CHAPTER 2

From Teaching to Learning: Key Concepts and Foundational Principles

Introduction

In seeking to explore key directions in higher education (HE) learning, teaching and assessment within this volume, we commence by underlining the importance of university teachers focussing their attention on designing for their students really engaging learning opportunities, where the emphasis is on pedagogic experiences as much as the content being taught. This chapter sets out our agenda for the rest of the book by signposting the significant theoretical concepts that underpin contemporary discussions of HE practice, before moving on to Chap. 3 to consider the ways in which university teachers can improve student learning in practice.

We argue here that knowledge and expertise is actively constructed by learners, rather than something that is passively received or consumed by them and review some of the most persuasive ideas to emerge in the research literature specific to teaching and learning in HE. What Kandlbinder (2013) describes as the 'signature concepts' used by key HE researchers are important foundations to our argument because they are typically used to justify what university teachers actually do (or should be working towards). Taken as a whole, such ideas have come to represent widely shared ways of describing and discussing issues about teaching for effective learning (Biggs 1996) and the design of engaging curricula (Holgate 2016; Warren 2016) in post-compulsory education. In this sense, despite the important nuances, diversity and complexities of local

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practices, they usefully offer us a shared vocabulary and conceptual reference points to talk about higher education teaching and help drive it in promising directions.

Terminology associated with learning and teaching at this level is contested, but like Beetham and Sharpe (2013, p. 1), we use the term 'pedagogy'—which the *Collins English Dictionary* (2016) defines as 'the principles, practice or profession of teaching'—throughout the book to describe activities focused on promoting learning rather than, for example, 'andragogy'. As Beetham and Sharpe argue, 'pedagogy embraces an essential dialogue between teaching and learning' (op. cit. p. 2) which helpfully assumes that teaching and learning are not separate entities but, rather, a combined whole, and certainly not in opposition to one another.

Towards Active Learning Pedagogies

In broad terms, the current drive within university education is towards active student-centred learning (Kane 2004; Spronken-Smith et al. 2008; Prosser and Trigwell 1999). There is a widely held belief among the higher education research community that well-designed active learning is an effective way of enhancing student learning (Biggs 2003; Ramsden 2003). Chickering and Gamson (1987) state emphatically, for instance, that;

> Good practice uses active learning techniques (3).

Active learning is, at root, a model of learning by doing (Gibbs 1988), whereby students are encouraged and supported to think deeply about what they are doing and why they might be doing these things. In other words, learning is not a spectator sport; it requires energy, commitment and involvement on the part of the learner. As teachers, your challenge is how you can help to make that happen.

There are some good reasons why it's generally regarded as important for practitioners to embrace active learning and consider how they might best facilitate it. In recent decades, rapid technological developments have brought about an explosion of information, to the extent that information overload, rather than limited access to information, is much more likely to be the challenge today's students face. Before the

advent of the Internet, book and paper-based information was something that had to be bought and accessed either through personal ownership or through libraries and was, consequentially, a relatively expensive commodity. In that context, listening to a knowledgeable speaker was probably one of the best ways to gain access to new material. Nowadays, by contrast, information is mind-bogglingly ubiquitous and readily available at every turn. For example, in an era of YouTube and Massive Open Online Courses (MOOCs), it is easy to find whole online courses (not just information) on most topics, and the big issue for readers is how best to evaluate the available content. Often these resources are free to access for anyone with an Internet connection and include a wealth of striking and accessible video and audio support materials.

Consequently, the sheer abundance of information, educational videos, podcasts and online articles means that it's probably no longer viable or even sensible for university tutors to be spending a huge proportion of their time compiling and transmitting information. It is arguably much more productive for them to redirect their energies on, say, framing questions and problems, assisting their students with finding answers or discussing multiple viewpoints on a topic and to focus much more firmly on helping learners critically evaluate and apply (rather than simply access) the wealth of information they can find at their fingertips.

In consequence, university practitioners are routinely exhorted by senior managers, educational developers and others to integrate more active learning pedagogies into their courses, so that their students are encouraged to construct an understanding of the material rather than constantly receiving information from their lecturers (Auerbach and Schussler 2016). Active learning pedagogies can vary widely, and can range from, at one end of the spectrum, fairly simple exercises and activities that can be built into everyday classroom environments to, at the other end of the spectrum, much more structured and elaborately planned approaches, as indicated in Fig. 2.1.

Some of these, such as research-based approaches, will be dealt with in more detail in later chapters, as they are increasingly seen as exciting 'new' ways of reframing and refreshing the student experience of higher education. In each approach, though, the aim is to help students engage dynamically in their own learning, regardless of whether they're in class, or beyond it.

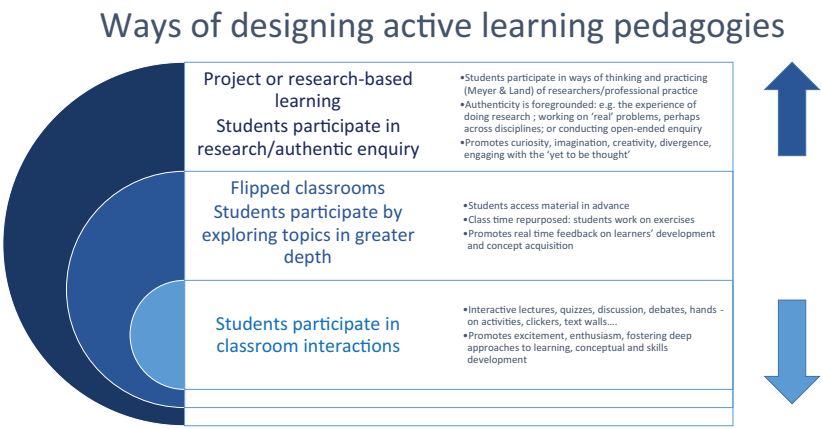

Fig. 2.1 Ways of designing active learning pedagogies

Shifting Paradigms of Teaching and Learning

The move towards active learning assumes that the traditional view of the educator as a 'sage on the stage' must shift to encompass much more facilitative, less transmission-focused or didactic views of what it means to be a 'good' teacher. Rather than being the conventional fount of all knowledge, university teachers can be seen, instead, for instance, as managers, leaders and designers of the literal and metaphorical spaces (Savin-Baden 2007) which enable learning to happen. This, of course, considerably broadens the repertoire of roles that must be learned by anyone who wishes to take the challenges of university teaching seriously.

