learning theories and Techniques/Approaches



However, to simplify this I have pulled together an example of some statements that you might consider that draws on a range of philosophies and models (see Table 3.1). See Diamond (1998), Smith and Ragan (2005) and Carlile and Jordan (2002) for further readings on these theories.

Prior to any team-based activity, it is worth **individually** considering your own beliefs based on these or other educational philosophies and theories, and note the extent to which you agree with these or similar statements (See Table 3.1).

Table 3.1 - Individual Belief Statements: Level of Agreement.

STATEMENTS					
To what extent to you agree with these statements related to student learning: **(Smith & Ragan, 2005; Carlisle & Jordan, 2005, O'Neill & McMahon, 2005)**	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Knowledge is not transmitted it is constructed *(rationalism: constructivism)*	1	2	3	4	5
2. Knowledge construction is the unique combination of new knowledge and a learner's individual prior knowledge *(individual constructivism)*	1	2	3	4	5
3. It is inappropriate to propose goals for learners because educators do not know what the learners need or want to learn *(radical constructivism)*	1	2	3	4	5
4. All learning should occur in collaborative work groups *(social constructivism)*	1	2	3	4	5
5. Learning, whether in groups or individual interaction with work of an author of a text, involves individuals working towards an agreement or understanding *(social constructivism)*	1	2	3	4	5
6. Problems should not be simplified for novice learners but presented in their full complexity early in the process *(contextualism)*	1	2	3	4	5
7. Learning should occur in a realistic setting *(situated cognition, experiential learning)*	1	2	3	4	5
8. Assessment should be integrated into the task, not a separate activity *(contextualism)*	1	2	3	4	5
9. Knowledge, in a particular field, is negotiated based on an agreement of experts to a common interpretation of experiences: 'truth for now' (*pragmatism)*	1	2	3	4	5
10. Learning has occurred when learners evidence the appropriate response *(Behaviourism)*	1	2	3	4	5
11. Learning is a series of transformations of information through several types of storage or memory *(information processing theory)*	1	2	3	4	5
12. Independent learning can be assisted (scaffolded) by a teacher or more knowledgeable peer *(socio-cultural theory)*	1	2	3	4	5
13. Control and choice in learning, must be shifted, as far as possible, from the teacher to the student *(Student-centred learning)*	1	2	3	4	5

Based on the data gathering exercise (see practical exercise: *'Informing your Educational Philosophy'*) and having considered your individual beliefs, you should be ready to meet as a team to develop your programme's educational philosophy.

Use the questions below (Table 3.2) to assist the team to develop your educational philosophy (vision and values) statement.

Table 3.2 - Questions to Assist the Programme Team in Developing their Statement of Educational Philosophy (UCD Curriculum Review Project, 2015)

QUESTIONS	EXAMPLES
What are the current trends and potential future developments that might impact on the purposes of your programme?	International student mobility; size and growth of domestic education systems; transnational education (TNE); Academic and/or business international research collaboration (British Council, 2012) Student characteristics; pragmatic factors; facilities and opportunities.(Stark, 2000)
Based on these, what is/are the key purpose(s) of your programme, including who is it aimed at?	*Purposes:* Employability, internationalisation, subject specialisation,inter-disciplinary engagement, active citizenship, widening participation, building partnerships and networks, etc.. *Aimed at* students with an interested in a career in science; practitioners in a specialised field; ....
What are the core educational values in your programme? (see Table 3.1 for examples)	Autonomous student learning; opportunities to learn from peers; work experience; thinking reflectively; socially-awareness; curiosity; dedication; motivation; student commitment to their studies; etc..
What do you value most, individually and collectively, in your discipline/subject/ profession?	Theoretical perspective, professionalism, dentity with subject, historical perspective, competent designers, problem-solvers, specialist knowledge, empathy, scientific approach, evidence-based practitioners, etc..
What is the nature of the learning environment?	Strong laboratory component; 50% of work is on-line; work placements integrated into the programme; year abroad encouraged; studio work is key throughout; clinical skills laboratories in early years; lectures aligned with seminars; tutorials are the primary approach; ..
What are the key teaching, learning and assessment approaches that reflect your collective values?	Group work; critically writing; debates; case-based assessments; student presentations; essays; online MCQ's; etc..

Where there is disagreement, negotiate how these or other values can be accommodated within the programme while still managing to provide a rationale to students as to why they may experience different approaches. For example, all staff may not agree

fully on the concept of student-centered learning, but there could be a decision, communicated to student, that this will be particularly accommodated in certain aspects of the programme.

Based on this exercise, write the start of your educational philosophy in language that the students and the wider stakeholders will understand.

It is useful, as noted earlier, to include in your philosophy the programme's:

- purpose(s);
- education and subject/discipline/professional values;
- the nature of the learning environment for students;
- the key approaches to teaching, learning and assessment.

An example of one that I have created is as follows:

BSc in Health Science Policy (mock programme and statement)

This programme is aimed at students who wish to develop a career or further studies in health science policy or related disciplines (Purposes). We value and therefore encourage our students to be active, motivated, autonomous learners who have a critical and reflective approach to health science policy (Values). We aim to provide a learning environment that will encourage students to constructively challenge policies and related practices, individually or as part of a team, so they can develop their own and other's leadership and advocacy skills. Tutorials and online discussion forums are a key element in the programme's design (Nature of the learning environment). As a result of this approach to learning, the programme in particular uses teaching, learning and assessment approaches such as debates, case studies, project work, policy development/analysis, work placements, online group work and includes many advocacy groups and individuals in the design and delivery of the curriculum (Teaching & Learning Approaches) (UCD Curriculum Review project, 2015)

Students needs and pathways.

At this very early stage it is also worth discussing whether there are any requirements for programme entry or student support. In addition it is also useful to consider the needs of the students on this programme. Some questions to answer are:

- Do you need to develop particular pathways to accommodate students with different prior knowledge?
- Do you need to develop a suite of electives in order to challenge students to achieve a range of different outcomes?
- Should you consider a greater choice of assessment approaches, to be flexible with different students?
- Consider how your programme links with entry and exit levels in the Irish National Framework for Qualifications (link to http://www.nfq.ie/nfq/en/) or where appropriate relevant international frameworks.

In Summary

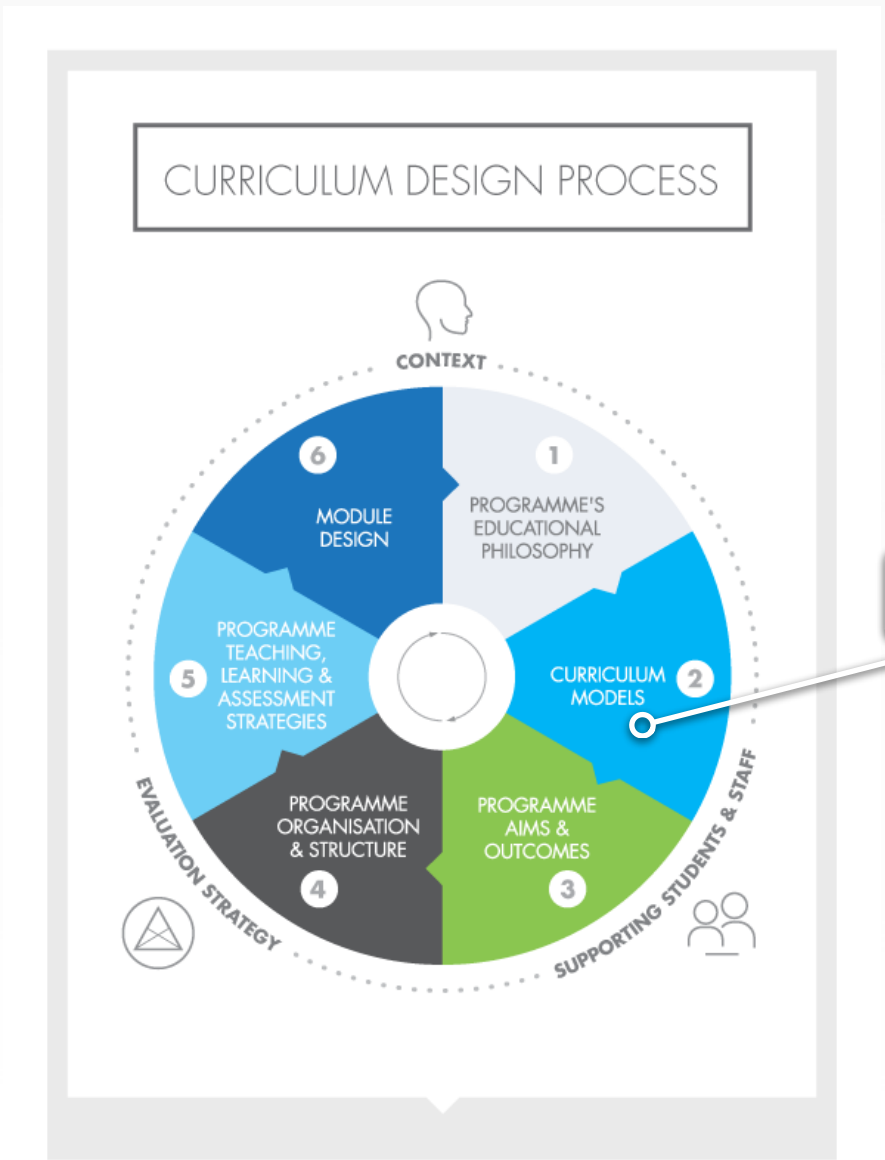
The starting point of a programme design is a) the consideration of the needs and resources for the programme; b) the development and articulation of a vision and set of values that the programme team aspire to, i.e. a programme's educational philosophy; and c) early consideration of students needs and pathways.

4

Curriculum Models

This chapter explores some of the curriculum models used in higher education, and it encourages you to consider whether one or a combination of models suit your programme.

Curriculum Models



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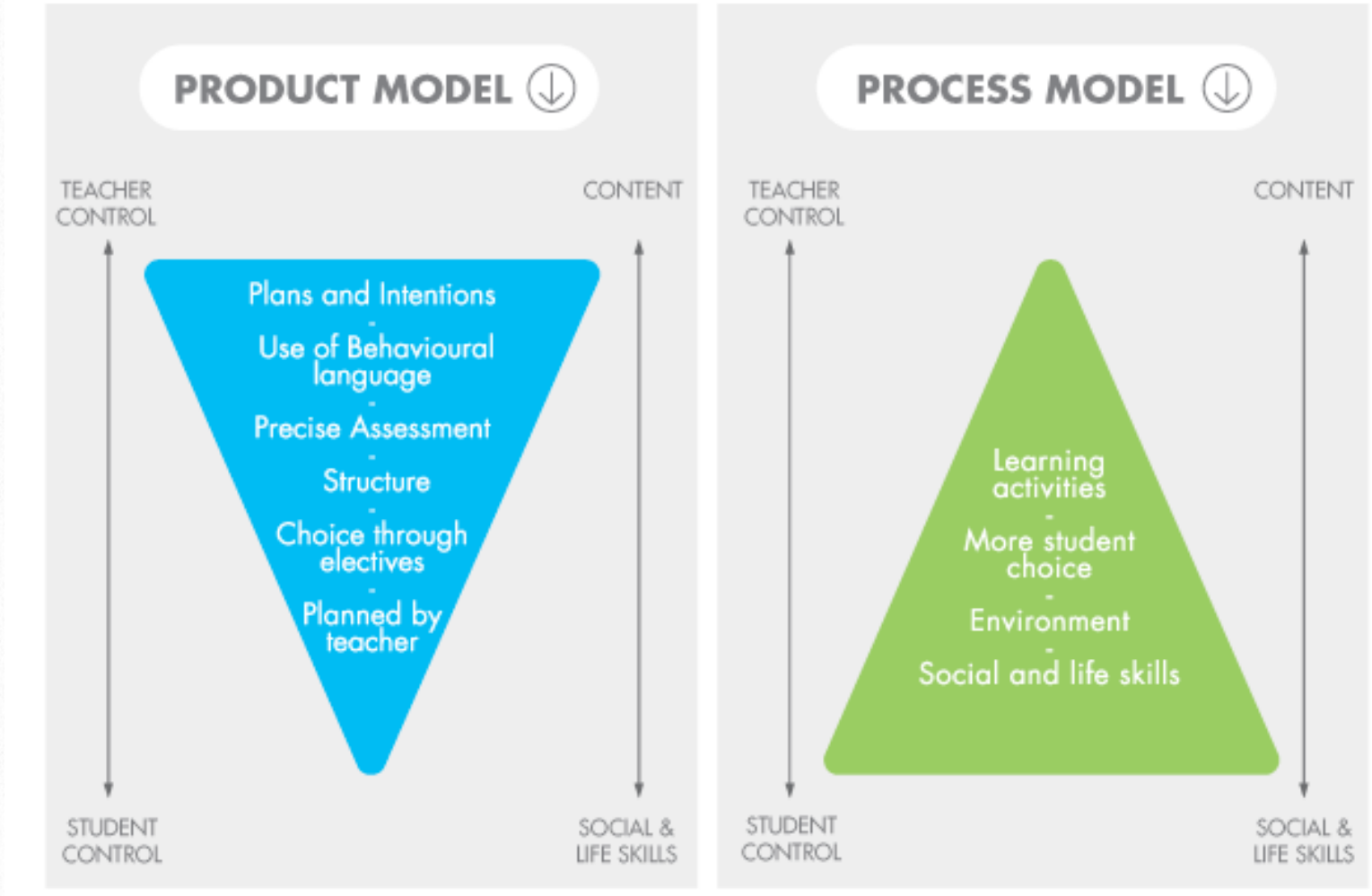
Chapter 4: Curriculum Models

Having created your educational philosophy, the programme team should have a shared view of the teaching and learning approaches that they consider important. At this point it is worth exploring whether there are any curriculum models that would suit all or aspects of your programme. Curriculum models help designers to systematically and transparently map out the rationale for the use of particular teaching, learning and assessment approaches. Ornstein and Hunkins (2009) suggest that although curriculum development models are technically useful, they often overlook the human aspect such as the personal attitudes, feelings and values involved in curriculum making. Therefore they are not a recipe and should not be a substitute for using your professional and personal judgement on what is a good approach to enhancing student learning.

A commonly described, maybe slightly simplistic version, of polarised curriculum models are those referred to by many authors as the 'Product Model' and the 'Process Model'. Neary (2003b) describes the emphasises of the former on plans and intentions and the latter on activities and effects (The Process Model) (See Figure 4.1). In most programmes there are elements of both of these models, however, your programme may emphasise one more than the other.

Figure 4.1 - The Product and Process Models of Curriculum Development



The Product Model can be traced to the writings of Tyler (1949) who greatly influenced curriculum development in America (O'Neill, 2010):

> *Models that developed out of Tyler's work, such as Popham and Baker (1970), were criticised for their over emphasis on learning objectives and were viewed as employing very technical, means-to-end reasoning. The higher education context in Europe, which has been strongly influenced by the 1999 Bologna Declaration (European Commission, 2009), uses a model not dissimilar to Tyler's work.* (O'Neill, 2010, p63).

The Product Model, however, has been valuable in developing and communicating transparent outcomes to the student population and has moved emphasis away from lists of content. Recent literature in this area suggests that in using this model, care should be taken not to be overly prescriptive when writing learning outcomes (Gosling, 2009; Hussey & Smith, 2008; Maher, 2004; Hussey & Smith, 2003). For example, Hussey and Smith maintain that:

> *accepting that student motivation is an essential element in learning, we propose that those who teach should begin to reclaim learning outcomes and begin to frame them more broadly and flexibly, to allow for demonstrations and expressions of appreciation, enjoyment and even pleasure, in the full knowledge that such outcomes pose problems for assessment*. (Hussey & Smith, 2003, p367)

Knight (2001) expresses the advantages of a more Process Model of curriculum planning in comparison to the Product. He notes it makes sense to plan a curriculum in this intuitive way, reassured by the claim from complexity theory that what matters is getting the ingredients— the processes, messages and conditions— right and trusting that good outcomes will follow. This suggests that when working in a more Product Model of learning outcomes, it may be more valuable to first consider what it is you are really trying to achieve in your teaching/learning activities and to then write your programme and/or module learning outcomes.

In addition to the Process and Product Model, there are a range of different, more specific, models that individually or collectively could suit your programme design. Some of the curriculum models have grown out of different educational contexts, such as second level (School), Higher and Adult Education. However, many are transferable across the different areas. Some are described as 'models' and as they become more specific they may be referred to 'designs', i.e. subject-centred designs. Table 4.1 gives an overview of some of these models.

Table 4.1 - An Overview of the Curriculum Models

Curriculum Models (Designs)					
Higher Education Literature	*2nd Level (School) Literature*	*2nd Level (School) Literature*	*Higher Education Literature*	*2nd Level (School) Literature*	*Higher & Further Education Literature*
Product	Technical-Scientific [1]	Tyler: Four Basic Principles[3]. Backward design (Wiggins & McTighe)[1]	Performance or systems approach Traditional or Discipline based curriculum [3]	Subject-centered designs[4]	Constructive alignment[6] Graduate attributes/ Competency based (see also Fink[5]) Broad Fields[4] Correlation Design[4] Theme based curriculum
		Cognitive Thought Model (Lakoff & Nunez) [1]	Cognitive Approach[3] Social-constructivist approach Threshold concepts[7]		
Process	Non-Technical [1]	The Deliberation Model: Conversational approaches[1]	Experiential or personal relevance[3]	Learner-centered design[4]	Negotiated curriculum Process-based curriculum
		Post Positivism models[1]	Social critical approach[3]	Problem-centered designs[4]	Integrated curriculum design[5] Problem/enquiry based models[3]
1= Ornstein & Hunkins (20004); Knight (2001), Neary (2003b); 3= Toohey (2000); 4= Ornstein & Hunkins (2009); 5= Fink (2003); 6= Biggs (2004); 7= Land (2005)					

Ornstein and Hunkins (2004) emphasise the importance of planning in curriculum design and they also note that although many curriculum models exist, most can be classified as Technical or Non-Technical approaches. This break-down is not dissimilar to the Product/Process breakdown of curriculum models (Table 4.1). They maintain that these approaches should not be seen as dualistic neither being positive or negative. In the Technical–Scientific approach, curriculum development is a useful blueprint for structuring the learning environment. The approach has been described as logical, efficient and effective in delivering education. The Non-Technical, in contrast, has been described as subjective, personal, aesthetic and focuses on the learner (Ornstein & Hunkins, 2004, p207). Non-Technical parallels some of the ideas in the Process Model (See Table 4.2).

Table 4.2 - Comparison of Technical/Scientific and Non-Technical/Non-Scientific Curriculum Approaches

Technical /Scientific	Non Technical/non scientific
• Curriculum as plan or blueprint	• Questions assumptions of technical approach
• Definable process	• Questions universality/objectivity
• Means/end analysis	• It stresses personal, subjective aesthetic nature of curriculum
• Usually pre-ordained objectives	• Focus on learner
• Emphasis on efficiency	• View learning as holistic
• Criticised as too linear	• Students as a participants
• Tyler	

In the Technical Scientific Approach, there are many different curriculum models. The original work by Tyler (1949) can be seen as one of the models. His work equates with the Product Model and is the foundation of the current Learning Outcomes Curriculum. A variation of the approach is the Backward Design Model, advocated by Wiggins and McTighe (2010), is very popular with professional programmes as it links with the idea of graduate attributes and competences. This approach is frequently used in curriculum design in the Irish context (O'Neill, 2010). Fink's (2003) popular curriculum model, although non-technical and humanistic in its approach, also draws on the concept of 'looking-back' to design a programme.

Table 4.3 - Two Examples of the Technical/Scientific Approach

The Deliberative Model	Post-positivism models
• Focus on how select content, procedures and questions one would employ • Reality exists in circles, not linear steps. • Draws on systems theory • E.g: Hunkins conversation approach	• Embrace uncertainty, chaos allowing order to emerge • Curriculum should help student search for instabilities • These do not result in a specified model (usually) but emphasise the social and emergent quality of curriculum

Similarly, in the Non-Technical, non-scientific approach there are many different curriculum models (Ornstein and Hunkins, 2004). The key focus in this approach is not on the content, or learning outcomes, but on the learner. 'Subject matter tentatively selected in the development process has importance only to the degree that a student can find meaning in it for himself or herself' (Ornstein and Hunkins, 2004, p207). The more student-centred approaches would align themselves with this approach. In higher education programmes today, there are aspects of this approach built in, often in the later years of a programme. However, it is important to consider whether this approach can be strengthened in many programmes to allow for a more student-centred approach.

Two examples of the non-technical approach are set out in Table 4.4. The Deliberative Model (Ornstein & Hunkins, 2004) addresses the gap between complete freedom for students to choose what they would like to learn and the prescription of learning. The model suggests a deliberative process whereby the educators make known their ideas to the students and together plan a educational journey, constantly feeding back and adjusting this plan. The post-positivism models take this one step further, where they advocate less intervention by educators, even advocating chaos to occur in order that order may result. In this approach 'students are not presented with ideas or information with which they will agree, but with encounters with content arranged as such that students will see that they have to seek more to find frameworks and generate fresh understandings' (Ornstein & Hunkins, 2004, p213). This approach is challenging to record, without being prescriptive, however it can allow for unexpected and creative learning to occur.

Table 4.4 - Two Examples of the Non-Technical/Non-Scientific Approach

Example: Tylers (1949) Four Basic Principles	Backward Design Model (Wiggins & McTighe)
• Define the purposes of the Curriculum • Define the educational experiences related to the purposes • Define the organisation of these experiences • Define the evaluation of the purposes	• Draws from Architecture, engineering and educational design • Commences with a statement of end-points • What do you want students to know, do...(discipline and non-discipline) • What evidence will be collected to assess the success of the curriculum ?

In the higher education literature, Toohey's (2000) key textbook on curriculum design describes the main curriculum models in this context. She elaborates on how these models view knowledge, express goals, organise content, assess learning and what resources are needed. She also gives examples of where these models are used in different disciplines. Table 4.1 sets out how these align with the other authors mentioned in this resource guide. Her experiential and social crucial models are elaborated on in Table 4.5.

Table 4.5 - The Experiential and Social Critical Models (Toohey , 2000)

Experiential	Social Critical
• Belief in importance of personal relevance and learning from experience • Adults learn in order to be able to do, solve problems, live life in a more satisfying way • Curriculum organised around life situations • Authentic assessments	• 'Seeks to develop a critical consciousness in students so that student become aware of the present ills of society and are motivated to alleviate them' • Content drawn from significant social problems of the day • Collaborative group work/projects

There is a collection of models that are organised around how students cognitively process information either individually or how this is enhanced by groups/peers. These can vary from the more cognitive information processing models to the more social models, i.e. social constructivism. A popular approach that is emerging in this area (which is also aligned with subject-centred design) is that of organising a curriculum around the key challenging, yet significant, conceptual areas in a discipline. Land et al (2005) have described these areas as threshold concepts. This approach seems to have become popu-

lar with the more technical/scientific approaches, for example, 'programming' as a threshold concept in Computer Science.

In addition, the Concept Curriculum, described by Erickson (2002) and more recently by Giddens, Wright and Gray (2012) organises curricula with a finite set of higher concepts derived from the discipline. This model has been popular in nursing curricula.

Another way of exploring these models is examining them in more depth from the Subject-Centred or Learner-Centred Models (described as 'Designs' by Ornstein & Hunkins, 2004). As can be seen in Table 4.1, this idea can also be traced back to the idea of Product/Process or Technical/Non-Technical divisions. Tables 4.6 and 4.7 list out some ways in which these designs are approached.

Table 4.6- Subject-Centred Designs (Ornstein & Hunkins, 2004)

Discipline-Based	Centred on the conceptual clusters of the discipline that inform the work of people in the discipline (the designs ignore knowledge that lies between disciplines
Broad Fields	Merge several disciplines into an interdisciplinary subject area (allow more correlation and integration of knowledge), i.e. Science, Social studies, Humanities.
Conceptual Clusters	Broad fields can have conceptual clusters, e.g. 'Science, Technology and Society' or 'Colonialism'
Theme-Based	Emphasizes importance of finding patterns/relationships between concepts. Based on culture and experiences

Table 4.7: Learner-Centred Designs (Ornstein & Hunkins, 2004)

Negotiated	Students, within the boundaries of the resources available, negotiate what they would like to or need to learn. Use of learning contracts are a common assessment with this approach.
Process-based	Emphasis is on the process of learning, not on the content. For example, structured around critical thinking, reflective writing. Assessment should align with this, including use of self assessment, reflection.
Integrated curriculum	Designs that encourage integration of concepts across, within and to future knowledge. For example, the spiral curriculum.

Many of the Learner-Centred designs are used where educators feel the students may be able to make more informed decisions, such as Masters programmes and in Adult Education programmes. However, where resources will allow, this assumption could be challenged and maybe students in earlier years of a programme or throughout an undergraduate programme may be able to make these decisions. Problem-Based learning is a curriculum model particularly, but not exclusively, advocated in professional programmes (For more details on this approach see Barrett et al (2005) *Handbook of Enquiry and Problem-based Learning Irish Case Studies and International Perspectives* http://www.aishe.org/readings/2005-2/).

Some curriculum models at Masters level

Many of the models mentioned apply to both undergraduate and graduate level; however the growing number of Masters programmes require some particular emphasis and many of them use blended or fully online models (Table 4.8).

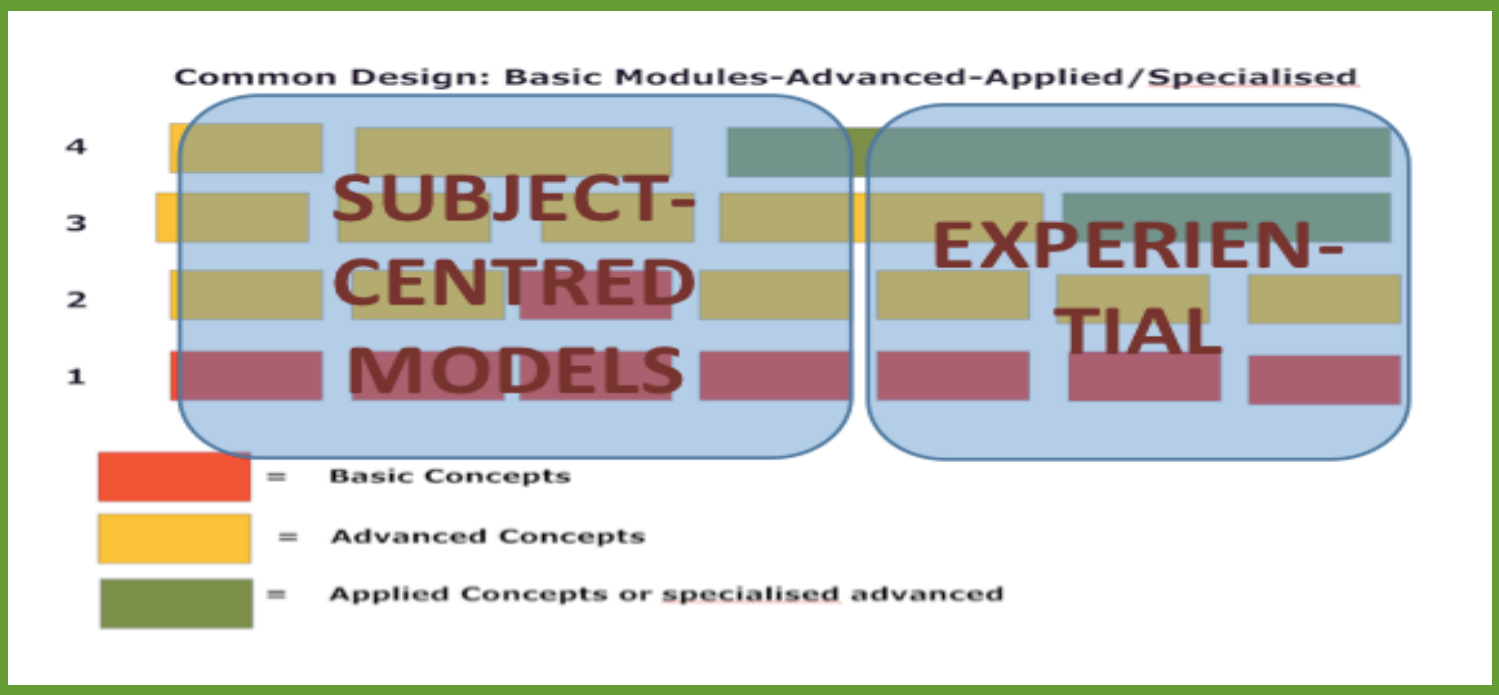
Table 4.8 - Some Common Curriculum Models for Post Graduate

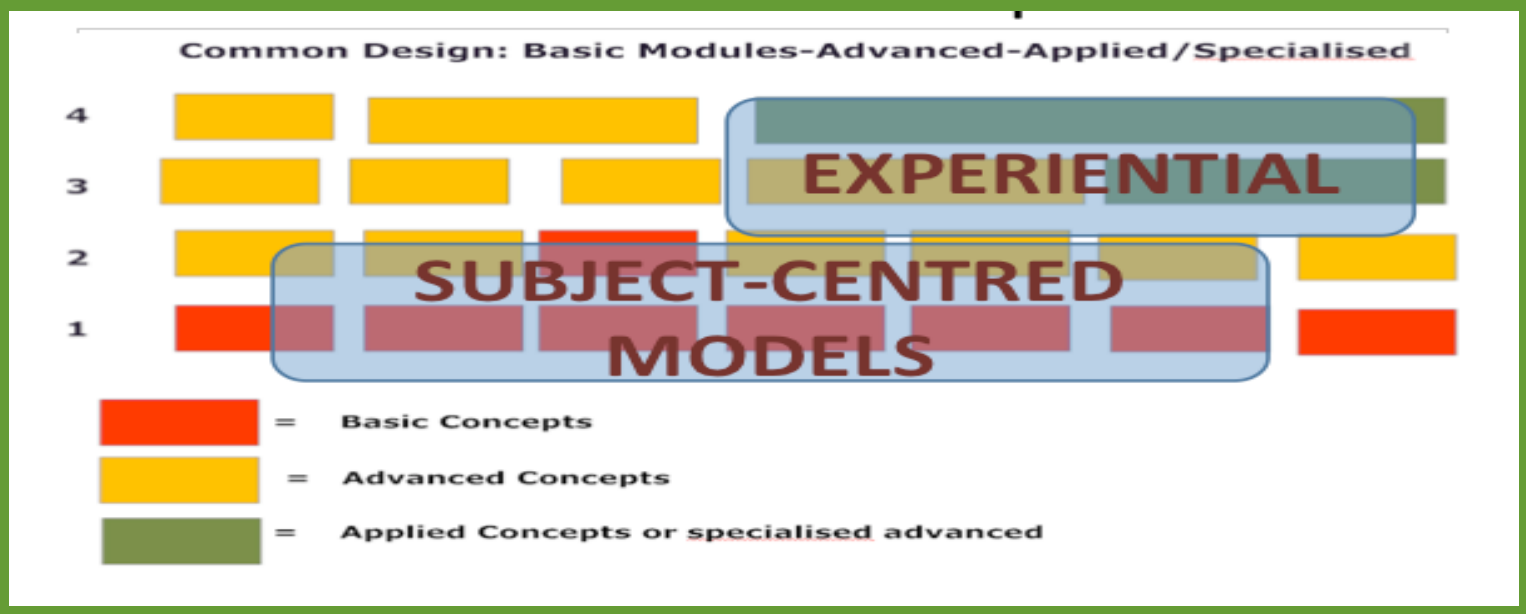
Product	**Discipline-based**	Centre on conceptual structure of the discipline (ignores knowledge between disciplines). (Ornstein & Hunkins, 2009; O'Neill 2010)
	Theme-Based Curriculum	Emphasises the importance of finding patterns/relationships between concepts. Based on culture, experiences (Ornstein & Hunkins, 2009). Can be adapted 'clusters' as they emerge across disciplinary boundaries. Lansu et al (2013)
	Threshold concept (Land et al 2008)	A 'threshold concept' is a core concept that, once understood, transforms the learner's way of looking at, and acting in, the discipline. '*It represents a transformed understanding, without which the learner cannot significantly progress',* explains Dr Bettie Higgs, NAIRTL Director. 'A focus on threshold concepts can free-up an overcrowded curriculum', Dr Higgs concludes. http://www.ucd.ie/teaching/news/news_items/name,200213,en.html (See also O'Mahony et al, 2014)
Process	**Enquiry or Problem-based learning**	Engagement with a complex problem or scenario that is sufficiently open-ended to allow a variety of responses or solutions. Students direct the lines of enquiry and the methods employed. The enquiry requires students to draw on existing knowledge and identify their required learning needs.Tasks stimulate curiosity in the students, encouraging them to actively explore and seek out new evidence. Responsibility falls on the student to analyse and present that evidence in appropriate ways and in support of their own response to the problem. Group work is essential to the process. (Kahn & O'Rourke, 2005)
	Dialogue approaches (activity and conversation) Salmon's (2011) 'five-stage' model	Salmon's model, which moves through *'access and motivation', 'online socialisation', 'information exchange', 'knowledge construction' and 'development'*(2011, p. 32), emphasises that from a dialogic perspective on eLearninglearners need to be 'scaffolded' in terms of the content but also in relation to the eLearningenvironment (cited in Baker & Watson, 2013)
	Laurillard's (2002) 'conversational framework'	Laurillard (2002) sees learning as requiring a pedagogic framework and support that guides learners to goals through dialogue which is discursive, adaptive, interactive and reflective.
	Other variations	See also Clinton & Rieber (2010) (Example from Studio experience)
		See also Baker & Watson (2013) (Example from English Language)
	Social Critical	Socially critical ideology '*seeks to develop a critical consciousness in students so that they become aware of the present ills of our society and are motivated to alleviate them'* (Toohey, 1999, 63). Also Peach, S. (2010)
	Negotiated curriculum	Students, within the boundaries of the resources available, negotiate what they will learn. Use of learning contracts, variety of assessments. (Ornstein & Hunkins, 2009)
	Experiential and/or Reflection	Belief in importance of personal relevance and learning from experience . Adult learn in order to be able to solve problems. Curriculum organised around life situations, Authentic assessment (Toohey, 1999, O'Neill 2010). Can include reflective practitioner models.

