



Students' Engagement with Learning Theory

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Abstract

This paper reflects on a module on 'Teaching and Learning Interactions', presented as part of the Rhodes University Advanced Certificate in Education (Environmental Education). The module is designed to help students use theoretical logic to enhance (not replace) their practical logic of how teaching and learning takes place. Data was analysed from three teaching and learning activities in the module. After the first participatory activity on water and sanitation, students narrated what teaching and learning had taken place using language available from their prior experiences. In a second activity students were introduced to explanations of learning, provided by learning theorists. In the third activity students analysed a case study, using a variety of questions relating to teaching and learning. They then had to consider these same questions in the light of a participatory on-course teaching and learning activity. The paper reflects on how students have used understandings of the nature of reality, the construction of knowledge, the use of language, situated learning, action competence and social change, in order to narrate their teaching and learning experiences on the ACE(EE) course. Through this, the paper trials a reflexive approach to the teaching of learning theory in environmental education.

Introduction and Theoretical Vantage Point of the Study

This paper reports an interpretive study focussing on the *Teaching and Learning Interactions* module of the Level 6 Rhodes University Advanced Certificate in Education (Environmental Education) or ACE(EE). The paper considers whether students are able to use theory to narrate and critique a variety of teaching and learning interactions.

Another area explored within this paper is that of how the research methodology contributed to my role as a reflexive practitioner in the *Teaching and Learning Interactions* module, which I teach. Reflexive practice is seen in the context of Delanty's (2005) interpretation of reflexivity as being the application of something to itself with a view to self-transformation. This study is reflexive in the sense that it critiques an approach to learning theory driven by scholastic reasoning. As an alternative, the study reflects on an approach which requires students to draw on theoretical logic in practical situations. This opens up space within the ACE(EE) module under study and amongst other environmental educators to think critically about how learning theory is engaged in environmental education courses.

Bourdieu (2000:11) describes a tradition of scholastic reasoning where

entry into a scholastic universe presupposes a suspension of the presuppositions of common sense and a para-doxal¹ commitment to a more or less radically new set of presuppositions, linked to the discovery of stakes and demands neither known nor understood by ordinary experience.

Following a concern that this tradition leads to a situation where theory becomes disembedded from practice, the environmental education course aims to ensure that theoretical engagement is not limited to finding descriptors to define practice, nor an attempt to replace knowledge and practice with something 'better'. Instead the course aims to support students to use the steering ideas provided by theory to enhance what they know about teaching and learning interactions and to enrich the narration and critique of their practice.

Theoretical Framework Guiding the 'Teaching and Learning Interactions' Module

Environmental education practice is often influenced by theories from sociology, psychology and education. In this section a selection of steering ideas provided by theorists from these disciplines are discussed with motivation as to why these particular ideas were introduced to students in the *Teaching and Learning Interactions* module.

Important to understanding of how learning takes place is an understanding of *how context influences teaching and learning*. To address this key focus of the *Teaching and Learning Interactions* module, students were introduced to Bourdieu's notion of social habitus and how habitus might influence the way in which people respond to teaching and learning opportunities. Social habitus explains how individuals internalise the lifestyle, values and dispositions of a particular social group to which they belong, through a dialectic of position (in the social order) and disposition (an individual's perception, appreciation or way of holding that position) (Bourdieu, 2000). Students were also sensitised to Bourdieu's understanding of how different cultural practices influence learning through the imposition of cultural norms of dominant social groups on subordinate groups in ways that exclude subordinates from opportunities to effect changes in their lives (Jenkins, 1992).

In order to illuminate the second key focus of the module – *how notions of knowledge and reality influence teaching and learning* – students were introduced to the cognitive learning theorist Jean Piaget for an understanding of the educational theory of constructivism and the belief that knowledge is constructed and restructured by learners and educators in an attempt to organise their experiential world (Capel, Leask & Turner, 1995). They were also introduced to another two cognitive learning theorists – Jerome Bruner and Lev Vygotsky – who are concerned with the culturally and socially situated nature of learning developed in their social constructivist theories of teaching and learning. Bruner concentrates on creative problem solving and emphasises how language, communication and instruction are paramount to the development of knowledge and understanding (Capel, Leask & Turner, 1995). Vygotskian ideas introduced to students in the module highlighted that ideas are not constructed in isolation and that the

context of learning is also important, particularly the way in which culture and language are mobilised in learning interactions (Schunk, 1996). Another concept attributed to Vygotsky, introduced in the course in relation to the role of culture and language in learning, is that of the zone of proximal development (ZPD). The ZPD is the gap that needs to be bridged between what a learner can achieve on his or her own and what the learner can achieve through carefully scaffolded learning activities, as described in more detail by Bruner (Capel, Leask & Turner, 1995).