Some of the stereotypical ways in which traditional models of teaching and curriculum design are frequently typecast and reframed by active learning approaches are broadly sketched out in Fig. 2.2.

In what follows, we flag up the importance of not simply viewing active learning as a matter of introducing some generic classroom techniques. While, up to a point, awareness of interactive or participatory techniques (which actually form the general focus of many of the examples in Chap. 3) can usefully help teachers move away from old-style models of information delivery, it is not, by any means, the whole story. As Ramsden (2003, p. 113) warns: 'Student activity does not itself imply

Traditional	Active
Academics are information providers, purveyors of knowledge, and broadcasters.	Academics are, inter alia, facilitators, designers, coaches, supervisors or guides.
Teachers talk, students listen and write down what they say. Students are relatively passive.	Teachers, inter alia, ask questions, stimulate discussion, set tasks or problems, offer feedback and guidance, act as catalysts and expert witnesses. Students discuss their responses or work out solutions. Students are relatively active.
Content is pre-eminent. Courses are structured around the inclusion of important content.	Outcomes, graduate attributes, or broad specifications of knowledge and skill are preeminent. Programmes of study and learning environments are thoughtfully structured around activities that help promote and develop desired qualities, which are often transformative in nature.
Progress is typically seen as a linear phenomenon.	Development is typically seen as an accretive and iterative phenomenon.
Assessments are manufactured and focus on measuring decontextualized knowledge and skills. They may not inter-relate and are used predominantly to test and place students in rank order.	Assessments are authentic and evocative of 'real world' situations. They may invoke multiple areas simultaneously and are used to evidence learning achievements and to promote learning via engagement, activity and participation.

Fig. 2.2 Models of teaching and curriculum design: from traditional to active approaches

that learning will take place'. Students don't simply learn, as if they're in a vacuum. For one thing, learning always has an object. So, it's worth remembering that your students are endeavouring to grasp concepts, theories and ways of seeing which are particular to their disciplines, for instance. In other words, learning is, importantly, *relational* (Ramsden 1987). Later in this chapter, we will focus on some key pedagogical concepts which help you to think about your role, as disciplinary specialists and researchers who are steeped in the ways of thinking and practising of your subject areas, in devising the ways by which you can entice and support students into the methods and field of enquiry you've often come to take almost for granted. First, though, we turn to some general perspectives on student learning which will hopefully serve as a useful backdrop to the ways in which you might reflect on, design and enact your day-to-day teaching.

Current Perspectives on Student Learning

While explaining the ways in which current shifts in society, especially changes brought about by the digital revolution, demand a concomitant shift in the ways in which we think about learning and teaching, Birenbaum (2003) argues that a whole range of theories of learning sit under the umbrella of what are generally known as **constructivist perspectives**. Within this broad church, there are diverse lines of thought. On the one hand, for instance, cognitivist perspectives on learning focus on the way that knowledge is structured in individual learners' minds (Piaget 1964). By contrast, situative perspectives emphasise the distributed nature of cognition and focus on learners' participation in socially organised activities (Brown et al. 1989; Lave and Wenger 1991). Key differences notwithstanding, Birenbaum usefully points out, all these perspectives are crucially underpinned by the fundamental notion of learners as core participants. Here, learner activity encapsulates the central idea that knowledge, whether that is seen as possessed by the individual or distributed within a community, is perceived as being actively constructed rather than passively transferred. This has important implications for the ways in which teaching is accomplished.

Drawing on both schools of thought—the individual and the social—Birenbaum (2003: pp. 18/19) has helpfully synthesised an eclectic mix of insights about constructivist views on the nature of learning. We've summarised these in the box below.

Constructivist views on the nature of learning

Birenbaum suggests that, viewed through the lens of constructivist perspectives, learning of complex knowledge and skills requires extended effort and guided practice. Hence, it should be

- active and reflective;
- a social phenomenon;
- context-related;
- strategic;
- and participative, with the learner having control over its nature and direction about when and/or how to apply strategies, and which should be used.

Furthermore, she maintains that learning is an active construction of meaning by the learner through discovery and that meaning cannot be transmitted by direct instruction. It takes energy on the learner's part. Learners need to activate and access prior knowledge and relate it to new information and experiences, she argues, for learning to occur.

She further suggests that learning derives from interactions with others and that cognitive change results from internalising and mentally transforming what is encountered in such interactions in a sociocultural context. Learning, she proposes, involves a process of enculturation into an established community of practice by means of cognitive apprenticeship, with expertise in study developing 'not just by accumulating information, but also by adopting the principled and coherent ways of thinking, reasoning, and of representing problems shared by the members of the relevant community of practice' (p. 19).

Most convincing to us is her argument that 'what is constructed from a learning encounter is also influenced by the learner's motivation and affect: his/her goal orientation, expectations, the value s/he attributes to the learning task, and how s/he feels about it [and that] it can be approached using different learning styles and various profiles of intelligences' (p. 19).