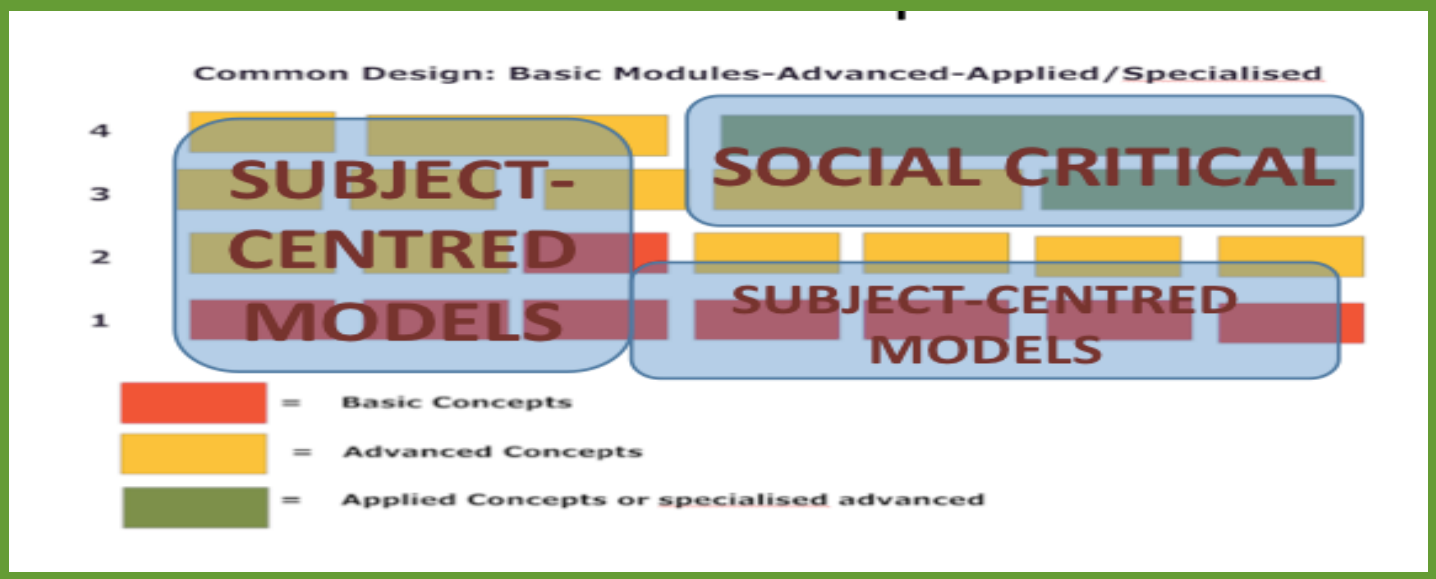
Practice Exercise

Exercise to reflect on your programme's curriculum model(s)

Have a look at the following five examples and consider the model(s), their relationships and what best suits your programme.







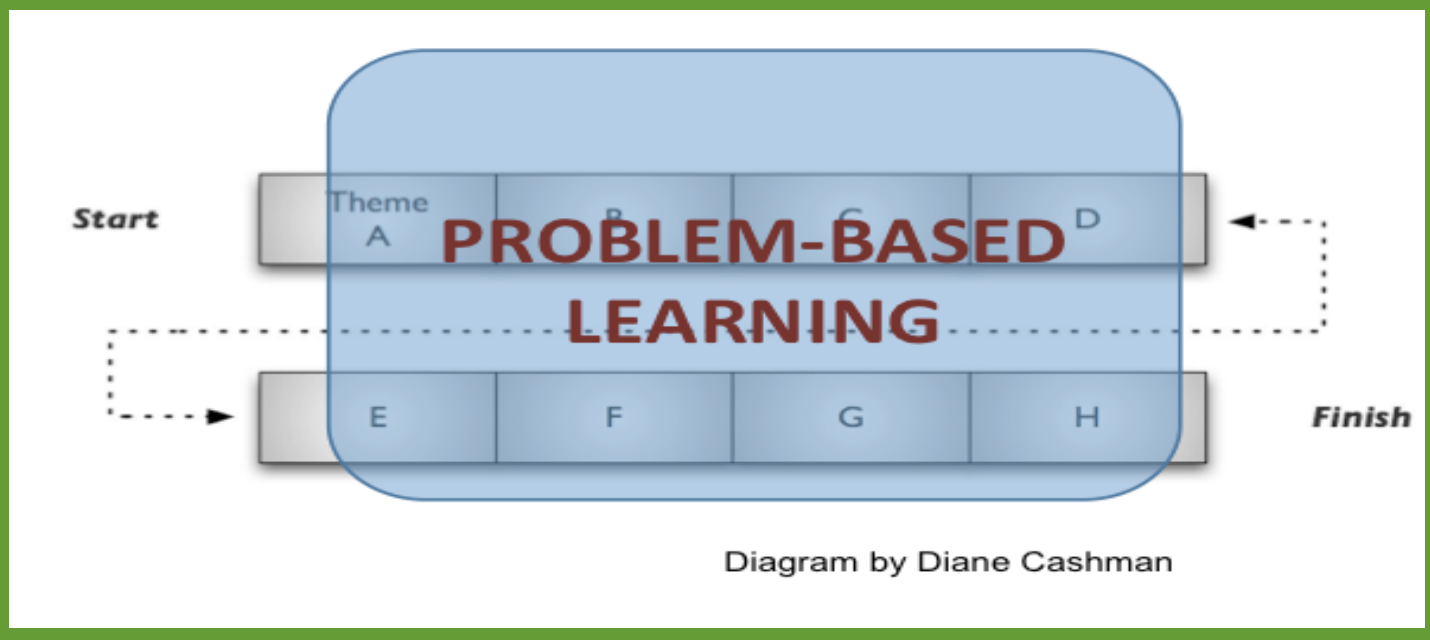
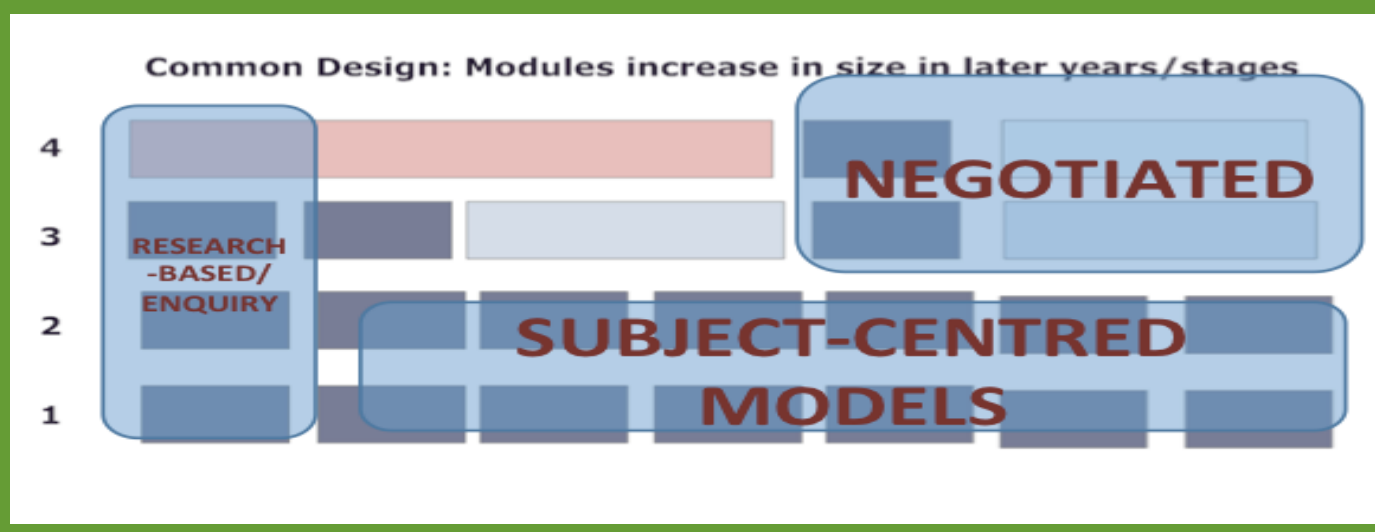


Diagram by Diane Cashman



In Conclusion

This chapter gives an overview of the literature on these curriculum models. No one model is ideal and no one model may suit a full programme. However, identifying and being consistent with these models will help support cohesion and clarity of approaches in your programme. For example, it is typical in some Science and Professional Health Science programmes that the early years may have a more Technical-Scientific approach, whereas later years may have a more experiential approach. However, in relation to student engagement, could these models be more integrated and streamlined across a programme? Is it valuable to think back over a programme and question what would a graduate remember, and still find helpful, three years later (Fink, 2003)?

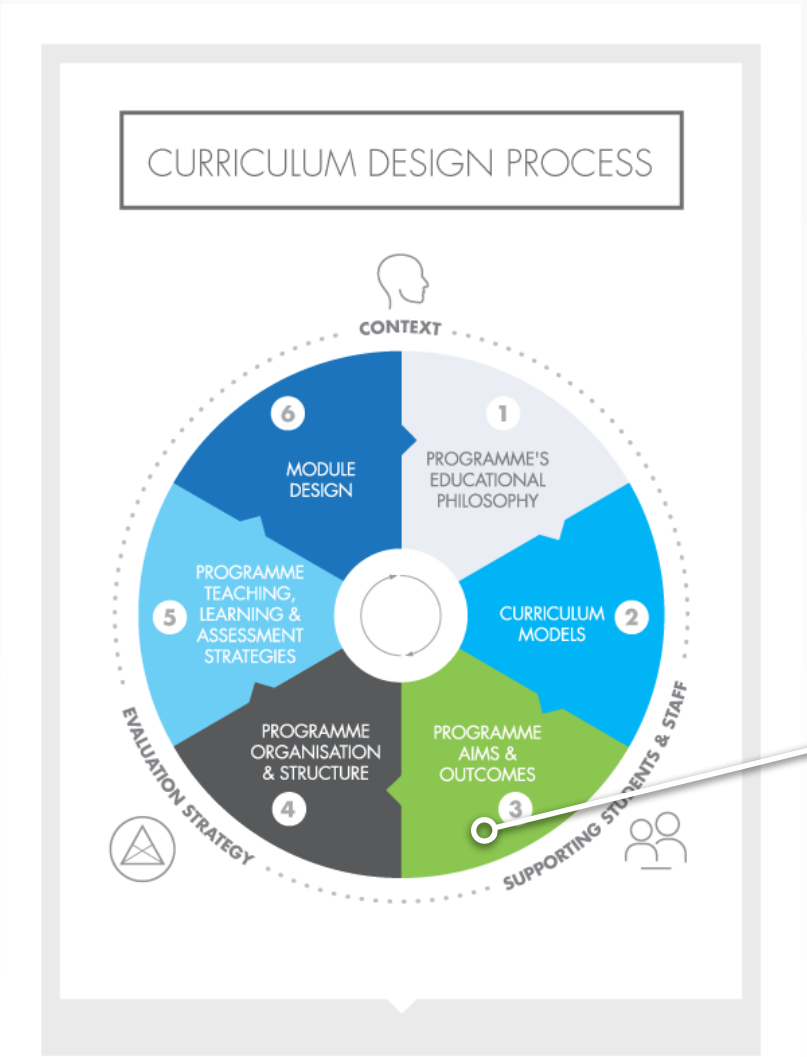
As a programme team it is worth exploring your views on these different models and using them to help design and deliver your programme to obtain the best and most coherent educational experience for both your students and the staff who teach on this programme.

5

Programme Aims and Outcomes

The development of programme graduate attributes, aims and/or outcomes assist in the decisions around curriculum design, activities and content. They also communicate to the students and other stakeholders the purpose and focus of the programme. This chapter highlights the difference between some of these terms and gives some practical ideas for writing them.

Programme Aims and Outcomes



Programme Aims and Outcomes

Programme Aims and Outcomes

Graduate Attributes

> '*Graduate attributes are the qualities, skills and understandings a university community agrees its students should develop during their time with the institution. These attributes include but go beyond the disciplinary expertise or technical knowledge that has traditionally formed the core of most university courses'*. (Bowden et al, 2000)

Over the last 20 years, there has been an international trend towards the development of institutional graduate attributes. This has been driven by the need for institutions to describe the uniqueness of their graduates to their current, potential students and the wider stakeholder groups, i.e. professional bodies, funding organisations. There has also been a growing practice of using them as a means of providing more efficient assessment practices and developing coherency in the curriculum; however, care needs to be taken in how these are contextualised at the local level of the discipline. For a summary of the debate on the use and mapping of graduate attributes, see O'Neill (2009). The full article is available in Appendix 4, under commons copyright.

Institutional Graduate attributes are often, although not always, written as a noun or a trait, for example:

- **'Scholars, Global Citizens, Leaders, Professionals' (University of New South Wales, Australia)**.
- **'Knowledgable, Proactive, Creative, Responsible, Collaborative, Articulate' (University of Limerick, Ireland)**

In situations where institutions have developed a set of graduate attributes, these can be a useful starting point for programmes working on their own attributes, aims and/or outcomes.

Writing Programme Aims/Goals and Programme Outcomes

Programme Aims/Goals

Adam (2004) notes that aims are concerned with teaching and the teacher's intentions whilst learning outcomes are concerned with learning. Moon (2002) suggests that one

way to distinguish aims from learning outcomes is that aims indicate the general content, direction and intentions behind the programme from the designer/teacher viewpoint. Programme aims describe intention of the entire programme and can be written as follows:

The programme:

- prepares students to/for….

-develops competences in the areas of….

-provides students with.

In practice, examples of programme aims are usually in the region of 3-4 broad aims.

Programme Outcomes (PO)

Programme outcomres are an expression contained within a programme specification of what a typical learner will have achieved at the end of the programme. Programme outcomes are related to the qualification level and will relate to the sum of the experience of learners on a particular programme (University of Exeter, 2004). At programme level, the term programme outcomes are often used interchangeably with the term programme graduate attributes, when written as described in Table 5.1.

There is an argument that outcomes at the level of a programme are not possible as it is too difficult to imagine what a student might do by the end of a lengthy programme (Hussey and Smith, 2008). They argue that programme outcomes are '*different from those used to specify what students will learn from a module; they would have to be an order of magnitude greater in scope and complexity'* (p113). Outcomes at module level are more realistic. The sum of all the module outcomes, however, would be quite unwielding. Programme aims on the other hand are often focusing on what the staff are trying to achieve. Reflecting on these dilemmas, it is still worth attempting to synthesize some key student-oriented programme outcomes in order to organise the teaching, learning and assessment strategies.

Programme outcomes are the knowledge, skills and abilities students should possess when they graduate from a programme. Resist the temptation to write outcomes about

curricular inputs, programme resources, staff characteristics or teaching methods. Programme outcomes are related to demonstrated behaviours of th**e** students who graduate not characteristics of the programme or its staff (Arizona State University, 2011). They are the answer to the question 'What should programme graduates know and be able to do at the time of programme completion?' (Arizona State University, 2011). When considering programme outcomes it is worth considering Fink's (2003) key questions on curriculum design:

- *What is it I hope that students will have learned, that will still be there and have value, **several years** after the course is over?* (outcomes) and
- *'What would the students have to do to convince me that they have achieved these learning goals (outcomes)?'* (assessment)

Stepping back to view the more long-term outcomes for your programme should assist you in considering the bigger picture and not focusing on the detail of the 'content' that is covered. It also assists you in focusing on what the students might achieve as opposed to what you will teach. Programme outcomes similar to module outcomes are written in the language of what your programme team intend the students will achieve by the end of the programme.

In summary:

> *A programme outcomes is what a typical student is expected to achieve through engagement in and completion of the programme. The program outcomes are the knowledge skills and attitudes students possess when they graduate from a programme. The key characteristics of program outcomes are that they are:*
>
> *1) Student focused, i.e. The student should be able to…*
>
> *2) High-level outcomes that are greater in scope and complexity than module outcomes*
>
> *3) Guides by professional, inter-disciplinary and institutional graduate attributes*
>
> *4) Informed by international, national and institutional level guidelines.* (UCD Curriculum Review Project, 2015)

Table 5.1 - Guidelines for Writing Programme Outcomes
1. Each Programme should articulate a high level ability that the student will have developed. UCD Curriculum Review Project, 2015). The outcomes should reflect the expectations of this level from Institutional, National (NQAI , 2003; QQI 2014, 2015) or International Frameworks i.e. QAA Scotland (2013).
2. As programme outcomes are intended as an overview, a useful number of outcomes for a masters programme is 6-8 and for an undergraduate programme is 8-12. Some programmes may also have a further extended list to meet the needs of professional bodies. (UCD Curriculum Review Project, 2015) Programme outcomes are at a level to allow for an overview of the intended outcomes for all students on a programme, i.e. they are not a sum of all the modules' learning outcomes or a list of all competencies in a programme.
3. Write the outcomes in clear language, so it is evident to multiple audiences what students are expected to achieve through the programme. (UCD Curriculum Review Project, 2015). For example, perspective students need to be able to have some understanding of the language prior to commencing the programme.
4. Use actions verbs when writing outcomes to show what students will be able to know and do. For guidance on the languages of programme outcomes, see learning taxonomies guide O'Neill & Murphy, 2010. (UCD Curriculum Review Project, 2015)**.** Write outcomes that are focused on demonstrable behaviours rather than what students *know, think, understand, appreciate, etc.* What someone knows, thinks, understands or appreciates is invisible and cannot be directly measured. *Not observable*: Graduates of the BA programme will think critically. *Observable*: Graduates of the BA programme will interpret, analyze, evaluate and construct arguments (Arizona State University, 2011).
5. Align the outcomes with international, national and institutional outcomes (together with professional outcomes where appropriate) (UCD Curriculum Review Project, 2015). The connection between any existing institutional graduate attributes and the programme outcomes should be clear.
6. Decide whether you want to embed key transferrable skills with related knowledge outcomes and/or write specific outcomes of transferable skills (UCD Curriculum Review Project, 2015)**.** For example: Student should demonstrate the ability to critically analyse or 'analyse the religious and political influences on 18th century European artists' (Arizona State University, 2011).
7. **Peer review draft outcomes with key stakeholders** (UCD Curriculum Review Project, 2015). Following a first draft of your programme outcomes, check that they are easily understood by students and in addition ask some colleagues to peer review them.
(adapted from UCD Curriculum Review Project, 2015 Arizona State University, 2011)

Practice Exercise

Individually and then as a programme team, write your programme learning outcomes and then cross-reference them to your institutional and/or national outcomes/attributes. See also some guiding questions to prompt thinking and suggestions for carrying out this task in UCD's Curriculum Review and Enhancement

Masters level outcomes

Many new programmes are at Masters level and there has been a wealth of recent literature on what is 'Masterness' (QAA UK, 2010; QAA, Scotland, 2013, 2013a). The following highlight some indicators of Mastersness at Irish and UK levels.

Irish Higher Education Indicators.

The key indicator for masterness in the Irish context is the Level 9 descriptors of the National Framework for Qualifications (Table 5.2).

Table 5.2 - Masters Degree (Irish NFQ Level 9 – major award)

Title	Master Degree (NQF Level 9)
Purpose	This is a multi-purpose award type. The knowledge, skills mad competence acquired are relevant to personal development, participation in society and community, employment and access to additional education and training.
Volume	Large
Knowledge-breadth	A systematic understanding of knowledge at, or informed by, the forefront of a field of learning
Knowledge-kind	A critical awareness of current problems and/or new insights, generally informed by the forefront of a field of learning.
Know-how and skill-range	Demonstrate a range of standard and specialised research or equivalent tools and techniques of enquiry.
Know-how and skill-selectivity	Select from complex and advanced skills across a field or learning: develop new skills to a high level, including novel and emerging technique.
Competence-context	Act in a wide and often unpredictable variety of professional levels and ill defined contexts
Competence-role	Take a significant responsibility for the work of individuals and groups: lead and initiate activity
Competence-learning to learn	Learn to self-evaluate and take responsibility for continuing academic/ professional development
Competence-Insight	Scrutinies and reflect on social norms and relationships and act to change them

It is important to note that the level at which programme outcomes are pitched for Postgraduate Diplomas or Certificates is the same as a Masters level, with the exception of the volume of study which is 'medium'.

Masters in UK

The UK literature notes that in general, there are three types of Masters: Research Masters; Specialised/advanced study programmes; Masters by professional/practices (Brown, 2015).

Master programmes should:

- Deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data and communicate their conclusions clearly to specialist and non-specialist audiences;
- demonstrate self-direction and originality in tackling and solving problems;
- act autonomously in planning and implementing tasks at a professional or equivalent level;
- continue to advance their knowledge and understanding and
- develop new skills to a high level (Brown, 2015).

The following outcomes may be important for more work-based Masters: '*the exercise of initiative and personal responsibility; decision-making in complex and unpredictable situations; and the independent learning ability required for continuing professional development*' (QAA, UK 2010, p16).

Lord (2008) noted that Masters programmes:

> *Demonstrate originality in solving problems and applying knowledge; critically evaluate current research in the field; deal with complex issues both systematically and creatively; clearly communicate conclusions to specialist and non-specialist audiences* (Lord, 2008, p. 4).

Clinical practice Masters should incorporate: 'high level of clinical reasoning', critical analysis in approach to practice' and 'critical use of evidence to inform practice' (Rush-

ton & Lindsay, 2008). In the Scottish QAA (2013) system, the key facets or indicators of Mastersness were:

- Abstraction
- Depth (of learning)
- Research and Enquiry
- Complexity
- Autonomy
- Unpredictability
- Professionalism

The Scottish QAA (2013) also provide a very useful resource that elaborates on the meaning of these indicators and on the wider debate around learning at Masters level (QAA, 2013; 2013a).

In summary

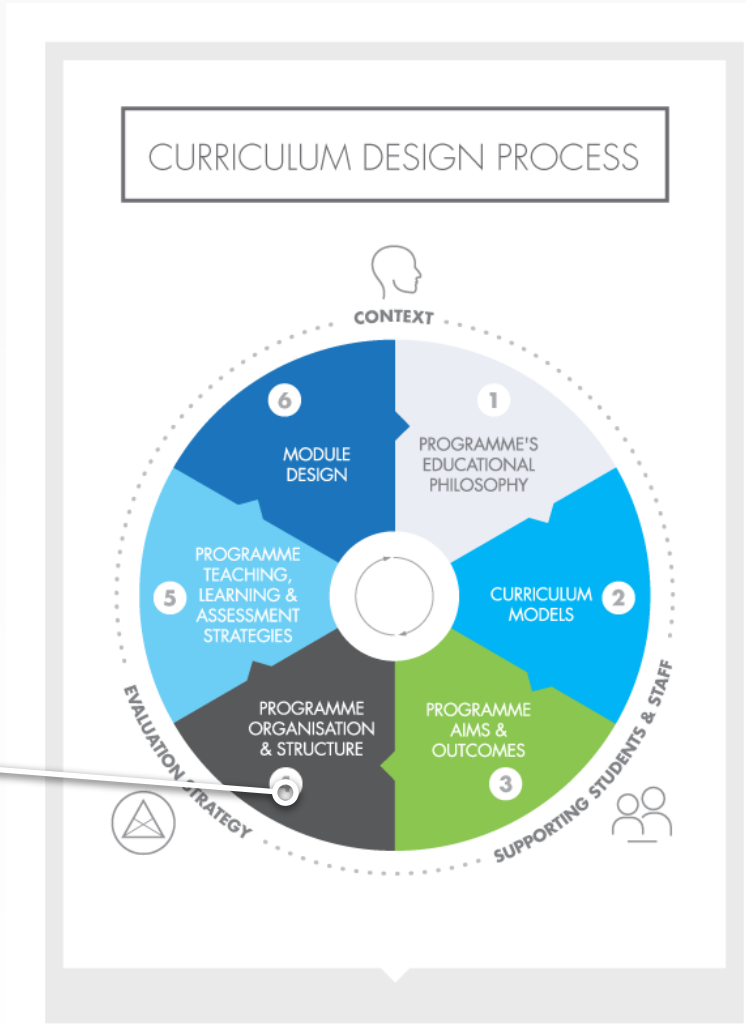
Some institutions have an agreed set of graduate attributes and these should be reflected at programme level. In addition or as an alternative, programmes can have overarching aims and a set of more student orientated programme outcomes. This chapter gives some focused advice on how to write these programme outcomes for undergraduate and post-graduate programmes.

6

Programme Organisation and Structure

This chapter explore the programme's organisation and structure. It highlights the important concepts of the programme's scope, sequence, continuity, integration, articulation and balance (Ornstein & Hunkins, 2009, p186-190).

Programme Organisation and Structure



Programme Organisation and Structure

Chapter 6: Programme Organisation and Structure

Having established a need for a programme, set out a programme's educational philosophy, explored curriculum models and initially attempted to devise programme outcomes, then it is time to consider the relationship of the programme's components. This is an often neglected aspect of curriculum design:

> *'Most curricula are unfocused… There is a notable absence of structure and coherence'.* (Gardiner, 1996, cited in Diamond, 1998, p85).

In some contexts, where there has been a focus on module design, the curriculum can often be limited to collection of all the modules and as a result lacks coherence. The challenge is therefore to develop some coherence in the relationship between these modules

Drawing a visual image of the curriculum image, as a team exercise, can assist in developing a curriculum's coherence and transparency. There are some very useful examples of curriculum images in the literature. There are also examples in the literature on how to do this as a team ,i.e. Course Intensive Design approach (Dempster et al, 2012).

In order to address the challenge of coherence in curriculum organisation, Ornstein and Hunkins note that attention should be given to the curriculum's: A) Scope, B) Sequence, C) Continuity, D) Integration, E) Articulation and F) Balance (Ornstein & Hunkins, 2009, p186-190).

A) Scope

Scope refers to the breadth and the depth of content in a curriculum. This content must include both the knowledge domain and other aspects, such as affective (values and attitudes) and where appropriate psychomotor (motor) skills. This is often described as the discipline-specific and generic skills required in a curriculum. The challenge in recent years, when deciding on the scope of a programme, has been the huge information explosion in the last 20-30 years. In parallel, there has been an increased availability of resources online. The key question can often be down to: *What does the teacher cover?* versus *What does the student seek out and do?*

Educators have adopted a few different strategies in how they have handled this information explosion. For example by:

- Reducing content
- Ignoring certain content
- Excluding, or alternatively focusing on, new content
- Integrating existing content into themes
- Linking with graduate attributes to guide content
- Increasing the emphasis on life-long learning and information retrieval skills.

There is a danger in trying to achieve a very wide scope in a curriculum that *'as students race through the topics they have less opportunity to engage in the process of sorting, comparing, prioritizing and critiquing… ideas'* (Clark and Linn, 2003). A balance needs to be found on how much to cover. It has also been noted that information overload can lead to a more surface approach to learning, where students then fail to remember the information at a later date. Knight (2001) also maintains that more complex learning (including creativity) depends on there being slack or spare capacity in the system, consequently:

- there should be opportunity for depth study*;*
- curricula should not be overcrowded*;* and
- time for strategic thinking, reflection, planning and portfolio making should be written into a programme.

B) Sequence

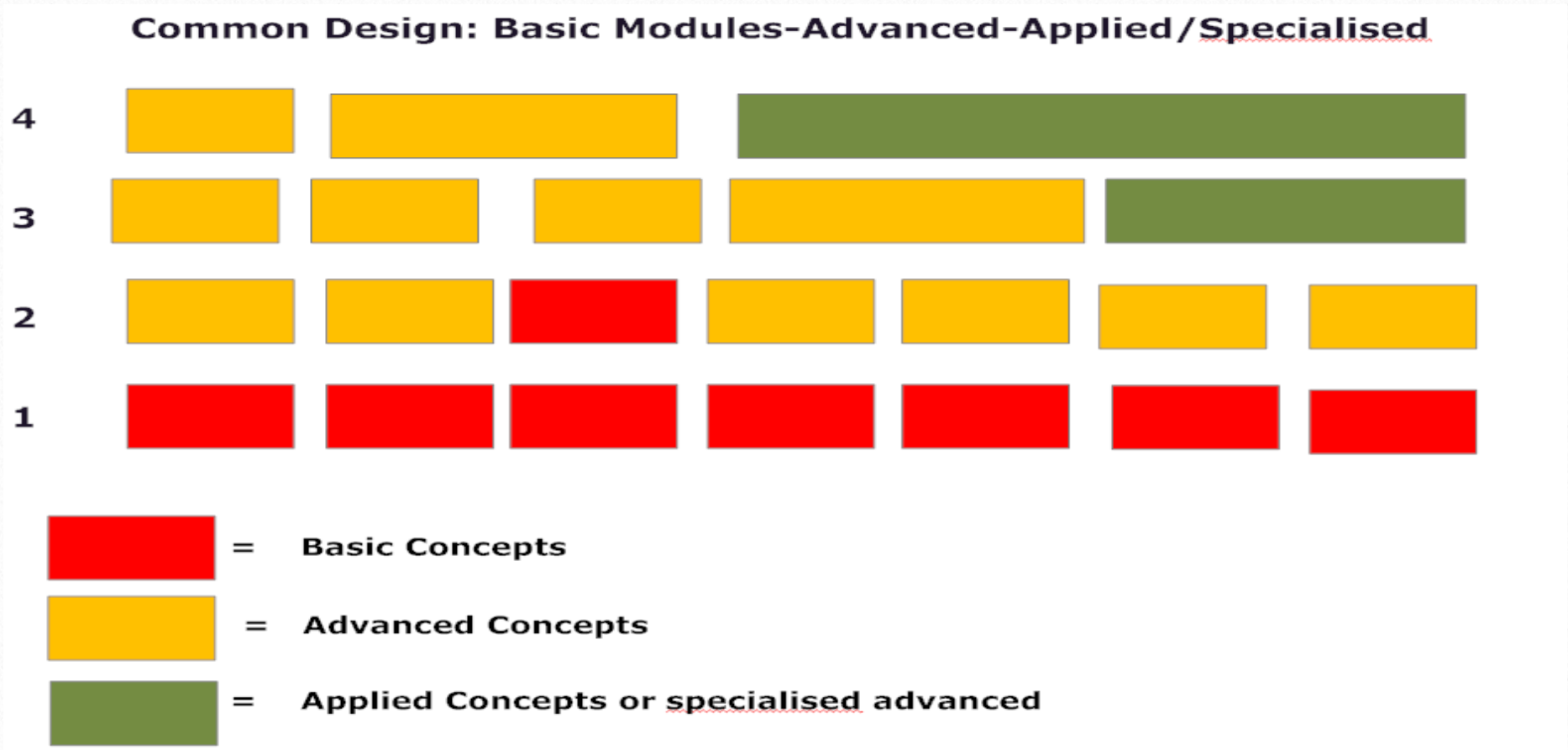
The sequence in a curriculum focuses on the order in which things occur. One approach to sequence is based on the logic of the subject matter, another approach is based on the way individual's process knowledge (Ornstein and Hunkins, 2009). Four different ways of approaching the design of this can be:

- Simple to complex learning;

- Prerequisite Learning (particular aspects grasped before others);
- Whole to part (Inquiry/problem-based /concept);
- Chronological learning (historical/developmental).

These areas are not mutually exclusive; for example, simple concepts can be introduced in the early years of a curriculum, building onto more complex (advanced) concepts in later years. This does not exclude a programme from introducing a more inquiry-based approach in some aspects of the early years of a programme. One danger with the over-emphasis on the simple (basic) to complex approach as the only organiser is that the early years of a programme can be uninteresting, irrelevant and very heavily laden with facts (see Figure 6.1). To complicate this issue, many modules in the early years of a programme have large classes and high levels of service teaching. This can lead to thee issues of reduced student retention and/or lack of motivation.

Figure 6.1 - A Common Design



There is a range of literature (See Table 6.1) that highlights different assumptions and suggestions for sequence in a curriculum. Whereas there is no prescription on what is ideal for any one programme, there should be a discussion on the sequence of a curriculum by the programme design team.

Table 6.1 - Overview of Literature on Sequence in the Curriculum

There is a long-standing controversy over whether the sequence of content and experiences should be based on t**he logic of the subject** or the way i**ndividuals process knowledge** (Ornstein & Hunkins, 2009, p187).
Content can be sequenced by **time** (history course); **spatial relationships** (country in geography); **species:** simple to complex (biology); **forms of expression** (art: drawing, painting, sculture) (literature: poetry, prose, drama); **functional systems** (respiratory, digestive: medicine); **processes** (human resource management: life cyle of employee for recruitment to retirement); **or a combination** of some of these (Toohey, 1999, p92).
Content is optimally organised in a sequence from **simple to complex** components (Ornstein & Hunkins, 2009, p187).
Unpractised skills atrophy quickly, particularly core skills such as computation and writing (Diamond, 1998, p84).
Course content and its flow of topics are the kind of **logical relationship** we as teachers like to construct, combined with what we think is the **order that students might find easiest** to study (Open University, 1999; Learning, Curriculum and Assessment Study Guide).
Cognitive psychologists have urged that the curriculum be arranged so that **content or experience is presented first** in an overview (Ornstein & Hunkins, 2009 p188).
Socially critical model: Content is drawn from **significant social problems of the day and organised around themes**, investigations or projects (Neary, 1999, p65) .
Students should chose and sequence their own topics in their curriculum, i.e. a negotiated curriculum (Neary, 1999, p111-114).
Perry's model (1998) is concerned first with how (College) students move from a ***dualistic*** **(right versus wrong) view of the universe to a more *relativistic* view,** and second, how students develop commitments within this relativistic world. There is a strong learning connotation in Perry's model since students **cannot understand or answer questions which are in a developmental sense too far above them**. (Wankat & Oreovicz, accessed March 2009 https://engineering.purdue.edu/ChE/AboutUs/Publications/TeachingEng/chapter14.pdf).
Curriculum should be designed to **mirror the professional development of skills from a novice to expert** (Eraut, 1994; Dreyfus & Dreyfus, 1986).