The symbolic interactionist – Charon (2001) – also contributed key ideas to the course on how language contributes to cognitive processes for making sense, or meaning, of what is experienced; as well as how language facilitates social relations in teaching and learning situations. These constructivist and social constructivist notions of knowledge served as an alternative view to behaviourist views which students had critiqued in previous modules.

Two notions, important to the design and delivery of the *Teaching and Learning Interactions* module that take cognisance of the importance of context and culture as described above are (1) recognition of prior knowledge and (2) situated learning. Students were introduced to a teaching and learning case study reported by Kawagley and Barnhardt (1999) to illustrate the importance of starting an educational process with what students and communities know and are using in everyday life. The notion of situated learning, as used in the course notes was informed by Lave and Wenger (1990) who argue the importance of observing that knowledge should be generated in an authentic setting and should incorporate social interaction and collaboration in the process. Students drew on a reading by Janse van Rensburg (2000:17) to inform their thinking about how concepts could be culturally and socially constructed rather than presented as 'autonomous and abstract entities'.

Extending the focus on notions of knowledge and learning, students also drew on Charon (2001) to understand how a social constructivist notion of reality affects teaching and learning. Charon (*ibid.*) makes the distinction between the physical objective reality, social reality and personal reality, and makes the point that while we need not deny the existence of an objective reality we need to acknowledge that we react not only to our direct environment, but rather to our definition of our environment (how we see the world). At the same time Charon (2001:9) highlights that 'perspectives are not all equal. Some are better than others'.

A final key focus of the module under study was *how learning interactions and notions of social change affect teaching and learning*. Students were introduced to a reading by O'Donoghue (2001) who proposed that learners learn through reaching a state of disequilibrium. This is particularly pertinent to environmental education which is concerned with risk and uncertainty and where disequilibrium often arises in many ways such as between different viewpoints that analyse issues and propose changes. Students were introduced to a perspective on risk in their first course module which perceives risk as being linked to culture which becomes prioritised through the assertion of dominant voices in society (Beck, 1992). Students were challenged to think about how change can come about – whether through drawing on critical theory which proposes that change can come about through a greater consciousness and critique of totalitarian and dominant economic and political structures (the *status quo*) (Janse van Rensburg, 2000), or whether through addressing the complex relational dimensions that exist

in societal context and that are often very difficult to change (see Bourdieu's notion of habitus discussed above). Students were challenged to think about whether the role of education is to bring about change or rather, as argued by Jensen and Schnack (1997), to develop the *action competence* of learners to respond to environmental issues in different contexts. They outline action approaches to learning which contribute to a sense of empowerment, ownership and ability to respond to issues (Heck, 2004; see also Jensen & Schnack, 1997).

Designing the Module

The *Teaching and Learning Interactions* module consisted of a number of carefully scaffolded activities that aimed to help students to gradually integrate a newly introduced theoretical logic with their earlier, more practical logic in a way that could lead to greater depth of understanding of teaching and learning interactions (or expanded interaction in the zone of proximal development if viewed with a Vygotskian learning theory frame). This design reflects a different approach to academic work than the tradition of scholastic reasoning as described by Bourdieu above.

Throughout the module students were expected to observe all activities from a 'meta-level'. That is, besides participating in and designing the activities, they were also expected to be considering in what way and how the teaching and learning was taking place.

The activities that made up the *Teaching and Learning Interactions* module are detailed below.

