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Learning by teaching: Exploring the factors involved in successful learning and reflecting on good practice

Abstract:

A review of a selection of the literature surrounding learning and teaching in higher education outlines a number of factors pertinent to successful learning. The author examines each of these factors in turn and relates them to her own teaching experience. Consideration is first given to the contribution made by the *teacher*, and various theories of teaching are examined. Choice of theory of teaching carries consequences for the student's learning experience, and the importance of teaching methods and techniques is emphasised. The *relationship between learner and teacher* is also crucial, as both need to engage in active dialogue and contribute to knowledge and understanding. *Stimulating learning through emotions and actions* is highlighted, in addition to the current emphasis on cognition. The author notes that the uses of emotion and action have, to some extent, been neglected in higher education. *Critical thinking* and the use of *reflective dialogue* are identified as two of the most significant factors; reflection allows the students to thoroughly engage and immerse themselves in their learning; whereas the very essence of what we understand as higher education is achieved by critical thinking. *Transformation within the learner* must also occur and involves the student actively engaging and performing within the learning process. *Learner-oriented approaches* touches on the current 'deep versus surface' debate in learning and some recent criticism of the term, and the *learning environment* itself must be recognised as an influential character. The *responsibility of the learner* themselves is also encouraged. Finally, the author reflects

upon these factors in relation to contemporary higher educational settings and encourages teachers to constantly revisit and reflect upon their current teaching practice. The author concludes by recommending that teachers share examples of good practice to continue to improve student learning.

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Learning by teaching: Exploring the factors involved in successful learning and reflecting on good practice

There is more to learning than simply imparting knowledge (Race & Brown 2001) and this article identifies and explores those most pertinent factors associated with successful learning and reflects upon their implications for good practice. They include: successful teaching; the relationship between learner and teacher; the influence of emotions; critical thinking and reflection; transformation within the learner; learner-focussed approaches; the learning environment and the social process involved. Consideration will also be given to the methods and techniques appropriate to learning and teaching. This article will consider each of the above factors and reflect upon them relative to the author's own limited teaching experiences[1], providing practical suggestions for other inexperienced teachers. It will conclude with recommendations for good practice for *all* teachers, both new and experienced.

Before one can consider successful learning, it is useful to contemplate what is meant by the learning process. Fry, Ketteridge & Marshall (1999) define learning as "how we perceive and understand the world, about making meaning" (citing Marton & Booth 1997, p9). It involves "mastering abstract principles, understanding proofs, remembering factual information, acquiring methods, techniques and approaches, recognition, reasoning, debating ideas, or developing behaviour appropriate to specific situations". Brockbank and McGill (1988) list a number of categories of learning, as originally defined by Saljo (1982), which include: a quantitative increase in knowledge,

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[1] The author is studying for a Postgraduate Certificate in Higher Education

memorising, acquisition of facts, skills and methods, abstraction of meaning, and interpretation and understanding of reality. An additional category was later added by Marton and colleagues (1993) – development as an individual. Ramsden (1992) notes that the first three of these categories are less complex and suggests they form a hierarchical structure, leading from one to another until the learner achieves personal success, at the top of the structure.

Ramsden also notes that "teaching and learning in higher education are inextricably and elaborately linked. To teach is to make an assumption about what and how the student learns; therefore, to teach well implies learning about students' learning" (1992, p6). Thus, teaching and student learning are two parts of the same whole and it is essential for the teacher to understand the students' ways of thinking in order for the student to learn well.

Successful teaching:

In order to explore those factors involved in successful learning, every new teacher must first consider the contributions made not just by the learner but also by themselves, and the impact they can have upon the learning process. There are a number of theories of teaching that address this issue.

As most teachers are aware, there are four popular theories of teaching; Transfer theory, Shaping theory, Travelling theory and Growing theory. Transfer theory is most associated with inexperienced teaching; teaching is a mode of transferring material and

information from the teacher to the learner. The analogy often associated with this theory is that of the student as a vessel which will be filled by the teacher. Shaping theory interprets students as something to be moulded or shaped into a certain form by the teacher. Both the Travelling and Growing theories tend to be used by more experienced teachers. The Travelling theory sees teaching as helping students on a journey through unfamiliar terrain, teachers go with them and act as a guide en route. The Growing theory interprets teaching as helping and encouraging students with their own personal development, much as an individual would 'grow' plants and flowers by feeding, watering and nourishing (Fox 1983).