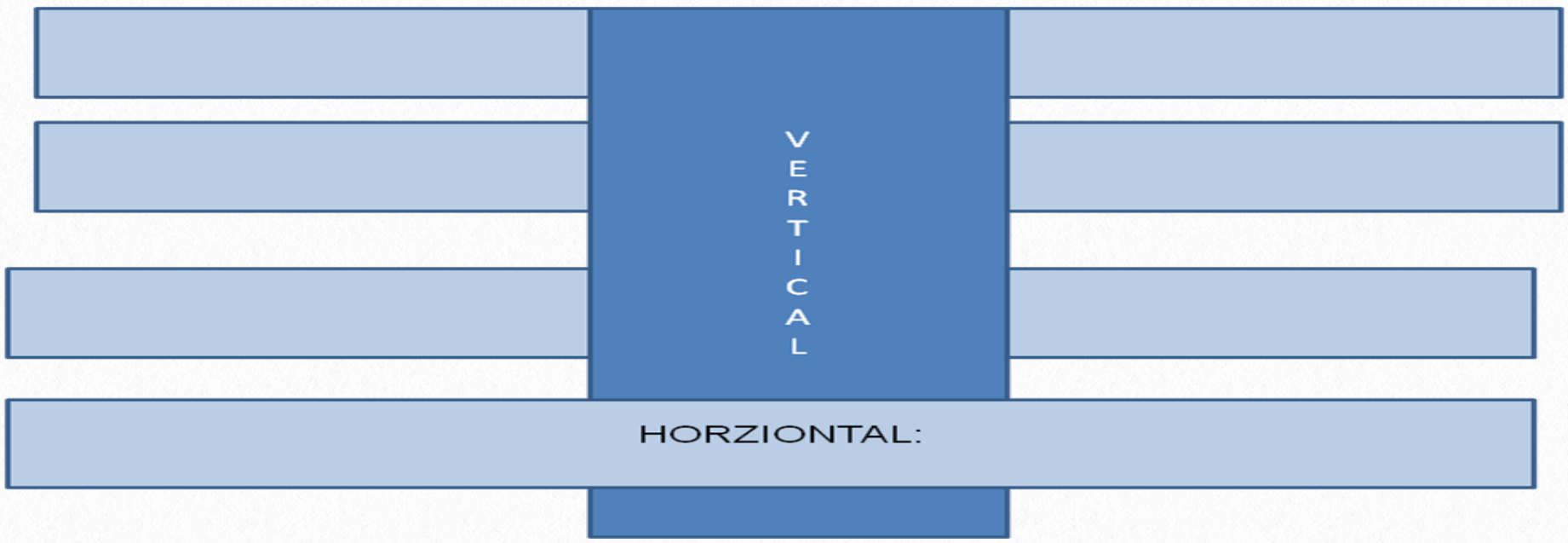
C. Continuity

Whereas scope is often associated with horizontal curriculum design, continuity is often described as the vertical integration of the curriculum design (See Figure 6.2) . Continuity in a curriculum provides students opportunities to revisit knowledge and skills in more depth as they progress through the years.

> *Students succeed best … when such skills (higher order) are reinforced throughout their educational programme. Student learn best… when they are required to synthesize knowledge and skills learned in different places..* (AAHE, 1996, pp5-8)

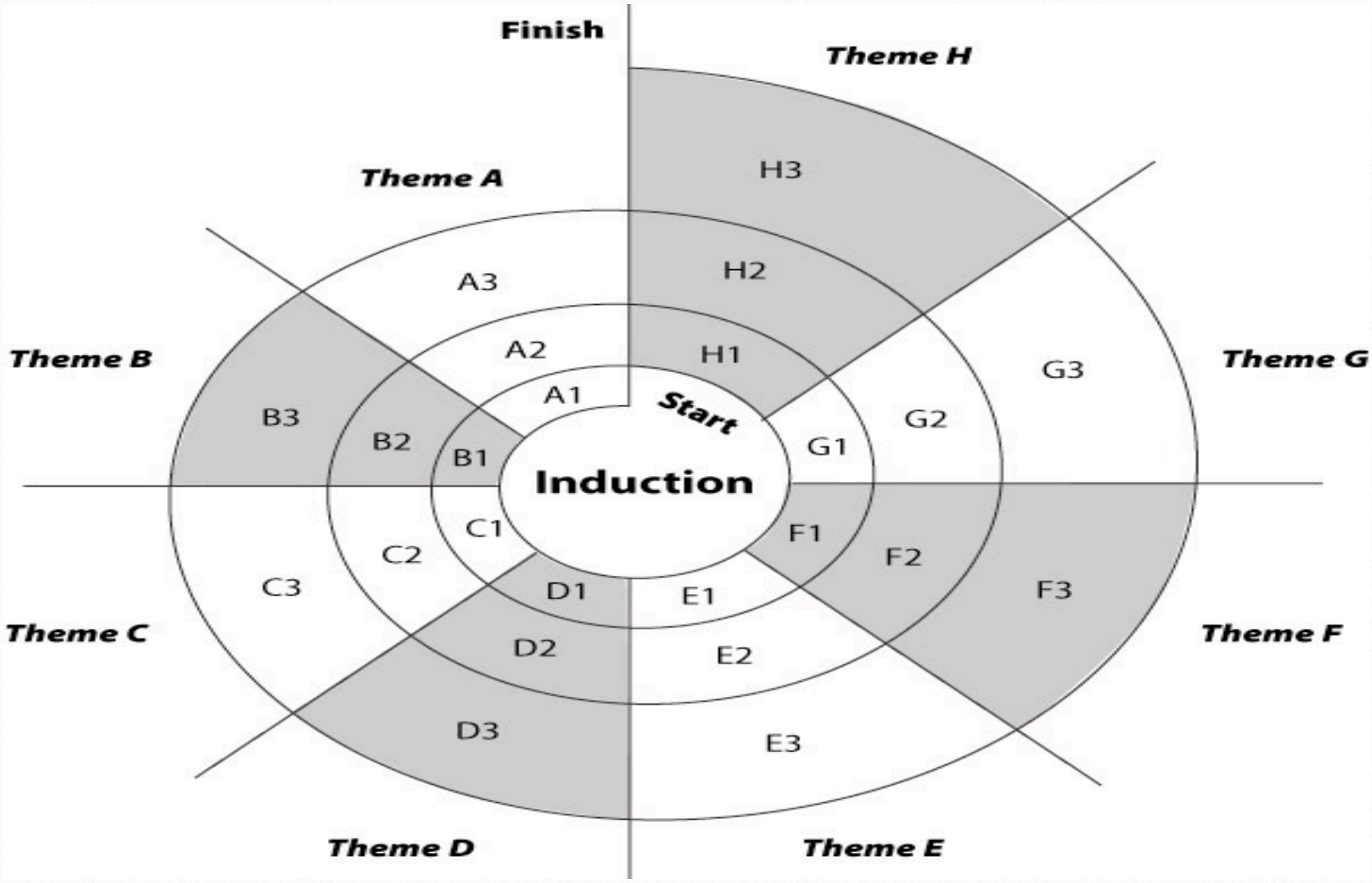
Continuity can relate to the subject matter, but can also be in other skills such as teamworking and problem-solving. Assessment procedures should reflect this developmental approach by requiring students to incrementally achieve higher-order cognitive competencies, for example, to judge and debate issues. Alternatively, assessments can require students to build higher levels of responsibility or autonomy in a skill, i.e. carrying out peer/self assessment.

Figure 6.2 -Vertical and Horizontal Curriculum Design



One classic example of a curriculum design model that pays particular attention to continuity is the 'Spiral Curriculum' (See Figure 6.3). This idea builds on Bruner's (1971) work that emphasises building on prior knowledge. The Spiral Curriculum helps staff organise the programme into themes that require further depth as students progress through the programme. This approach is popular in many health science curricula.

Figure 6.3 - Spiral Curriculum.

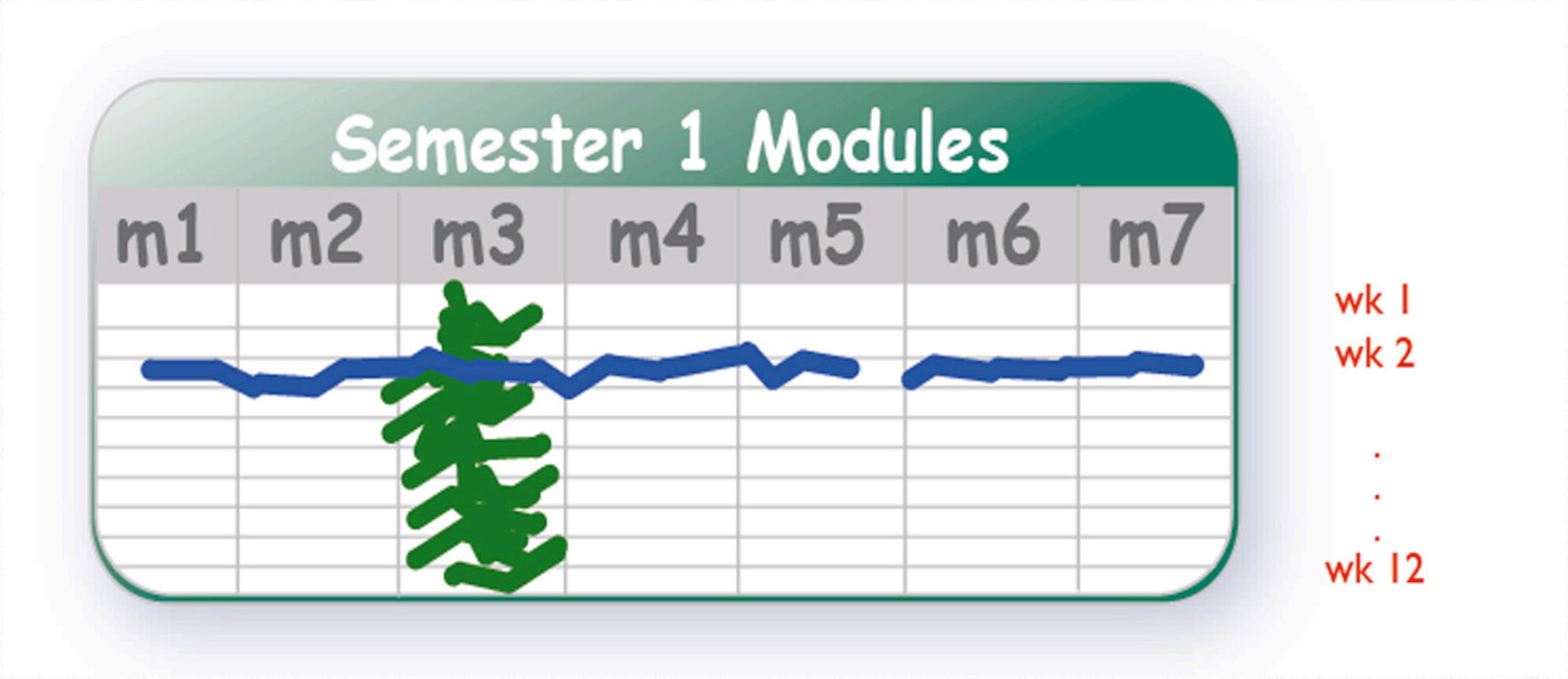


Adapted by Diane Cashman
from Neary, 2002, p 104

Another approach to continuity, seen in some programmes, is to develop one core module is built upon throughout every year of the programme (see column m3 in Figure 6.4). It exists vertically throughout the programme but draws together some of the horizontal relationships (Integration). This model has also been used to develop some core generic skills vertically into curricula, i.e. Enquiry-based learning (O'Neill & Moore, 2008).

Figure 6.4 - Vertical Development of One Core Module (m3) throughout the Programme. (O'Neill & Moore, 2008)

Diagram by Diane Cashman



D. Integration

Integration is concerned with the linkages of information in order that students can develop a holistic overview of the curriculum. Integration of knowledge has been described by some as more than just making links within a curriculum, but as linking curriculum to real-world themes (Ornstein & Hunkins, 2009). Modularisation has been criticised for its lack of attention to integration. Integration or Integrative learning: ‘

> *comes in many varieties: connecting skills and knowledge from multiple sources and experiences; applying theory to practice in various settings; utilising diverse and even contradictory points of view; and, understanding issues and positions contextually*. (Huber & Hutchings, 2004, p. 13)

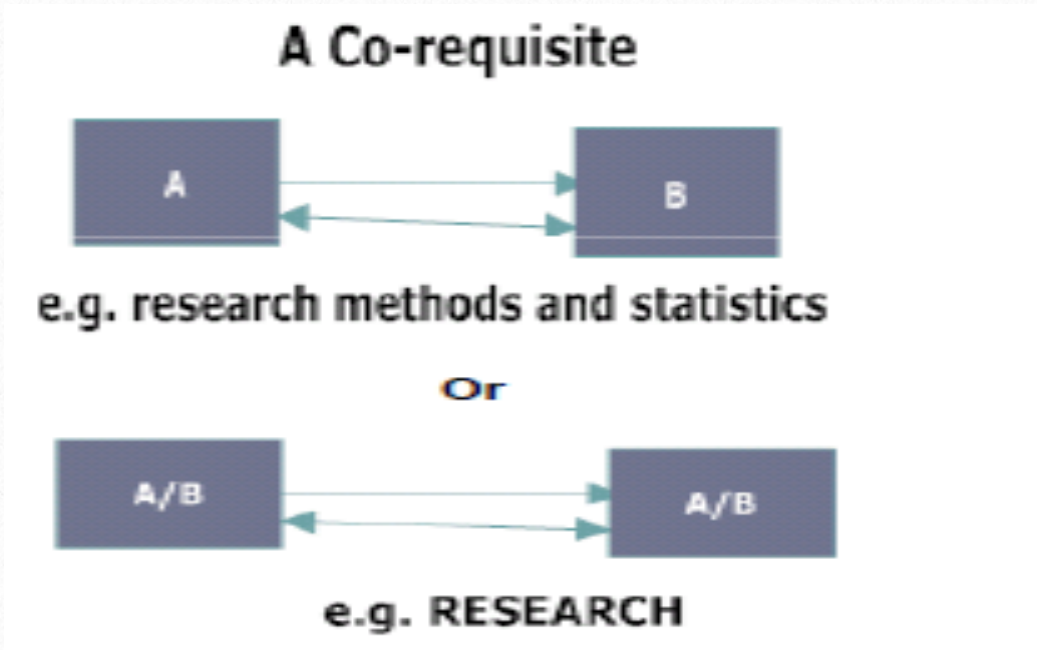
Knowledge integration is linked to the idea of continuity, as Clark and Linn (2003) maintain that knowledge integration takes time, energy, varied activities and many opportunities to make connections. *Students learn best… when they are required to synthesize knowledge and skills learned in different places…..* (AAHE, 1996, pp5-8).

Assessment approaches that facilitated this integration include: capstone assessments; case studies; portfolios; projects; concept maps

In some US programmes, it is common to see capstone courses/modules at the end of a programme to assist in the synthesis of programme outcomes. Traditionally in Irish higher education, it is the research project that is the large module at the end of a programme. The research project usually draws together the enquiry skills developed in a programme; however, the content is more specialised (more depth) and its purpose may not necessarily be to integrate previous knowledge. The programme may need a different approach to achieve wider integration of knowledge and skills.

At a more micro-level, it may be possible to consider how some individual modules can be drawn together in a more integrative manner, for example, through combining modules or making them as co-requisites to each other (Figure 6.5)

Figure 6.5 - Integrating Two Modules



E. Articulation

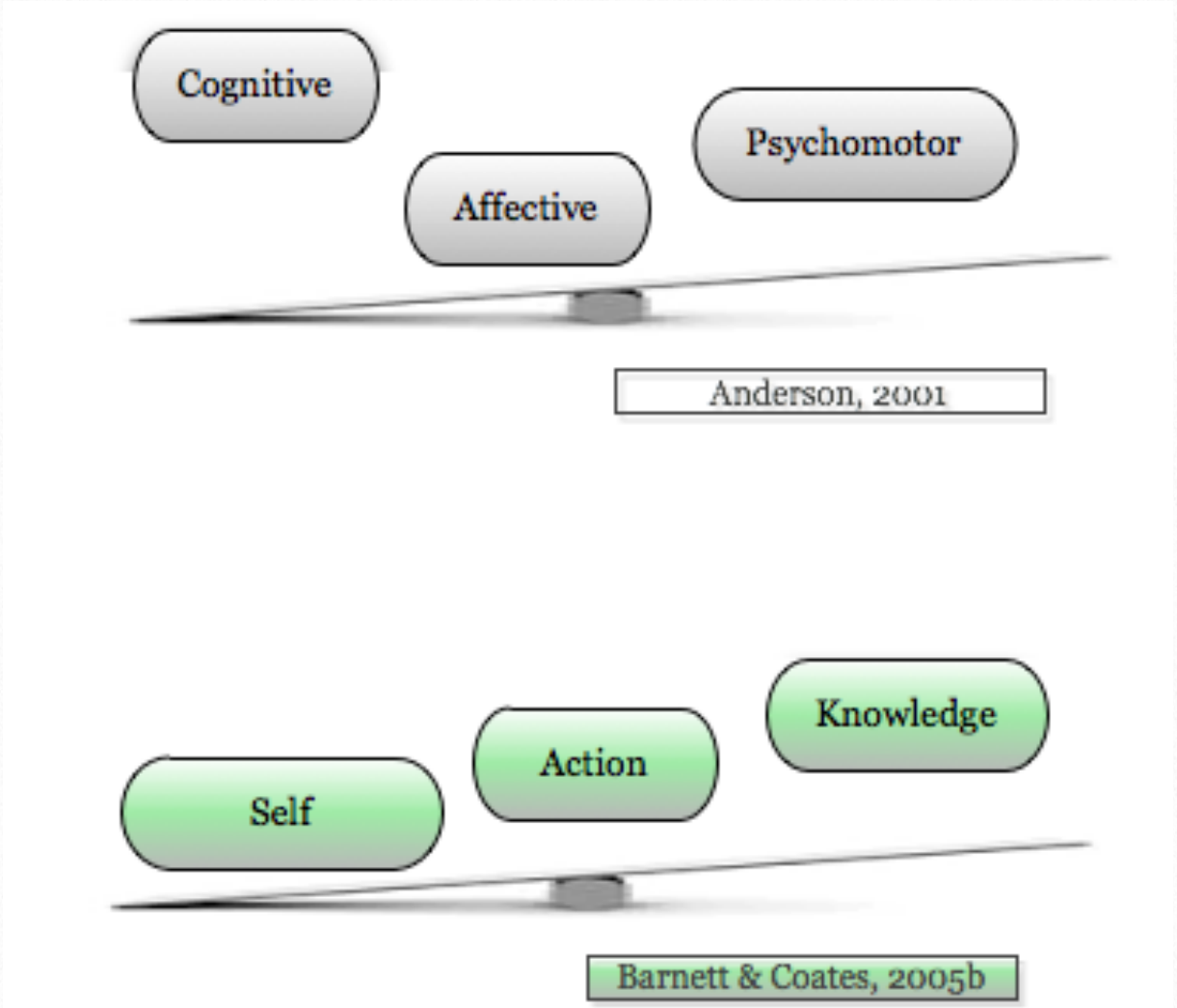
There is a need in a programme to articulate the horizontal and vertical relationship of a programme to the various stakeholders. The students should receive some indicator of how they will progress through the programme, i.e. in student handbooks, used in class, on web, etc. Mapping tools can be also used to achieve this. There are have been different mapping tools available internationally (O'Neill, 2009) and one worked exam-

ple can be seen in Appendix 3 (Appendix 3: *Instructions for the UCD P.O.M.M, including link to the tool).*

F. Balance

Finally, as mentioned earlier, it is important in a programme to balance the discipline knowledge with other more generic skills. Anderson (2001) describes this divide as cognitive, affective and psycho-motor, whereas Barnett & Coates (2005b) puts forward the idea of a curriculum balancing knowledge, action and self (Figure 6.6).

Figure 6.6 - Balance in the Curriculum



Institutional and discipline/subject graduate attributes usually present a variety of knowledge, skill as and attitudes. Where available, they help to oriented staff to maintain a balance in the curriculum.

In conclusion

In the early stages of a programme's design, it is important to consider how the programme's components are organised and relate to each other. These should be organised in order to achieve maximum cohesion and integration in a programme. This chapter examines the programme's organisation under the headings of scope, sequence, continuity, integration, articulation and balance (Ornstein & Hunkins , 2009). In addition, Ornstein & Hunkins (2009) suggest that the programme team should:

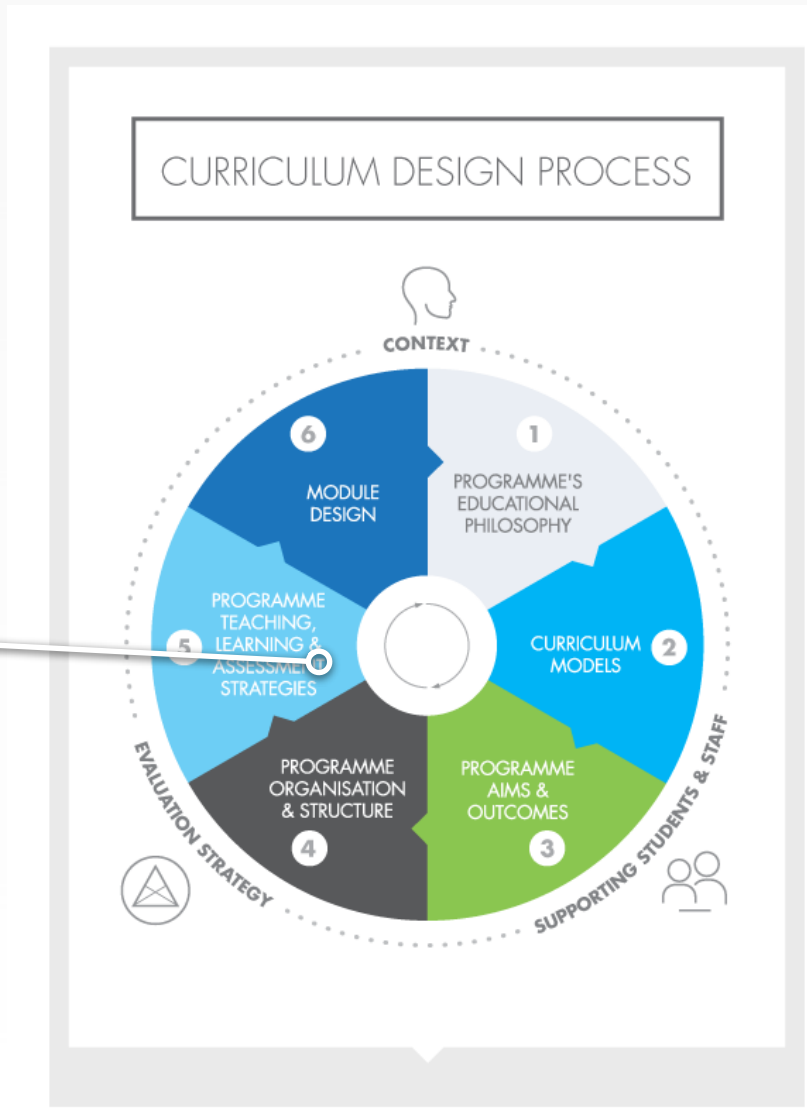
- Reflect on the educational philosophy and the curriculum models of the programme (i.e. Do you/your team believe basic concepts must be done first?);
- Consider the students' needs (Do students see relevance of materials in first year? Are they straight from School or a more mixed group?);
- Sketch out the various designs (what are the relationships, good overlaps?);
- Cross check with aims/outcomes/learning experiences/evaluation;
- Share design with others (Ornstein & Hunkins, 2009).

7

Programme Teaching and Learning Strategies

This chapter includes advice on some current trends in teaching and learning strategies to consider at the programme design stage.

Programme Teaching and Learning Strategies



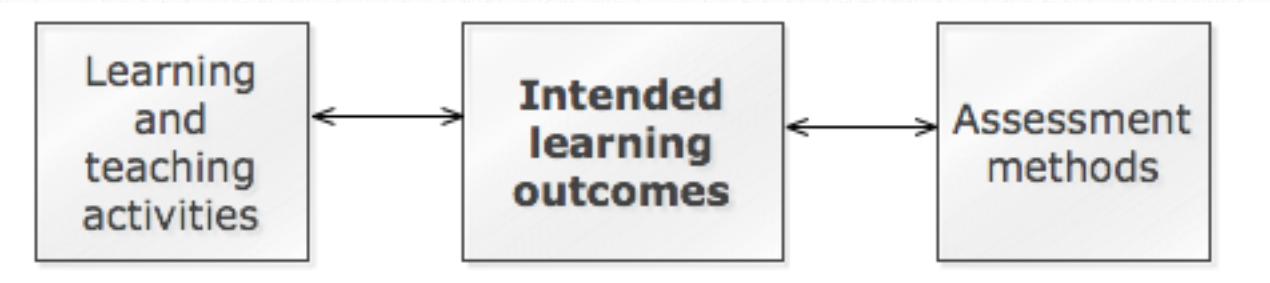
Programme teaching and learning strategies

Chapter 7 : Programme Teaching and Learning Strategies

Aligning your teaching, learning and assessment strategies

In stepping back to think about your programme's teaching and learning strategies, the first step is to review what you emphasised in your programme's educational philosophy. For example, if your programme team valued 'active learning' as an approach, this should be present and transparent in your programme's teaching and learning strategies. The programme models and devised outcomes should also aid you to 'align' your choice of strategies. This concept of the alignment of your outcomes with the teaching/learning and assessment strategies is quite commonly referred to at module design level. It also holds true for programme outcome alignment. Biggs (2003) and Biggs and Tang's (2007) well-referenced work on the constructive alignment of the curriculum emphasises this. Fink's (2003) work on also support the concept of alignment.

Figure 7.1 -The Constructive Alignment of the Curriculum (Biggs & Tang, 2007)



In theory, if you have highlighted in your programme outcomes that you would like students to be able to critically evaluate and solve creative problems, then in a good programme design these should be a strong component of your teaching and learning approaches.

The curriculum models described in chapter four have different emphasis with some overlaps; for example, enquiry based approaches emphasise group learning and investigation skills. The models you have chosen should help guide the emphasis of your different teaching and learning approaches. The following however

are some common approaches that you may wish to consider in your programme design are:

1. Engagement and empowerment of students in the curriculum
2. Social dimension of learning, including communities of practice, peer learning
3. Experiential and work-based learning
4. Approaches to encourage creativity and innovation
5. Internationalisation of the curriculum
6. Increasing blended and online learning

Engagement and empowerment of students in the curriculum

There is a growing movement internationally on increasing the student voice in the design of the curriculum. A recent international publication in this area set out some ideas and arguments around this partnership model (Cook-Sather, Bovill & Felten, 2014). Their publication set outs how students can be involved in the design of programmes in their planning and revision stages; in addition students can be empowered through, for example:

- choice of assessment (O'Neill, 2014; 2011);
- student-centred learning approaches, including more active and autonomous learning (O'Neill & McMahon 2005);
- inclusive learning/universal design (Mavrou & Symeonidou, 2014);
- choice of electives (Ting et al. 2012).

The concept of empowerment, where a student has some control over their learning, has also been strongly associated with the issue of engagement (Bovill & Morss, 2011; REAP, 2010). Some of the focus on engagement has been linked with retention and progress rates with student in their first year. However, there has also been a growing concern across all years with attendance rates in lectures, students lack of engagement and motivation to learn. The term engagement can mean different things to different people; however, Krause (2007) maintained that 'engaged' students were more satisfied, achieved greater success and were motivated to persist with their programme.

The popularity of the recent growth of the flipped classroom has been partly due to the need to address engagement in the lecture format. The NMC Horizon Report (2015) highlights this approach as a current and important trend in higher education:

> *In the flipped classroom model, valuable class time is devoted to more active, project-based learning where students work together to solve local or global challenges — or other real-world applications — to gain a deeper understanding of the subject.* (NMC Horizon Report, 2015, p38)

The following two practical resources give examples of how the flipped classroom was implemented in large classes. In considering engagement across a programme, much of the work in higher education has focused on the first year experience. This is not surprising as in the later years students have more identity with the programme, have smaller class sizes and work on projects that are often more authentic. One resource we collated, with five case studies, highlights some different ideas to enhance first year engagement (O'Neill & Galvin, 2011). In relation to empowering students across a programme, Bovill and Bulley (2011) present a useful *'Ladder of student participation in curriculum design'*. This ladder is offered as a catalyst for a debate of the level of empowerment that is possible in a curriculum and provides some useful ideas on types and levels of empowerment.

Practical Resource:'Flipping the classroom, flipping the culture' Trinity College Dublin Symposium, (TCD, Dublin)

Professor Simon Bates.

n=500+ students, Physics, University of British Columbia & University of Edinburgh.

Key changes: flipping the classroom, lectures online, in-class discussion.

Practical Resource:

Using online lectures to support active learning (UNSW, COFA Ob-line)

Dr Daniel Southam.

140 students, 1st year, Chemistry for Pharmacy/ Curtin University, Australia

Key changes; . Both in-class polling software and on-line lectures are used as part of a comprehensive teaching strategy, designed to enable students to develop critical thinking and analytical skills.

In my own study of students' choice of assessment method in a module, students in the later years of the curriculum and in the post-graduate programme were more comfortable with choice of assessment (O'Neill, 2014; 2011).

There is a strong movement of students as partners in the learning process (Cook-Sather et al, 2014; O'Neill & McMahon, 2012) and when planning your programme it would be important to consider how you might incrementally enhance their involvement.

Social dimension of learning, including group work, communities of practice, peer learning

Mann (2010) argues that the future learning theories in medical education will emphasise the social and contextual aspects of learning. He notes that:

> *Socio-cultural learning theories, particularly situated learning, and communities of practice offer a useful theoretical perspective. They view learning as intimately tied to context and occurring through participation and active engagement in the activities of the community*. (Mann, 2010, p60)

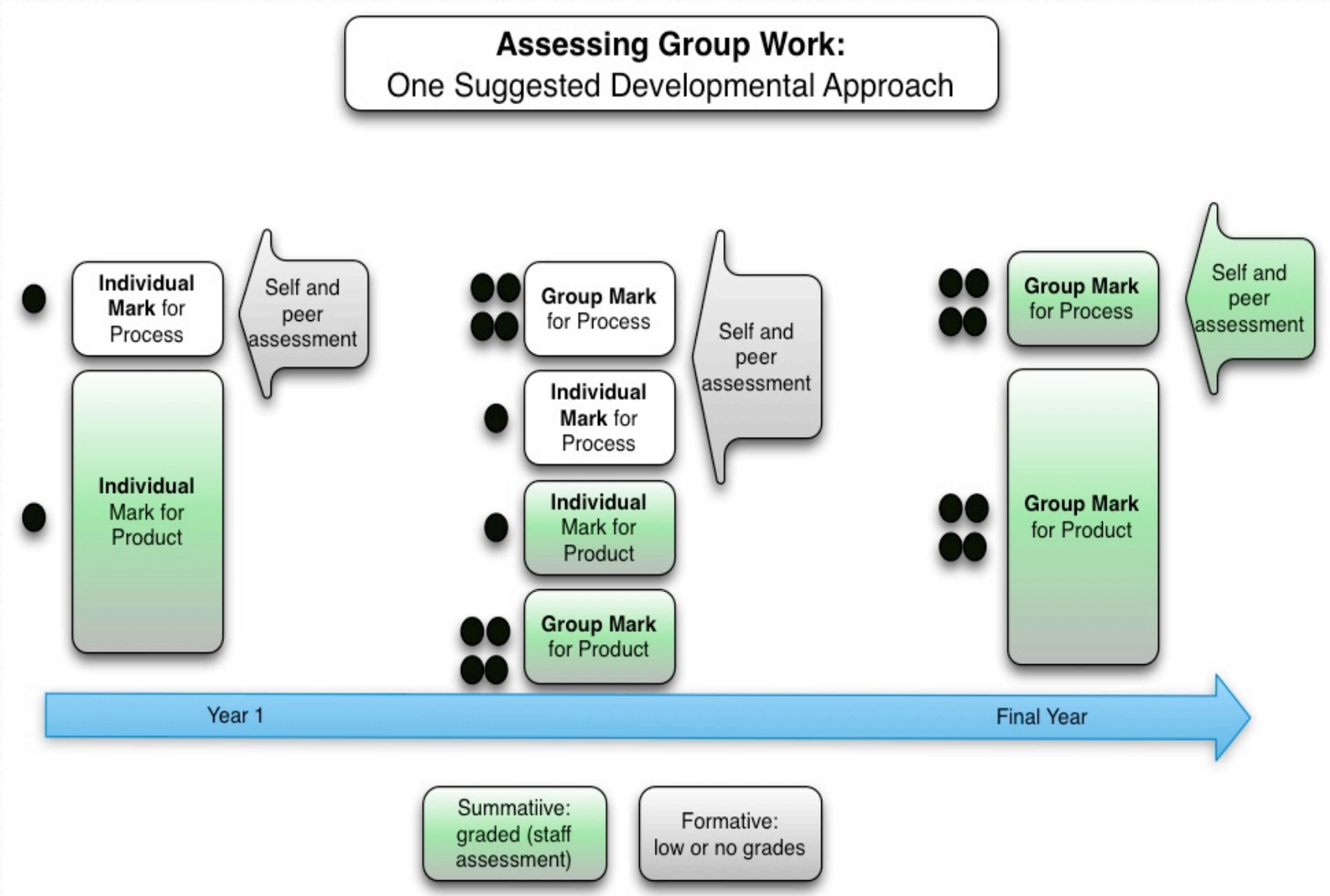
The concept of students learning from peers is a practice that has been growing in higher education (Boud, 2001). This emphasis appears to be also true for the online learning literature for example:

- Garrison and Anderson's Community of Inquiry model emphasises the social presence in learning (Garrison & Anderson, 2003; Donohoe et al, 2008);
- Baker & Watson (2013) used a dialogue-based framework in an online Masters in English language;
- Laurillard's Conversational framework (2002) sees learning as requiring a pedagogic framework that guides learners to goals through dialogue which is discursive, adaptive, interactive and reflective.

Group work is not new to higher education practices. It is still a popular approach growing partly from the need to engage students with their peers, as noted above. However, the other not mutually exclusive driver, in the context of larger classes, has been the need to reduce assessment workload for staff (Hornby, 2003). One challenge with group work is that students need to be prepared for the team-working skills needed for it (Oakley et al, 2003); for example, they struggle with dealing with 'free-riders' (Maiden & Perry, 2011). Staff have a range of options that can assist with this element for example the use of student peer and self assessment (Zhang et al, 2008), which in itself can also be a challenge.

