
Published 2014 by the Higher Education Research and Development Society of Australasia, Inc
PO Box 27, MILPERRA NSW 2214, Australia
www.herdsa.org.au

ISSN 1441 001X
ISBN 978-0-908557-96-7

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Rethinking teaching and learning in higher education: Reframing our research priorities

Jennifer M. Case
University of Cape Town, Rondebosch, South Africa
jenni.case@uct.ac.za

The term ‘teaching and learning’ is ubiquitous in contemporary higher education, yet an examination of contemporary debates suggests a poor conceptualisation of these central activities and the way in which they relate to each other. A long established research programme on teaching and learning shows quantitative correlations between lecturer’s approaches to teaching and students’ approaches to learning but offers insufficient explanatory theory to allow for a proper understanding of where the value resides in contemporary models of teaching and learning in higher education. This article thus proposes a critical realist reconceptualization of teaching and learning, in which the teaching-learning interaction is shown to be emergent from the activities of teaching and of learning. Support for this position is located in recent work by the higher education scholar Paul Ashwin and also in the sociology of Margaret Archer. Proceeding in this vein, an illustrative analysis is given of the course experiences of ten senior engineering students. Students’ descriptions of how the course influenced their learning point to the key role of the lecturer, not only in providing good explanations, but in being accessible and responsive to their questions as they grappled with the course requirements. The article suggests that what is needed to further the research agenda in teaching and learning is more empirical work such as this, aimed at a close-up examination of the teaching-learning interaction as it plays out in courses.

Keywords: teaching and learning, teaching-learning interactions, critical realist analysis

Introduction

The joined up terminology of ‘teaching and learning’ is ubiquitous in the organisational markers of 21st century higher education, from Deputy Vice Chancellor titles down to departmental strategies (Edwards, 2006). This might give the impression that we know what we are talking about when we refer to ‘teaching and learning’, particularly how the first half of this twinned term relates to the second: What is the relationship between teaching and learning? Even recognising that this is not a simple linear causal relationship, how do we think about the ways in which teaching might impact on or facilitate learning? You would think that we would have a good grasp of this one central activity in the academy, yet a closer look at contemporary discussion and debate suggests a surprising evasion of any clear conceptualisation of university ‘teaching and learning’. Two topics that dominated the ‘teaching and learning’ space on my campus in 2013 are illustrative of our contemporary difficulties.

The first discussion, carrying over from earlier debates, but ramping up sharply in 2013, was that regarding MOOCs. MOOCs, abbreviation for Massive Open Online Courses, are online courses offering free and massive enrolment. Pundits predicted a disruptive technology which would shortly leave higher education, as we know it, decimated (Daniel, 2012). Conole (2013,
p. 1) writes that ‘… there isn’t a Vice Chancellor or Rector in the world who isn’t considering what the impact of these free online courses might have on traditional offerings.’ The way in which this debate has run – with a serious consideration of the possibility of all of higher education offerings being replaced by online modes of delivery - suggests that we don’t really have any sense of the fundamental value of our current models of teaching in the university. We don’t seem to have a good answer at hand as to why taxpayers should be forking out for the relatively expensive activity of undergraduate teaching to take place, when MOOC teaching, involved recorded lectures by academic superstars and peer-moderated online discussions can purportedly achieve the same ends.

The second discussion was a peculiarly South African one but is nonetheless illustrative. The Council on Higher Education (CHE) issued a proposal for extending the length of undergraduate degrees by one year (Council on Higher Education, 2013). This proposal was primarily based on an analysis of student throughput in the existing degrees, showing that most students take at least an extra year to complete their degrees; that is if they don’t leave prior to graduation – the report shows that more than a third of South African students do not complete the degrees they register for. It was suggested that offering an extended degree as the normal pathway through higher education is the best current solution for working with the enormous diversity of students entering South African universities. This was an ambitious and radical proposal, sparking off serious discussions across institutions (Shay, 2014). However, a conspicuous absence in both the proposal and the discussions that followed was an articulated sense of how university teaching can work and the possibilities for supporting learning across a diverse student body. The central focus was on student learning and an assumption that student learning proceeds almost akin to a biological process with a built-in time to maturation – with a diverse intake simply requiring a readjustment of the time to graduation. If students are currently taking, on average, an extra year to complete their degrees, then, it was argued, we should simply make the degree structure a year longer – with an assumption that then, students will actually complete in ‘regulation time’. It sounds like currently we are simply trying to pick the fruit too early, and we should simply allow a bit more time for growth. Learning sounds like a process of maturation, but where is the impact of teaching?