Each of the theories in turn has consequences for the student's learning. One of the most common problems teachers can experience is that learners and teachers are approaching the learning process from different theories (Fox 1983). Furthermore, new teachers may feel inexperienced to teach in certain subjects and can spend a lot of time and energy researching and preparing for the lessons, omitting to concentrate on the "process of transfer" itself (Fox 1983, p161; Race & Brown 2001).

Brockbank and McGill (1998) note that the teacher is a 'facilitator' of learning and is responsible for "creating the conditions conducive to critical reflective dialogue" (p5). They emphasise how individuals vary in response to learning opportunities, using examples from the theories of Honey & Mumford (1982), Kolb (1984), Marton (1981), Pines & West (1986), and Saljo (1988). All of these researchers emphasise the importance of teaching methods and techniques to the learning process, the need to

consider all possible styles and approaches, and the context of learning. There is the risk, however, that teachers will consider how they themselves learn best but not how their students learn. In order for teachers to see that learning has been achieved, feedback and discussion are vital here (Fry, Ketteridge & Marshall 1999).

Finally, Ramsden (1992) says that understanding is an important concept in the learning process and he outlines three theories of teaching in higher education; teaching as telling, or transmission of material; teaching as organising student activity; and teaching as making learning possible. The argument put forward is that the latter is where teachers need to aim for, although they may find themselves naturally drawn towards the former.

Reflecting on her first experiences of teaching, the author concurs with the research highlighted above and admits to having initially approached teaching from the perspective of the Transfer and Shaping theories, seeing teaching as 'telling' or 'transmission of material'. By recognising her reliance of transference and tranmission, the author was able to reconstruct her approach to learning. She suggests other teachers revisit their approach to learning regularly so that they continue to be active participants in the learning process. An easy way to do this is initially asking students what they want to achieve from their teaching sessions. Using this feedback constructively, the teacher can determine which approach to learning will work best within the specific learning environments. For example, if they say they want 'information' then a transference approach may be required after all; if they want 'to evaluate and understand theories', a more complex approach is needed.

Relationship between learner and teacher:

As much as the role of the teacher is involved in successful learning, consideration must also be given to the relationship between both learner and teacher as a further contributing factor in successful learning. Brockbank and McGill (1998) highlight how the significance of *relationship* in learning is crucial and see this as teachers and learners actively reflecting on issues and materials together, engaging in dialogue and working together to construct meaning and knowledge. The author's own experiences have been improved by developing and nurturing relationships with her students in this way, but it is worth bearing in mind that students "adapt to the requirements they perceive teachers expect of them" (Ramsden 1992, p62). Thus, it is the learner's *perception* of requirements that is important. Communication is key here.

Stimulating Learning through Emotions and Action:

The role of emotions in learning was emphasised by Bloom (1956, 1964, in Brockbank & McGill 1998), who originally identified three domains of learning; cognitive (reason, deduction), 'conative' (action, doing) and affective (emotion). The importance accorded to each domain by a teacher may reflect her or his own theoretical model of a person as learner, but if the model is limited to one domain, learning is also limited. The literature shows that too much emphasis is placed on cognition in higher education, to the detriment of both affect and action. Thus, as teachers, we need to be consciously attempting to balance all three domains. "Emotion holds the key to a higher level of learning, through reflective dialogue" and "emotional intelligence is an essential attribute

of a teacher in higher education" (Brockbank & McGill 1998, p42). The impact of reflection is addressed in more detail below.

Critical thinking – Reflection and Self-Reflection:

The factors involved in successful learning cannot be used selectively or independently. They compliment each other and contribute as a collective to successful learning as a whole. That said, without critical thinking and reflective dialogue, it is difficult to contemplate achievement in any form of successful learning. The activity of teaching and the processes of reflection, with peers, and self-reflection are inextricably linked and are highlighted throughout the literature (Fry, Ketteridge & Marshall 1999; Marshall & Case 2005; Ramsden 1992; Brockbank & McGill 1998). Teachers need to encourage learners to challenge and change knowledge to bring a sense of awareness and agency and, by experiencing reflective dialogue, the students will learn to do so themselves. If reflective dialogue is happening "all are really engaged" and there is an "intensity of listening and contributions" (Brockbank & McGill 1998, p106).