Therefore when considering group work across a programme, it is important to consider its development throughout the programme, as presenting students with a once-off opportunity for group work does not allow them to incrementally build their team-working or self and peer assessment skills. One example, from my own experience, of how group-work could be developed across a programme is presented in Figure 7.2.

Figure 7.2 - A Programmatic Approach to Assessing Group Work



As noted in Figure 7.2, in the early years of a programme students could experience group work but be assessed individually for both the product of the group work (i.e. a project, poster) and the process (the contribution, effort, engagement). The use of self and peer assessment of the process is done formatively, i.e for feedback purposes and not graded. This allows students to get practice in self and peer assessment of their peers but does not have the high stakes activity of grading. As students progress through the programme they could incrementally have more summative (graded) assessment of the process and the product, in addition the weighting of the group mark could increase. This type of approach could assist students to develop the strategies that are needs for more effective team-working. Oakley et al's Engineering article (2003) presents a very useful set of activities and templates to use for developing team work in groups.

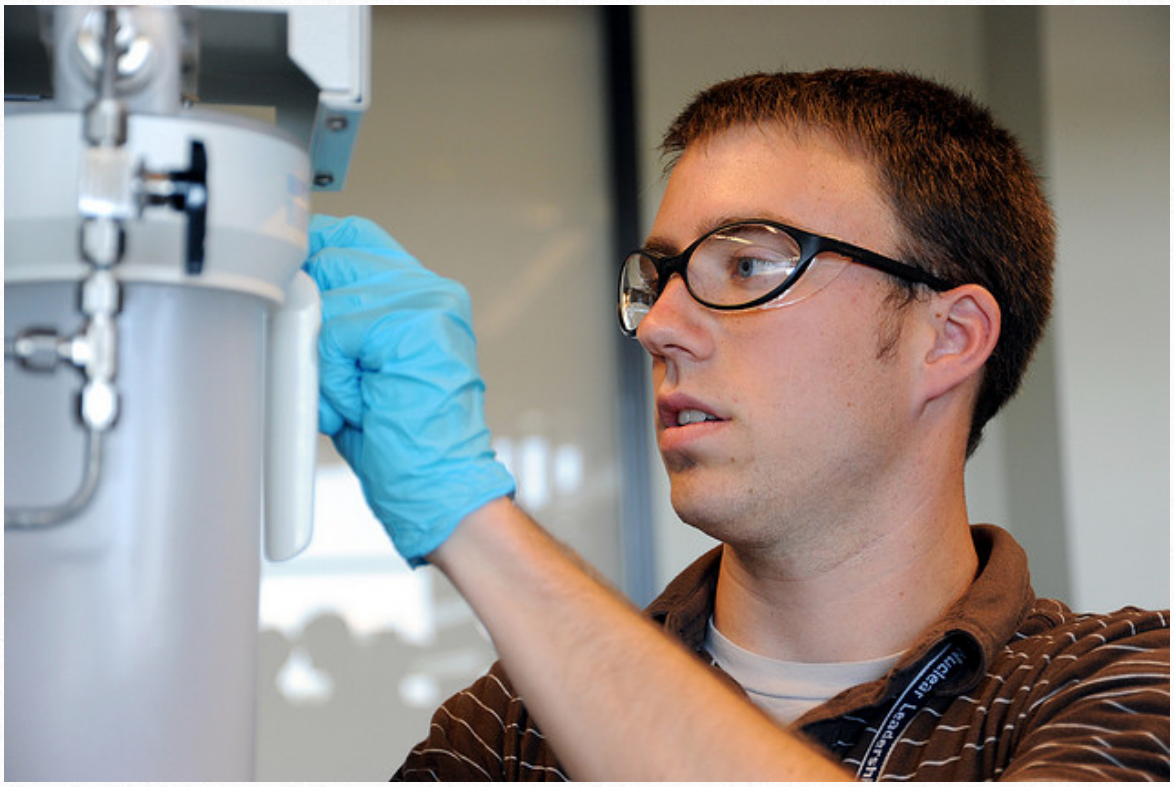
Experiential and work-based learning

> *Experiential education is a philosophy and methodology in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills and clarify values.'***(AEE, 2015)**

In general the term experiential learning refers to students applying concepts and/or skills to real world situations within or outside of the classroom context. Within the classroom context, traditional forms of work-based leaning have been laboratories, clinical skills sessions, case-based learning, problem-based learning, simulations, art projects, studio work, etc. Within the programme but usually off campus there are approaches such as internships, fieldwork, clinical placements, research, volunteering, service learning, study abroad, etc. The context in which the learning occurs is therefore extremely important.

Figure 7.3 - Work-based learning

Image available on commons copyright from fickr



Many learning theories, such as situated view of learning (Lave & Wenger, 1991), emphasise the importance of the context on the learning process. Both Glaser's (1999) work on the novice/expert (see also Moore, O'Neill & Barrett, 2008) and McCormick's work (1999) on the value of practical knowledge appear to be supported by the situated view of learning. However, there has been an ongoing debate about the role of work-based learning in higher education. An Irish govern-

ment report (Skilbeck, 2001) highlighted the debate around knowledge and values and notes how two key educationalists in history, John Henry Newman (Ireland) and Wilhelm von Humbolt (Germany), both grounded their views about the purpose and nature of universities in the pursuit of knowledge *'as of value in itself'* (p39).

Despite this debate, there has been a growing development in higher education of this form of learning and many advocate (Wurdinger & Carlson, 2010; Moore, 2010; Kolb, 1984) that there is value in engaging in this form of learning. For example students can:

> *deepen their knowledge through repeatedly acting and then reflecting on this action, develop skills through practice and reflection, support the construction of new understandings when placed in novel situations, and extend their learning as they bring their learning back to the classroom.'*(CTL, 2015 University of Texas, Austin)

Work-based learning provides an excellent opportunity for students to achieve many of the learning outcomes aspired to by both the programme and the institution's graduate attributes, often difficult to achieve in other modules in the programme. One study on work-based learning notes that:

> *Leadership and entrepreneurial skills, assuming responsibility and making decisions, and demonstrating high ethical standards were felt to be more appropriately developed in the workplace, either during work placement or in an employment situation, than at university where opportunities were more limited'*. (Crebert, et al, 2004, p.147).

When exploring the practices and literature of work-based learning there are some common features and phases. Common assessment approaches include reflection on-and in-practice (Chirema, 2007; Redmond, 2004) and portfolios (Barton & Westwood, 2010) which are a mixture of reflection and other evidence.

> *Portfolios, as a method of assessment in cooperative education and WIL (Work-integrated learning) activities, together with reflective practice,*

are becoming more commonly cited in literature. (Dunn et al, 2012, p135).

A critical success factor in the workplace experience being transformational for all parties is that the underpinning reflective practices are designed around career development learning. The metaphor of the two-way mirror embodies the unique capacity which career development learning brings to the experience. (HECSU, 2010)

Students need preparation when learning the skills of reflective writing and deepening critical reflection and these should be done prior to and, where possible, during the work placement process. Some useful guides for students in this area are:

- Reflective Writing (UNSW, 2013)
- Faculty of Public Health Tips on Writing Effective Reflective Notes (Syder et al, 2012)

In addition to the popular use of reflective writing, McNamara (2013) and others argue that there should be some element of evidence of students' work skills or competence:

Alignment theory therefore suggests that the assessment of WIL should include an assessment of students' demonstration of professional competence in the workplace. The assessment of professional competence in WIL is, however, problematic. It may be impractical for the academic supervisor to directly assess professional competence if there are a large number of students in external placements. (McNamara, 2013, p183).

Specific disciplines may require other written work or tasks during the placements, such as research or lab reports (Gomez et al, 2004). The use of the online environment has begun to be used to support students discussion forums while on placement (Whipp, 2003). At the end of the placement (or on return to College), reflective writing is still a popular activity, i.e. reflection-on-action. Dunn

(2012) and McNamara (2013) both present ideas on how to gather other evidence from the workplace and how to structure it into a final portfolio of evidence.

For more in-class forms of work-based learning, such as laboratories, studio work, there are established practices in learning and assessment, such as portfolios and laboratory reports. The online environment is opening up opportunities for novice students to repeatably observe skills in action, the virtual lab.

- See Case study from Ireland (Costello, Fox & Lynn, 2008)
- See Case Study from South Africa (Akinwale et al, 2011)

Approaches to encourage creativity and innovation

> *Contemporary society is characterised by rapid and complex change processes that encompass all spheres of life. Creativity has been identified both as a key factor for adequately addressing the challenges caused by these changes as well as a major driving force towards knowledge creation and social and economic advancement through the development of a knowledge society.* European University Association, (EUA, 2007, p6)

One of the critiques of the curriculum designed around outcomes has been that it does not allow staff to change and be flexible as the learning occurs. Student groups differ in how they work through the learning and if teaching is too structured it does not allow for more iterative, flexible approaches for students. It has been also argued that it does not encourage student creativity. A useful way that this has been presented has been the idea of the balance between order and chaos, linked with the 'chaos theory' (Stacey et al, 2000). Tosey (2002a, 2002b) highlights that the most beneficial and creative learning happens at the edge of chaos. There is an important balance then between have high levels of prescription and allowing for flexibility in how you teach and encourage student creativity. More complex learning (including creativity) depends on there being slack and space or spare capacity in the system:

- There should be opportunity for depth study;
- Curriculum should not be overcrowded; and

- time for strategic thinking, reflection, planning and portfolio making should be written into a programme (Knight, 2001).

McGoldrick (2002) highlights that there are certain conditions that encourage creativity in the design of learning:

- Existing knowledge of the discipline;
- Enthusiasm for the discipline;
- An interest in students and their learning;
- A problem.

One approach that encourages creativity is enquiry-based approach learning, which presents students with complex problems to be solved in groups (Barrett & Moore, 2010; O'Neill & Moore, 2008).

Donnelly (2004) emphasizes that creativity can and should be assessed, but with the appropriate methodology. Some common assessment methods can include, reports, art, research, drama, essays, video development, photography, etc. However the options for assessment in this area are endless and only constrained by our own imaginations. There are many rubrics that can assist in the judging of creativity, two well developed rubrics are:

- the 'consensual assessment technique' by Baer & McKool (2009)
- The Creative Thinking Value Rubric (AACU, 2015)

A useful and comprehensive book on the subject of creativity is Jackson et al's 2006 book titled *'Creativity in Higher Education: An Imaginative curriculum'*. They explore creativity from four different but inter-related standpoints: contextual, perceptual, practical and conceptual.

Internationalisation of the curriculum

As mentioned in the context chapter, there is a growing internationalisation of the curriculum. A recent report by the U21 group (Welikala, 2014) highlighst that our understanding of this must extend beyond *'...a narrow focus on international students and provide international experiences to all university staff and students*

so that they will perform successfully (professionally, economically and socially) within diverse contexts' (p.4).

Figure 7.4 - International Students.
Image available from flickr under creative commons copyright

As knowledge is no longer constrained by nations, he suggests the term 'multiple-perspective curriculum' should replace international curriculum. The report highlights some suggestions on how this should be achieved in the curriculum's teaching and learning strategies. These are presented in Table 7.1

Table 7.1 - Putting the Multi-Perspective Curriculum into practice (Welikala, 2014, p 5)

Continuously expose students and staff to multiple views of the world (create different socio-cultural/educational societies, promote interdisciplinary activities, harness experiences of all the students in teaching and learning, value alternative world views, use comparative approaches to teaching);
Encourage reflexive learning and teaching (reflexive dialogue, keeping reflexive diaries, reflexive teaching/learning logs) so that students can constantly and critically reshape their approaches and views about learning and teaching;
Seek to create a culture that makes students and staff feel that the university is a democratic meeting place where the encounter of diversity (in terms of gender, maturity, culture, nationality) creates opportunities to develop new competencies, knowledge and understandings;
Increase opportunities for collaborative learning (communities of practice, group work, workshops, seminars) which exploit the diversity within the student body.

Increasing blended and online learning

The growth of the online environment has accelerated in the last decade and opens up great opportunities when planning your curriculum. Whereas the design of these approaches are best considered at module level (see chapter 9, Blended Module Design), planning for the resource implications and the coherent student experience is important at the programme level design. Some useful tools to assist staff in peer reviewing the design is explored in Chapter 10, for example, *The Quality Scorecard*. The digital literacy skills of your students and staff needs to be planned for at programme level; for some details on this see chapter 11, Supporting student and staff.

In summary

Based on your programme's educational philosophy, outcomes and curriculum model(s), you need to plan for alignment and coherence in your teaching and leaning approaches. This chapter highlights some common teaching and learning trends:

1. Engagement and empowerment of students in the curriculum
2. Social dimension of learning, including communities of practice, peer learning
3. Experiential and work-based learning
4. Approaches to encourage creativity and innovation
5. Internationalisation of the curriculum
6. Increasing blended and online learning

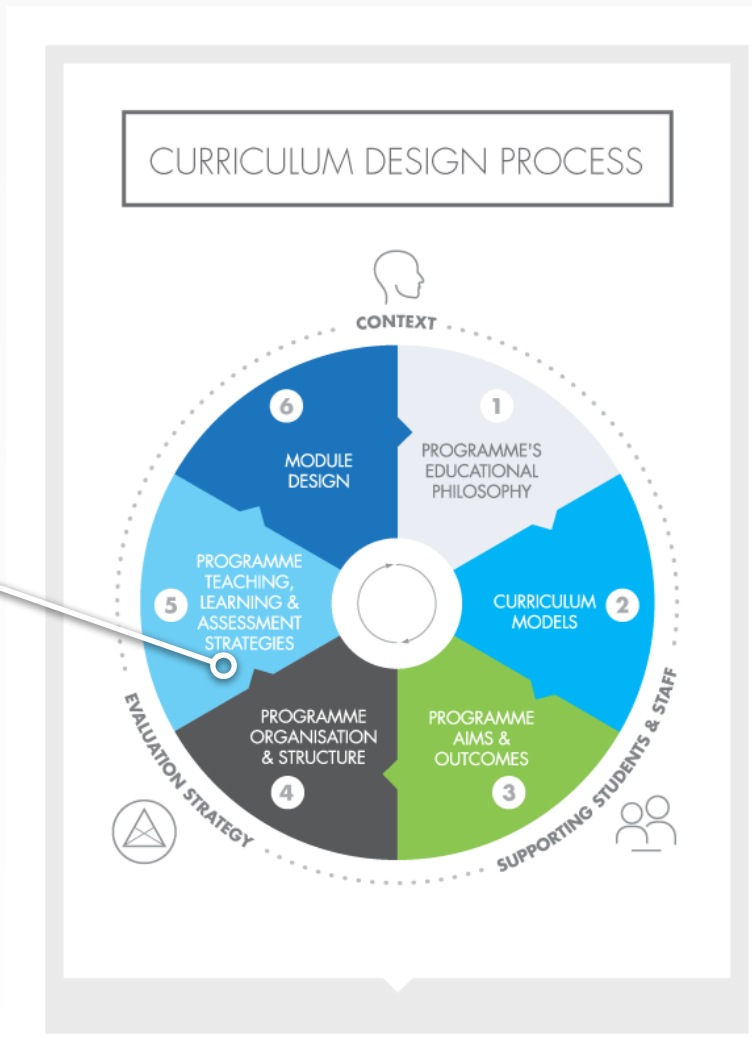
8

Programme Assessment and Feedback Strategies

This chapter highlights some of the considerations while exploring assessment at the level of the programme, for example: programme assessment principles; assessment *As* learning as an approach; validity and reliability of programme assessment.

Programme Assessment and Feedback Strategies

Programme Assessment Strategies



Chapter 8: Programme Assessment Strategies

Assessment Purposes

Assessing student learning across a programme is a complex task. There are many conflicting purposes and principles of assessment. It is worth starting by asking yourself why we assess students, i.e. the purposes of assessment.

Assessment is a systematic process for gathering and evaluating information on students' progress, which can be used for one or more of the following three purposes:

- To contribute to quality assurance
- To provide certification (summative assessment)
- To improve student learning (formative assessment)

(Bloxham & Boyd, 2008; Mutch & Brown, 2001)

To Contribute to Quality Assurance

One of the purposes of assessment, less obvious when considering assessment, is that the assessment provides evidence to different stakeholders, i.e. employers, external examiners, other institutions, so that they can judge the appropriateness of the assessment used. This is usually done with a view to improving the assessment quality (Bloxham & Boyd, 2008). It is important where assessment is used for this purpose that there are valid assessment policies and procedures to ensure that the judgements are accurate.

To Provide Certification (Summative Assessment)

Another purpose is to provide stakeholders the means to identify and discriminate between different levels of achievement of the learning outcomes (Bloxham & Boyd, 2008). This is often associated with the term 'Assessment Of Learning'. Manitoba Education (2006, p55) described that

> *Assessment of Learning is the assessment that becomes public and results in statements or symbols about how well students are learning. It often contributes to pivotal decisions that will affect students' futures. It is im-*

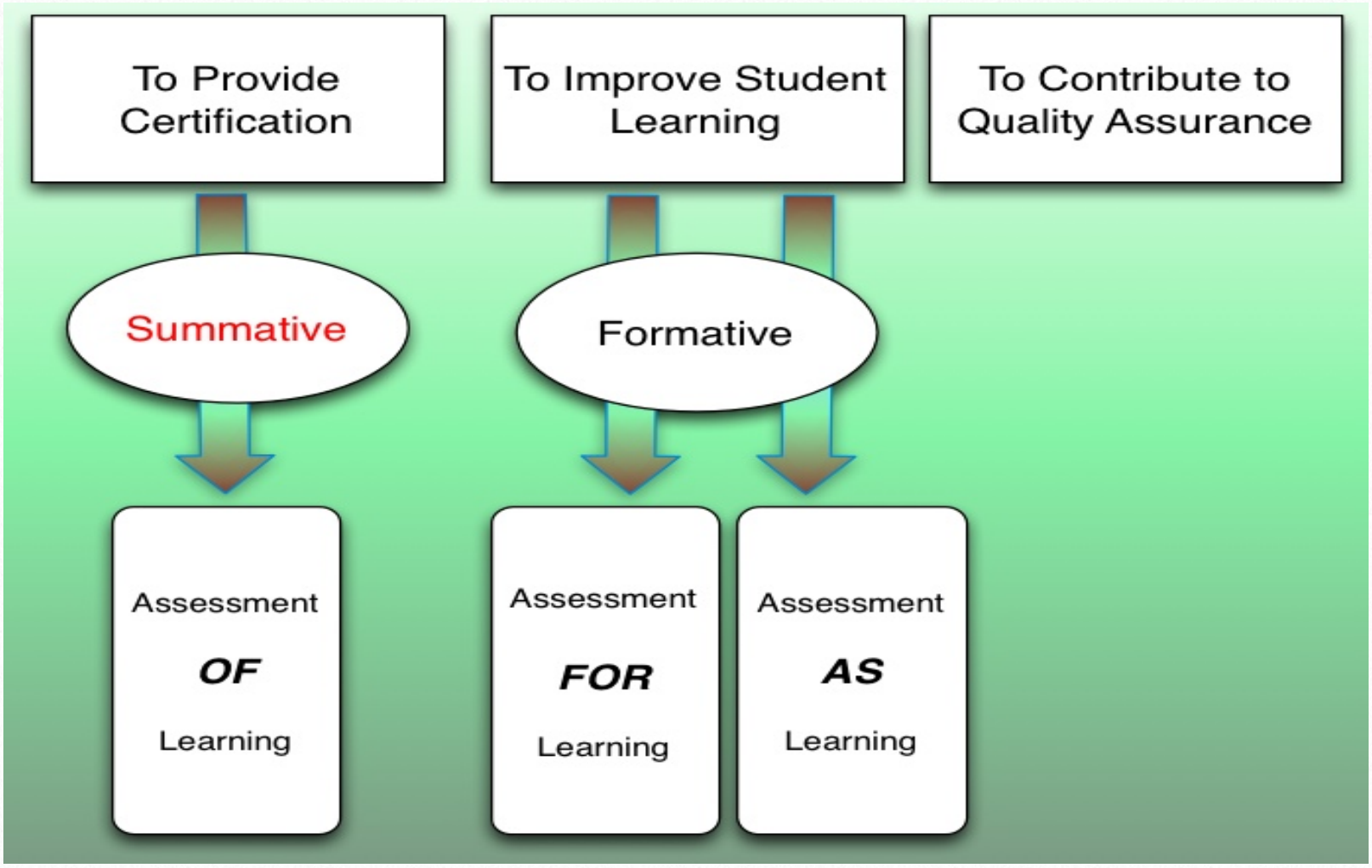
> *portant, then, that the underlying log and measurement of assessment be credible and defensible*. (Manitoba Education, 2006, p55)

To Improve Student Learning (Formative Assessment)
Another, not mutually exclusive, purpose is to improve student learning. This is often associated with the term formative assessment (See Figure 8.1).

> *Formative assessment refers to assessment that is specifically intended to generate feedback on performance to improve and accelerate learning (Sadler, 1998). A central argument is that, in higher education, formative assessment and feedback should be used to empower students as self-regulated Learners*. (Nicol & MacFarlane-Dick, 2006, p 199)

In a key article on conditions that support learning, seven of the 10 conditions relate to feedback (Gibbs & Simpson, 2005) .

Figure 8.1. - The Language of Assessment.



It is very important to build in strategies across a programme so students have multiple opportunities to get feedback from the staff. This is often associated with the term Assessment FOR Learning. However, telling

> *students about the quality of their work through the provision of teacher feedback will leave many students unprepared for life beyond the university. It will not develop high-level evaluative skills in complex learning domains, where students are expected to produce high-quality work on their own.* (QAA, 2010)

Therefore, in recent years, there has been an emphasis on assessment that assist sstudents to self-monitor (assess) their own performance. This is another type of formative assessment and is called is Assessment AS learning:

> *Assessment AS learning occurs when students reflect on and monitor their progress to inform their future learning goals.*
> *http://www.education.vic.gov.au/studentlearning/assessment/*

The distinction between these purposes of assessment can 'overlap' and they are not always mutually exclusive (See Figure 8.2). For example, some Assessments FOR Learning, whose primary function is for support/ feedback, can have some low weighted grades, such as grades for engaging and participating in this activity. In addition, some Assessment OF Learning whose primary function is for grade and certification may also have a feedback component to it, for example, a mid-semester essay.

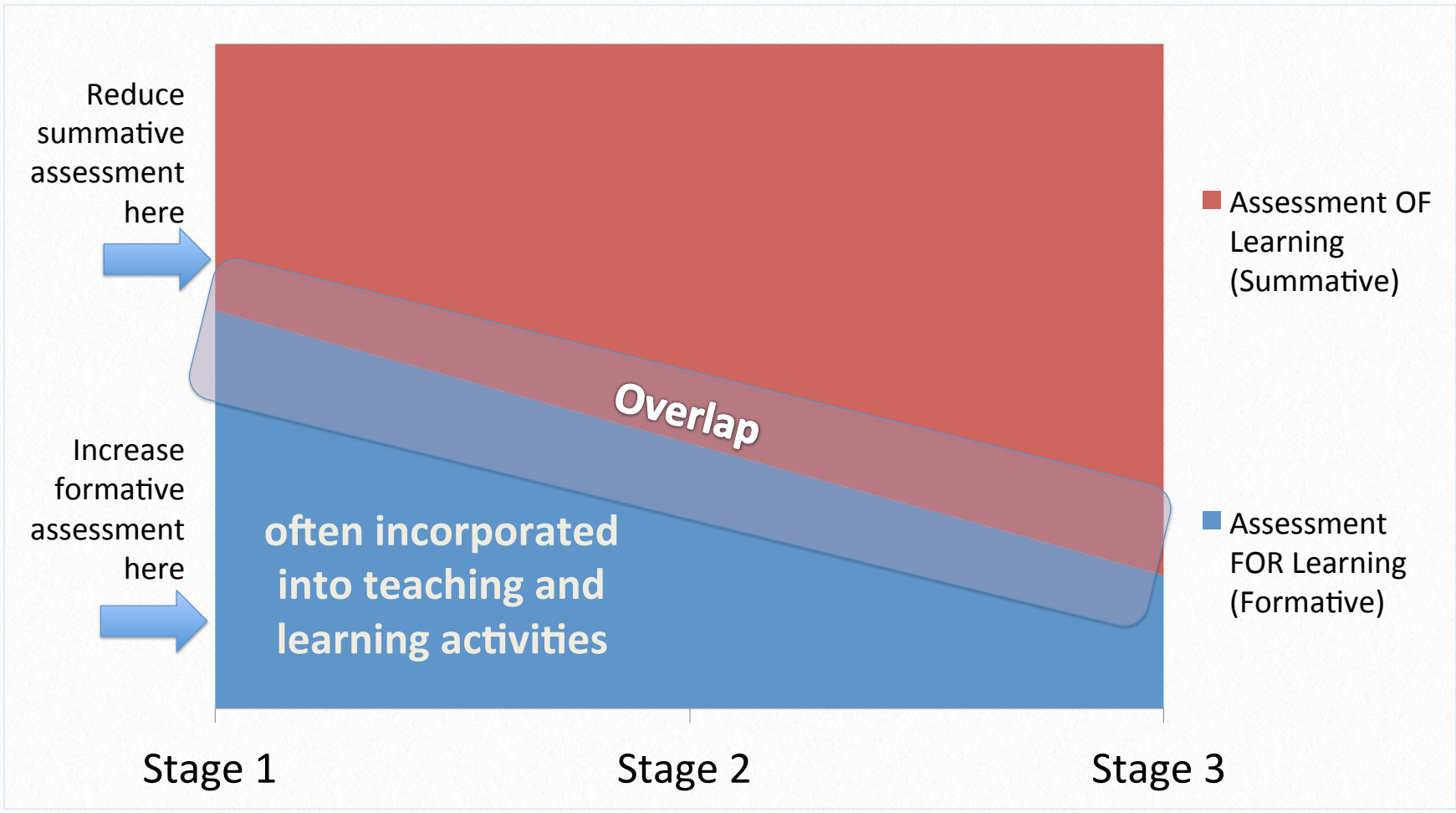
In looking at programme assessment strategies:

> *Balancing assessment of and assessment for learning well, it is argued, is a key aspect of an integrative approach to enhancing assessment*..(UK Quality Assurance Agency for Higher Education, 2007)

Students in the early stages/years of a programme are introduced to new ways of thinking and need multiple opportunities to get feedback and self-monitor their performance (Assessment FOR and AS Learning: Sadler, 2010; Nicol 2010).

Before students exit the programme, staff need strong evidence that students have achieved the required learning to progress (Assessment OF Learning). Therefore, there is a need to have assessment FOR and OF Learning in all stages/years of the programme; however, as in Figure 8.2 Assessment FOR Learning should have a higher weighting in Stage or Year 1 (Knight, 2000).

Figure 8.2 - Balance across a Programme's Stages: Assessment OF Learning and Assessment FOR Learning



In association with an increase in assessment FOR learning in Stage or Year 1, there is potential to reduce (Hornby, 2003) some Assessment OF Learning (graded assessment). Reducing assessment overload for staff and students is a key design principle in *UCD's Assessment ReDesign project* (O'Neill & Noonan, 2011). Some additional characteristics of Assessment FOR Learning are:

- It strongly overlaps with teaching and learning activities, i.e. assessment is not seen as separate;
- There is an emphasis on feedback to the students on their learning, either before, during or after assessment;

- There is an attempt to develop students' ability to self-monitor and judge both their own performance and against peers.

Some example of assessment FOR Leaning are presented in Table 8.1

Table 8.1 - Some Suggestions for Assessment For Learning

Context	Assessment For Learning Ideas
In-Class	In -class quizes/problem sheets
	Formative MCQ's in class
	One minute test
	In-class peer and self review of work against set criteria
	In-class discussions
	In-class feedback on assignment/assessments
Online	Online formative MCQ's developed by students
	Problem-solving activities
	Online formative MCQ's developed by staff
	Participation in online discussions, blogs or wikis
Out of class	Use of pre-submission checklist for assessment
	Research activity as a group
See also, O'Neill, G. Noonan, E. (2011) *The 1st Year Assessment Design Principles (Module Design)*, UCD Teaching and Learning website http://www.ucd.ie/t4cms/moddesignfyassess.pdf	

Some ideas to increase students' role in monitoring their work can be listened to in the UCD podcast: Six ways to engage students with feedback.

n summary, the purposes of assessment may change throughout a programme and both staff and student energies should reflect these different emphases.

Assessment Principles

Assessment principles can help to guide both programme and module assessment practices and their emphasis will vary according to the context and purposes of the assessment. Some assessment principles are more relevant to different levels in a programme and will require a judgement as to their balance.

Table 8.2 - Some Key Assessment Principles, adapted from Bloxham & Boyd (2008)

Validity	Assessments should be appropriate and they should measure what they purport to measure and should align with the programme and module's learning outcomes.
Reliability	Assessment tasks should generate comparable grades across time, across graders and across methods to ensure academic standards.
Effectiveness	Assessment tasks should be designed to encourage good quality 'deep' approaches to learning in the students.
Comparability and Consistency	There should be consistent and comparable approaches to the summative assessment requirements of awards of the same level across programmes and institutions in terms of student workload and academic challenge.
Equity and Diversity	All students should have the opportunity to effectively demonstrate their learning and should have opportunity to be assessed by a different, appropriate and applicable methods across a programme/subject major.
Practicability and Efficiency	Assessment tasks should be practical for both staff and students in terms of a reasonable workload, the time needed for completion and marking and their cost effectiveness.
Transparency	Information, guidance, assessment criteria, rules and regulations on assessment should be clear, accurate, consistent and accessible to all students, staff and examiners.

The assessment principles can assist us to improve our assessment practices. As some of the principles can clash with others, there is often a need for a programmatic approach to assessment (see next section for example of validity versus reliability).

Practice Exercise: The purposes and principles of assessment in your programme

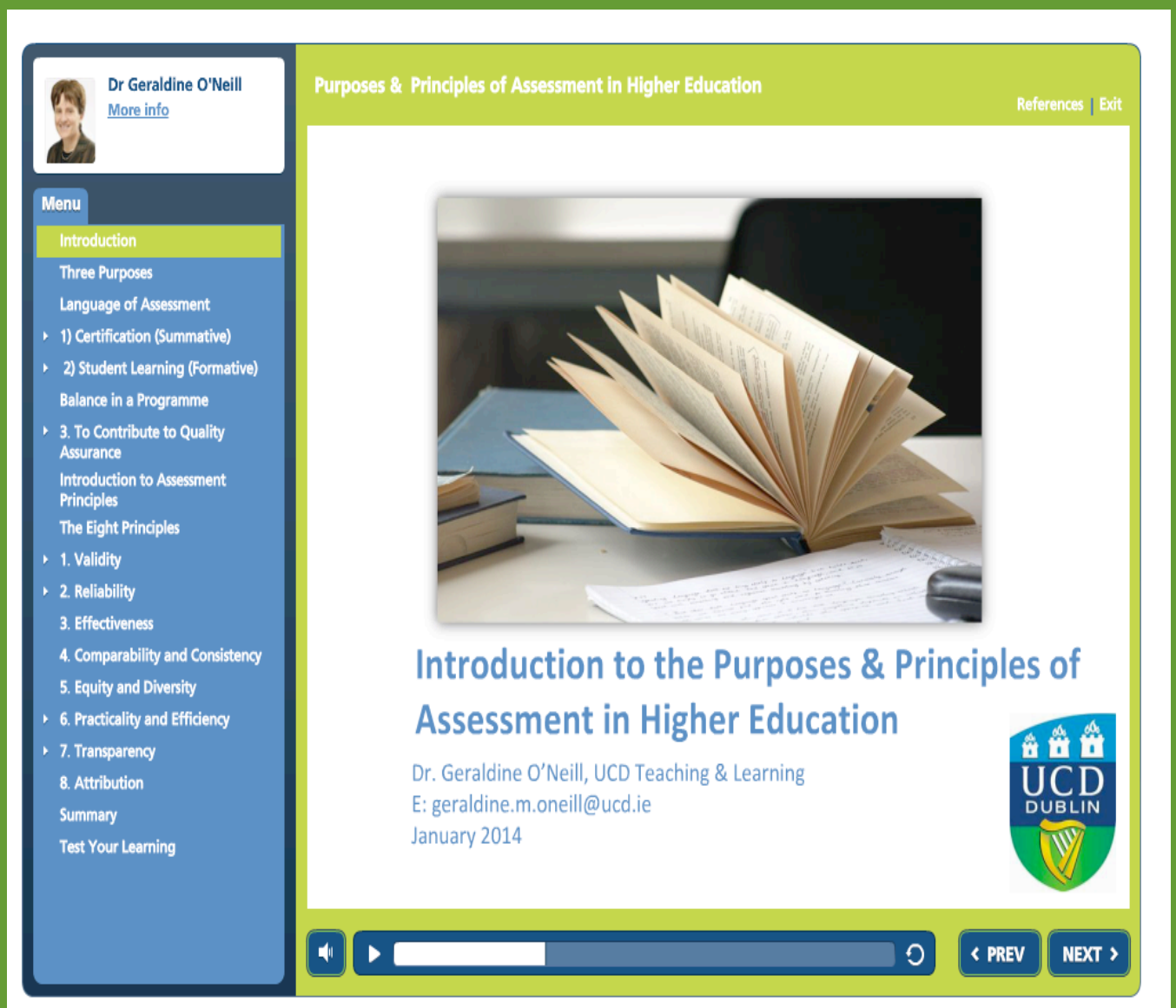
Task Part 1: Listen to this media resource by clicking on this link

Task Part 2: Ask yourself:

Could I consider more formative assessment in my programme?

Where is it important that assessment is high stakes and summative?

Are there principles that I should enhance or rebalance in programme, based on my student group, programme level and other variables?



Validity versus reliability of programme assessment

There is a danger in a programme that the sum of the assessments will not reflect the programme outcomes. There can be gaps or over-assessment in the curriculum. In addition approaches to student feedback may be inconsistent, lack transparency and be incoherent.

Knight (2000) highlights the challenges in having assessments that are both reliable and valid but not resource intensive, see an overview of his argument in Table 8.3.