These debates summarise sharply the key challenges facing higher education in the early 21st century, not only in South Africa, but across a rapidly globalising world marked by inequality (Unterhalter & Carpentier, 2010). Firstly, there is a massive and relentless growth in demand for higher education, but the financial resource that states are able to direct this way remains limited, and in some cases reduced. Secondly, the massification of higher education means that a much more diverse body of students is entering higher education; diverse in terms of their cultural, family and educational backgrounds. The pressure is building and the old solutions and structures are straining. People are on the hunt for quick fixes and large scale technological solutions have an automatic attraction.

The serious risk is that if we don’t have a grasp of the essential purpose and value of higher education and how the ‘teaching’ that we do impacts on the ‘learning’ that we claim to facilitate, then we might opt for solutions that on the face might look successful, but which could result in a diminished capacity with low quality outcomes. In this paper it is argued that our contemporary crisis requires a serious examination of ‘teaching and learning’, in order that we might have an informed debate about the places we currently find ourselves in, with a view to thinking through future possibilities for higher education.
This paper thus commences with a brief overview of research to date on teaching and learning in higher education. In order to rethink the conceptualisations of teaching and learning that underpin our current thinking, a critical realist perspective is then put forward. Based on this, a new approach to thinking about teaching and learning is developed, and demonstrated with reference to an illustrative analysis deriving from an investigation of student learning in a third year engineering course. The paper concludes with an outline of the implications of this perspective for research going forward.

Research on teaching and learning in higher education

Research on student learning in higher education began in earnest about fifty years ago. From early on, this work linked itself closely to a concern about quality teaching in higher education, as summarised succinctly by Ramsden: “… we can improve our teaching by studying our students’ learning” (Ramsden, 2003, p. 6). Many commentators have noted – some critically - that the conceptual frameworks established early on by Entwistle, Biggs, Ramsden and colleagues are still relatively influential today (see, for example, Ashwin, 2009; Haggis, 2009).

A foundational construct in student learning research is that of ‘approaches to learning’, with the central distinction between deep approaches to learning, where the student is aiming towards building understanding, and surface approaches, aimed at meeting course demands at the expense of understanding (Marton & Säljö, 1976). Approaches to learning research differed from other typologies of learning such as learning styles in that the approach is seen as an outcome not only of the characteristics of the learner, but also of the teaching context (Ramsden, 2003). Thus, within this conceptualisation is embedded an inherent model of the relationship between teaching and learning.

The relationship between teaching and learning was conceptualised more explicitly in subsequent work by Biggs (1999), who posited a potential ‘constructive alignment’ between modes of teaching and modes of learning, clearly outlined here:

There may well be endogenous limits to what students can do that are beyond any teacher’s control, but there are learning-related aspects that are controllable. Capitalising on them is what good teaching is about. Good teaching is getting most students to use the higher cognitive level processes that the more academic students use spontaneously. Good teaching narrows the gap. (Biggs, 1999, p. 58)

Prosser and Trigwell, working with Ramsden, later operationalised this theory into a quantitative relationship showing a correlation between teachers’ ‘approaches to teaching’ and students’ ‘approaches to learning’ (Prosser, Ramsden, & Trigwell, 2003). Using surveys of students and university teachers they showed that, particularly for senior academics, in courses where students reported higher quality learning experiences, they also tended to describe the approaches to teaching as ‘consonant’ i.e. the modes of teaching were explicitly aligned with the desired modes of student learning (typically a deep approach to learning for university courses).