Description of learning activities, drawing on prior knowledge: The first educational intervention was a series of activities about water and sanitation. Photographs were taken of students during the activity and they were requested to use their practical knowledge to annotate the photographs with descriptions of how learning was taking place. This meta-level reflection was an attempt to give students a different view of their own learning and the facilitator's intentions. At this stage of the module, students were not introduced to any learning theory. This approach enabled students and the course facilitator to establish prior knowledge of students' views of how learning takes place.

Encounters with the learning theorists and their work: The second educational intervention involved students in a discussion of the histories and the work of three key learning theorists, and their views on teaching and learning – Vygotsky, Piaget and Bruner.

Undertaking investigations and narrating practice: The third educational intervention was a *Consumer Choices* activity. In this activity, students worked in groups to investigate a choice of three groups of products which they narrowed down through preliminary investigations into: household cleaners, artificial sweeteners, and perfumes and cosmetics. They were given reading packs with some useful websites as a starting point to find out about the issues and risks related to their chosen product. They were then required to design and conduct an enquiry to find out more about the product in Grahamstown. These enquiries took the form of visits to stores and interviews with consumers and store managers. Finally, they had to plan and initiate an appropriate response to the identified issues and risks. These responses took the form of information pamphlets, letters to store managers, and phone calls to the South African Bureau of Standards and other consumer organisations.

Narration of teaching and learning supported by an illustrative case study: Students were required to produce an assignment narrating the teaching and learning experiences from the *Consumer Choices* activity. To support this meta-level reflection, students were guided by a selection of readings, and were encouraged to draw on theoretical insights described by Bourdieu, Charon, Janse van Rensburg, Jensen and Schnack, Heck and O'Donoghue (see reference to these above). To assist the students, a case study of a tree planting project in Haiti, illustrating narration of teaching and learning interactions, which draws on the work of these theorists (and Bruner, Piaget and Vygotsky), was presented to the students and discussed with them in preparation for the activity.

Research Methodology

The main question in this paper is 'Are students engaging with theory in such a way that the theory remains embedded in practice?'. The broader purpose of the paper is to engage the teaching of the *Teaching and Learning Interactions* module reflexively. The research focussed on a description of the students' engagement with learning theory, which fits within a hermeneutic/interpretive research orientation – an orientation concerned not with 'generalisation, prediction and control but with interpretation, meaning and illumination' (Usher, 1996:18). In this research, I interpreted how students were making meaning of their own teaching and learning experiences through encounters with learning theory. Thus, the research process can further be described as a 'double hermeneutic'. Usher (*ibid.*: 19) described this phenomenon as a case where 'both the subject (the researcher) and the object (other people) of research have the same characteristic of being interpreters or sense-seekers'.

Evidence was gathered to support the narration of learning experiences through a detailed analysis of the assignments students produced at the end of the *Consumer Choices* activity. The assignments of ten students were analysed. For the purposes of maintaining anonymity, students are referred to as Student 1–10, with their assignments numbered A1–A10 respectively. Notes made by the researcher during class discussions have also been used as data to inform this research. These data are prefixed with a 'D' to distinguish these from the assignment data.

Main Findings of the Study: Interpreting students' experiences and reflections

Extracts from students' assignments have been categorised according to different aspects of teaching and learning related to notions of knowledge and reality, the role of language in making meaning, and reflections on processes of change as introduced in the module (see above). These different aspects are reported below with selected extracts for the illustration of points.

Notions of reality

Student assignment work reflects understandings of social reality, as proposed by Charon, emphasising an understanding of social reality. In one case, a student expressed this in the context of the social reality pushed by advertisers playing on people's images of purity and status in society. For example:

Student 1 acknowledged how the act of branding products gives the false feeling of ‘status, esteem and approval of society’ while effectively ‘covering up ... dangerous ingredients ...’.

Another student, working in the group focussing on household cleaners indirectly called for informed consumer choice when she commented on the different factors people take into account when choosing a cleaner:

‘Cost, ecological impact and effectiveness (most dominant)’. She drew on Charon (2001: 9) to note that ‘a good perspective gives us insight, clearly describes reality, helps us find the truth’. (A3)

How knowledge is constructed

While students did not expressly refer to constructivism in their assignments, the following three quotes illustrate an understanding of the processes involved in the social construction of knowledge:

We found out in conducting questionnaires the answers we got often led to more questions or provided [more] information than we had asked for, which helped in gaining knowledge and insight. (A2)

Student 3 commented that:

In our preparation for researching the use of household cleaners in a local context, we deliberated and transcended ourselves in the challenge to understand each other, to make ourselves understood, to work together and to get each other to accept our suggestions on what to do or how to do things.