Table 8.3 - Balancing Validity and Reliability in Assessment (Knight, 2000)

	HIGH RELIABILITY (especially important in high stakes assessments, such as degree awards)	**LOW RELIABILITY** (characteristic of situated judgements of complex performance or of aesthetic works)
HIGH VALIDITY (Important where an award certifies someone to be competent to practice)	Holy grail, valid & reliable assessment of complex outcomes, but is expensive.	In low stake assessment where there is relatively open dialogue , limited reliability is not a significant matter
LOW VALIDITY (Not desirable, but often present in test-like situations)	Can be useful if used as intended where limitations known	Not desirable

Footer

He goes on therefore to suggest that staff should:

- Recognise that some things cannot be reliably assessed and devise alternative ways of making information available to stakeholder
- To invest in reliable assessments of what can be and needs to be reliably assessed ('high stakes assessment')
- To recognise that assessment is not primarily a tool for awards, but also an aid to student learning ('low stakes' assessment)
- To use resources freed up by (3) to do (2).

He advocates a programme approach to assessment to achieve these suggestions (Knight, 2000)

My own experience has been that many assessment problems can be resolved using a programmatic approach to assessment. A first step in this process is to explore the current assessment practices, for example, by using assessment mapping tools.

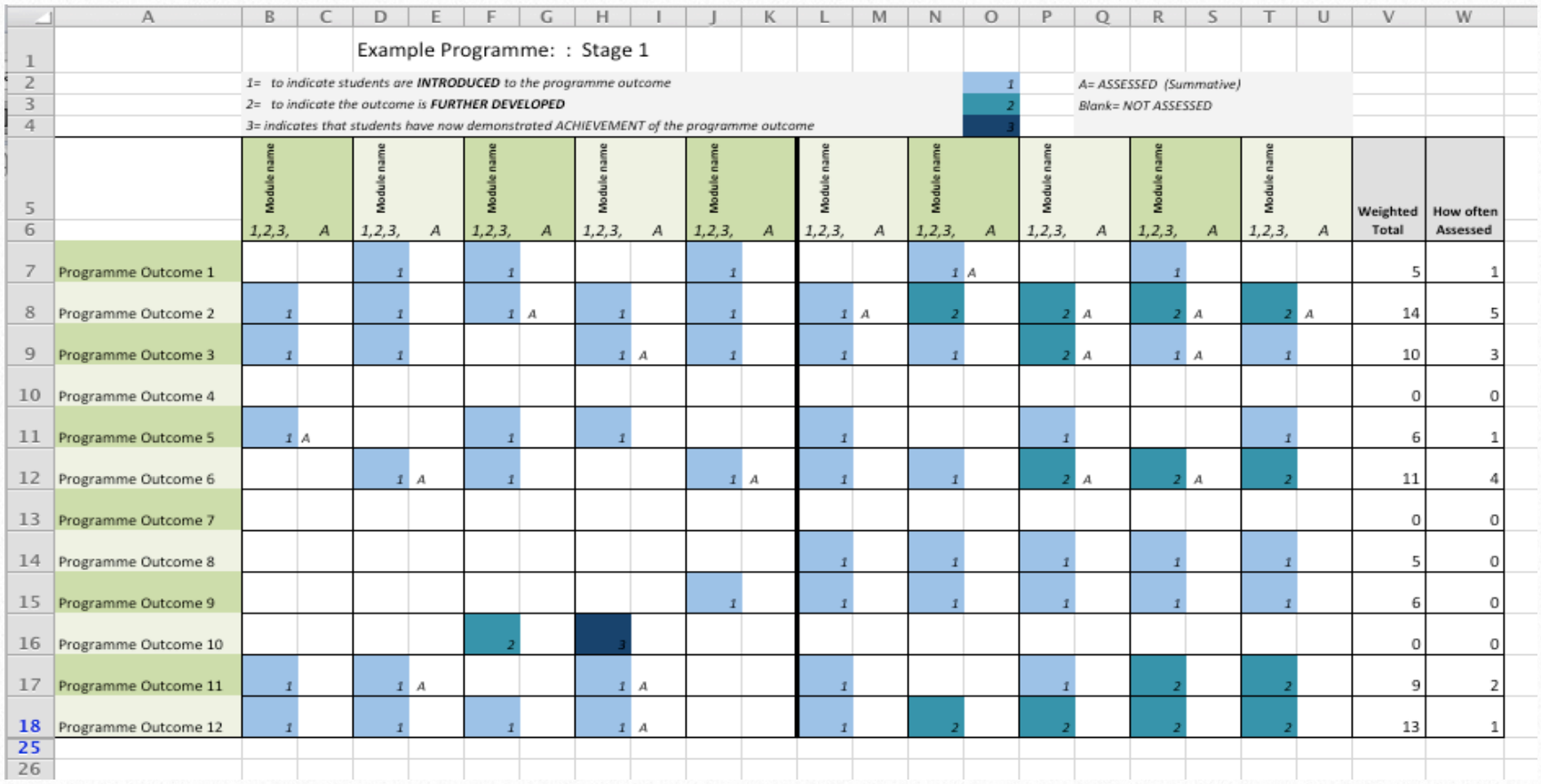
One solution to these dilemmas is to take a programme-wide approach to assessment, ensuring that over the duration of a full programme students will: have adequate opportunity to be assessed in different ways; receive on-going feedback on their progress; be ensured of a valid and reliable final outcome; and be assessed in both simple and complex tasks. (O'Neill, 2009, p1)

Programme Assessment Mapping tools

In a paper on this subject, (O'Neill, 2009, see appendix 4), I contrasted a variety of mapping tools to inform the reader who may be considering taking this programme-wide approach. The tools are explored in relation to how they are used; where they are used; and what type of information they are producing. In addition, the paper explores the challenges in approaching assessment from the 'lens' of a programme, particularly in relation to academic autonomy and the current focus on assessment at module level.

As part of UCD's Teaching & Learning's Assessment Redesign project (Galvin et al, 2013), we developed a simple mapping tool to plan for assessment strategies (Appendix 3: *Instructions for the UCD P.O.M.M,* including link to the tool). It was based on a review of different tools (O'Neill, 2009) and is available for use as a tool for mapping assessments.

Figure 8.3 - Screenshot of UCD's 'Programme Outcomes Mapping Matrix' POMM©



Example Programme: : Stage 1

1= to indicate students are **INTRODUCED** to the programme outcome
2= to indicate the outcome is **FURTHER DEVELOPED**
3= indicates that students have now demonstrated ACHIEVEMENT of the programme outcome

A= ASSESSED (Summative)
Blank= NOT ASSESSED

	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Weighted Total	How often Assessed
Programme Outcome 1		1	1		1		1 A		1		5	1
Programme Outcome 2	1	1	1 A	1	1	1 A	2	2 A	2 A	2 A	14	5
Programme Outcome 3	1	1		1 A	1	1	1	2 A	1 A	1	10	3
Programme Outcome 4											0	0
Programme Outcome 5	1 A		1	1		1		1		1	6	1
Programme Outcome 6		1 A	1		1 A	1	1	2 A	2 A	2	11	4
Programme Outcome 7											0	0
Programme Outcome 8						1	1	1	1	1	5	0
Programme Outcome 9					1	1	1	1	1	1	6	0
Programme Outcome 10			2	3							0	0
Programme Outcome 11	1	1 A		1 A		1		1	2	2	9	2
Programme Outcome 12	1	1	1	1 A		1	2	2	2	2	13	1

This simple mapping tool gives a quantitative summary of how often each outcome is assessed, which gives rise to some reflective questions that the programme team can ask themselves, for example:

- Q1: Programme outcome 3 is not addressed at all in stage/year 1, is that a problem?
- Q2: Programme outcome 11 is significantly addressed in the teaching and learning approaches, but is only assessment in three modules, are you satisfied with that? Does this make sense for stage/year 1 students?

In summary

This chapter highlights some of the considerations while exploring assessment at the level of the programme, for example: programme assessment principles; assessment *As* learning as an approach; validity and reliability of programme assessment**.**

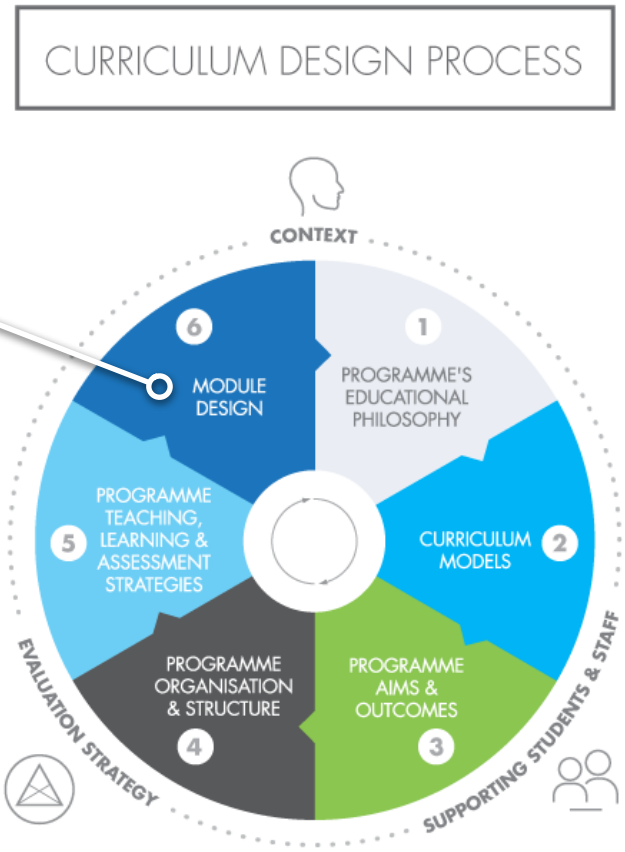
9

Blended Module Design

This chapter focuses on blended module design as it is a growing approach to module design in higher education. This chapter is based on the UCD Teaching & Learning website and resource composed by O'Neill & Galvin (2013)

Module Design

Module Design



Chapter 9: Blended Module Design (Geraldine O'Neill & Aine Galvin)

Module Design

Although this book is focused at the level of programme design, module design is part of the overall programme design. There are some very useful and accessible resources on this. This chapter is based on a UCD blended module design project and related resources that we (O'Neill & Galvin, 2013) developed as a part of that project. Although this chapter is targeted at the blended learning environment (i.e. the blend of face-to-face and online learning, often called a hybrid approach), the guidelines are also a good starting point for the development of fully online or distance learning modules.

What is blended learning?

Blended learning is a flexible term, used to describe any and all varieties of teaching where there is integration of both face-to-face and online delivery methods. Although in existence for over ten years, Chew (2010, p. 2), citing earlier work, found that '*researchers and practitioners consider that blended learning is currently embryonic in its development*'. Debate about the meaning of the term is still ongoing (Partridge, Ponting, & McCay, 2011, p2). One overview of online learning highlights that blended learning is usually in the proportion of 30-79% online, described as either 'Blended' or 'Hybrid' learning (See Allen & Seaman, 2010, in Table 9.1) .

Table 9.1 - An Overview of Online Learning Environment (Allen & Seaman, 2010)

% on-line	Type of Course (Module)	Typical Description
0%	Traditional	Course with *no online technology* used – content is delivered in writing/orally
1-29%	Web Facilitated	Course that uses *web-based technology to facilitate F2F course*. May use VLE or web pages to post curriculum & assignments
30-79%	Blended/Hybrid	Course that *blends online & F2F delivery*. Substantial proportion of content is delivered online, *typically uses online discussion & typically has a reduced number of F2F sessions.*
80+%	Online	A course where *most/all of the content is delivered online*. Typically no F2F meetings.

In addition one definition notes the value in blended learning of 'trading-off' time with the face-to-face component: '*Blended courses integrate online with face-to-face instruction in a planned, pedagogically valuable manner, and do not just combine but trade-off face-to-face time with online activity, or vice versa'*. (Vignare 2007).

Osguthorpe and Graham (2003) identified six goals when designing blended environments: pedagogical richness, access to knowledge, social interaction, personal agency, cost effectiveness and ease of revision (p.231).

Some useful reading

The literature on blended learning is growing. In 2012, Halverson et al did a comprehensive review of the most cited literature on blended learning. They noted that the most impactful book on blended learning was *The Handbook of Blended Learning: Global Perspectives, Local Designs* (Bonk & Graham, 2006), while the most impactful article was Garrison and Kanuka's (2004) article on the transformative power of blended learning.

In our own review of the teaching and learning design literature, we found that

- Partridge, Ponting and McCay, (2011) gave a readable overview of the different blended design models and frameworks
- Gilly Salmon's (2007) book gave more detail on setting up and implementing e-tivities
- A very practical American resource for module design is Finks's (2003) web resource. This is developed from his text book on *Creating significant learning experiences: An integrated approach to designing college courses* (Fink, 2003).
- Littlejohn and Pegler's (2007) book is a very useful resource around making your design transparent and forms the basis for our own design in the 'UCD Blended Learning Initiative Project'
- Diana Laurillard's (2012) recent book on *Teaching as Design Science: Building Pedagogical Patterns for Learning and Technology* sets out how you can design the online environment for Learning for Acquisition; Inquiry; Discussion; Practice and Collaboration.

Good blended module design

Table 9.2 - Overview of Good Practice in Blended Module Design

In the design of the a module, it is recommended that you should:

Consider the needs of your student group and the context of their learning, e.g. the level, students' previous experience[1,2]

Consider the key learning tasks for your students and based on these write your learning outcomes[2,3]

Align your module's learning outcomes, assessment approaches and teaching and learning activities[1,2]

Emphasize active student learning, in particular students' peer learning, self-monitoring and autonomous learning [1,2,3, 4,5].

Develop an efficiency with staff and students' time over the blended learning experience [3, 5, 6,9]

In addition for a blended learning module

- Make sure that you present students with a coherent and efficient sequence of your face-to-face, out-of-class and on-line module activities and learning materials/resources so that they can see what you have made available for them to help them complete your module[2,6,7,8].
- To help reduce information overload[8], create a thematic structure to the module by grouping the learning materials by either topic, concept, activity and/or time-scale, i.e. Topic A weeks 1-3; Topic B weeks 4-6.
- Within these groupings, try and position all of the related learning materials close to each other in the VLE[2,3].
- Where appropriate, consider opportunities for students to collaborate and monitor their progress within Bb, e.g. group discussion, low-stakes MCQs [5,6,7]
- Write a simple explanation in the VLE for your students, setting out your expectations of what they have to do in the module, why they are doing it and how it links with their learning and assessment[6].
- When setting activities/tasks for student to complete, set out the expected amount of time students should spend on this task, i.e. time-on-task[5,6,8].
- Ensure that your learning materials are readily accessible to all students[1,5,6].

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Table 9.2 gives an overview of good practice in blended module design. Careful planning of the blended environment is key. Listen to the informative video presented by Australian Learning and Teaching Council (ALTC, 2013b). This resource considers what you should put on line:

> *It examines the importance of considering pedagogy before technology; constructively aligning assessment with learning outcomes; and the integration of digital literacy skills. It also offers some useful strategies for deciding which components are better suited to an online learning environment (ALTC, 2013b)..*

The ALTC also highlight some of the key considerations developed by UNSW when planning, in particular, for the blended learning environment; see their excellent Learning to Teach On-line resource .

As for all module design processes, consider the needs of your student group and the context of their learning. Based on this, decide what are the key tasks/learning that you hope your students should achieve in this module. It is then that you should consider what technologies are most suitable to supporting this.

Write your learning outcomes and ensure that the learning and assessment tasks align with these outcomes. Consider also the sequence and inter-relationship of the assessment tasks. Littlejohn and Pegler (2007) describe that there are four types of blend to consider for both staff and students:

- The space blend: virtual and/or physical
- The time blend: for example synchronous versus asynchronous
- The media blend: the types of tools and resources
- The activity blend: the organisation of the different activities and resources.

In addition to the consideration of the time blend, the efficiency of the blended module from both your and the students' time is very important. In your initial module design, consider the balance in students' time between: what they are required to study (autonomous student learning); tasks they are prescribed to do themselves online or

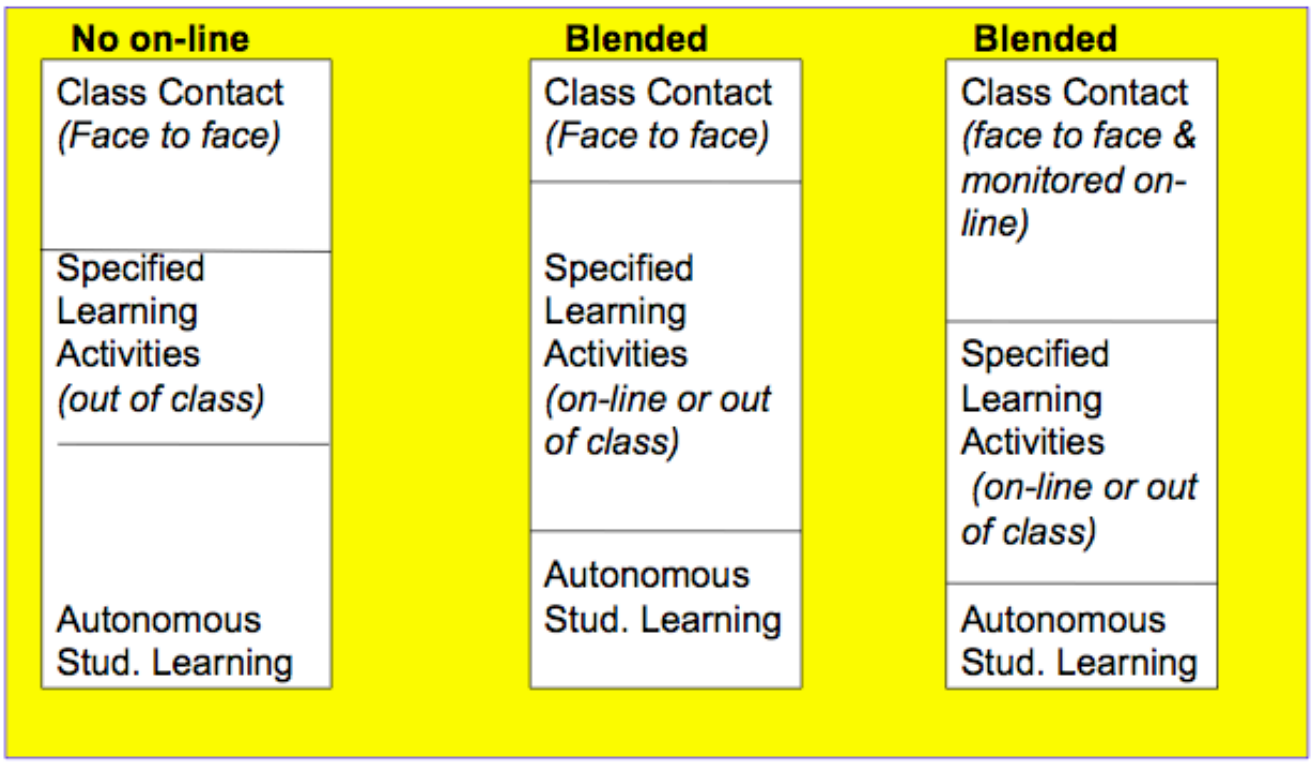
out-of-class (specified student learning tasks, including assessment activities); and what is addressed in the face-to-face or online monitored contact hours (lectures/labs/tutorials/online group discussions). Collectively they should add to the equivalent of approx. 110 student effort hours for a 5 ECT credit module (Figure 9.1).

Consider the added value of the online environment for student-activity and how this may 'supplement' or 'replace' some in-class face-to-face interaction.

> *The supplemental model retains the basic structure of the traditional course and a) supplements lectures and textbooks with technology-based, out-of-class activities, or b) also changes what goes on in the class by creating an active learning environment within a large lecture hall setting. (NCAT, 2013a)*
>
> *The replacement model reduces the number of in-class meetings and a) replaces some in-class time with out-of-class, online, interactive learning activities, or b) also makes significant changes in remaining in-class meetings. (NCAT, 2013b)*

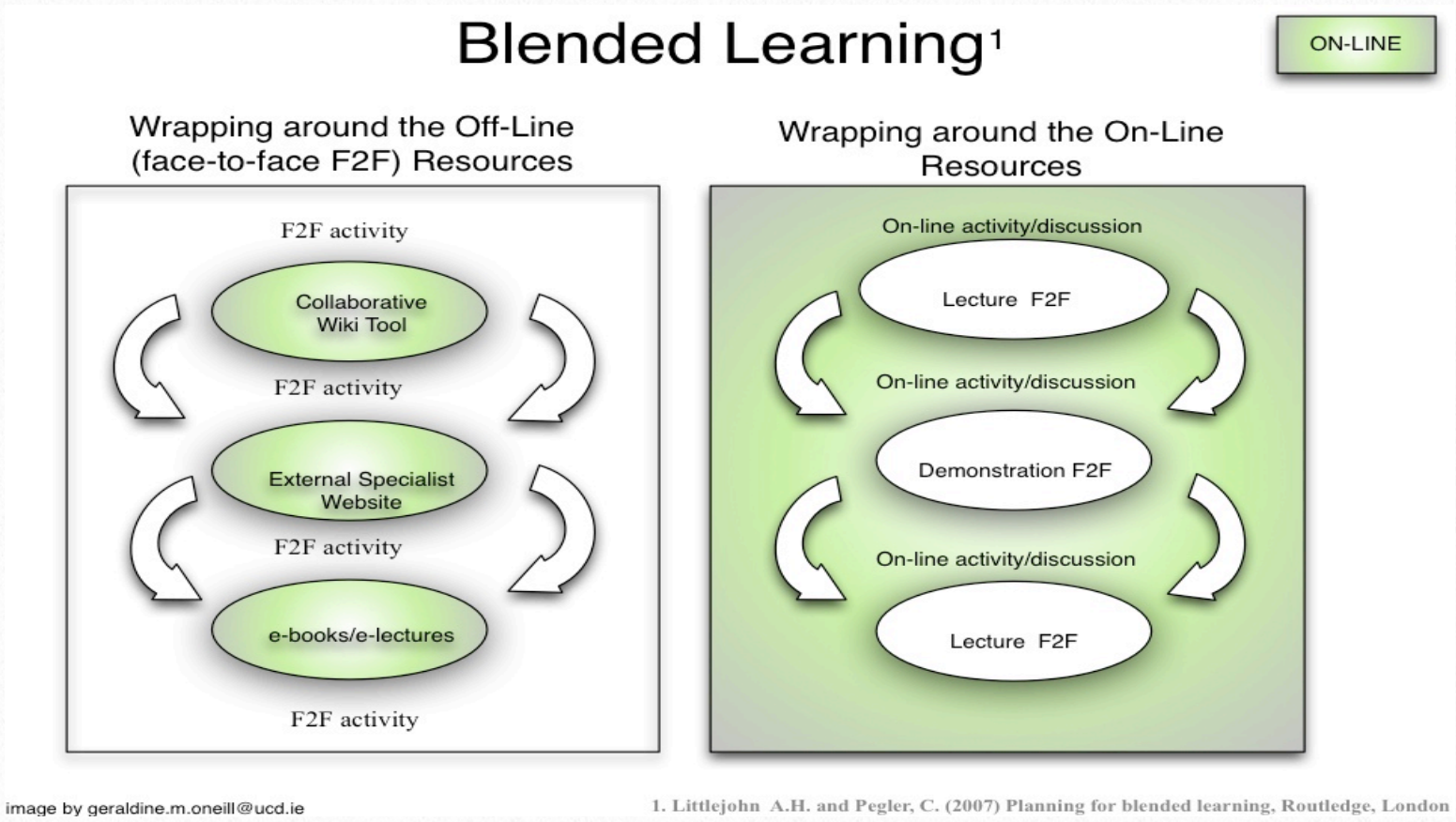
Calculate the expected student-effort hours for any online tasks for the students (i.e. later you will need to communicate this to students).

Figure 9.1 - Student Effort Hours in Blended Learning (same hours, different weightings)



As the online environment allows students to engage with the materials before, during and after class, consider the best sequence for when and how students might do this, i.e. develop a plan to 'wrap' (Figure 9.2) the blend of content, activities and resources (Fink, 2003, 2004; Littlejohn & Pegler, 2007).

Figure 9.2 - Blended Learning: The Wrap Around (Littlejohn & Pelger, 2007)



There have been different models used on how to document eLearningblends. Common to the majority of these frameworks are that 'people' engage in 'activities' with 'resources'.

Littlejohn and Pegler (2007) suggest some frameworks. The first of these is a lesson plan approach to documentation and includes documentation on: time; mode; staff role; student role; resources and feedback and assessment. Table 9.3 gives an example of this approach to documentation. Another framework is the learning design sequence map (Table 9.4). This approach visually highlights the sequence of the learning and teaching perspectives, which can be either linear or iterative non-sequential tasks (Littlejohn & Pegler, 2007).

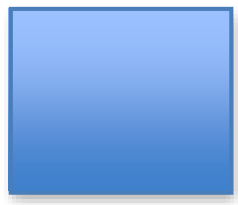
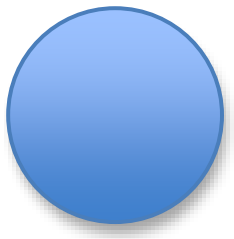
Table 9.3 - Lesson Plan (adapted from Littlejohn and Pegler, 2007)

Lesson Plan: Planning the Blend of Teaching, learning and assessment activities.
(adapted from Littlejohn & Pegler, 2007)

What is the sequence of these activities and where do they where do they best fit (On-line, out-of-class and /or in-class (F2F))?
Be efficient with assessment as students have demands from other parallel modules.

Time	**Mode** (delete irrelevant)	**Student Role** (Task to do, e.g. read, do MCQ, meet student group..)	**Staff Role** (e.g. lecture, monitor on-line discussion, set up groups on-line, ...	**Resources** (content and other)	**Resources** (services /courseware/ technology)	**Feedback and Assessment**
Week(s)	On-line, In-class (F2F), Out-of-class					
Week(s)						
Week(s)						
Week(s)						

One very commonly used approach is that developed by Oliver et al (2002) and used by the Australia Universities Teaching Committee (AUTC). It visually sets out the categories of 'learning activities' (sometimes described as learning 'tasks'), the 'learning resources' and the 'learning supports.' AUTC (2013, p1) describe these in Table 9.4.

TABLE 9.4 - ONE FRAMEWORK FOR DOCUMENTING BLENDS	
Oliver et al (2002); Australia Universities Teaching Committee (AUTC, 2013).	
Representing learning supports: The learning supports are represented by circles to the right of the activity sequence. An arrow from a 'circle' to a 'square' indicates that support strategies are being used to assist the students in their learning.	
Representing learning activities: The learning activities are represented by a series of rectangles, arranged vertically. These activities represent the learner's 'journey'. Each rectangle has a description of what the learners are required to do or produce. Activities that are assessable are distinguished with an asterisk (*).	
Representing learning resources: Learning resources are represented by triangles to the left of the activity sequence. An arrow from a resource (triangle) to an activity (square) indicates that resources are available to the student when doing the activity. An arrow from an activity (square) to a resource (triangle) indicates that a resource is produced during the activity and becomes a resource for others to use later.	

These can be overlapping categories and they appear to be differently interpreted in the literature, for example the lecture can be seen as a 'learning resource' (as in Figure 9.3) or as a 'learning activity' that the student needs to attend and engage with. Using the square, triangle and circle, the map is laid out in a sequence, based on the types of learning situation, such as that represented in Figure 9.3 and 9.4).

Figure 9.3 - Example of a Module Design using Oliver et al's (2002) design.

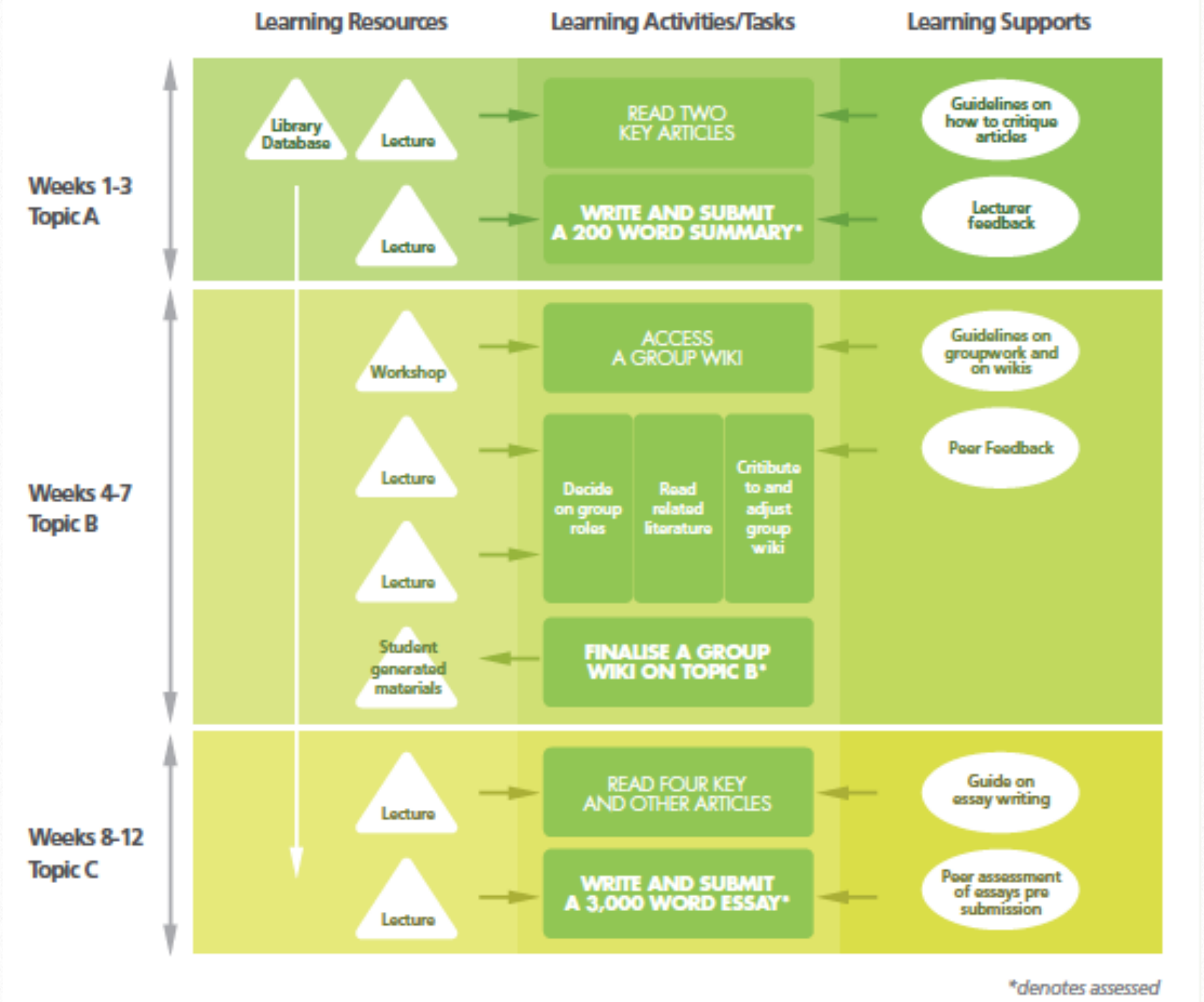
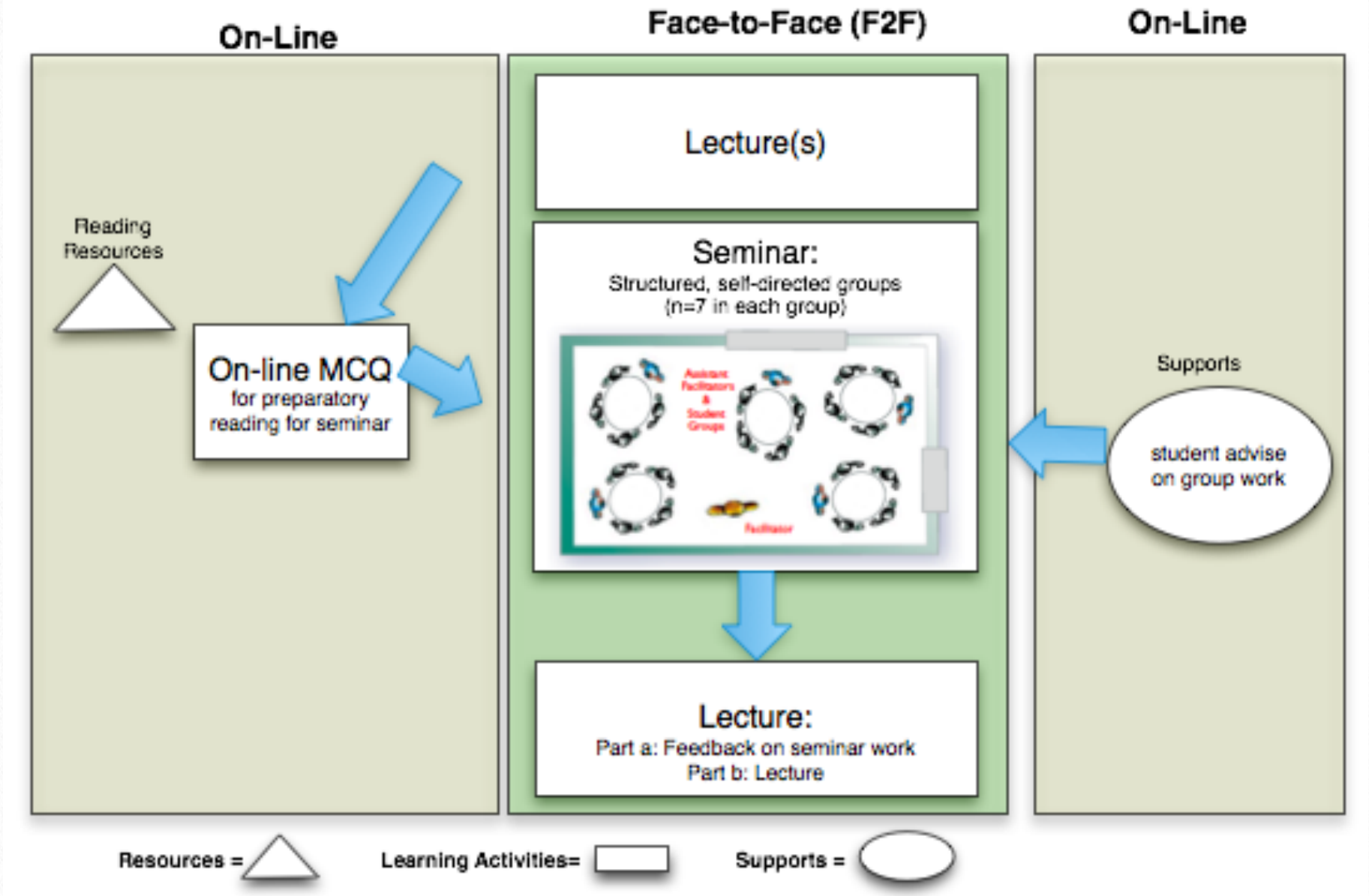
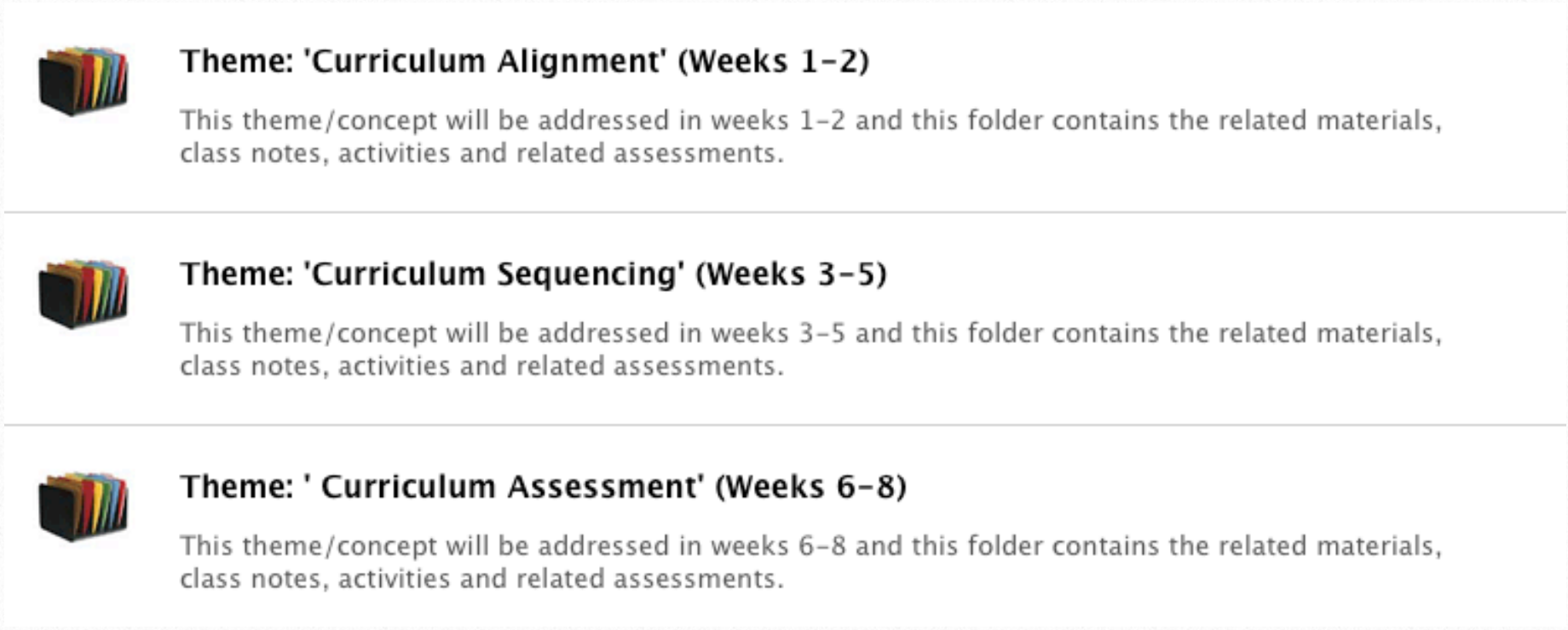


Figure 9.4 - UCD Example Organised by Online and Face-to-Face.