This programme of research would thus seem to tie things up once and for all: teaching has a strong influence on student learning. Good teaching matters. Furthermore, good teaching can be defined – it is focused on students and aims for conceptual change. Bad teaching is ‘teacher-focused’ and involves ‘transmission’. These findings have indeed been influential,
particularly in the UK and Australia, where student surveys of teaching (using surveys based on these and related constructs) have been used in the performance management of academics, departments and even whole institutions.

There is no doubt that this research programme has been significant in bringing to the fore a focus on student learning in the university (Case & Marshall, 2009). However, it does not seem to be productive for taking us much further, particularly in the complex and crucial decisions that are facing higher education in the 21st century. As noted in the introduction to this paper, we are living in a paradox where ‘teaching and learning’ have apparently more significance than ever before, to the extent that we think we can measure them, yet higher education continues to exhibit a sense of crisis, and conversations about future alternatives tend to be technologically and managerially driven – with little commonly held sense of what university teaching and learning are really about. To resolve this impasse, we need to return to our foundational conceptualisations, to rethink what we are talking about. Critical realism has provided important new philosophical directions in contemporary social science and is used here to support a new conceptualisation of teaching and learning.

**A critical realist ontology**

A persistent but frequently unrecognised difficulty in social science is that we literally don’t know what we are talking about. Concepts frequently exhibit what Bernstein (2000) terms ‘weak grammaticality’ in that there is no clear unambiguous relationship between the concept and the phenomenon that it claims to represent. A starting point in critical realism is a consideration of what constitutes ‘reality’. Here we recognise the possibility of social structures and activities being ‘real’, in the sense that they have causal properties and powers (Bhaskar, 1998). In order to make any progress we need to explicitly identify ‘the nature of the objects under study’ (Sayer, 2010, p. 118). We particularly need to watch out for ‘chaotic conceptions’, which carve up that which is empirically observed without regard for internal or external relations. Sayer writes:

… you don’t have to look far in social science to find substantial bodies of literature based on chaotic conceptions. Particularly common are searches for empirical regularities in quantitative relationships between objects which are internally heterogeneous and hence unlikely to behave consistently. (p. 138)

Herein lies the only valid reason for using ‘theory’ in social science. Sometimes ‘theorising’ seems to be an end in itself or at least a way to advance in academic status. This is not the point of research. We are of course interested in generating knowledge that has some bearing on the real world. But if we don’t have a defensible way of looking at the real world we can easily turn out journal papers that are essentially not really worth the paper they are printed on. So we need to sort out what entities we are dealing with, in the sense of which real entities can be identified and what relationships between them can be established. Sayer (2010) cautions that one can easily come up with a concept and even operationalise it in a questionnaire, and even say, find that it quantitatively correlates with another concept, but this does not necessarily indicate that this relationship actually means anything; you could easily be dealing with a chaotic conception. For example, consider the widely used construct of ‘motivation’ used as a causal predictor of learning outcomes. Just because you can find a quantitative correlation between the checking of a statement on an inventory and the achievement of a particular academic mark, does not prove this to be a causal relationship, or indeed even that an entity such as ‘motivation’ is a real construct (Haggis, 2004).
A key critical realist idea is that of a stratified ontology. Once we have identified the real entities that we are dealing with, we need to outline the different ontological layers (strata) which these potentially constitute. Real entities which are located at different strata do not have straightforward connections with each other, but rather need to be understood in terms of relations of emergence, where entities at a particular stratum do not simply have the combined properties of those entities at the stratum from which they emerged. A common sense way of thinking about this is to think of relationships where one might observe that the sum is more than the combination of the individual parts. In this regard, Sayer (2010) advises further:

Disregard of stratification and emergent powers is also evident in research which investigates relationships (usually quantitative) between objects which are treated merely as ‘factors’ or ‘variables’ and which may belong to quite different strata. Such indifference to stratification (and structures) invites misidentifications of causality. (p. 120)