Birenbaum's synthesis simultaneously views learning, then, as a process of mental self-management and enculturation. Taken as a whole, these constructivist beliefs clearly underscore the importance of teachers proactively thinking about what the *learner* does (Biggs 1999) in order to create activity-based learning environments in which students themselves perform the task of learning and are encouraged to engage proactively with the ways in which they are able to apply it. This approach contrasts strongly with more traditional approaches, which focus predominantly on what the *teacher* does. It means shifting from an approach to teaching which is all about your skills (in, say, using your own subject knowledge to organise material, putting ideas across effectively or demonstrating necessary classroom management techniques). Whilst these skills are important, they are only part of the overall picture and should, therefore,

be deployed judiciously. In student-focused teaching, a teacher's attention is trained predominantly on how best to bring about conceptual change and development in his/her students via, for example, evaluating and challenging students' current ideas through questions, fostering dialogue and opportunities to practise (Prosser and Trigwell 2013).

Perspectives on How Students Learn in Higher Education: Drawing on the Evidence Base

While, of course, there are no simple answers to the questions 'how do students learn?' and 'how can we make learning happen?', many years of pedagogic research and scholarship in higher education mean that the sector has inherited a persuasive set of ideas about how learning occurs, what conditions typically enable effective learning and what sort of things usually help to foster learning both in and beyond the university classroom (Fry et al. 2014; Hutchings 2005). In the past four decades or so, a number of influential concepts and trends have emerged in the specific literature on higher education. These can be useful in helping educators to consider the quality of student learning and decide how to go about improving it.

It's interesting to observe that, historically speaking, two broad ways of looking at student learning have become particularly prominent: Approaches to Learning and Student Engagement (Kandlbinder 2014). Both of these traditions, which are now fruitfully being brought together in mutually enriching ways, can help teachers to identify tactics to foster students' academic engagement and drive pedagogic practices in productive and learner-centred ways, despite their tendencies to look at student learning through somewhat different lenses.

The Approaches to Learning Paradigm

In Europe and Australasia, much pedagogic research and practice development has been deeply influenced by a set of phenomenographic research studies which identified and described broad patterns of learning and the intentions that underpinned them (Marton and Saljo 1976). The 'approaches to learning' movement was championed and disseminated widely by, among others, Biggs (1976), Entwistle and Ramsden (2015) and Gibbs et al. (1984). It afforded the sector with the still

extensively used, but sometimes unfortunately misunderstood and misapplied, signature concepts of 'deep' and 'surface' approaches to learning. These metaphors actually refer to distinct patterns of studying and learning which were uncovered by large-scale investigations into student learning. They are, importantly, linked to the ways in which a learner interprets and relates to any given task- and the ways in which that individual subsequently structures and approaches tackling it with a particular *intention*- although sometimes the characteristics of 'deep' and 'surface' approaches are mistakenly assumed to be character traits or learning styles, as if they were essential features of an individual. It's important to realise, though, that *any* individual might adopt either approach, depending on their reading of what the particular context demands.

The categories of 'deep' and 'surface' approaches emanated from studies in which students were questioned about a reading task they were asked to undertake. It became apparent that students framed or interpreted the task in different ways, and this influenced how they actually went about the business of studying and impacted on the quality of the learning outcomes they consequently achieved (Marton and Saljo 1976). Some saw the task as a memory test. They also viewed it as an external imposition: something they did because they were required to do it. They did not feel personally involved in the task. Instead, they tried to commit facts to memory, largely because they thought they might be asked questions which required them to recall facts later. Because of this, they skipped along the surface of the material they read, rather than trying to understand the bigger picture, or the meaning that the writer was trying to convey.

In marked contrast, other students related to the same task in a very different way. They experienced it as a quest to develop personal meaning. They saw it was their job to make sense of the material, by looking for connections in the text, by relating what they read to what they already knew and by trying to notice the underlying structure of the text. In short, they set out to *understand,* rather than memorise, what they were reading. They did not believe that they would simply be asked to remember facts, but imagined they would be expected to discuss and comprehend its overall meaning.

The two variations in students' approach or intention observed in the original experiments have subsequently been applied to much broader

	Deep approach	Surface approach	Strategic approach
Intention	To understand	To cope minimally with course requirements	To achieve highest possible grades
Orientation	Meaning	Reproducing	Achieving
Learning Processes and Strategies	Active interest and personal engagement Relating ideas Gaining an overview Creating outlines and structures Questioning and using evidence critically Seeking the central point Drawing conclusions Seeing the purpose of a task or seeing it in its wider context	Rote learning Routine memorising Focus on fragments and unrelated parts Focus on facts Focus on minimum requirements	Elements of either deep or surface approach: Deep strategic OR Surface strategic
Outcome	Higher level learning outcomes	Lower level learning outcomes	
Conception of learning	Learning as transforming	Learning as reproducing	
Teaching preferences	Teaching that encourages and challenges understanding	Teaching that transmits information Being directed towards assessment requirements	

Fig. 2.3 Approaches to learning

educational contexts, along with what are often termed 'strategic' approaches, where the aim is to focus on achieving the highest possible grades (Entwistle and Tait 1990). We have indicated their broad differences in Fig. 2.3.

Interestingly, because strategic approaches to learning appear to have a predominantly utilitarian focus, they are often regarded by academics with deep suspicion, although they could be seen as a sign of a student's acumen and the ability to adapt and make shrewd choices about when to adopt deep or surface approaches (Race 2014). Nevertheless, strategic approaches also importantly foreground the link, which has often also been seen as problematic, between learning and assessment. The latter is a particularly hot topic to which we'll return in a later chapter.