Learning design sequence maps help outline the complexities of the sequencing of your teaching and learning activities. In order to reduce information overload online, first organise your module's content into themes/concepts/units/activities as is appropriate to your subject.

Figure 9.5 - Example of Folder Organised by Themes and Time



It is good practice, as in Figure 9.5, to write a short note addressed to the students that highlights what is in each folder. In order to scaffold student learning, it can be beneficial to progressively release folders. It is also possible in most VLEs to turn off folders so one student group can't see another group for some aspects of the module.

Set explicit tasks

Within these folders organise the material to explicitly set tasks with which the students should be engaging at that time (i.e. reading, attending class, doing assessments, other online or offline activities; see Figure 9.7 as an example). Even in modules with a high level of lectures and formal examination, there is still an expectation of reading and critiquing materials. Make this expectation explicit.

Consider sequencing of the activity

Consider what is the most efficient sequence of activities for the blend of online and face-to-face experiences.

Write a narrative to the student

Write to the students as if you were talking to them, '*you should now be doing/ reading…'; 'you might find the following resource useful…*' Use very clear instructions and rationale for tasks. In the narrative, note the

- 'purpose' of the activities;
- the 'task' including estimated time student should be spending on the task; and,
- where applicable, the expectation of students' 'responses to each other (i.e. in group discussion/blogs/wiki).

Salmon (2007) suggests that activities (e-titivities) should be laid out by these three elements. See an example of this in Figure 9.7 and see Table 9.5 for a template to help you present the activity (e-tivity) to the students in the VLE environment.

Table 9.5 - A Template to Assist in the Design of an E-tivity (based on Salmon, 2007)

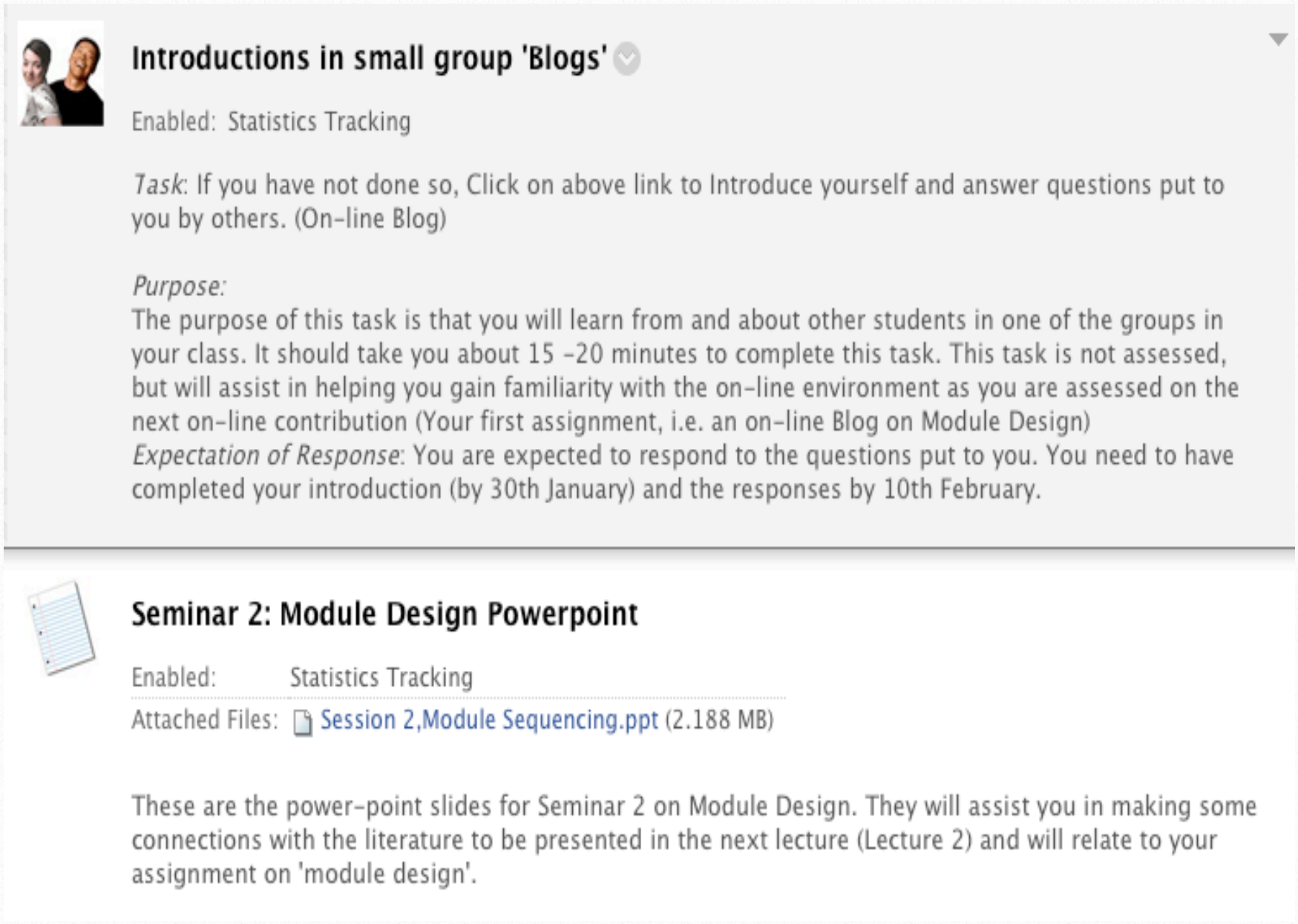
Write as a narrative (as if talking to the students) but with clear expectations of what they need to do.

1.	**Title of E-tivity:**
2.	**Purpose of the e-tivity (why they are doing it, is it assessed, indicate what might indicate success and how achieve)**
2	**Task : (What they should do and how go about doing it)**
4.	**Where required, note whether they need to responds to other students and how they should work together**
5.	**Time and Timing (Length of time expected to complete and any deadlines for completion)**

Salmon, G (2007) *E-tivities: The key to Active On-line Learning*. Oxon: RoutledgeFalmer.

As noted earlier, as you add in items and folders, write a summary sentence on what is in this folder/item (See Figure 9.7).

Figure 9.7 - Aligning the Sequence and Positioning of Materials



Align Resources

Resources should be linked with the task and the narrative and placed as the students need them. Therefore, resource-type folders or items, i.e. 'materials', 'resources', 'documents' should be embedded close to the task and they should align with the tasks. The assessment should also be aligned with these resources.

Engagement and Inclusive Learning

Ensure that your learning materials are in an accessible format to meet diverse students' needs (see also http://www.ucd.ie/teaching/documents/AccessibleBlackboard.pdf

Consider how the online materials best compliments and/or supplements the face-to-face content. For inclusive student learning approaches, resources should be available to students beforehand; however there needs to be an added value to the face-to-face interaction for students to be encouraged to attend and engage with the material. Consider how the lecture is not an exact replica of the slides/materials online. You may decide to adjust the style of your lecturing to move away from what students can now receive easily in the online space, i.e. :

- Lectures to include more depth explanation on complex concepts,
- In-class case studies based on pre-reading,
- In-class short discussions in pairs,
- Mini-tests based on readings,
- Formative MCQ's in-class using clickers or show of hands.

For more on blended learning case studies for large classes (including examples of the 'flip-class-room'), see the UCD Teaching and Learning resource on Case Studies on Blended Learning in Large Classes.

Encourage Student Collaboration and Peer Learning

Where possible, use the blended environment as an opportunity for students to collaborate with each other and with staff, i.e. Discussion Boards, Wikis, Blogs. These collaborative activities can be assessed for student participation and/or quality of contribution. There are also some useful case studies of students benefitting from low weighted grading for participation in un-monitored discussion. For example, one of REAP case studies describes how this approach was used with 500 1st year Psychology students, see Baxter (2007). For more details on the rationale for discussion groups, wikis, blogs, see UCD Teaching & Learning's eLearningpage

Assessing online

The online environment allows opportunities for summative assessments (i.e. MCQ, discussion boards, wikis, concept maps, etc.). The same methods can also be used for assessment FOR learning opportunities (ungraded or low-graded assessments for feedback purposes; UCD T&L, 2012a). Some of the range of online assessments include:

Written assignments Essays Interactives e.g. drag-and-drop, labelling, sequencing Online quizzes and questions Collaborative assignment work Portfolios Online exams (open-book; structured; timed) Practicals	Simulations Case studies Participation in online discussions Publication of student work / presentations Experiential activities, such as role-play Debates Reviews

When considering whether to use online assessments, the *Centre for Study in Higher Education* (2013) provides a useful resource on some key issues to consider when starting this process.

In summary

In the design of the a module, it is recommended that you should:

- Consider the needs of your student group and the context of their learning, e.g. the level, students' previous experience
- Consider the key learning tasks for your students and based on these write your learning outcomes
- Align your module's learning outcomes, assessment approaches and teaching and learning activities
- Emphasise active student learning, in particular students' peer learning, self-monitoring and autonomous learning

- Develop an efficiency with staff and students' time over the blended learning experience.

In addition for a blended learning module:

- Make sure that you present students with a coherent and efficient sequence of your face-to-face, out-of-class and online module activities and learning materials/resources so that they can see what you have made available to help them complete your module
- To help reduce information overload, create a thematic structure to the module by grouping the learning materials by either topic, concept, activity and/or timescale, i.e. Topic A weeks 1-3; Topic B weeks 4-6.
- Within these groupings, try and position all of the related learning materials close to each other in the VLE
- Where appropriate, consider opportunities for students to collaborate and monitor their progress within Bb, e.g. group discussions, low-stakes MCQs
- Write a simple explanation in the VLE for your students, setting out your expectations of what they have to do in the module, why they are doing it and how it links with their learning and assessment
- When setting activities/tasks for students to complete, set out the expected amount of time students should spend on this task, i.e. time-on-task
- Ensure that your learning materials are readily accessible to all students.

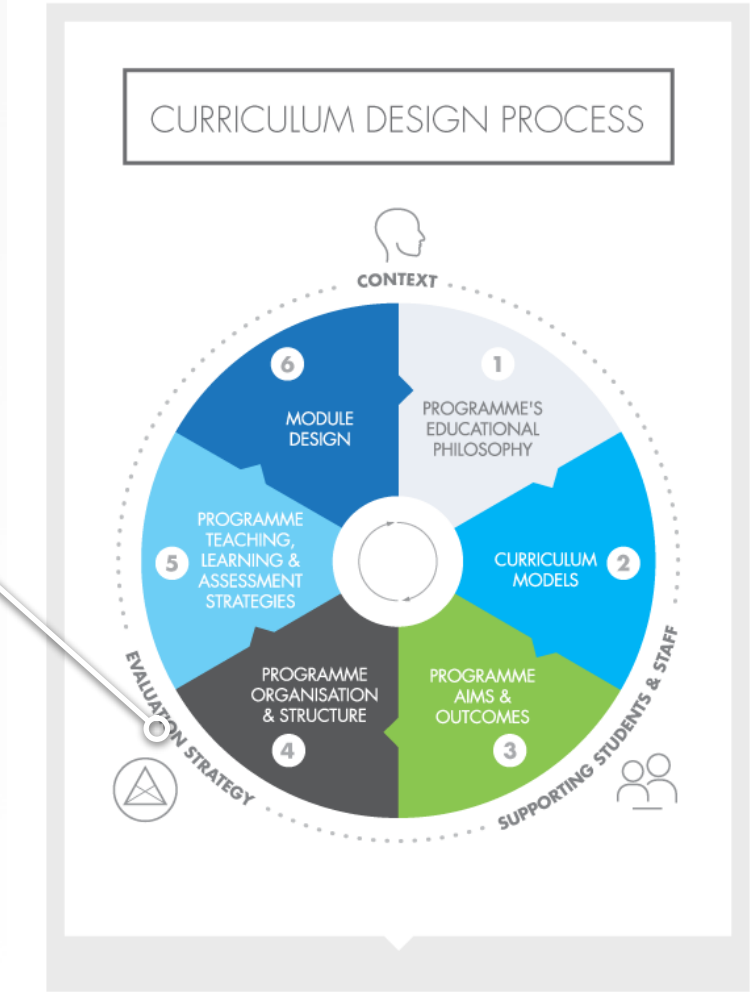
10

Monitoring and Evaluation

A programme requires an evaluation strategy that that assists in the design, implementation and post implementation stages. It also requires that different stakeholders, internal and external to the institution, are involved in this process. This chapter presents some option to consider and includes evaluations that can be used for face-to-face, blended and online programmes.

Monitoring and Evaluation

Monitoring and Evaluation



Chapter 10: Monitoring and Evaluation

At various points in time programmes need to be monitored and evaluated formally by both internal and external colleagues/peers/students/alumni. In addition, programme teams may have their own professional or other programme monitoring processes.

An evaluation strategy

Programme evaluation should occur:

- throughout the programme;
- using multiple methods; and
- By multiple stakeholders.

Many informal processes for monitoring programme success, such as informal student feedback, are very valuable but rarely captured in documentation. These can give a valuable contribution to the monitoring process if evidenced more accurately. Lyons, as early as 1998, suggested that programme teams can gather such evidence into a course narration/reflection or summary.

Evaluation at programme (or stage level) does not necessarily equal the sum of the module evaluations and requires some special attention in order to gain the full picture, i.e. assessment overload across the full programme. In addition, although student evaluation is very common at module level, programme evaluation also requires the views of those who have done the full programme, such as recent graduate students and of those who have an invested interest in the outcomes of the programme. These could include staff/faculty, employers, professional bodies, librarians, educational technologists, etc.

There are broader considerations for evaluation at Institutional level, for example: institutional costs and investment in the programme; technology; staff time; choice of technology; staff training needs; student access and inclusion; ethical issues; pedagogical models; copyright, etc...

Some core principles /procedures of programme evaluation

There are some common core principles when considering evaluation of face-to-face, blended or online programmes:

- The programme should be evaluated as far as possible by multiple methods, i.e. student questionnaires, group discussions, interviews, peers (colleagues) evaluation, self-evaluation and self-reflection. This increases the reliability and validity of the process
- Evaluation should be on-going and the iterative nature of the evaluation should make the process more efficient as the feedback is used to continuously improve the process
- Cross comparisons across programmes are often less useful, than comparisons from year to year of the same programme
- Examples of changes made to the programme from the previous year's process should be highlighted to students
- Care should be taken not to overload students or staff with questionnaires/ interviews/focus groups in the same week/day.

Evaluating online or blended programmes

Many of the frameworks used to evaluate face-to-face programmes can be used with online or blended programmes. However, some frameworks and tools have been designed with these types of programmes in mind and I present a few of these in this section. They can be used in conjunction with many of the other methods. Some of the tools have been adapted for online use, for example, there is an online version of the nominal group technique.

(Pappas, 2012).outlines that evaluation of online programme enables us: to determine the quality, effectiveness and continuous improvement of eLearning; understand the pros and cons of the eLearning modules or programsmes; and make improvements (Pappas, 2012).

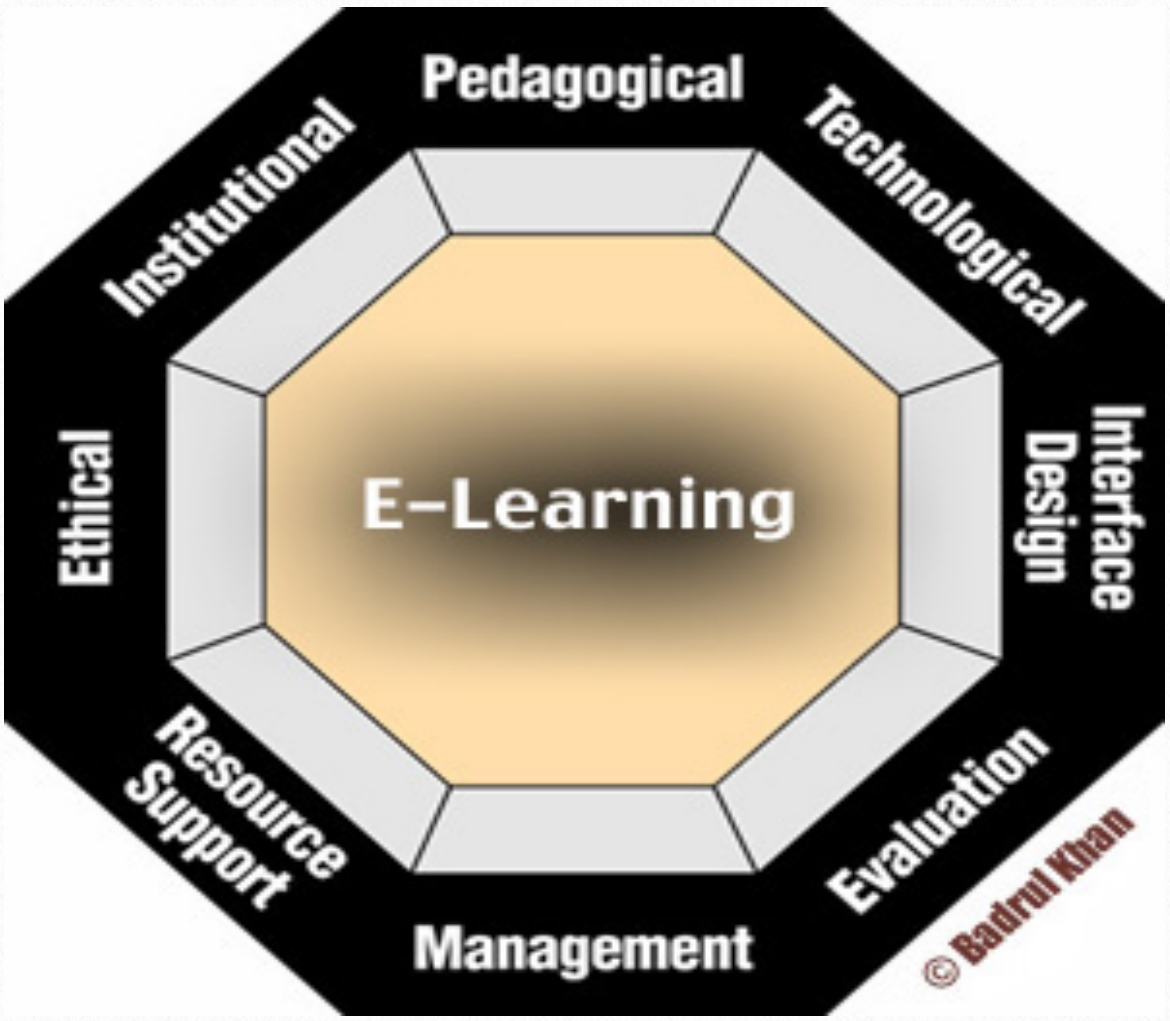
He also reinforces that it can should happen

- Before the eLearning (needs assessment) to plan eLearning
- During the eLearning (formative evaluation) to make improvements, and
- After the eLearning (summative evaluation) to determine outcomes (Pappas, 2012).

There are many dimensions to eLearning that can be evaluated, for example, Khan's (2005, 2013) Eight Dimensional Elearning Framework gives a comprehensive representation of the key areas for evaluation.

Figure 10.1 - Khan 's Eight Dimensional Framework (2005) .

Khan (2013) with permission



When looking at the bigger picture, some of the following give a wider perspective on eLearning for evaluation /quality assurance purposes:

- Ten Principles for Successful eLearning, International Association for Distance Learning;
- Shelton (2011) did a recent review of some of these frameworks;
- EADTU (2012): From a European perspective, E-excellent provides a new manual setting some benchmarks for quality of eLearning at institutional level;
- Lorillard and Ljubojevic (2013) have written extensively around the evaluation of eLearning designs;
- A very comprehensive web-page on evaluating eLearning can be seen on the University of Warwick website. This website addresses many research methodologies that might be suited to different questions.

As mentioned earlier, when evaluating a face-to-face, blended or fully online programme, the views and data from a wider group of stakeholders and approaches are needed across the timelines of the programme.

Table 10.1 highlights some key approaches at different points in times and this chapter will be structured by these timelines, i.e. end of programme, end of year/stage, module and on-going approaches.

Table 10.1 -Overview of a Programme Evaluation Strategy (examples of data)

	End of Programme	**End of year/ Stage**	**Module**	**Ongoing throughout program**
Students	Standardised student evaluations, i.e. ISSE, NSSE, Alumni feedback,	Stage evaluation	Standardised student evaluations, mid-unit feedback	Student-staff committees, student representatives, Student union
	Focus groups, nominal group technique, interviews.			
Peer/Self staff	Peer for self review questionnaires, Programme boards.	End stage questionnaires	Peer for self review questionnaires	External examiner reports, staff meetings, informal conversation, employer feedback
Other data (i.e. grades, data analytics)	Grades, GPA, employment data,	Grades, retention rates, etc	VLE engagement data	Pass rates, etc.

End of Programme Evaluation

Student Standardised Programme Evaluations

NSSE and AUSSE

The National Survey of Student Engagement (NSSE) has been in use in the US and other countries since 2000. Whereas in Australia and New Zealand, the tool that is extensively used since 2007 is the *Australasian Survey of Student Engagement (AUSSE)*. This tool was based on the NSSE. Both surveys are based on the idea of evaluating the student engagement at College/University, including the curriculum and extra-curricula activities. The *AUSSE website* defines student engagement as:

> *students' involvement in activities and conditions that are linked with high-quality learning. A key assumption is that learning outcomes are influenced by how an individual participates in educationally purposeful activities. While students are seen to be responsible for constructing their own knowledge, learning is also seen to depend on institutions and staff generating conditions that stimulate student involvement.* (AUSSE, 2015)

The findings from these surveys are reported back to the institutions and have been used, for example: to measure quality; provide information on the learning process; attract and retain students; change student engagement; and assist in the management of resources.

Irish Survey of Student Engagement (ISSE)

The key student programme evaluation in Ireland is now the Irish Survey of Student Engagement (ISSE, 2014). This is an Irish tool, based on the AUSSE, that is pitched at evaluating a programme. It draws on students' views on engagement in their programme. Is is completed at end of 1st year, final year undergraduate and at the end of postgraduate study. It was devised for developmental purposes, not for benchmarking. The score can be compared to similar disciplines but the results are anonymous. More than 27,000 students from 30 Irish higher education institutions took part during February – March 2015.

The survey *'is managed as a collaborative partnership. It is co-sponsored by the Higher Education Authority (HEA), institutions' representative bodies (Institutes of Technology Ireland, IOTI, and the Irish Universities Association, IUA) and the Union of Students in Ireland (USI)'* http://studentsurvey.ie/wordpress/about-the-survey/

Its purpose is to assist institutions and their students to improve their programmes based on the views of the students. It is divided into engagement and outcomes categories, or indices (See Table 10.2). The results are made available to institutions and a general annual national report is available online.

Table 10.2 - The Indices in the ISSE

Engagement Indices	Outcomes Indices
Academic Challenge	Higher Order Thinking
Active Learning	General Learning Outcomes
Student-staff Interactions	General Development Outcomes
Enriching Educational Experiences	Career Readiness
Supportive Learning Environment	Overall Satisfaction
Work Integrated Learning	

The Course Experience Questionnaire (Ramsden, 1991a, 1991b, 1991c; Wilson et al, 1997)

This questionnaire is used internationally. It was designed and is frequently used in Australia and the UK. It measures graduates' views on the entire programme. It contains the following scales: Good Teaching Scale; Clear Goals and Standards; Appropriate Assessment Scale; Appropriate Workload Scale. Other versions also included, for example, a Generic Skills Scale; Intellectual Motivation Scale; Student Support Scale.

> *The theoretical construction and the practical application of the CEQ are not without their critics. Some argue that the focus of the CEQ is too narrow as measure of the entirety of the student experience. Since its original development as a proxy measure of quality of student learning, the CEQ has been used for a range of purposes, some very different than for what it was in-*

tended, i.e. for determining institutional funding and use by third parties to construct league tables (Niland, 1999). There is some evidence that aspects of the CEQ may not be well suited to 'unconventional' teaching and learning environments, such as problem-based learning (Lyon & Hendry, 2002). Nevertheless, the CEQ remains a widely used measure of student quality of learning (see http://www.deakin.edu.au/itl/pd/tl-modules/scholarly/setu-ceq/setu-ceq-05.php)

There are various versions of the questionnaire. In addition to a likert scale of strongly agree to strongly disagree, it usually has some open ended questions. Wilson et al. (1997) describe that the tool is best used for: intermittent planned use; as a programme evaluation; for summative purposes; and cautious contextualised comparisons across programmes and institutions.

Student Focus Groups and Nominal Group Techniques

To balance the more quantitative data gathered by standardised student evaluations, it is useful to use more qualitative approaches. Two very common qualitative approaches to gather student feedback at the end of a programme are the *student focus group* and the *nominal group technique*. Both of these methods strengthen the student voice in the programme feedback process and can allow for a more detailed understanding of the strengths and weakness of the programme. In a recent article on these two approaches, the focus group is described as *a 'a face-to-face small-group technique in order to explore perceptions of given topics'* whereas the nominal group technique is a structured face-to-face group method for achieving group consensus (Varga-Atkins, McIsaac & Willis, 2015, p2). Whereas the focus group can give rich data, the nominal group technique provides consensus and a useful ranking of issues, which can then be actioned.

The steps in carrying out a nominal group technique are as follows:

- Students are presented with a question. This can be general or specific. Alternatively, participants can be asked to state the problem or issue they feel is most important.
- Each individual member of the group is asked to write down their own response to the set question. If they have more than one response then they should be asked to rank them in order of importance. Discussion is not permitted at this stage - which should last for about 10 minutes.
- Participants form groups of 6 - 10 and elect a leader. Alternatively, a leader may be chosen by the teacher and may be an 'outsider'. These groups pool their responses to form a composite list. At this stage there is still no discussion and responses must not be criticised or edited in any way. Individuals may make additional responses but this must not be allowed to develop into a discussion. The aim is to compile as large a list if possible. This stage is likely to take at least 45 minutes.
- In the same groups, the leader takes the group through its list of responses making sure that everyone understands what they all mean. Again, no discussion is allowed but the list may be altered for the sake of clarity.
- In the same groups, each participant ranks the top five problems or issues by assigning 5 points to their most important perceived problem and 1 point the least important of their top five.
- In the same groups, the results are tallied by adding the points for each problem or issue. The problem or issue with the highest number is the most important one for that group.
- The same groups discuss the results and generate a final ranked list of five responses which will be reported to plenary.
- In plenary, the groups come together and the ranked lists of responses are pooled. Overlapping items can be combined or composited. A second 5 point voting system is operated. The outcome is an overall ranking of issues / responses which reflects the concerns of the whole group.
- Participants are asked to brainstorm possible future actions (e.g. changes in the course) that should follow. These are recorded.

Varga-Atkins, McIsaac and Willis (2015) provide a useful visual overview of these two approaches and they describe how they combined the focus groups and nominal group techniques approaches. This, they believe, combined the advantages of the detailed fo-

cus group and the prioritised and quantitative ranking produced by the nominal group technique.

In addition, many staff are trying out nominal group techniques online, for example, McIsaac & Varga-Atkins, at the University of Liverpool

In order to strengthen the student group voice in a curriculum revision exercise, we also used a similar student participatory technique called *PRA (Participatory Research and Action)*. Our process used one method from the PRA approach method described as 'Pie charts'. We were also attempting to encourage student groups to negotiated the weighting of the issues and, based on these, to set actions with the staff on how to, where possible, to address them. Our technique is written up in O'Neill & McMahon (2012).

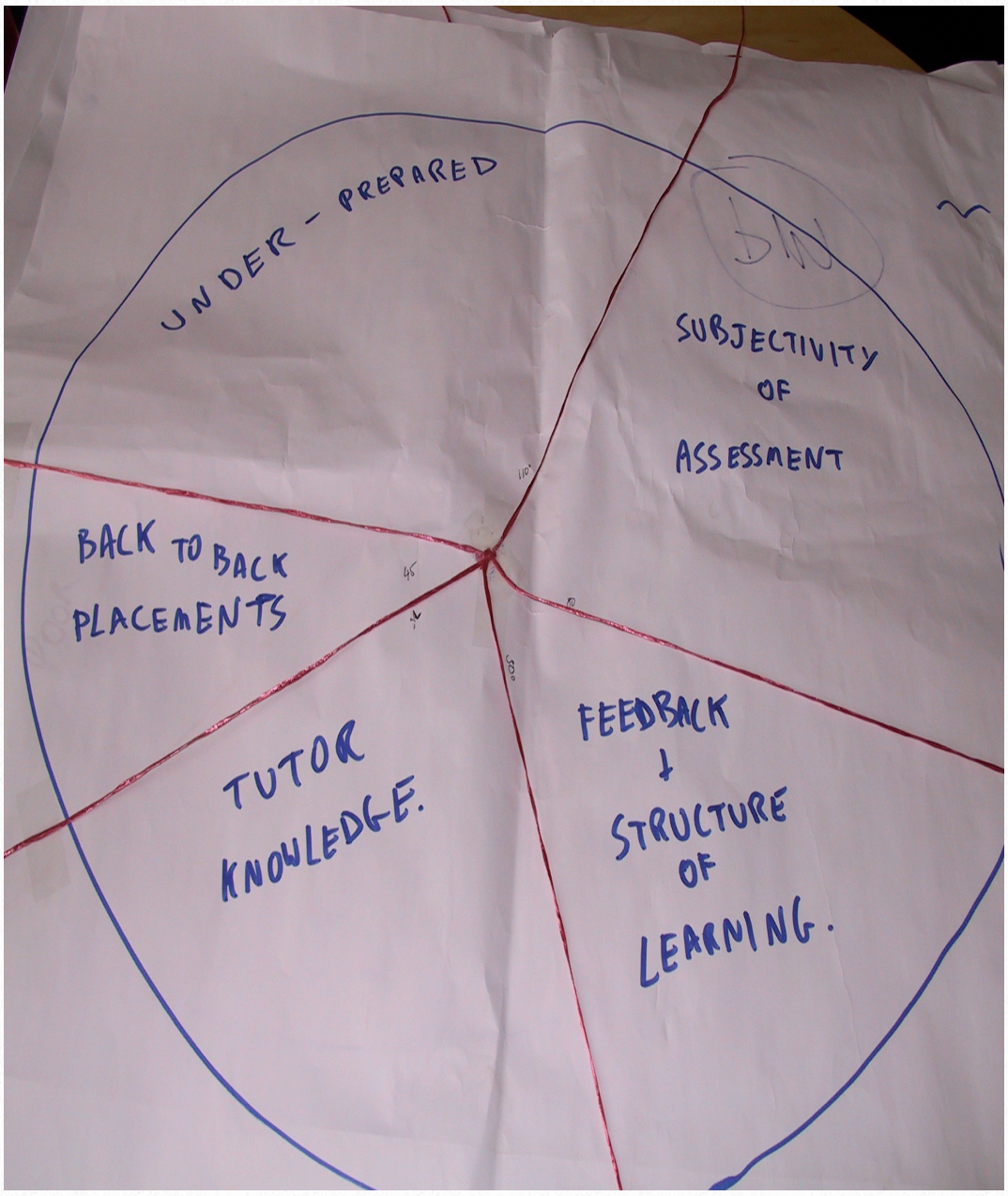


Figure 10.2 - An Example of a Negotiated Pie-chart by One Student Group.