A (critical realist) reconceptualization of teaching and learning

A critical realist analysis of teaching and learning thus needs to proceed carefully to establish its conceptual foundations. A first necessary analytical move is to start with teaching, and learning, each on its own account. Williams (2012, p. 301) argues that ‘learning needs to be extracted from a vice-like linkage to teaching’, to be understood ‘on its own as an agential activity with structural consequences’. Drawing on Lave (1996), he notes that we need to be able to have ‘clear analyses of learners as subjects - and of teachers as subjects as well’. Learning, as the acquisition of knowledge (with the terms ‘acquisition’ and ‘knowledge’ both seen in their broadest sense), implies a personal and social transformation that Williams terms ‘ontological change’ (see also Dall'Alba & Barnacle, 2007). Teaching is a set of activities aimed at facilitating learning in this broad sense. Inasmuch as teaching is directed towards learning (ideally) it is nonetheless analytically a distinct entity from learning. As Ashwin (2009) writes:

…when foregrounding social practices it becomes clear that academics and students are engaged in different types of practices. (p. 6)

At this point we can move to affirm a key conceptual point that both Ramsden and Biggs emphasise. Learning is not wholly determined by teaching. We should therefore not be surprised if people can learn knowledge through engaging in a MOOC; from the days of Gutenberg the regular person in the street has had access to knowledge through books and MOOCs are well described as 21st century textbooks (Feldstein, 2013). Students have always used a wide range of resources in support of their learning, and what has now changed is the explosion of the range of informational resources. Using activity theory, Ashwin (2009) characterises teachers and learners as inhabiting different activity domains (depicted in the class activity theory triangles), but with an overlapping common ‘learning object’. Both teachers and learners in a particular course context are centred on the same knowledge and the same intended learning outcomes in that knowledge domain (represented by the curriculum). Their activities are different but they overlap in this regard.

How then can we characterise the connection between teaching activities and learning activities? Here a critical realist perspective is potentially productive. As distinct activities teaching and learning can be seen to occupy a particular stratum in a realist ontology. However, emergent from this stratum is the point of intersection of these activities, what
Ashwin (2009) terms ‘teaching-learning interactions’. This is the space where teaching impinges on learning. Ashwin suggests that these are a subset of the broader categories of teaching and learning activities. I would rather like to propose that, following a critical realist perspective, the stratum of interaction is considered to be emergent from the separate activities. Ashwin’s emphasising of the learning object is however crucial. The heart of the teaching-learning interaction is not an interaction of merely a social kind, for example amongst student peers, but is aimed specifically towards curricular knowledge. Herewith lies a further shortfall of contemporary perspectives on teaching and learning, especially the model of ‘student-centred teaching’ that has become associated with research on approaches to teaching. If teaching-learning interactions are simply centred on students, then we end up with trying to make sure that students are ‘satisfied’ etc. The teaching-learning interaction is centred on knowledge, nothing less. Of course, in recognising the profound challenges that students face in taking on new knowledge, the interaction is centrally there to support that process, but it is not simply about making students or teachers feel good (see also Hobson & Morrison-Saunders, 2013).

Further support for a focus on the teaching-learning interaction can be found in Margaret Archer’s model of the morphogenetic cycle, an overarching framework which can be applied to any instance of social change, including student learning (Case, 2013). Summarised in Figure 2 below, the morphogenetic cycle plots social change on the temporal domain (indicated by the direction of the arrows), with prior conditioning of structure (from previous cycles) given at the outset, interaction at the heart of the cycle, and elaboration or reproduction of structure as the outcome. Human interaction is at the heart of social change and thus a sensible model of the relationship between learning and teaching should have (the teaching-learning) interaction at its heart.

![Figure 2: The basic morphogenetic sequence (after Archer, 2012, p. 52)](image)

The significance of the (structural) conditioning on the space for interaction is crucial. Conditioning in this regard will include the understandings about the roles of teachers and students that are dominant in the university. If this is not a logic that fully recognises the transformative possibilities of learning, then it is likely that interactions will fall short of promoting change. Ashwin offers a similar observation.

… in order to understand what happened within a particular teaching-learning interaction it is necessary to understand how the interaction was shaped by processes that might not be visible within the interaction. (Ashwin, 2009, p. 6)
Focusing on teaching-learning interactions is maybe not a new position in educational theory, but arguably a forgotten one. Ashwin offers the following succinct quote from McKeachie (1974, p. 11).