Here though, we want to flag up the values base which is always inherent, albeit frequently on a tacit level, in discussions of student learning. 'Deep' approaches are generally regarded as something to strive for and foster, because they coincide strongly with some widely espoused

views of the purpose of higher education. In other words, they resonate with the imagined ideal of the 'model' student, who is often believed to be created 'in our own image' (Haggis 2003). This, of course, as Haggis points out, is far from being ideologically neutral and methodologically unproblematic. Nonetheless, encouraging a deep approach has become the *sine qua non* of much development work in higher education. Deep learning is valuable to students because it doesn't just let students pass assignments on a course, but also helps them to prepare for changing professional environments, where the 'half-life' of content learned in higher education is progressively becoming shorter. Graduates in the twenty-first century need to be able to make sense of conceptual frameworks, rather than just remembering facts and they need to be effective sense-makers when they encounter new knowledge.

Entwistle and Ramsden (op. cit.) and others working within the approaches to learning paradigm argue convincingly that students who adopt a deep approach to study have the intention of understanding, engaging with, operating in and valuing the subject. They believe learning is about developing their understanding, and so they adopt approaches that are consistent with this belief, thus putting themselves in a good position to achieve the kinds of high-level outcomes typically eagerly anticipated in higher education. To help themselves achieve this mental shift, they become actively involved in learning by asking questions and wishing to apply new knowledge that they have gained. Because they intend to grasp the subject and to see it in new and complex ways, they interact energetically with course content, making use of evidence, inquiry and evaluation. They look for the big picture. They relate ideas to one another and they relate concepts to everyday experience. They tend to read and study far beyond the material that is introduced in lectures, digesting material and fleshing ideas out for themselves, often by talking with others about it.

By contrast, students who adopt a surface approach believe that a task requires them to 'acquire' content and that assessment demands they regurgitate that material. Students who take a surface approach try to learn in order to repeat or reproduce what they have learned. While they can be extremely diligent and industrious, working very hard to gather lots of material, they do not read effectively or actively to make sense of their reading by examining and comparing various viewpoints. Because they see knowledge as a set of facts, they can confuse quantity with quality. They take a narrow view and concentrate on detail, typically failing to

distinguish principles from examples. These kinds of approaches aren't a good fit with the expectations of most lecturers.

Approaches to learning are, then, commonly viewed as a function of the interrelationship between student-based factors and teaching-based factors, including, or indeed, especially, assessment. The effect that context has on student approaches to study has been widely demonstrated by researchers such as Trigwell and Prosser (1991) and Tang (1994). The approaches to learning paradigm is particularly appealing as it has practical applications for teaching, although the status afforded to some of these ideas has been the subject of some criticism for its lack of recognition of the importance of sociocultural factors (Haggis 2009; Mann 2001). The alluring premise of the approaches to learning paradigm is, however, that you can help foster deep approaches by the way you design and deliver your curricula by, for instance, structuring knowledge and the student journey in a coherent and cumulative way, clearly communicating the relevance and meaning of material and tasks, ensuring students have ample opportunities to interact and learn actively to bring about conceptual change. It is salutary to remember, though, that it is unfortunately much easier to prompt surface approaches via your learning, teaching and assessment methods than it is to foster deep approaches.

Constructive Alignment

The approaches to learning literature makes clear, then, that meaning is not imposed on a student nor transmitted by direct instruction, but is *created* by the students' learning activities. Learning is thus seen as a way of interacting with the world, and good teaching is seen as encouraging a deep approach, whereby activities are appropriate to handling a task so that a fitting outcome is achieved (Ramsden 2003). For Ramsden, as people learn their conceptions of phenomena change, so they start to see the world differently, due to the way they structure information and use it to think differently. This views education as a matter of conceptual change and a process of helping students to overcome the barriers to insight and understanding (Perkins 2006), not just the acquisition of more information.

According to the principles of constructive alignment (Biggs 1999), this change takes place most effectively when a course is carefully designed to pull in the same direction, enmeshing students in a web of consistency which seeks to avoid the fragmentation and lack of

connection characterised by a surface approach. Ramsden (2003: p. 47) argues the following features are important:

1. It is clear to students and teachers where they are supposed to be going, what is deemed 'appropriate' and what the objectives are. The objectives should be evident and embedded in the assessment tasks.
2. Students experience the felt need to get there. The art of good teaching is to communicate that need where it is initially lacking. 'Motivation' is a product of good teaching, not its prerequisite.
3. Students feel free to focus on the task, not on watching their backs. Often, attempts to create a felt need to learn, particularly through ill-conceived and urgent assessments, are counter-productive. The game then becomes a matter of dealing with the test, not with engaging the task deeply.
4. Students can work collaboratively and in dialogue with others, both peers and teachers. Good dialogue elicits those activities that shape, elaborate and deepen understanding.

These four points contain a wealth of implication for the design of teaching, and for personal reflection about what one is really trying to do.

From the perspective of the approaches to learning tradition, well-organised and aligned curricula are, then, regarded as particularly helpful. Admittedly anxieties about too tight a focus on narrow, pre-specified outcome-based approaches have been voiced (for example, Hussey and Smith 2002), based on fears of stifling the creativity, innovation and flexibility inherent in the kind of complex learning that higher education is assumed to represent. Critiques of over-specified learning outcomes or criteria act as salutary reminders that educators need sensitively to construct their curricula to avoid rigidity and conformist hoop-jumping on the part of their students. That said the notion of constructive alignment remains a powerful signature concept for HE practitioners, because it focuses your attention on what the student does rather than delivery of content. The challenge is to strike a careful but tricky balance between

achieving clarity and direction on one hand and flexibility, 'stretch' and challenge on the other. These are issues we'll take up more fully in the later chapters, most notably the ones on assessment and feedback and engaging students via research-rich teaching.