Staff Peer and Self Assessment of the Programme

It is from the eLearning literature that you can come across many guidelines or tools that assist staff to self or peer monitor their programmes. These activities can be done either in the design phase or when revising a programme. When exploring tools that assist staff to monitor the quality of the online or blended program, we came across some international tools that assisted staff in this process (O'Neill & Cashman, 2015a, 2015b). There are many common themes across these tools, which map to the key area of programme design as laid out in this eBook, i.e. context, philosophy and models (Table 10.3).

Table 10.3 - Common Themes and Tools to Assist Staff in Peer and Self Reviewing Programmes (O'Neill & Cashman, 2015a)

Themes O'Neill & Cashman, 2015	Programme: Common components	References (cited in Sheldon, 2010)
Context	Institution support for programme4, 6; technology support for programme (including VLE); institutional policies for on-line; diverse student group; scale and cost effectiveness3; funding8	1. OLC Quality Scorecard 2. Western Cooperative for Educational Telecommunications (2001) 3. Bate's ACTIONS Model of Quality (2000) 4. Frydenberg's quality standards in e-learning, (2002) 5. Sloan consortium's 5 pillar of quality, (2002) 6. Lee and Dziuban's Quality Assurance Strategy, (2002) 7. Lockhart and Lacy's Assessment Model, (2002) 8. CHEA's accreditation and quality assurance study (2002) 9. Osika's concentric model (2004) 10. Khan's eight dimensions of e-learning framework 11. Haroff and Valentine's six-factor solution, 2006 12. Chaney Eddy Droman Glessner Green Lara Alecios Quality Indicators, 2009 13. ISSE
Philosophy and Models	transparent values; appropriate curriculum models;	
Outcomes	higher order13, career readiness; research information retrieval skills; aligned with teaching and learning activities;	
Organisation and Structure	sequence; coherence; development of digital literacy skills; interface design10	
Teaching and Learning Strategies	active learning across the programme; interactivity5; access and inclusion strategies across the programme	
Assessment & Feedback Strategies	clear assessment policies; assessment criteria; feedback policies; authentic assessment; timely feedback; self-monitoring;	
Support and Documentation	Staff training in technologies6; staff support; student support for digital literacy; student orientation; student handbook; clear documentation, access to the learning materials5	
Evaluation	Student and faculty satisfaction5; evaluation process in situ; retention rates7;	

9

One example of these tools is the OLC Quality Score card, see O'Neill & Cashman, 2015a for more examples.

The OLC Quality Score Card.

The US *Institute for Higher Education Policy* study, titled *Quality on the Line: Benchmarks for Success in Internet-Based Distance Education (2000)*, was used as a starting point for this tool. Building on this work, Shelton (2010) carried out a six round Delphi study, using 43 administrators of online education programmes from a variety of institutions in higher education. She developed 70 quality indicators. Each quality indicator has a potential range of 0-3 points, with a perfect score on the scorecard resulting in 210 points. The sections in this tool are divided up into:

- Institutional Support
- Technology Support
- Course Development / Instructional Design
- Course Structure
- Teaching & Learning
- Social and Student Engagement
- Faculty Support
- Student Support
- Evaluations & Assessment

It is available to be used, at a cost, from the OLC (Online Learning Consortium).

O'Neill and Cashman (2015b) are devising a similar tool for use in the Irish context for development purposes; the initial finding on this were presented at ITLA conference in 2015 (O'Neill and Cashman, 2015b).

Other data gathered at the end of a programme.

There has been a growing use of data analytics to inform the programme team. This data can assist with understanding, for example, students engagement with the programme. In addition, the views of graduates, alumi and employers have a particular role to play at this point, i.e. The end of the programme. For example, graduate destination surveys are becoming more valuable to feedback into the design of the programme. See HEA (2015) What do Graduates Do as an example of this approach in Ireland. More routine data gathered at the end of the programme can also provide a

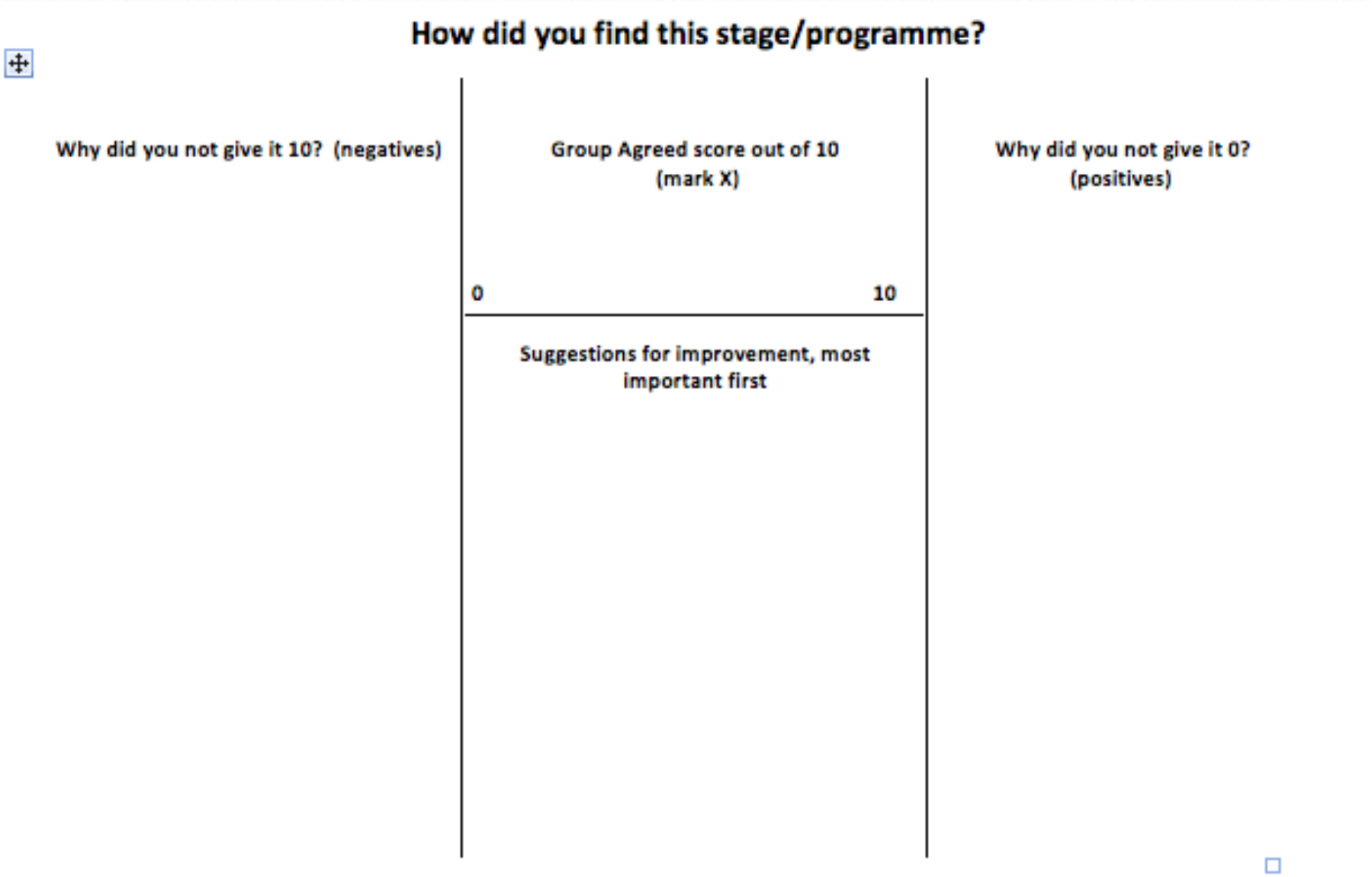
picture of the programme's progress, in terms of, for example, students grades, failure rates, awards and achievements, GPA. These all add to our understanding of the programme.

End of Year/Stage Evaluation

An interim approach to programme evaluation is stage (or end of year) evaluation. Most of the standardised and non-standardised questionnaires to students, noted earlier, are designed for the full programme and not for one year of the programme (with the exception of the ISSE/AUSSE for year 1). However, *Student Focus Groups* (Gibbs et al, 1988) and *The Nominal Group Techniques,* along with other more qualitative methods, could be also used for stage evaluation. (See Also Varga-Atkins, McIsaac & Willis, 2015).

Another approach that can be useful at stage level is the use of some questionnaires that compare across modules. Appendix 5 gives an example of one that can be used to give an indicator of how modules relate to each other and asks some open questions of student experience of the year/stage, i.e. *The Comparative Evaluation of Modules at Stage (Year) Level.* This approach is more useful than asking students individually about, for example, workload in each module. Another approach that could be used for student feedback at end of stage/year is an adapted version of the H Form (Guy & Inglis, 1999). This approach combines a quantitative score, i.e. 1-10, with some qualitative comments based on that figure.

Figure 10.3 - An Adapted Version of Guy and Inglis (1999) H-Form for Year/Stage Evaluation



H-Form Adapted from Guy, S., and A. Inglis. 1999. Tips for trainers: introducing the 'H' form – a method for monitoring andevaluation. *Participatory Learning and Action (PLA) notes* February 1999. Lon: IIED.

Similar to end of programme, other data that can be useful at the end of a stage/year is progression rates, grades, numbers of student on modules, failure rates on particular modules, etc.

Module Evaluation

Student Evaluations of Modules

The most common form of evaluation in higher education is student feedback on their modules. This makes a valuable contribution, but care must be taken that the sum of these evaluations does not equate to a programme evaluation. In Ireland there are many different evaluation of module questionnaires and there is no national module

survey currently. Some institutions however have developed their own evaluations for module level. For example, UCD uses an anonymous online module evaluation with seven core institutional questions, and an additional six (optional and free choice) questions added by the module co-ordinators. The process also encourages staff to 'close the feedback loop' so students are familiar with the changes made as a result of their own or other students' feedback. This is an important step to increase the low response rates associated with multiple module feedback from students.

There are some international standardised module evaluations available, for example:

Student Evaluations of Educational Quality (SEEQ)

> The *SEEQ* (Marsh 1982) is one of the best researched student feedback instruments. It is designed to measure factors including: Learning/Value; Instructor enthusiasm; Organization; Individual rapport; Group interaction; Breadth of coverage. The SEEQ has been shown to reliably discriminate between teachers and to provide valid measure based on a number of indicators of effective teaching (Marsh, 1987).

Module Experience Questionnaire (MEQ)

> A version of the *Course Experience Questionnaire* (Ramsden, 1991). *The Module Experience Questionnaire* has been used successfully in the UK (Lucas at al, 1997) to measure differences in students' learning responses to the design of individual modules (in contrast with the use of the *Course Experience Questionnaire* in Australia where it is used to measure students responses to entire programmes). The *MEQ* contains the following scales for module evaluation: Good Teaching; Independence; Appropriateness of workload; Appropriateness of assessment; Deep approach; and Surface Approach.

In the UK the main module evaluation is the *The National Student Survey (NSS)* (see http://www.thestudentsurvey.com/).There are 23 core questions questions that relate to the following subheadings:

- teaching on my course
- assessment and feedback

- academic support
- organisation and management
- learning resources
- personal development
- overall satisfaction. (http://www.thestudentsurvey.com/)

See the most recent review of the National Student Survey (HEFCE, 2014)

Mid Unit Feedback

One of the criticisms of end of module feedback, is that it is too late to change or address issues that arise during the module. Gathering students' views on the module while the module is still in progress allows student to have their voices heard for the module in which they are currently engaged. One such questionnaire was designed by James Wisdom and give some advice on how to carry out such a process during the module , see Mid-unit Questionnaire

Staff Peer and Self Assessment of the Module

There are some useful module design guides arising from the blended and online literature to assist staff in self and peer reviewing their module designs. These are collated in the reference list in Table 10.4 and are linked to common themes for evaluating the design of a module.

Table 10.4 - Common Themes and Tools for Blended and Online Module Design (O'Neill & Cashman, 2015b)

Themes O'Neill & Cashman, 2015	Module: Common components	References
Learning Outcomes	Level; alignment with programme outcomes; clearly defined; measurable	1. Quality Matters, 2. Online Course Review Rubric, Southern Mississippi 3. Quality Assurance Checklist, Central Michigan University 4. Distance Education Course Rubric, Craven Community College 5. Teaching with Sakai Innovation Award Evaluation Rubric 6. Rubric for Online Instruction, CSU Chico 7. Online Learning Course Quality Guide, BYU Idaho 8. Quality Online Course Initiative Rubric & Checklist, University of Illinois 9. Blackboard Exemplary Course Program Rubric 10. Coulter Faculty Centre Online Course Assessment Tool (OCAT) and Peer Assessment Process 11. Online Course Evaluation Project (OCEP), Montery Institute for Technology and Education 12. Online Course Assessment Tool (OCAT) and Peer Assessment Process, Coulter Faculty Centre 13. Online Course Quality Rubric, Utah State 14. Blended Course Peer Review Form, University of Central Florida 15. 5-star online course review, University of West Georgia
Design & Organisation	Learning approach (also referred to as 'instruction method' or 'T&L methods'); structure & sequence of learning activities; alignment of T&L activities and assessment; learning activities are authentic; ...	
Assessment & Feedback	Authenticity; timely responsive & varied feedback; criteria setting; guidelines; volume; variety; self / peer assessment	
Orientation	Student facing; guidelines / instructions / transparent; welcome message staff & students; netiquette; minimum technological standards; prerequisite knowledge	
Student & teacher Interaction	Expectations; teacher/student roles; student-student interactions; teacher-student interactions; learning community; student-centred learning; engagement	
Instructional Materials	Accessibility; appropriate use of media; benchmark quality of presentation; reliable; citation of third party materials	
Learner Support	Staff contact details; academic support; technical support; information literacy; online library	
VLE Interface Design	Navigation & clear organisation; access; link; accessibility; consistency of presentation	
Evaluation	Student evaluation, staff peer/self evaluation	

Some examples of common tools used to peer review the design of a blended/online module are listed below**:**

The Blended Learning Toolkit

> *The Blended Learning Toolkit was prepared by the University of Central Florida (UCF) and the American Association of State Colleges and Universities (AASCU) with funding from the Next Generation Learning Challenges (NGLC).* (UCF, 2015)
>
> It is available under commons copyright and contains the following components:
>
> • *Best practices, strategies, models, and course design principles.*
>
> •*Two prototype blended course templates in key core general education disciplines: Composition and Algebra.*

•*Directions and suggestions for applying the Toolkit resources to create original blended courses other than Composition and Algebra.*

•*Train-the-trainer materials for faculty development.*

•*Assessment and data collection protocols, including survey instruments and standards.*

•*Research and literature references related to blended learning* (UCF, 2015)

The Quality Online Course Initiative

The Illinois Online Network *'partnered with 2-year and 4-year, public and private educational institutions in Illinois to create and utilize a quality online course rubric to improve and evaluate online courses'. Illinois Online Network*

The rubric is divided into the following categories:

- Instructional Design;
- Communication, Interaction and Collaboration;
- Student Evaluation and Assessment;
- Learning Support and Resources;
- Web Design and
- Course Evaluation.

Blackboard Exemplary Course Programme Rubric (BECPR)

This evaluation is used for courses/modules in Backboard.

Ongoing monitoring throughout the programme

Given the length and complexity of a programme, it is commonplace to have more ongoing monitoring processes with multiple stakeholders. Many programmes have student-staff committees that address ongoing issues that arise in the programme. Most institutions have student class representatives on these and other University committees. There is a growing movement to also involve students in the design of pro-

grammes, both before and during its implementation (Cook-Sather, Bovril & Felten, 2014).

The external examiner system, particularly in the UK and Ireland, is one of the most regular external monitoring processes, albeit limited to that of a programme's assessment system. In addition, programmes (or their Schools) may undergo quality assurance processes that evaluate the overall quality of the programme. However, many of the changes done at programme level can occur as a result of ongoing staff meetings and informal conversations. Whereas this iterative approach can be very valid, care is needed that the programme does not become disjointed and that changes align with both the programme's educational philosophy, models and outcomes. There is also a danger in this more iterative approach that new content and concepts are added into a curriculum and nothing is taken out. This has been referred to as 'curriculum creep' (Walsh, 2014).

In Conclusion

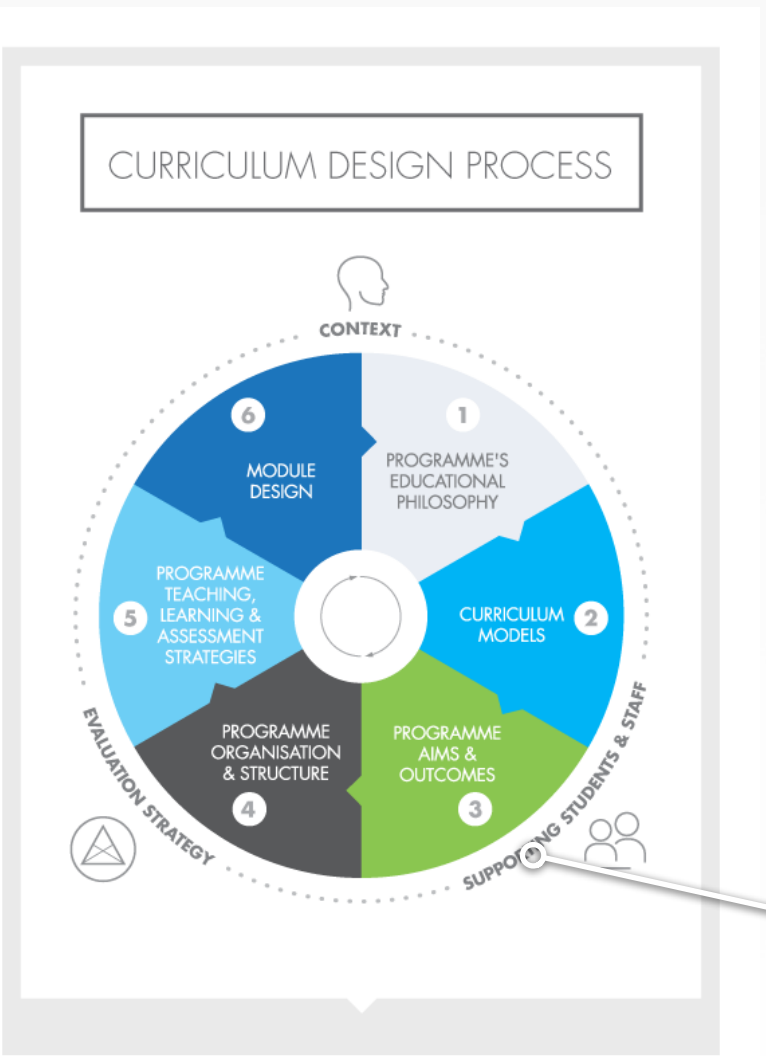
As a programme is a complex set of activities and as a curriculum is 'a dynamic and interactive process of teaching and learning' (Fraser & Bosanquet, 2006), then its evaluation strategy needs to be systematic and multifaceted. It is important that there is a holistic overview at key points in time on how the programme is experienced by the different stakeholders. Graduates who have recently experienced the full programme are a very valuable resource in this regard. However, staff and other stakeholders are also important contributors to the evaluation process. There are some key quantitative tools that can give some reliable data, such as the ISEE and the NSSE, and these are usefully balanced by the more qualitative approaches such as staff peer review, student focus groups and nominal group techniques.

11

Supporting Students and Staff

At various points in time in their experience of the programme, students may need support. They may need academic support; learning to learn (L2L) support; personal or social support; technical support. In addition, staff may need resources to assist them in curriculum design and implementation.

Supporting Staff, Students and Technology



Supporting, Staff , Students and Technology.

Chapter 11: Supporting Students and Staff

Supporting students and staff is key to the success of curriculum implementation and is required throughout the curriculum design process.

Student Supports throughout a programme.

Students may need: academic support; learning to learn (L2L) support; personal or social support; and technical support.

Student Academic Support

Throughout a programme, students may need to be supported in studying their disciplinary knowledge. Many programmes have particular disciplinary knowledge that can be challenging or, as Land (2005) describes it, 'troublesome'. Students need to have multiple opportunities to revisit these key or challenging knowledge areas and this needs to be considered in planning the sequence of modules in the curriculum. Specific additional supports many need to be put in place where groups of students require more tutoring through, for example, Maths and Writing Support Centers. The QAA (2013) presents some resources on how to support specific students groups at Masters level. However, these approaches could also be useful for undergraduate students, see in particular the following case studies:

- Orienting International Students (Cases 7,8,12)
- Getting diverse students to the same level (Case 10)
- Meeting diverse needs (Case 13).

As noted in the earlier chapter on *Programme Assessment and Feedback Strategies*, a key to supporting students' understanding of the discipline knowledge is effective feedback and self-monitoring strategies. Some examples of how you might do this efficiently in practice include:

- In-class or online peer and self-review of work against assessment criteria
- Use of self-monitoring questions
- Encouraging students to request specific feedback

- Participation in online discussions/online MCQ's
- Students showing evidence of action from previous feedback
- Use of a student pre-submission self assessment check-list (pro-forma)
- Use of clickers/show of hands in class followed by discussion in pairs
- In-class learning logs/journals
- In-class graphic representations of knowledge, i.e. group concept maps.

In the online environment, the VLE allows the opportunity for automated feedback. In addition, you can use the functionality of the discussion forums or group e-mails to assist with students' academic queries. Discussion fora can often be titled, for example, 'the Online Café' to facilitate a more student-friendly environment. This type of support can be a useful alternative to the multiple student e-mails that can be generated by the online environment (Bright, 2012).

The VLE can allow students to view drafts of each others' work and this functionality (usually through group discussions, blogs or wikis) can be built into your assessment and feedback design.

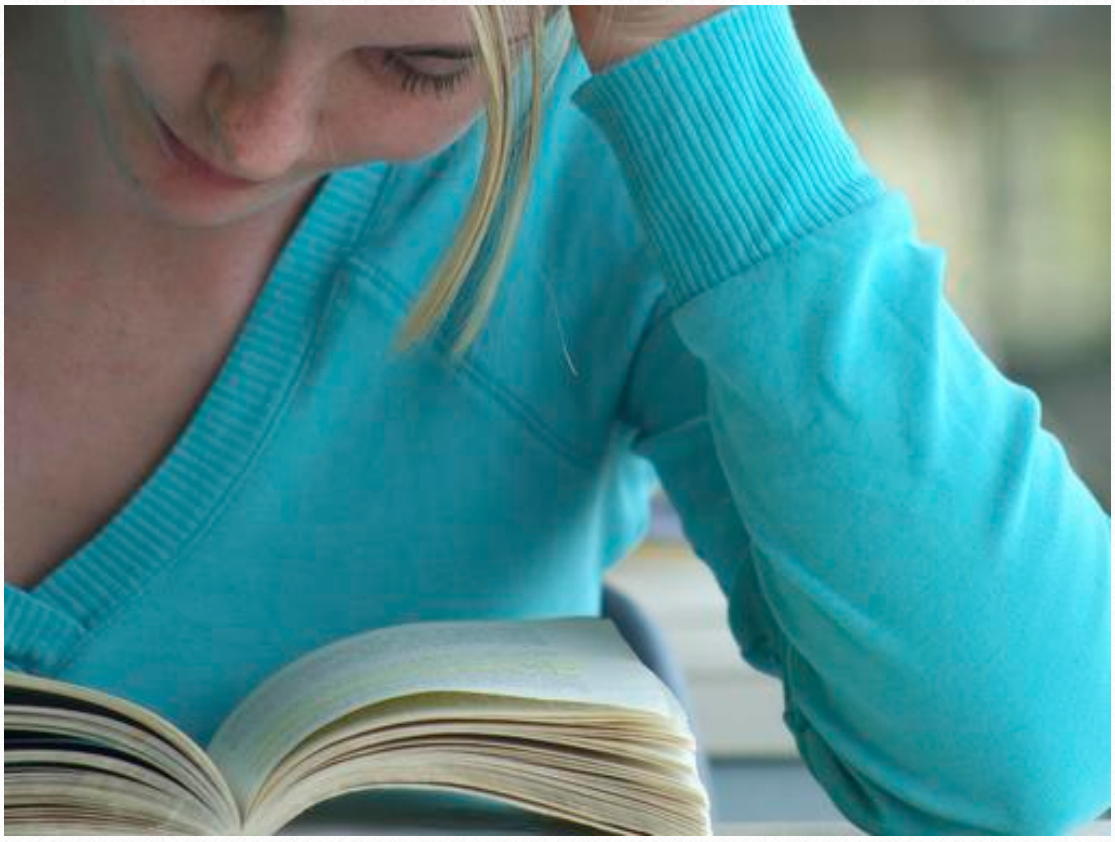
Students Learning to Learn support

There has been a growing interest in the development of support for students' transition to learning in higher education and in particular with their experience of first year (Gibney et al, 2010; Krause et al, 2005; Nicol, 2009; Taylor, 2008). Some of the interest in this early stage of the programme has been driven by poor retention issues (Blaney & Mulkeen, 2008; Krause et al, 2005) and the need to support students in the new ways of learning that occur in higher education (Nicol, 2009; Sadler, 2010).

It is often, although not exclusively, in this year that there is an emphasis on the learning to learn (L2L) skills (often described as 'study skills') required for this stage of learning. The research into this practice, however, is quite critical of some approaches to students skills (Blythman & Orr, 2002; Fallows & Steven, 2000; Gamache, 2002). Wingate (2006; 2007) in particular highlights that the stand-alone study skills module, divorced from the subject matter, is not popular or relevant to the students. Black

et al (2006, p126) in more School-based literature, also highlights the danger of this separation of the 'learning to learn' (L2L) skills from other forms of learning.

Figure 11.1 - Learning to Learn Skills (Image Courtesy of UCD Media Services)



It follows that considering learning to learn in isolation from other aspects of learning is likely to produce a narrow conception and might lead to a limited focus on study skills, as well as leading to the neglect of fundamental changes that may be needed to the learning environment (Black et al, 2006, p126). Wingate (2007) maintains that some of the reasons that the stand-alone study skills modules/sessions are less effective are: a) they are taken by students perceived as having a 'deficit' in this area; b) they are seen as irrelevant to their subject. She advocates for a more holistic framework through an embedded programmatic approach. This potentially involves all academic staff working with all students, but she also highlights the challenge of widespread engagement of academic staff in this task (Wingate, 2007). Despite these criticisms, and possible due to the difficulty in engaging the wider academic community in this task, there have been some benefits reported of learning to learn workshops or modules, for example, Bailey et al (2007) and Harwood and McLaughlin (2012).

We carried out a study on a stand-alone study skills approach in a large 1st year Arts programme and although there was some benefit from this approach in particular with supporting time management skills, many student did not see the relevance of this approach (Guerin & O'Neill, 2015, unpublished report). It appears that it is more beneficial to support this embedded approach alongside discipline knowledge and skills throughout the programme.

One excellent resource in this area is Palgrave Study Skills.

For some institutional examples of resources in this area, see:

University College Dublin, UCD Library

Cornell University

University of Leicester,

In the online environment, students may need some quite specific supports, such as online group-work skills; self-directed learning skills online; communications skills online, including netiquette; and online research or information retrieval skills.

Students Personal or Social Support

Students in the face-to-face or online environment can feel very isolated. Salmon (2002) highlights the importance of both 'access and motivation' and 'online socialisation' in the early stages of online learning. The importance of a social presence in the online environment has been central in many practices and theories of online learning. In particular, students need opportunities to get to know their peers. In Chickering and Gamson's (1991) well referenced principles of good practice in higher education, they emphasise that curricula should 1) encourage contacts between students and faculty and (2) develop reciprocity and cooperation among students. Yet many student feel isolated in higher education, particularly in the early years.

Students entering our institution (UCD) had concerns about the social aspects of college life, with two thirds reporting fears of being socially isolated in their new environment (Gibney et al 2010). Developing effective social networks is a key part of a successful transition to university life. Group work and opportunities for collaborative learning can play an important role here (O'Neill et al, 2011) . Throughout a programme, there are also also many different models that describe how students can support other students (see systematic review by Dawson, et al., 2014), which can address the academic and/or the social support for students:

- Peer Mentoring (see UCD example of peer mentoring)
- Peer Learning (Supplemental Instruction) (Dawson, et al, 2014)

- Peer Tutoring (Kieran & O'Neill, 2009) .

Figure 11.2 - Social Support (Image Courtesy of UCD Media Services)

Some practical ideas from the eLearning literature include:

- Early in the module, get students to upload their picture, introducing themselves to you and to each other in the online environment (in blogs, wikis)
- Set up communities in the online environment (group forums)
- Have a mentor, peer or teacher presence (Thomas, 2005).

Student Technical Support (including digital literacy)

Although many younger students may be considered to be 'digital natives' and older students might be considered 'digital immigrants,' most students require support in the online or blended environment. Students need support in developing their digital literacy skills and you need to use strategies that integrate these into the curriculum.

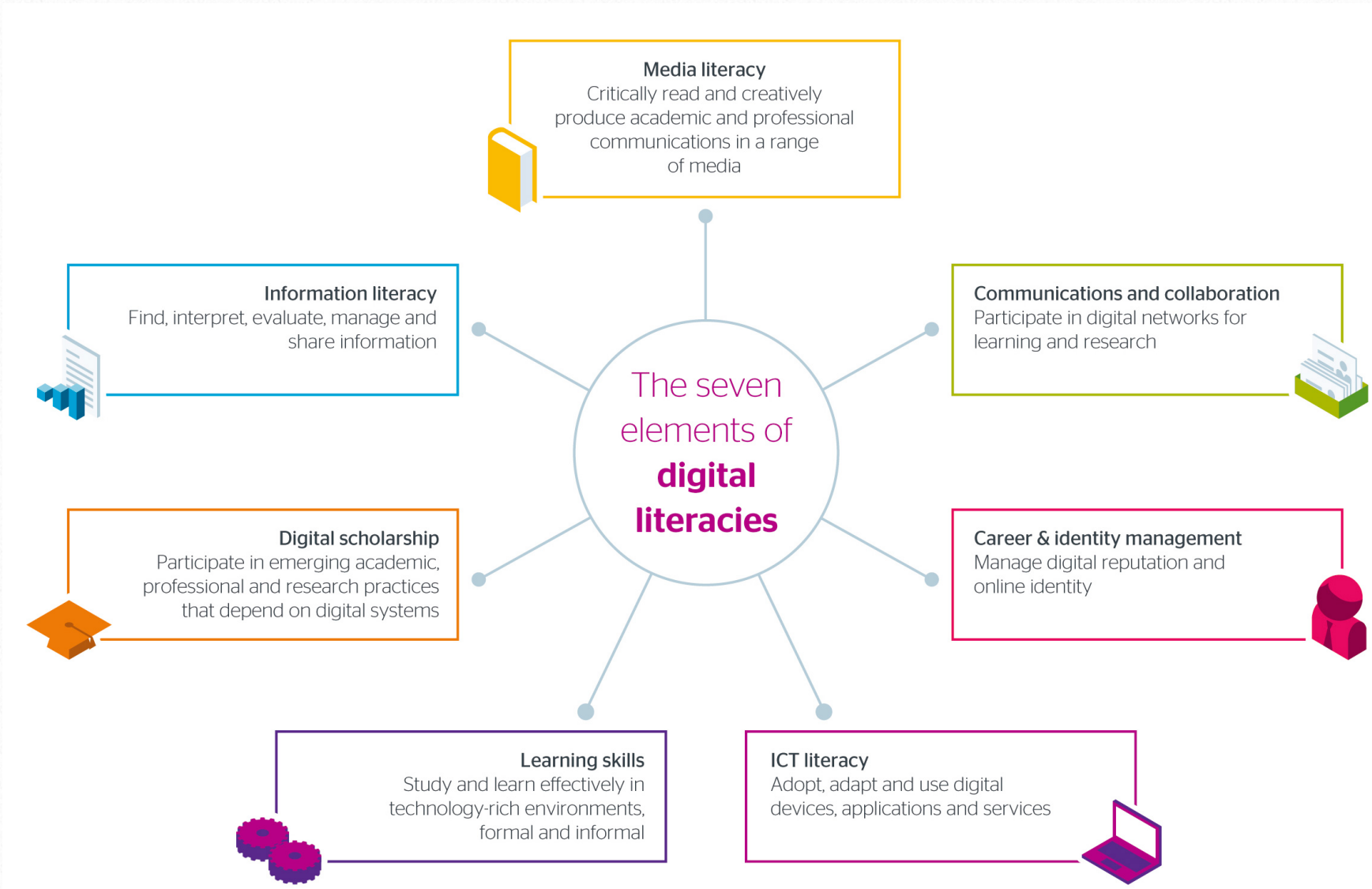
JISC (2015) describe digital literacy as 'those capabilities which fit an individual for living, learning and working in a digital society'. COFA (2013) at UNSW have developed some advice around supporting students in this area (Table 11.1).