Furthermore, many authors emphasise the importance of critical thinking as an outcome of education (Ramsden 1992). Students should not be judged on their amount of knowledge per se but on their self-critical awareness of such knowledge and their readiness to learn more. Brockbank & McGill cite Barnett (1990, 1997) when they note that the essence of higher education is achieved by critical reflection. "This ability to contextualise the learning process and de-construct it in a dialogue with others is an

important component of reflection and one that is regarded as important by those seeking transformative purposes on higher education" (Brockbank & McGill 1998, p41).

In the author's case, a practical approach to developing and encouraging reflection and critical thinking is by utilising simple tasks at various stages of a teaching session. For example, the author asks students at the beginning of class to briefly summarise a piece of work from a reading they prepared for that session and to determine if they agreed or disagreed with the fundamental points, and why. In some cases, the students work independently, in others they collaborate with their peers. They discuss it briefly, then put it to one side. At the end of the teaching session, having explored the relevant literature and various arguments within that topic overall, the students are again asked to revisit the piece they had prepared earlier. In some circumstances, this is addressed again at a later teaching session. This approach encourages students to de-construct what they have read, critically evaluate their work and return to it for further reflection later. Although it is simple, it is a worthwhile task when utilised regularly and encourages students, over time, to appraise their reading materials and develop their own reflective practice.

Transformation within the learner:
Transformation is a term that is often associated with successful learning and goes hand-in-hand with the abilities for critical thinking and reflection. Brockbank and McGill (1998) talk about the learning process as being *transformational*, where the "[development] of the person is the aspiration, where the capacity to learning is

increasingly in the learner as greater autonomy is reached" (p4). Furthermore, this transformational approach to learning emphasises that the context in which the learning occurs is crucial. Transformation involves the learner as being an active, engaged and performing participant and provides the capacity and empowerment for learners to change within themselves. The Constructivist approach to learning sees it as a process of "individual transformation" (Fry, Ketteridge & Marshall 1999, p10). Teachers must consider not just *adding* knowledge but creating change or transformation to that pre-existing knowledge, which in itself should enable the learner to retain facts for longer.

A popular task used to develop this transformation is having students plan and run a teaching session; again this can be done independently or with peers, and the author has experimented with both forms. The author received very positive feedback from students when she utilised this method; the students were engaged, thought critically about what they wanted to impart to their peers and realised their own potential and capacity for learning within their subject area.

Learner-oriented approaches:

Much has been written in the literature about approaches to learning and their influence on the success or otherwise of the learning process. The most popular current debate surrounds the 'deep versus surface' approaches to learning (see Brockbank & McGill, 1998, citing Marton 1975; Marton & Saljo 1984; Entwhistle 1981; Kolb 1984; Bateson 1973, for example). Surface approaches are seen to concentrate on discourse, rely on memory and utilise superficial levels of processing; whereas deep approaches are about

processing knowledge, seeking meaning, drawing conclusions and an active and critically evaluative approach to learning. Brockbank and McGill state that these outcomes reflect that students have particular, consistent styles of learning which remain constant regardless of context and discipline. However, critics have found reliability and validity lacking therein (for example, see Fry, Ketteridge & Marshall 1999; Haggis 2003). It has been argued that students apply a specific approach to the context of their learning; using a surface approach where reiteration and memorisation is required, for example during an exam, can produce a very good grade. Thus, an approach to learning can simply be a response to the teaching environment in which a student is expected to learn (Ramsden 1992) and therefore everyone is capable of both deep and surface approaches, depending on the circumstances. Haggis (2003) questioned the relevance of these approaches to learning and suggested that, although useful for producing a "generalised description" (p89), higher education needs to find new ways to define and understand its core values. Furthermore, this approach fails to really engage with the complexities of location and context. (See Marshall & Case 2005, for a rebuttal of Haggis). However, as it currently stands, deep approaches are seen as far more beneficial in terms of grades, success and achievement in the learning process and thus can be said to contribute to successful learning.