Student Engagement

In contrast to the approaches to learning literature, which has tended to focus attention on classroom practice and curricular innovations, research in the USA and Canada has generally placed greater emphasis on what is generally termed 'student engagement'. This is a concept which has recently attracted extensive international interest in HE research and practice (see, for example, Bryson 2014; Dunne and Owen 2013; Solomonides et al. 2012). It has its roots in the work of Pace (1979), Astin (1977), Chickering and Gamson (1987), Tinto (1987) and others. It, too, is based on a series of evidence-based studies which also built a description of student learning and behaviour, this time, though, by looking at students' experiences of tertiary education across the piece. An interest in issues of retention, persistence and withdrawal, especially amongst so-called 'non-traditional' students, has featured prominently in this field.

Pace (1982) developed a survey instrument containing 14 'quality of effort' scales and arrived at the conclusion that

> Once students go to college, what counted most was not who they were or where they were but what they did (p. 20).

His argument was that learning involves an investment of time and effort by the student, where effort is demarcated as the quality of the exertion students devote to curricular and co-curricular activities. From this viewpoint, quality outcomes are influenced by

- the strength of the personal relationships achieved between students, teachers and relevant college staff
- the emphasis students feel is placed by the institution on the importance of developing academic, vocational, cultural and intellectual competencies.

Astin (1977, 1984) further developed this work, asserting that the educational impact of institutions is mediated by variables such as student peer group relationships and what he called 'involvement'. For Astin, 'student involvement' represented the 'amount of physical and psychological energy that the student devotes to the academic experience' (Astin 1984, p. 518). Importantly, Astin's view of the 'academic experience' included study, time on campus, student associations, interaction with other students and interaction with faculty staff. From this perspective, effective policy and practice increases that involvement, so *all* students can be encouraged to become more involved in the whole experience of being at university. In a series of meta-studies, Pascarella and Terenzini (2005) also found that 'the impact of college is largely determined by individual effort and involvement in the academic, interpersonal, and extra-curricular offering on campus' (2005, p. 602).

Taking a similarly holistic view, Chickering and Gamson (1987) developed seven principles for good practice. These have become widely disseminated and used as the basis for considerable development work in HE. We present them in the box below.

Seven principles to promote engagement

- Encouraging student–staff contact;
- Promoting active learning techniques;
- Developing cooperation and reciprocity between students;
- Emphasising time on task;
- Giving prompt feedback;
- Communicating high expectations;
- Respecting diversity in talent and ways of learning (p. 3).

Similarly, Kuh et al. (2008, p. 22) emphasise that it is what the students *do* that matters, referring to this as student engagement:

> Student engagement is defined 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** [our emphasis]. 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.

A National Survey of Student Engagement (NSSE), developed by Kuh and colleagues, was created to benchmark key components that were known to encourage student engagement, including:

- **Level of academic challenge**—the extent to which expectations and assessments challenge students to learn. This includes class preparation time; encouragement to spend time on meaningful tasks and work hard; amount of reading and writing assigned; coursework that emphasises analysis, synthesis, making judgements about course materials and applying theories and concepts to practical problems or new situations.
- **Enriching educational experiences**—with opportunities to participate in educational activities which broaden students' horizons. These include talking with students from different backgrounds, political beliefs or religious commitments; using information technology to discuss or complete assignments; and participating in work experience, community service, study abroad or studying another language.
- **Active and collaborative learning**—which strengthen students' efforts to actively construct their knowledge. This includes involving students in class discussions; making presentations; working with other students on projects during and outside of class; tutoring or teaching other students; and discussing and applying ideas beyond the confines of the classroom.
- **Supportive campus environment**—which relates to students feeling a sense of belonging and feeling valued within the campus community. This includes satisfaction with academic and non-academic support, the quality of relationships with other students, faculty members and administrative staff.
- **Student–Staff interaction**—which relates to the level and nature of students' contact with teaching staff. This includes discussing grades and assignments with lecturers; talking about career plans with lecturers; discussing ideas from class with lecturers; receiving prompt feedback on performance; and working with a staff member on a research project.

The survey varies from others, such as the National Student Survey in the UK and other similar surveys globally, which focus on measuring satisfaction. Administering the NSSE helped to identify ten types of potentially life-changing 'high-impact' practices (Kuh 2008), such as the opportunity to undertake community-based projects, participate in peer tutoring or gain fieldwork experience or working with a staff member on a research project. According to the US researchers, these high-impact practices were positively associated with learning and retention.

Student engagement has also, importantly, been linked to a sense of belonging (Kember et al. 2001). It is, moreover, increasingly recognised that social as well as academic integration are the important factors when it comes, for instance, to students' levels of persistence and success (Tinto 2003) and their employability and professional development. In short, engagement can be seen as a complex web of interrelated factors. It encompasses emotional, cognitive and behavioural dimensions which, in turn, are related to institutional and local cultures and the wider socio-political climate, as well as being influenced by the values, attitudes, assumptions and experiences which staff and students bring to the learning process (Bryson 2014). Solomonides et al. (2012) note that this not only inextricably links student engagement to issues of epistemology (as characterised, for instance, by disciplinary practices) but also to questions of identity, a sense of being and becoming and what Barnett (2007, p. 70), with his focus on critical thinking and being, has called the 'will' of the student:

> The student's being, her will to learn, her strong self and her willingness to be authentic: all these are a set of foundations for her knowing and her practical engagement. Without a self, without a will to learn, without a being that has come into itself, her efforts to know and to act within her programme of study cannot even begin to form with any assuredness.