Table 11.1 - Useful Strategies for Integrating Digital Literacy into Curriculum (COFA Online, 2013)	
Incorporate some scaffolding that supports or develops digital literacy into your class	Include tasks that provide a foundation in developing necessary skills. This can be done over the duration of the semester, or over a series of classes within a program.
When introducing a new online technology, allocate sufficient time beforehand to fully brief students	(often in a 'step-by-step' process) on how to set up and use that technology or software
Provide ongoing support.	Prepare written instructions (online or hard copy) that reiterate what was introduced in the aforementioned briefing to allow students to revise any steps they may have forgotten. Provide a 'Question and Answer' thread in a discussion board where students can ask questions, and ensure that you respond promptly. A 'Frequently Asked Questions' document may also be helpful
Before teaching your class, ensure you are familiar with, and have experience in the technology or online environment that you are introducing.	This allows you to pre-empt and possibly divert any problems, and answer or resolve issues more promptly
SEE COFA.Online. (2013) LEARNING TO TEACH ONLINE Under Commons Copyright.	

There are many different digital literacy frameworks emerging that can assist programme teams to develop and support students' digital literacies in the programme.

JISC have developed a model that incorporates seven elements, see Figure 11.3.

Figure 11.3 - JISC Digital Literacy Model , Available Under commons copyright



The JISC website also present many different approaches and case studies that support the development of students' digital literacy skills. The UK Open University website also presents a *Digital and Information Literacy Framework* that is divided into Levels 1, 2 and 3 and Masters. This is useful for those planning a programmatic approach to students' digital literacy. In Ireland, a National Forum for the Enhancement of Teaching and Learning in Higher Education project *'aims to develop a National Digital Skills Framework for Irish Higher Education that will capture the range of knowledge, skills and attributes that are relevant for the wide diversity of roles and experiences encountered as we work or study'* . The outcomes of this project, titled 'All Aboard', will inform an Irish framework for both staff and students' digital literacy skills support.

Staff support for curriculum design and implementation

As alluded to throughout this book, there are many resources for staff considering the design of curricula.

Whereas there are many resources and textbooks on module design (for example, Biggs, 2004; Fink, 2004, 2003), four text books that I have found that give a comprehensive overview of curriculum design are the following (Table 11. 2) :

Table 11.2 - Four Key Text Book on Curriculum Design	
Ornstein, A.C., Hunkins, F.P. (2009) *Curriculum foundations, principles and issues.* (5rd ed). Boston: Pearson Education Inc	This is book give a comprehensive theoretical overview of curriculum theory and models (US).
Toohey, S. (2000). *Designing courses for higher education*. Buckingham: SRHE & Open University Press	This book emphasises the theory to practice aspect
Diamond, R.M. (1998) *Designing and Assessing Courses and Curricula: A Practical Guide*. San Fransisco: Jossey-Bass.	This is intended to have more of a practical application and includes many templates (US) .
Neary, M. (2003). *Curriculum studies in post-compulsory and adult education: A teacher's and student teacher's study guide*. Cheltenham: Nelson Thornes Ltd.	Another theory to practice book, which also includes post-compulsory and adult education (UK).

In the area of online programmes, the JISC (2014) website presents some useful resources on institutional approaches to curriculum design .

Finally, I hope that through the multiple links, articles, and other resources in this eBook that you will be able to enhance the design of your own programme. As I am planning to have further additions of this eBook, available through commons copyright, I would appreciate if you would share with me any resources that you have found useful on your curriculum design.Please feel free to contact me at Geraldine.m.oneill@ucd.ie or via twitter: @gmoneill2 (see also author contact details).

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AUTC (2013). *Guidelines to Construct a Learning Design Sequence* http://www.learningdesigns.uow.edu.au/project/doc/Construct%20an%20LD%20Sequence.pdf

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Appendices

Appendix 1: Needs Analysis Form

Needs Analysis Form:

Adapted from Diamond (1998)

The following is an example of series of questions that need clarification, or require further data gathering, in order to establish the needs for a new programme (or revision to an existing one). These have been adapted from Diamond's resource book on *'Designing and Assessing Courses and Curricula'* (Diamond, 1998, pages 37-42).

Establishing the Need for a New Programme

If you and your programme are ticking a lot of 'Nos' there may be a need for a new programme, or if unsure you may need to collect more data

	Factors	**YES**	**NO**	**Need More Data**
1.	The existing programme meets the present and long-term needs of your students as noted by : Alumni Feedback Employer/Recruiter Feedback Final Year Students			
2.	Graduates in your programme are successful in finding a job or being accepted into further study			
3.	The curriculum meets accreditation standards (if appropriate)			
4.	The curriculum is up to date and sensitive to changing needs in the field			
5	The School/Discipline's needs are met by existing programmes			
6	The current programme is very efficient, i.e. there is very little duplication and is efficient on staff and School/College resources			
7.	The current programme has space and flexibility to allow new areas of development.			
8.	The sequence, coherence and integration in the current programme are strong			
9.	The current programme has a strong curriculum model(s) that supports student learning.			

Establishing the Need for a Major Revision to Existing Programme

If you and your programme are ticking a lot of 'Nos' there may be a need for a revision to the programme, or if unsure you may need to collect more dat

		YES	NO	Need More Data
1	The teaching, learning and assessment approaches are in line with good educational theory and practice			
2	Attrition rate is acceptable on the current programme(s)			
3	Based on student evaluations, students are pleased with existing programme(s)			
4	Core learning outcomes are clearly stated for all students			
5	Assessments are emphasizing higher order competencies			
6	There is a variety and choice in assessments across the programme			
7	Students are supported in their learning on existing programmes			
8	The current programme is very efficient, i.e. there is very little duplication and is efficient on staff and School/College resources			
9	The current programme has space and flexibility to allow new areas of development.			
10	The sequence, coherence and integration in the current programme are strong			

Some Indicators of Potential Success for new Curriculum Design Projects (new or revised programme).

		YES	NO	Not sure
1.	There is support for a curriculum project from the Dean, Head of School			
2.	Administrative support for the project will be in place for the time required			
3.	There is support for this new project from the teaching staff who will be involved.			
4	Curriculum design work/efforts by staff involved are acknowledged by appropriate means			
5.	Resources are available for changes required			
6	Educational advice and support is available, where needed.			
7.	Space is available for the programme needs			

Appendix 2: Instructions for using UCD's curriculum mapping tool (P.O.M.M)*

Authors: Geraldine O'Neill & Elizabeth Noonan, UCD.

Introduction

The **Programme Outcomes Mapping Matrix (P.O.M.M)*** has been designed to provide Programmes/and or Schools with a simple synoptic tool to map the relationship between programme outcomes and the extent that they are addressed and assessed in modules, which could include for example: all Stage 1 modules, modules within a major, or modules associated with a particular programme pathway (see *Figure A3a)*.

The purpose of the matrix is provide a visual representation, using simple scoring and a colour coded pattern, of the degree to which programme outcomes appear to be covered in terms of:

- In which modules do the programme outcomes appear to be addressed?
- To what extent do they appear to be *introduced, further developed or achieved?*
- Do some programme outcomes appear to be addressed more frequently than others?
- Are there any programme outcomes which appear not to be addressed?
- Holistically, is the extent to which programme outcomes appear to be addressed (introduced, further developed, achieved) within the modules appropriate?

The Matrix is intended to be developmental in its focus with a view to stimulating interpretation and review of outcomes and/or assessment practices amongst a curriculum

team, it is not intended as an absolute measure of the achievement of programme outcomes.

*Figure A3a: Screenshot of the UCD POMM mapping tool**

Example Programme: : Stage 1

1= to indicate students are **INTRODUCED** to the programme outcome
2= to indicate the outcome is **FURTHER DEVELOPED**
3= indicates that students have now demonstrated ACHIEVEMENT of the programme outcome

A= ASSESSED (Summative)
Blank= NOT ASSESSED

	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Module name 1,2,3, A	Weighted Total	How often Assessed
Programme Outcome 1		1	1		1		1 A			1	5	1
Programme Outcome 2	1	1	1 A	1	1	1 A	2	2 A	2 A	2 A	14	5
Programme Outcome 3	1	1		1 A	1	1	1	2 A	1 A	1	10	3
Programme Outcome 4											0	0
Programme Outcome 5	1 A		1	1		1		1		1	6	1
Programme Outcome 6		1 A	1		1 A	1	1	2 A	2 A	2	11	4
Programme Outcome 7											0	0
Programme Outcome 8						1	1	1	1	1	5	0
Programme Outcome 9					1	1	1	1	1	1	6	0
Programme Outcome 10			2	3							0	0
Programme Outcome 11	1	1 A		1 A		1		1	2	2	9	2
Programme Outcome 12	1	1	1	1 A		1	2	2	2	2	13	1

Programme Outcomes

It is worth noting that programme outcomes may already exist in a number of guises, for example entries in the undergraduate prospectus or local curriculum information, where this is the case in bringing together information from different sources, a useful question for staff to consider is:

What do you value and hope that the students will achieve by the end of your programme?

It is sometime useful to prioritise what you think the students should still retain 1-2 years after the programme is completed (Fink, 2003, 2004).

It can be useful to think of expressing programme outcomes in terms of:

- High-level abilities the graduate will have at the end of the programme;
- How these abilities relate to the academic discipline;
- How they align to institutional and/or professional outcomes.

It can be useful to think of writing programme outcomes in terms of:

- Using action verbs
- Focusing on student outcomes
- Avoiding multiple outcomes in one outcome.
- It is likely that programme outcomes could be described in approximately 8-12 outcomes overall, less for graduate taught programmes (approx. 6-8).

Using the Programme Outcomes Mapping Matrix

The Matrix template presents on the left-hand side vertically, Module titles are inserted horizontally.

A scoring system is used as follows: *1= Introduced; 2= Further Developed and 3 = Achieved*. This scoring system is automatically colour-coded.

In addition the character **A** can be used to indicate whether a programme outcome is assessed **summatively (for a grade)** or not. It is assumed that some programme outcomes may be assessed formatively (not graded) in the early stages.

To commence scoring: take the first programme outcome and relate it to the first module and decide what score should be applied, 1,2, or 3. Insert the appropriate number (1,2 or3) into the box and if the outcome is **assessed summatively** also add A.

If the programme outcome is addressed but not **assessed summatively** the box should not contain the character **A**.

If the programme outcome is not addressed in the module, no score should be applied and the module box should remain blank.

Continue horizontally across all the modules with the first programme outcome. Then repeat the process with the second programme outcome, until all outcomes have been scored across all modules.

When all programme outcomes are mapped to the modules, the matrix will show a colour coded concentration based on the scores applied. This allows a visual representation of the degree to which programme outcomes appear to be addressed in the selected group of modules.

Reviewing the completed Matrix

1. When complete, overall the matrix will show a colour coded pattern of the distribution of the programme outcomes which appear to be achieved across the modules for that stage.

The programme outcomes are automatically summed into a 'weighted total'. This allows the "concentration" of the programme outcomes to be read in relation to the group of modules included in the matrix for each stage

2. The number of times a programme outcome is assessed in that stage is also calculated ('how often assessed'). This allows a review of the link between programme outcomes and assessment. In reviewing the stage assessments, it is also useful to discuss the use of different methods of assessment (exams, journals, lab report, etc) and to note is there is an over or under emphasis on certain types.

*Note: POMM tool available at http://www.ucd.ie/t4cms/Mapping%20Matrix.xlsx) (use freely, but acknowledge the authors i.e. UCD Teaching & Learning, 2013)

For any further information on the 'Programme Outcomes Mapping Matrix', please contact geraldine.m.oneill@ucd.ie.

Appendix 3: An overview of scoring on other curriculum mapping tools

Table: The wording, data type and comments on the different tool. (note assessment highlighted in red font)

See E.G	Wording/Coding	Data	Comments Adv: Disadvantages
1	'*Addressed* (ticked or percentage)' (University of Tasmania, Australia)	Nominal or interval	Simple: but not that sensitive
2	*'Taught, practiced,* ***assessed'*** (Oxford Brookes)	Some ordinal	Mentions assessment: is 'practiced' confusing?
3	*Introduced, Developing, Consolidated/ Advanced'* (UNSW, Health Management)	Ordinal	Easy description: but doesn't mention assessment
4	*Introduced, Used, Further Developed,* ***Comprehensively assessed'*** (Diamond, 1998)	Ordinal	Easy description and mentions assessment
5	'*Relevance to each GA; Assumed (already has); Encouraged; Modelled; Explicitly Taught; Required;* ***Assessed****.'* (Sumion and Goodfellow, 2004)	Nominal (descriptive) and Ordinal	Relevance is a useful concept; is it too detailed?
6	*a) Module learning outcomes, b) teaching and learning activities, c)* ***assessment tasks*** *and d)* ***assessment marking criteria*** *to programme learning outcomes (University New England)*	Nominal (descriptive) but could be added to give a count 1-4.	Good link with constructive alignment, it would also highlight poor alignment; not easily developmental (could be adapted to UCD language, i.e. specified learning activities)
7	a. 'I' to indicate students are *introduced* to the outcome b. 'R' indicates the outcome *is reinforced and students afforded opportunities to practice* c. 'M' indicates that students *have had sufficient practice and can now demonstrate mastery* d. 'A' indicates where evidence might be collected and *evaluated for program-level assessment*) *http://manoa.hawaii.edu/assessment/howto/plan.htm*	Ordinal	Clearly developmental, building on previous; They note what assessment method they use to gain this.
8	I] OUTCOME STATEMENT: The program outcome is x) EXPLICITLY or (m) IMPLICITLY reflected in the course syllabus as being one of the learning outcomes for this course. [II] LEVEL OF CONTENT DELIVERY: (I) INTRODUCED - (E) EMPHASIZED - (R) REINFORCED (A) ADVANCED [III] FEEDBACK ON STUDENT PERFORMANCE / ASSESSMENT: (F)	Descriptive Ordinal Descriptive	3 separate columns, well presented, could be useful to note that LO are explicit or implicit; gives details description of what them mean by I, E, R and A.; Don't separate formative and summative
9	√= Learning opportunities plainly presented in the majority of courses in this year's programme FP= Formative, low stakes PEER-assessments FS= Formative, low stakes SELF-assessments FF= Formative, low stakes FACULTY-assessments A1= Faculty give feedback and guidance in student advisement interviews HSF= High stakes FACULTY-Assessments (Knight, 2000)	Ordinal with a lot of description	Strong focus on assessment for (formative) and of learning (summative), including those who assess; not mutually exclusive as more than one may happen.

Examples (linked to table)

1. *A Guide to Course Mapping Tools*, University of Tamania http://www.teaching-learning.utas.edu.au/__data/assets/pdf_file/0009/1107/GA_mapping_guide.pdf

2. *Mapping Brookes Graduate Attributes,* Oxford Brookes. https://wiki.brookes.ac.uk/download/attachments/75825559/mapping+brookes+graduate+and+postgraduate+attributes+(package).pdf

3. *Mapping of Graduate Attributes* UNSW http://teaching.unsw.edu.au/curriculum-design-and-mapping

4. Diamond, R.M. (1998) *Designing and Assessing Courses and Curricula: A Practical Guide*. San Fransisco: Jossey-Bass.

5. Sumsion, J., Goodfellow, J. (2004) Identifying generic skills through curriculum mapping: a critical evaluation. *Higher Education Research & Development,* 23 (3), 329-346.

6. *Step by Step Guide to Curriculum Mapping* (University New England) *http://www.une.edu.au/__data/assets/pdf_file/0004/36679/graduateattributesguidelines.pdf*

7. Curriculum Mapping, University of Hawaii. *http://manoa.hawaii.edu/assessment/howto/mapping.htm*

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Appendix 4: A programme-wide approach to assessment: a reflection on some curriculum mapping tools

Geraldine O'Neill (2009)

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A programme-wide approach to assessment: a reflection on some curriculum mapping tools

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Introduction

Developing valid and reliable approaches to assessment that are efficient with staff and students' time can be a challenge in today's higher education institutions. Knight (2000) describes the tension between developing valid complex assessments and the time and economic resources associated with ensuring reliability in assessments. The learning styles, multiple intelligence and inclusive learning literature supports the use of a range of different types of assessments to suit the different learners, yet how can staff do this in a systematic way that doesn't exhausted themselves and the students in the process? Keenan and O'Neill in a study on assessment practices in University College Dublin found that staff and student overload was a significant feature of assessment practices (Keenan & O'Neill, 2008). This issue can be confounded by an additional need to consider increasing the level of formative assessment, i.e. giving feedback to students (Juwah et al, 2004).

One solution to these dilemmas is to take a programme-wide approach to assessment, ensuring that over the duration of a full programme students will: have adequate opportunity to be assessed in different ways; receive on-going feedback on their progress; be ensured of a valid and reliable final outcome; and be assessed in both simple and complex tasks. Among others, authors such as Knight (2000) and Diamond (1998) have proposed some curriculum mapping tools to support in the design and monitoring of assessment at programme level. In addition, institutions such as Murdoch University, Australia have implemented an electronic tool, mapping assessments to their programmes' graduate attributes (Lowe & Marshall, 2004). Graduate attributes, however, is a contentious issue (Lowe and Marshall, 2004) and there is a need to

reflect on how best these could be used to map assessment practices in a curriculum. This paper therefore will reflect on the following questions:

1) What are the advantages and challenges to exploring assessment at programme level?

2) How does a sample of curriculum mapping tools compare and contrast in relation to how, when and where they are used?

Programme-Wide Approach to Assessment

In an age of modularisation, there is a danger that the sum of the parts (modules) doesn't equal the whole (programme). With academic staff given ownership of modules, the overview of the programme can be in danger of becoming fragmented. Who is looking and has ownership of the whole picture? Proponents of curriculum design emphasise the design of assessment methods early into the curriculum design process (Fink, 2003; Diamond, 1998; Toohey, 2000b). For example, Fink (2003, p63) outlines some key questions to consider at the start of the programme design process which emphasise the role of assessment in this activity:

> What is it I hope that students will have learned, that will still be there and have value, several years after the course is over?' (goals)
>
> 'What would the students have to do to convince me that they had achieved these learning goals?' (assessment)
>
> 'What would the students need to do during the course to be able to do well on these assessment activities? (learning activities).

The interesting aspect of these questions is that it asks the programme designer to consider what will be valued several year after the programme is completed. I doubt the answer would be that graduates at this stage should be good at writing three hour examinations on knowledge. We need a variety of different methods of assessment to answer Fink's questions. Even for those who would say that knowledge of the discipline is the key aim, Clark and Linn's work (2003) would suggest that knowledge integration itself takes time, energy, varied activities and many opportunities to make connections. Gardiner (1996, cited in Diamond, 1998, p85) also supports the idea that the

'most effective curriculum provides multiple opportunities to apply and practice what is learned'. So if the literature tells us we need a) to have a variety of assessments, b) to improve feedback to students (formative assessment) (Juwah et al, 2004) and c) ensure that these assessment are both valid and reliable, how do we meet these demands giving consideration to staff and student time and energy? One key solution to this is to be more efficient with our time and have a more programme-wide view of assessment.

There are challenges with a programme-wide approach to assessment and these have been described as the threat to academic staff autonomy over their modules (Knight, 2000); an over-emphasis on module as the unit of learning (modularisation); a teacher-centered approach to assessment that focuses on content and coverage (O'Neill & McMahon, 2005); and a lack of structures or policies with a focus on curriculum planning (Mutch, 2002).

One strategy for approaching the design of assessment at programme level has been to examine the question: what is core for the students to learn by the end of the programme? This has been called a 'backward-design' approach to curriculum planning (Wiggins & McTighe, 2005) and is strongly linked with the idea of graduate attributes. Graduate attributes are often known as key skills, generic attributes, transferable, employability and/or soft skills (when not including discipline knowledge) (Trevelaen & Voola, 2009). Although gaining international credibility, the concept of mapping and implementing graduate attributes across a programme is a contested area, in particular around issues of accountability, discipline differences in their relevance and meaning, staff disengagement (in particular in non-vocational courses) (Lowe & Marshall, 2004; Sharp & Sparrow, 2002).

In contrast to mapping programme assessment to graduate attributes, Knight (2000) suggests a different programme-wide strategy to mapping assessment to a programme that addresses the validity and reliability dilemma. Knight recommends viewing programme assessments in relation to the use of high and low stakes assessments and suggests how these can be used more efficiently across a programme (See Table 1).

Table 1: Strategy for Assessment of a Programme (Knight 2000)

1) To recognise that some things cannot be reliably assessed and devise alternative ways of making information available to stakeholder
2) To invest in reliable assessments of what can be and needs to be reliably assessed ('high stakes assessment')
3) To recognise that assessment is not primary a tool for awards, but also an aid to student learning ('low stakes' assessment)
4) To use resources freed up by (3) to do (2)

Critique of a selection of curriculum mapping tools

In the literature there are a variety of different tools used to map assessments across a programme. I have chosen four contrasting tools in order to explore the benefits and uses of these in practice, i.e. Diamond, 1998; Sumsion & Goodfellow, 2004; Knight, 2000; Lowe & Marshall, 2004.

a) Diamond (1998):

Robert Diamond's highly referenced practical guide to designing courses and curricula (Diamond, 1998) in American higher education, places particular emphasis on developing a cohesive curriculum. He encourages that the assessment methods be considered in relation to the emerging course goals early in the curriculum design process. Linked with the concept of graduate attributes, Diamond presents a basic competency checklist that may be considered by a curriculum committee to facilitate this task (Diamond, 1998). The checklist 'assigns specific competencies to individual courses (modules) or other formal learning experiences, indicating in which courses the competency will be introduced, used further developed, and assessed.' These competencies can be adjusted for discipline-specific skills and therefore this list should not be fixed, indeed Diamond encourages the readers to add their own and warns against taking 'any published list of basic skills or competencies and accept for use on another campus without revision' (1998, p53). He argues if this is to be a success that academic staff must have ownership of the mapping process.

Table 2: Representative of Diamonds' (1998) Curriculum Competency Mapping Form.

Competency (Institutional Specific)	Module	Module	Module	Module	Module	KEY:
Communication	A	A	B	B	C	A: Introduced
Enquiry	A	A	A	A	A	B: Used
Creativity	A	B	B	C	C	C: Further Develop
Team-working	A	A	A	A	A	D: Comprehensively Assessed
Problem-solving	A	D	D	D	D	
Critical thinking	D	D	C	D	D	
Computer literacy	D	D	D	D	D	
Ethics	A	A	B	A	A	
Leadership skills	A	A	A	A	A	
Information retrieval skills	D	D	D	D	D	
Citizenship	-	-	-	A	A	

Diamond's key for mapping the assessment across the programme is simple, maybe even a little too simple. It gives only one option around assessment i.e. is or isn't it 'comprehensively assessed'. It does not transparently mention either formative or summative assessment nor does it mention assessment methods (i.e. exam, posters, essays). It could be argued that formative assessment may be inherent in the first three categories (introduced, used, further developed), which relate to learning activities. However this simple mapping exercise may serve the purpose that Diamond is using it for, i.e. early stage discussions around curriculum planning.

b) Sumsion & Goodfellow (2004).

In contrast to Diamond's early intervention, Sumsion and Goodfellow (2004) carried out a curriculum mapping exercise on an existing curriculum (Bachelor in Education) to identify both the generic skills fostered in the programme and to highlight those that may be overlooked. It compared with Diamond's approach in its focus on graduate attributes. They approached this task in a collegial manner and discovered that the task is not as simplistic as it first appears, for example varied staff perceptions of the different skills and their views on whether or not some should be formally assessed. Sumsion and Goodfellow (2004) designed, based on Gibbs et al (1994) earlier work, a matrix they referred to as the Student Learning Profile. They included institutional skills (attributes) in the Profile, however they allowed other skills to be added. Instead

of a broad overview to the programme by a curriculum committee (Diamond, 1998), Sumsion and Goodfellow encouraged a more detailed module-focus to this task working with individual module co-ordinators. The additional detail included a) a descriptor (learning outcome) from the module that mapped with the competency, b) a section whether they thought the competencies was relevant or not, c) a much more detailed key that included whether students had prior knowledge in this area, d) a range of teaching/learning and assessment expectations and e) a section for further comments that often expanded on the assessment method (See Table 3). This approach, whereas it gives much more individual detail on each module, and is clearer in expectations of what is meant in the teaching and learning activity, requires a few pages of information on every module. What it gains on the detail it loses on the overview.

Table 3: The Comparison between Sumsion and Goodfellow's (2004) and Diamond's (1998) Key.

Sumsion and Goodfellows Key		Diamonds's Key
Relevance	*Tick those generic skills relevant to your unit*	-
Assumed	*Students are assumed to have acquired this skill prior to this unit*	-
Encouraged	*Students are encouraged to gain/practice/refine this skills in this unit*	Used
Modelled	*Modelled for students in this unit by teaching staff and other students*	-
Explicitly Taught	*Explicitly taught to students in this unit*	Introduced
Required	*Students are required to demonstrate this skill in this unit*	-Further Developed/Used
Evaluated	*Students are evaluated on this skill in this unit*	-Comprehensively Assed
Additional Comments		

T

c) Knight (2000)

Knight approaches this mapping issue from a different angle (Knight, 2000). He argues that due to the multiple purposes of assessment is difficult to have assessments that are economically viable that are both reliable and valid. He maintains that across the timeline of a curricula that there needs to be a trade off between assessing for the purposes of the external stakeholder (high stakes, summative assessment) and those assessments which in order to be valid need to be low-stakes complex assessments (often formatively assessed). He also encourages the use of a range of student, peer and faculty (staff) assessment. Although he uses graduate attributes (or as he describes generic or transferrable qualities), he presents these without reference to the individual

module, instead he describes these across the years of a programme. He doesn't describe this approach as a mapping exercise, however it could be usefully used as such, particularly for its strength in presentation of assessment in relation to its function (formative versus summative ; Brown et al, 1997) and by who is doing the assessing (student, peer and faculty). Table 4 represents a summary of his economic and pedagogical argument for keeping the high cost, high stakes reliable faculty (staff) assessment until the later years (see highlight in red in Table 4), in contrast to the more complex generic, low-stakes, peer, self or faculty assessed, assessments in the early years.

Table 4: Representative of Knight's mapping of programme assessments

	Discipline Specific				**Generic Transferrable**				
	Graduate Attribute	**Graduate Attribute**	**Graduate Attribute**	**Graduate Attribute**	**Graduate Attribute**	**Graduate Attribute**	**Graduate Attribute**	**Graduate Attribute**	**Graduate Attribute**
Year 1	√FP FF	√FP FF	√FP FF	√FP FF	√FP FF		√FP FS		
Year 2	√FP FS	√FP FS	√FP FP	√FP FP	√FP FP	√FP FF			
Year 3	√FP FS HSF	√FP FS HSF	√FP FS HSF	√FP FS HSF	√FP FS HSF	√FP FS		√FP FS AI	√ FS AI
Year 4	√HSF	√HSF	√HSF	√HSF	√HSF	√ FS HSF	√HSF	√FP FS AI	√ FS AI

Key: √= Learning opportunities plainly presented in the majority of courses in this year's programme
FP= Formative, low stakes PEER-assessments
FS= Formative, low stakes SELF-assessments
FF= Formative, low stakes FACULTY-assessments
A1= Faculty give feedback and guidance in student advisement interviews
HSF= High stakes FACULTY-Assessments

d) Lowe & Marshall (2004)

The higher education section in Australia has been one of the key international advocates of encouraging the mapping graduate attributes in a programme. Linked with a School Development Process in Murdoch University (embedded in a five year Quality Assurance process), Lowe and Marshall (2004) were involved in the development of an electronic web-based tool for a Graduate Attributes Mapping Program (GAMP)

which outlined each unit (module) and then each course's (programme) graduate attributes. They emphasised the developmental nature of this task and commented on how the process initiated other curriculum design discussion with the staff involved in the process. As the Centre for Teaching and Learning were involved in the process they described it as a 'middle-out' as opposed to either a top-down or bottom-up approach (Lowe & Marshall, 2004). This, similar to Sumsion and Goodfellow's (2004) matrix, is performed on existing curricula, however its web-based approach allows staff to print out reports and graphs on the units learning objectives, learning activities, content and assessment as they relate to the institution's nine graduate attributes and 27 sub-attributes.

The recording in this web-based approaches gives details on the methods of assessment (i.e., poster), content (i.e. chiropractic history), learning activities (i.e. practical classes) and learning objectives (i.e. evolution of the chiropractic profession). This gives more detailed information than either Diamond (1998) or Sumsion and Goodfellow's (2004) approach which do not elaborate on the methods of assessment used. In comparison to Knight's (2000) approach however, this tool does not give details on who assesses or the functions of the assessment, i.e. formative or summative. Its strengths therefore is its ability to easily print out reports, the ease in which staff can quickly see an overview of the methods of assessment used, how they link with the learning objectives and how they all link with the institutions graduate attributes.

Discussion and conclusion

The important of mapping assessment practices across a programme is gaining increased attention as international practices related to coherence in the curriculum is gaining popularity (Knight, 2000; Diamond, 1998). Many have linked this mapping activity to the increasing popularity of the development of graduate attributes, an approach not without its critics (Lowe & Marshall, 2004). There appears to be at the more macro-level a common stance on the general approach to the implementation and benefits of mapping assessments in a programme, however at the more micro-level there are differences in the information gathered for this process.

The first commonality is that the majority of the approaches address not just assessments in the curriculum but also highlight the teaching and learning activities used

across the programme. Gijbels et al (2005, p7) would also argue that the traditional view that the assessment of students achievement is separate from instruction, and only comes at the end of the learning process, is no longer tenable. Another common feature in the literature in this area is that although the mapping of assessments, in particular to graduate attributes, can often be initiated by management, it may only be superficially achieved if the academic staff do not become engaged with the process (Lowe & Marshall, 2004). Mutch (2002) maintains that it may be more useful for academic staff to see an emphasis on the ' process' rather than a 'product' of this approach. Lowe and Marshall (2004) also supported this in their approach, which although linked with a top-down quality assurance process had a developmental aspect to it (see also Cummings et al, 2005). In addition, Sumsion and Goodfellow (2004) highlighted that this task can be more complex than appears at first and is more useful for general patterns. The majority of authors who have used graduate attributes as the mapping approach would argue that although having a list of institutional attributes may be a useful starting point, these need to be adjusted and elaborated on for them to make sense to the different disciplines (Ducasse, 2009). 'The importance of the academic ownership of graduate attributes…cannot be overstated' (Sharp & Sparrow, 2002, p6)

Where these approaches differ is the a) timing of, b) simplicity and c) types of information gathered. In addition the level of involvement of staff in the programme differs. At the simplest end of the scale, Diamond (1998) uses a very simple form that is filled in by curriculum committee to gain brief overview in the planning of a new curriculum. In contrast, most of the other authors have used approaches on their existing curriculum. Sumsion and Goodfellow (2004) and Lowe and Marshall (2004) giving more detailed information. Sumsion and Goodfellow (2004) focusing on whether the graduate attributes are relevant and the extent to which they are taught/modelled in the module, unlike Lowe and Marshall they do not give detail on the methods of assessment used. Knight (2000) is akin to Diamond (1998) in his simple overview of the programme, but differs to all other approaches in his attention to who is doing the assessing (self/peer/staff) and the function of the assessment (formative/summative). In particular, he considers issues of reliability/validity and cost-effectiveness in his approach to assessment in a programme.

In considering which of the above examples might best suit your own needs in this area, you need to decide a) who and how many people will be involved in the mapping, b) the timing of the mapping in the curriculum design process, b) how the information will be used and shared and c) the purposes of the curriculum mapping. No one approach seems to be ideal but it is possible that one approach (or a combination of more than one) could best suit your own needs and hopefully this paper has gone some way towards helping you make that choice.

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Appendix 5: Comparative Evaluation of Modules at Stage (Year) Level

Comparative Evaluation of Modules at Stage (Year) Level

UCD Teaching and Learning (geraldine.m.oneill@ucd.ie)

O'Neill, G, adapted from Gibbs et al, 1988)

School	**Programme(s):**
Stage:	**Date:**
Evaluator:	

Instructions to students: Please complete sections A, B and C.

A) *For each module, please indicate its weighting in relation to other core modules.*

Therefore, for each question all answers can't be higher (3) or lower (1) than average, some must be higher/lower than others, i.e. all can't be 3. You may decide, however, that for some questions all answers are average (2).

3 =Higher than Average for Stage (this year)

2 =Average for Stage (this year)

1 =Below Average for Stage (this year)

N/A= Not applicable

	Semester 1 : Core Modules						Semester 2: Core Modules					
	modules											
1. Assessment workload												
2. Level of feedback on assessments												
3 Use of active learning methods												
4. Development of my self-directed skills												
5 Use of real life examples												
6. Clarity of staff presentations												
7. Level of difficulty of material												
8. Advice on study skills and strategies												
9. Relevant material covered												
10 Materials are up-to-date												
11. Module developed in a logical sequence												
12. Clarity of module aims (expectations)												
13. Learning from other students												
14.												

B) In comparison to other core modules in this stage, are there modules you would like to mention that should be:

- Improved (please elaborate on why they should be improved and give some ideas for change):

- Have great strengths (elaborate on why you think this?):

C) Have you any comments on the overall stage, for example, did the modules link together well? Have you suggestions for improving the design of this stage (year)?

Instructions for Staff: Year/ Stage Co-ordinators

1. This questionnaire is most suited for comparative evaluation of core modules and therefore is more appropriately used by Stage co-ordinators involved in the design of the Stage. It is not a substitute for module co-ordinators doing their own more focused feedback on their modules.

2. It is best used at the end of the Stage to compare across all modules in the Stage. This will highlight not only modules that, compared to others, have identified issues but also whether there is some inequality between semesters.

3. The results should be interpreted by Stage co-ordinators in a professional and informed manner as some modules, by the nature of the subject or teaching approaches, may be more difficulty or have unique circumstances that need to be considered. In addition, this is one view on the modules (the students) and therefore this should be triangulated by discussion with module co-ordinators/Heads of Schools'.. Note that discussion should be focused on scores of 1 and 3, and depended on the question these can be positive or negative scores.

4. The questions used have been collated by Dr Geraldine O'Neill, UCD Teaching & Learning (Geraldine.m.oneill@ucd.ie) based on frequently used questions in feedback forms. However, some of these may not be appropriate for your Stage; in addition, there may be questions you would like to add, for example mandatory instiutional questions. Feel free to adjust these questions.

5. Only one questionnaire needs to be used for each Stage to gather feedback on the overview of all core modules.

6. It should be used by Stage co-ordinators to make adjustments to the Stage in association with the programme team and should feedback into the full programme design.

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