Fortunately most educational situations are interactive situations in which a developing, learning human being engages with a situation in ways designed to meet [her or] his learning needs. Part of that situation is another human being who has some resources for instruction and some capacity to adapt to the learner. It is this that makes education both endlessly challenging and deeply humane.

Illustrative analysis of teaching-learning interactions

For illustrative purposes, the paper draws on findings from a case study which is reported elsewhere in more detail (Case, 2013). This was an in-depth exploration of teaching and learning in a third year engineering course, selected deliberately as a course with a reputation for being very challenging but also with an effective lecturer. In semi-structured individual interviews students were asked to describe their experiences of the course and to describe how they went about learning in this course. For purposes of the present illustrative analysis we consider only the reported experiences of a group of 10 students in the course who had entered through the extended degree programme for those from disadvantaged school backgrounds. Inasmuch as distinct analyses of teaching and learning as separate activities are important (see above), the focus for the analysis is on the relationship between teaching and learning, conceptualised here as centred on the teaching-learning interaction. In this analysis we seek to provide some preliminary pointers to the nature of this interaction and its manifestation in student learning interview data.

In the interviews, students had not been specifically asked to comment on the lecturer; the questions were phrased more generally to talk about the various aspects of the course including lectures, tutorials, project, and so on. It is maybe not surprising that each of these students did choose to speak about the lecturer (termed here ‘The Prof’, a term used by many of them). What is more interesting is what they said when talking about the teaching in this course, the focus for the present analysis aimed at capturing aspects of a successful teaching-learning interaction. Some students described what happened in the lecture; here many of them referred to the clear explanations that the lecturer gave.

The Prof explained so much that I tend to visualize and it really helps because I can see what he’s talking about… (Mpho)
He explains everything like in detail, compared to Prof XX [who] is more vague you know … (Sipho)

This aspect of the analysis is perhaps not surprising, with the traditional university lecture centred on clear exposition of knowledge. Yet, in contemporary times where the traditional lecture is so frequently maligned, it is useful to see in this analysis of teaching-learning interactions that many of these can be identified in the lecture context.

Students’ descriptions of teaching-learning interactions also went beyond their engagement with explanations given in the lecture. In this study, a number of students talked about the lecturer’s use of an interactive teaching approach where he required them to do some work on their own in class while he walked around to see what they were doing.
The Prof himself he gets us involved in class. … I mean I could always study myself, but his methods of teaching, he doesn’t just take everything from the textbook. You need to be involved in the class, you need to concentrate more I mean. If you come to class and don’t concentrate it’s like sort of not coming to class at all. So I try to come to class each time and try to, you know, concentrate. He asks questions, [he says] “Solve this” and then he goes around. This is the type of thing I come to class for. (Tshepo)

In this quote we start to see some detailed evidence of how the lecturer’s actions impacted on the student’s approach to their learning – the questions he asked elicited in the student a sense that they needed to engage in a particular way in the class.

A further aspect of the lectures that was commented on by some students is maybe unexpected; the lecturer’s punctuality and professionalism made a particular impact, inspiring in them a similar commitment to the course. Again we will characterise this as a teaching-learning interaction: the lecturer’s actions prompted reciprocal actions in the students.

The Prof is always ahead with everything, he’s punctual, he’s everything, so you can’t afford to skip up in a sense like… (Mpho)

Of significance to this analysis is the dominance in the interview data of comments pertaining to the lecturer’s response to students’ questions. Most of these students said that they didn’t ask questions in class but nearly all consulted the lecturer either directly after the lecture or in his office. As above in a number of instances they noted that the kind of response that they received differed to their experiences in other courses, for example:

Any question you ask him, he will answer it so I think that’s very good because some of the lecturers they don’t answer questions … (Nkosi)

This is a very significant aspect in the domain of teaching-learning interactions – here we have activities that the student initiates (asking questions) but which requires for closure a particular response from the lecturer (answering).