For Barnett, a deep approach to study epitomises a personal stance—whereby somebody invests something of themselves as a person. A surface approach, by contrast, is devoid of such a will and means that someone subjects themselves passively to their experiences. This is particularly important for those who believe that higher education is about transformative experience (Bryson 2014; Mezirow 1997), with the potential to support individuals to challenge taken-for-granted assumptions and premises, enabling them to realise their creative potential, both

in the academy and in society. From this perspective, higher education is about equipping students to think critically, and cultivating a shared appetite for curiosity, uncertainty and an openness to thinking the yet to be thought.

Threshold Concepts

Another striking metaphor which has recently been highly influential in higher education—and usefully underlines the importance of developing students' understandings so they become equipped to think at more advanced levels—is the notion of threshold concepts. These are the concepts which can be regarded as being absolutely fundamental to the (often tacit) ways of thinking and practising in that discipline or field (Meyer and Land 2003) and serve to bind a subject together. They epitomise thinking like an engineer, an historian and so on. They act as 'conceptual gateways' or 'portals' that lead to previously inaccessible ways of thinking about something and bring about a transformed view of subject matter or a subject's landscape, or even a new way of looking at the world. They sit at the heart of core disciplinary knowledge, so students need to 'get' them for that disciplinary knowledge to make sense.

Meyer and Land (2005) suggest threshold concepts offer teachers a useful way of reflecting on the structure of their students' subject understanding, allowing educators to ponder how best they might help their students to recognise, encounter explore and internalise them. Their formulation suggests threshold concepts have five characteristics. First, they are transformative, in that once acquired they shift one's perception of the subject. Second, they are irreversible. Once an individual has begun to perceive the world in terms of a threshold concept, it should be inconceivable that they would return to viewing it in the original way. Third, a threshold concept is integrative. Meyer and Land describe this as the capacity of a concept to expose the previously hidden interrelatedness of something. Fourth, a threshold concept is bounded. That is, it helps to define the boundaries of a subject area. If a threshold concept is relinquished thinking begins to move outside or beyond the scope of the subject itself. Finally, it is potentially troublesome in the sense defined by Perkins (2006). That is, a threshold concept may be counter-intuitive, or feel absurd in some way. In grasping a threshold concept, a student moves from common sense understanding to an understanding which may conflict with perceptions that have previously seemed self-evidently

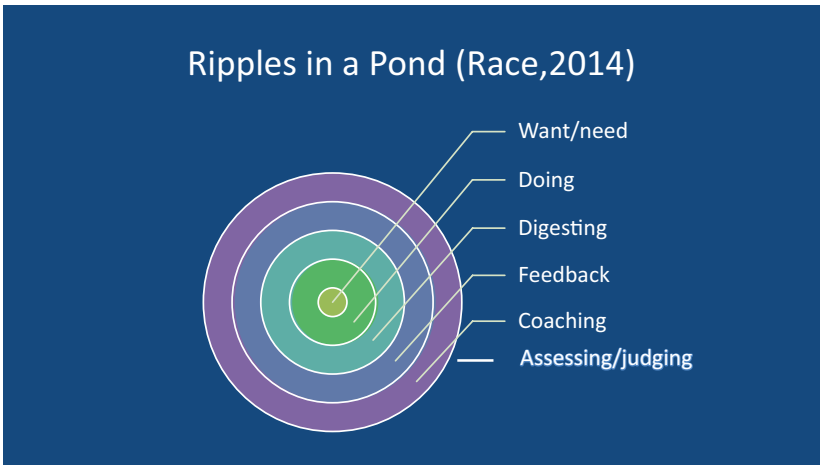

Fig. 2.4 Ripples in a pond diagram

true. This, of course, can be extremely unsettling, as well as cognitively taxing. Students (and indeed academics) often get 'stuck' in the liminal space of the threshold, oscillating between old and emerging understandings, so they often need time and sympathetic help to negotiate their way through this tricky terrain.

Factors Underpinning Successful Learning

Actually, while all this, quite rightly, depicts learning as a very complex, complicated and contingent process, which means that it's reductive to think of teaching as a recipe to follow or a problem that can be fixed, it's worth reminding ourselves that learning, until it's institutionalised, is a perfectly natural state of affairs. Race (2014) reminds us emphatically that to learn is to be human and learning can happen anywhere.

Race's (2014) 'ripples on a pond' model speaks powerfully to many individuals, staff and students alike, partly because of its accessibility and avoidance of educational jargon, and partly because of the ways in which the metaphor Race uses clearly captures the dynamic ways in which the factors for successful learning inter-relate and bounce off each other, just as ripples on a pond represent energy flowing in multiple directions and bringing about change (Fig. 2.4).

By asking thousands of people about how they learned to become good at something, and what went wrong in their learning, Race pinpointed distinct factors which generally underpin successful learning. In summary, these are the following:

Wanting. To learn, which is something intrinsic.

Taking some sort of ownership of the **need** to learn. This need might be externally generated, but its important quality is that it keeps people going when the going is tough.

Learning by doing. Things like having a go, experience, repetition, learning by trial and error are all the important features here.

Learning through feedback. Learning is helped by having access to other people's reactions, getting confirmation you're on the right lines, seeing where you've made mistakes and simply seeing if something that you've done works out. This factor relates strongly, of course, to everything under the 'learning by doing' banner, underlining the need for learner activity.

Making sense of things. The process of getting your head around something, or 'digesting' it, so that you see it afresh (as 'the light starts to dawns' or the 'penny begins to drop') is an important part of the process of learning something, and links strongly to constructivism, as, unlike the first four factors, no one can make sense of things for you—it is something only you can do. This means that the job of teaching is to provide learners with the best possible environment in which they can accomplish the making sense aspects of their learning.