For those interested in reviewing other learning approaches, it is worth consulting Honey & Mumford's Learning Styles classification in detail (1982, cited in Fry, Ketteridge & Marshall 1999) and also reviewing Phil Race's 'Ripples on a Pond' (Race, undated). Race outlines five factors that overlap (like ripples on a pond) for successful learning;

wanting to learn; needing to learn; learning by doing; learning by making sense, or digesting information; and learning by feedback. The author would emphasise the latter; the use of feedback via appropriate formative assessment, whether given face-to-face or by written comments, is recognised as one of the principles of effective teaching and learning (Ramsden 1992). Indeed, the majority of assessment methods are now designed to support student learning and the emphasis is on enhancing student learning and a learner-centred approach (Rowntree 1987, cited in Falchikov 2005).

The Learning Environment – the Social Process:

The *learning process* is not just the context but also the conditions in which learning takes place and thus the impact of the learning environment cannot be underestimated. The optimum learning environment creates the opportunity for the learner to reflect on his or her learning, both as an individual and with others. This social process is vital and Brockbank and McGill (1998) argue that there is a link between the quality of the learning environment and deep learning outcomes. Fry, Ketteridge & Marshall (1999) further emphasise the relevance of the learning environment in their discussion on 'situated learning'. Context is vital to the learning process and peer groups, in particular, can be powerful tools in achieving successful learning.

Thus, the author would reflect that it is vital that the student is given the opportunity to learn in an environment that provides not just a physical space to encourage reflective dialogue (such as chairs in a circle for small groups), but also the opportunity and time to

reflect on and enhance their own learning (such as the examples of practice the author cites above), both on an individual level and in a peer group.

Responsibility for learning:

Finally, consideration must be given to the student's own responsibility for their learning. Engaging with and taking responsibility for their own learning are credited by Boud (1995) and Fry, Ketteridge & Marshall (1999) as being invaluable to the learning process. The teacher, as mentioned previously, has some responsibility here too: he or she must ensure that the course is designed to help the learner actively construct knowledge, by allowing space for thinking and reflecting, for interaction with others and encouraging learning from and with peers and experts. Without the student's own concerted efforts, however, the learning process cannot actively be realised.

At a recent lecture, the author began with an outline of what would be covered within that lecture and its relevance to the module outcomes. At the end of the lecture, she asked students to provide a brief written summary (in one to two minutes) of the lecture. This task enables a teacher to see if she/he has covered the aims of the lecture and has met the module outcomes relevant to the teaching session from the students' perspective. It encourages students to critically evaluate the lecture and identify the most relevant points. It is a valid tool used by many in the teaching profession and is recommended for new teachers.

Reflecting upon successful teaching

"Unsuccessful learning is seen to be the consequence of poorly motivated, unintelligent, lazy, forgetful students" (Fox, 1983, p152) and few teachers acknowledge their own responsibility in this. When preparing this paper, the author spent a great deal of time questioning her own, limited experience of teaching with regards to those factors listed herein and hopes this review will encourage other teachers to do the same. Furthermore, she has outlined some simple teaching strategies, which are used by many professionals much of the time, but which may be unknown and of use to new teachers.

It is clear from this review that the teacher and the learner are embarking on a journey together in the hopes of achieving successful learning for the student. It must also be emphasised that these factors need to be continually revisited throughout a teachers' career, providing an opportunity for he or she to review their own teaching style in the context of their current working environment and make adjustments as necessary. However, the factors involved in successful learning cannot be used selectively or independently. They compliment each other and contribute as a collective to successful learning as a whole, providing a positive learning outcome as a result.

Thus, this exercise has enabled the author to consider the effects of her own participation in the learning process. The author has a number of groups of students for seminars and has also conducted presentations, workshops and lectures. In terms of the seminar sessions, each group of students is very different, despite two of these groups being apparently randomly selected from the same cohort. One group are quiet, less willing to

speak up, and somewhat reticent to contribute to the teaching class; here the author concedes her role may now be one reflective of the Travelling theory. Another group, whilst smaller, contribute more generally to the discussions and debates and are more willing to question and challenge ideas and knowledge. A further group of postgraduate students are utilising seminars so they can express their opinions and ideas, think critically about their own contributions to their work, learn from the social environment and use reflection regularly to encourage and contribute to class. The author admits to finding it somewhat daunting when considering her own responsibility to each person's learning within each of her teaching sessions. There is clearly a need to channel her teaching abilities and efforts to suit each individual as best as possible, and to fit with each group independently, to achieve the best practice possible. The author must approach each group from a different learning perspective – whichever is best suited to the needs of that group as a whole – rather than taking the same approach to all.