This brief analysis has thus demonstrated the practical manifestations of the teaching-learning interaction. The activities of the lecturer – providing clear explanations, asking questions in class, running the course with punctuality and professionalism, answering students’ questions – prompted and facilitated student learning. To call these instances teaching-learning interactions is to look closely at the way in which particular kinds of teaching activity were seen to prompt learning, as reported in student interviews. A closing quote from a student, Sizwe, who was asked to comment on what helped his learning in his course summarises the nature of this interaction:

Other students and the easy access of The Prof facilitated my learning in the course because I mean … The Prof himself was part of the motivation that I do extra work late, I mean on my own.

These kinds of data go beyond numerical correlations into the beginnings of an investigation of what really lies at the heart of successful teaching-learning interactions. The impact of this lecturer’s teaching on his student’s learning was grounded in his strong conceptual understanding and ability to give good explanations, but crucially went beyond clear
exposition and into the realm of a personal interaction centred on students’ own grappling
with this material.

Discussion and conclusion

We are now in a position to critically assess contemporary perspectives on teaching and
learning in higher education, particularly the model put forward by Ramsden, Biggs and
others reviewed above. This empirical programme has developed ways of characterising
teaching activities as well as learning activities, and is then placed to look for correlations
between these. We should not be surprised to see some measure of correlation between
lecturers’ approaches to teaching and students’ approaches to learning, for example as
reported in the work by Prosser and colleagues (2003). However, this theory is limited in its
further explanatory grasp, since it cannot account for teaching-learning interactions. This
resonates with the position taken by Ashwin (2009), who notes:

… it [the Approaches to Learning and Teaching Perspective] tends to focus on
academics’ perceptions of teaching or students’ perceptions of learning. This
gives little sense of the way in which academics and students continually impact
on each other in particular interactions. As a result, when the relations between
academics’ approaches to teaching and students’ approaches to learning are
examined, they are linked in a fairly distant manner, largely through the
examination of the relation between students’ and academics’ scores on
questionnaire inventories. (p. 36)

The theoretical perspective on teaching and learning put forward here has specific
implications for research in higher education. Programmes that aim to describe and capture
student learning and university teaching, in all their contemporary manifestations, should
continue to be significant. Of particular importance is a need to understand the dynamic space
in which student learning takes place, and the ways in which students mobilise social peer
relations and information technology resources in effecting their learning. But if we are
considering learning in higher education then we need a core focus on the ways in which the
teaching-learning interaction happens. With regard to the concerns outlined at the outset to
this article, of particular interest will be instances where this interaction impacts on learning
for students who come from diverse academic backgrounds. It will also be important to map
out the full range of possibility for teaching-learning interactions in educational contexts of
limited resources, for example in large class enrolments.

This suggests a somewhat different, broader research programme going forward. Following
Sayer (2010, p. 175ff) it seems unlikely that quantitative methods of data collection are going
to assist us in addressing these research questions. For a phenomenon to be amenable to
mathematical modelling it requires that measurement of intervals matches the real properties
of the phenomenon. The teaching-learning interaction does not appear to be in this set of
phenomena. Rather we need more targeted use of student interviews, coupled with field
observations and focused interviews with academics. Given the centrality of curricular
knowledge in the teaching-learning interaction, it also seems likely that different programmes
of study might produce different manifestations of this interaction.

Research that can capture the teaching-learning interaction in its best manifestations in
contemporary higher education is needed if we are to be able to properly respond to any
simplistic ‘silver bullets’ that are proposed in response to the deep challenges we face. If we
have a proper sense of the significance of the teaching-learning interaction we will be able to sensibly interrogate any new proposals that come forward, be they in the global technological reach of Coursera and its MOOCs or the radical reform proposal in South Africa for extended degrees. These proposals will be closely interrogated for their implications on the teaching-learning interactions that we value, and will be judged accordingly.

Acknowledgements

I wish to acknowledge the financial support of the University Research Council at UCT. I also wish to note the contribution of intellectual inspiration and encouragement from my colleagues Kevin Williams, Sioux McKenna and Delia Marshall.

References


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