Verbalising orally. Speaking to others, face to face, helps people to make sense of something even better than they had done previously. Verbalising, however tentatively, enables people to hear what they think by hearing what they say when they try, for example, to explain something, adjusting and readjusting along the way, informed by the feedback available in any given context.

Assessing how students make informed judgments. The process of seeing and making evaluative judgements about what others have done and how they've gone about it intensifies many of the other factors listed above. It helps people to gauge and develop the quality of their own learning very sharply.

Race makes clear that it is useful to think of all of these factors as continuously affecting each other concurrently, just like ripples bouncing backwards and forwards on a pond. More importantly, he argues

(2014, p. 42) that they are tangible and readily appreciated by teachers and learners alike and can be put into practice and harnessed by teachers and by the learners themselves. The factors offer processes for teachers to bear in mind when designing educational courses, training programmes, learning resources and open-learning materials. Teachers can use them to think about the different ways in which they set out to:

- Enhance or ignite the want to learn;
- Illuminate the need to learn, and help learners 'own' that need;
- Enable learners to learn by doing, by devising ample opportunity for practice, trial and error and so forth;
- Help learners to make sense of what they are learning, rather than simply storing information to regurgitate at a later date;
- Cause learners to derive feedback on what they do, and on what they think they have done and so on;
- Get their learners to vocalise orally the material, talking through material with their peers or any other interested party;
- Cause their learners to assess, by, for instance, building peer and/or self-assessment opportunities into their teaching, or asking them to apply criteria to sample evidence.

Learners, too, can use them to help them take charge of their own learning, by thinking about how they address of all Race's seven factors. In the authors' own experience of teaching large groups of undergraduates, the process of discussing Race's insights with students and highlighting their relevance to the programme of study can considerably enhance learners' levels of pedagogic and assessment literacy, raising awareness of the complex processes that are called into play while learning at university.

Conclusion

Our unapologetic and enthusiastic focus on student engagement in this volume is one that echoes perspectives found in many universities globally and is, we would argue, an invaluable development. Whilst it's admittedly a complex, nuanced and, some would suggest, a rather diffuse concept, it importantly recognises our students as the key players in their own academic achievements. As Bryson (2014, p. 17) neatly sums up:

> Student engagement is about what a student brings to Higher Education in terms of goals, aspirations, values and beliefs and how these are shaped and mediated by their experience whilst a student. [It] is constructed and reconstructed through the lenses of the perceptions and identities held by students and the meaning and sense a student makes of their experiences and interactions…. As players in and shapers of the educational context, educators need to foster educationally purposeful student engagement to support and enable students to learn in constructive and powerful ways in order to realise their potential in education and society.

Throughout the rest of this volume, we will further demonstrate how these game-changing perspectives can be used as lenses through which to review all aspects of curriculum design, delivery, assessment and evaluation, in ways that can enrich student learning and, as a bonus, make the working lives of those who teach and support them more fulfilling and enjoyable. In the next chapter, we provide practical illustrations of approaches we, our colleagues and fellow educators have used in everyday classroom scenarios to engage students in activities that contribute to high-quality learning outcomes.

References

Astin, A. W. (1977). *Four critical years: Effects of college on beliefs, attitudes and knowledge* (2nd ed.). SanFrancisco: Jossey-Bass.

Astin, A. W. (1984). Student involvement. A developmental theory for Higher Education. *The Journal of College Student Development, 40*(5), 518–529.

Auerbach, A. J., & Schussler, E. E. (2016). Instructor use of group active learning in an introductory biology sequence. *Journal of College Science Teaching, 45*(5), 67.

Barnett, R. (2007). *A will to learn: Being a student in an age of uncertainty.* Maidenhead: Society for Research into Higher Education & Open University Press.

Beetham, H., & Sharpe, R. (2013). *Rethinking pedagogy for a digital age: Designing and delivering e-learning* (2nd ed.). London: Routledge.

Biggs, J. B. (1976). Dimensions of study behaviour: Another look at ATI. *British Journal of Educational Psychology, 46*(1), 68–80.

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*(3), 347–364.

Biggs, J. (1999). What the student does: Teaching for enhanced learning. *Higher Education Research & Development, 18*(1), 57–75.

Biggs, J. B. (2003). *Teaching for quality learning at university: What the student does* (2nd ed.). Philadelphia: Society for Research into Higher Education.

Birenbaum, M. (2003). New insights into learning and teaching and their implications for assessment. In M. Segers, F. Dochy, & E. Cascallar (Eds.), *Optimising new modes of assessment: In search of qualities and standards* (pp. 13–36). Boston: Kluwer Academic.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Bryson, C. (2014). Clarifying the concept of student engagement. In C. Bryson (Ed.), *Understanding and developing student engagement* (pp. 1–22). London: Routledge, Taylor and Francis Group.

Chickering, A., & Gamson, Z. (1987). Seven principles of good practice in undergraduate education. *AAHE Bulletin, 39,* 3–7.

Collins English Dictionary. (2016). 'Definition of pedagogy'. Harper Collins. Retrieved December 14, 2016 from http://www.collinsdictionary.com/dictionary/english/pedagogy

Dunne, E., & Owen, D. (Eds.). (2013). *The student engagement handbook: Practice in higher education.* Harlow, United Kingdom: Emerald Group.

Entwistle, N., & Tait, H. (1990). Approaches to learning, evaluations of teaching, and preferences for contrasting academic environments. *Higher Education, 19*(2), 169–194.

Entwistle, N., & Ramsden, P. (2015). *Understanding student learning.* (Routledge Revivals). London: Routledge.

Fry, H., Ketteridge, S., & Marshall, S. (2014). *A handbook for teaching and learning in higher education: Enhancing academic practice* (4th ed.). London: Routledge.