Experienced teachers would do well to consider this point as habit, experience and repetition can lead to a 'one size fits all' approach to learning and teaching. By the author's own experiences as a student, she has come to recognise that a small but not insignificant number of experienced teachers conduct all of their teaching in a similar format, regardless of their students needs, level of education and experience. This is exactly what much of the literature outlined in this article advises against. The author would encourage all teachers to honestly reconsider and reflect upon their own teaching, using those factors listed herein, on a regular basis.

Furthermore, a review such as this has produced within the author a strong defence for the seminar format. The author's current teaching requirements centre predominantly around lectures and seminars. A lecture, in its most traditional sense, could be interpreted as a classic example of Transfer theory, in that the lecturer is imparting knowledge and information to a group of largely non-participatory students (Race & Brown 2001). Brockbank and McGill (1998) note the tendency towards the 'didactic' – the one-way transmission of knowledge often associated with traditional lecture formats. It is worth asking the question: should we still be using the lecture format for teaching large numbers of students? Of course, the counter-argument is that lecturers using the lecture format are breaking down information into more easily understood fragments of material and, furthermore, there is a necessity in higher education to provide lectures in order to impart knowledge to as large a number of people as are on a particular course. The author would rebut this in that, as much as a teacher imparts knowledge, there is no confirmation that this has been processed or even made sense of. If we consider the ramifications of a lack of comprehension of the material produced in lecture format, surely it is better to get it right with a small group of students at a greater expense, than get it wrong with a larger group while saving on costs? The influence of financial implications on education, however, is an argument best saved for another day.

There is another alternative, of course, which is highlighted in the practical examples outlined in this article. Academics such as Race and Brown (2001), amongst others, have encouraged lectures to be more participatory in approach. The advent of the internet provides the opportunity for the use of videos and clips within the lecture itself; the use of

modern forms of technology allows teachers to be able to run multiple choice quizzes, for example, in the midst of a lecture theatre. Lectures can be used to develop student activity to "turn information into knowledge" (p6) and move away from the traditional, transfer of information approach.

Teachers can also take advantage of the availability of a variety of different teaching formats on offer today. They range from the use of web-based packages to communicate with students, providing them with the ability to work from their own homes, in their own time, to the creation of a blended learning format, which combines the best of both traditional and modern methods. With these options available to teachers, they can tailor their teaching to the most appropriate method for the learner, more so now than ever before.

Conclusion

It is worth returning to Ramsden (1992) when considering the standards and quality of undergraduate education; there is a lot still to achieve. Some forms of education remain inefficient and ineffective and could be interpreted as a waste of knowledge, experience, youth, time and ability. "Every teacher can learn how to do better" (p3) and good teaching is its own reward. However, students today are paying more than ever before for their education and their expectations are raised in an increasingly competitive market. There are more students in higher education from a variety of academic backgrounds and greater demands for more flexible options in learning (Dunn & colleagues 2004).

Successful learning is a constant challenge for both new and existing teachers but ultimately is open to their own interpretations. To quote Ramsden (1992, p110): "I can tell you what good teaching is: but only you can come to realise what it means". Teachers, both experienced and inexperienced, must always consider how a student integrates and organises the task to hand. They must revisit and reflect upon the factors involved in successful learning regularly and with honesty, as part of their own learning and teaching experience. If we consider Ramsden's key principles of effective teaching, the last of these is one of the most pertinent – learning from students. In order for students to be successful, so must teachers.

By contemplating upon the factors herein, and perhaps utilising some of the practical examples, teachers can improve the learning experience for both students and themselves. This article aims to prompt teachers to pay greater consideration to how they approach their teaching and would encourage them to share examples of good practice with their colleagues, to continue to improve upon successful student learning.

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