Gibbs, G. (1988). *Learning by doing: A guide to teaching and learning methods.* London: Further Education Unit.

Gibbs, G., Morgan, A., & Taylor, E. (1984). The world of the learner. In F. Marton, D. Hounsell, & N. J. Entwistle (Eds.), *The experience of learning* (pp. 165–188). Scottish Academic Press.

Haggis, T. (2003). Constructing images of ourselves? A critical investigation into 'approaches to learning' research in higher education. *British Educational Research Journal, 29*(1), 89–104.

Haggis, T. (2009). What have we been thinking of? A critical overview of 40 years of student learning research in higher education. *Studies in Higher Education, 34*(4), 377–390.

Holgate, P. (2016). *Developing a curriculum of engagement in architectural education at Northumbria University.* Unpublished Ed.D. Thesis, Northumbria University.

Hussey, T., & Smith, P. (2002). The trouble with learning outcomes. *Active Learning in Higher Education, 3*(3), 220–233.

Hutchings, P. (2005). Building pedagogical intelligence. In *Carnegie perspectives: A different way to think about teaching and learning*. Stanford: Carnegie Foundation for the Advancement of Teaching.

Kandlbinder, P. (2013). Signature concepts of key researchers in higher education teaching and learning. *Teaching in Higher Education, 18*(1), 1–12.

Kandlbinder, P. (2014). Signature concepts of key researchers in North American higher education teaching and learning. *Higher Education, 69*(2), 243–255.

Kane, L. (2004). Educators, learners and active learning methodologies. *International Journal of Lifelong Education, 23*(3), 275–286.

Kember, D., Lee, K., & Li, N. (2001). Cultivating a sense of belonging in part-time students. *International Journal of Lifelong Education, 20*(4), 326–341.

Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Association of American Colleges and Universities. Retrieved December 13, 2016 from http://provost.tufts.edu/celt/files/High-Impact-Ed-Practices1.pdf.

Kuh, G. D., Kinzie, J., Buckley, J., Bridges, B., & Hayek, J. C. (2008). *What matters to student success: A review of the literature*. ASHE Higher Education Report. San Francisco: Jossey-Bass.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.

Mann, S. J. (2001). Alternative perspectives on the student experience: Alienation and engagement. *Studies in Higher Education, 26*(1), 7–19.

Marton, F., & Säljö, R. (1976). On qualitative differences in learning: L-outcome and process. *British Journal of Educational Psychology, 46*(1), 4–11.

Meyer, J. H. F., & Land, R. (2003). Threshold concepts and troublesome knowledge: linkages to ways of thinking and practising, In C. Rust (Ed.), *Improving student learning—Theory and practice ten years on* (pp. 412–424). Oxford: Oxford Centre for Staff and Learning Development (OCSLD).

Meyer, J. H. F., & Land, R. (2005). Threshold concepts and troublesome knowledge (2): Epistemological considerations and a conceptual framework for teaching and learning. *Higher Education, 49*(3), 373–388.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education, 1997*(74), 5–12.

Pace, C. R. (1979). *Measuring outcomes of college: Fifty years of findings and recommendations for the future*.San Francisco: Jossey-Bass Inc.

Pace, C. R. (1982). *Achievement and the quality of student effort*. Los Angeles,CA: University of California.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students Vol. 2: A Third decade of research* (2nd edn.). San Francisco, CA: Jossey-Bass Inc.

Perkins, D. (2006). Constructivism and troublesome knowledge. In J. H. F. Meyer, & R. Land (Ed.). (2005), *Overcoming barriers to student*

understanding: Threshold concepts and troublesome knowledge (pp. 33–47). New York: Routledge Falmer.

Piaget, J. (1964). Part I: Cognitive development in children: Piaget development and learning. *Journal of Research in Science Teaching, 2*(3), 176–186.

Prosser, M., & Trigwell, K. (1999). *Understanding learning and teaching: The experience in higher education*. Maidenhead, United Kingdom: Society for Research into Higher Education & Open University Press.

Prosser, M., & Trigwell, K. (2013). Qualitative variation in approaches to university teaching and learning in large first-year classes. *Higher Education, 67*(6), 783–795.

Race, P. (2014). *Making learning happen: A guide for post-compulsory education* (3rd ed.). London, United Kingdom: Sage.

Ramsden, P. (1987). Improving teaching and learning in higher education: The case for a relational perspective. *Studies in Higher Education, 12*(3), 275–286.

Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). New York: Taylor & Francis.

Savin-Baden, M. (2007). *Learning spaces: Creating opportunities for knowledge creation in academic life*. Maidenhead: Open University Press.

Solomonides, I., Reid, A., & Petocz, P. (Eds.). (2012). *Engaging with learning in higher education*. London, United Kingdom: Libri Publishing.

Spronken-Smith, R., Bullard, J., Ray, W., Roberts, C., & Keiffer, A. (2008). Where might sand dunes be on mars? Engaging students through inquiry-based learning in geography. *Journal of Geography in Higher Education, 32*(1), 71–86.

Tang, C. (1994). Assessment and student learning: Effects of modes of assessment on students' preparation strategies. *Improving student learning: Theory and practice* (pp. 151–170). Oxford: Oxford Centre for Staff and Learning Development.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Tinto, V. (2003). Learning better together: The impact of learning communities on student success. *Higher Education Monograph Series, 1*(8).

Trigwell, K., & Prosser, M. (1991). Improving the quality of student learning: The influence of learning context and student approaches to learning on learning outcomes. *Higher Education, 22*(3), 251–266.

Warren, D. (2016). Course and learning design and evaluation. In H. Pokorny, & D. Warren (Eds.), *Enhancing teaching practice in higher education* (pp. 11–46). United Kingdom: Sage.

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