She explained this phenomenon through a reference to how Charon ‘... describes how individuals deliberate in their interactions with others, or transcend their own person to see things from other people’s perspectives’.

The following extract indicates an understanding of how different teaching methods influence the restructuring of knowledge:

We know that some of these products are used to make the house smell nice and fresh but we did not know the dangers they were causing. Knowledge here was [acquired] by co-operative learning and researching. (A2)

Although they did not necessarily articulate the significance, it appeared that two students were aware of experiencing a state of disequilibrium. It appeared that Student 7 had found out some

disturbing information through her research which had encouraged her to question her own 'habitus' when she commented that: 'We were removed from our comfort zones'.

Student 5 implied an experience of disequilibrium with her comment that: 'We learned that we are at risk in using some of the household cleaners and cosmetics'.

Student 4 attempted to apply the concept of the Vygotskian Zone of Proximal Development (ZPD) in explaining his learning experience, even though he misconstrued the ZPD as a goal rather than as a social interaction space involving challenge. He described the reading packs as giving him '... some kind of basic knowledge to further proceed in order to achieve the zone of proximal development'.

Student 3 was more successful in applying the concept of scaffolding when reflecting on information packs students had been given in order to start their investigations: 'There was good scaffolding provided in terms of the initial learner support material and the list of further sources of reliable information'.

While students do not expressly refer to 'situated learning' in their assignments, it is clear from the following extracts that these students can explain some of the advantages of situated learning in knowledge construction:

Student 8 commented on the 'sudden learning' when a connection was made between the symptoms associated with phthalates in perfumes that they had read about on the Internet and the actual experience of two of her classmates who were regular users of the product they were investigating.

We became more aware of labels and ingredients of the artificial sweeteners we researched. (A9)

The following extract shows evidence of a student thinking about the mobilisation of their own prior knowledge which enabled them to do more effective web searches.

We were able to mobilise ... prior knowledge about harmful chemicals and it enabled us to hone in quickly on website sources that provided further, more detailed information on the subject. (A3)

The role of language in learning

Through the course materials, students were supported to think about *how* language is used to construct meaning in different ways. The example below illustrates a student thinking about how environmental *destructiveness* can be misconstrued as *effectiveness* through the emphasis by manufacturers on the non-selective action of an insecticide:

The fact that the product is high quality and that it kills all insects would have double connotation. It would impress a layman with the word 'all', although to an environmental person it would not be very ... impressive. (A4)

Two other examples of students commenting on how symbols can be used to manipulate consumers are included below:

Producers of cosmetics know that through language (symbols) humans are able to imagine and perceive reality beyond the 'concrete'. 'Nivea crème is claimed to enhance "natural" qualities and is for people who are "different". Here a concept of nature is cunningly associated with purity, originality and perfection'. (A1)

Due to the open-ended, figurative and metaphoric nature, symbols in the form of language are exploited for maximum economic yields. (A1)

Students drew on Hertzler (in Charon, 2001) to discuss the different ways in which language was used to enhance their learning. For example, students explained how language had been used as a tool for designation, conceptualisation, interpretation, consolidation, simplification and clarification:

Language [was] used for designation e.g. this is a poisonous pesticide, interpretation e.g. this pesticide is organic, conceptualisation e.g. should organic pesticides not be subjected to regulatory use? (A5)

We used conceptualisation ... on the customer questionnaire ... we asked the customer 'If the environmentally friendly cleaner was the same price as the one you have chosen, would you consider buying the environmentally friendly one?' (A3)

In a class discussion students mentioned that using 'Google' as a search engine on the Internet was a learning experience when they had to narrow their search by adding 'risk' to their original search 'pesticide'. (D2)

We were able to recall information gathered from different resources ... we could consolidate and simplify the information that we gathered. (A9)

Students noted that language was not always an enhancer of learning, but at times was also a barrier:

... experiences like reading the internet articles and the product information labels on the bottles and interviewing the pharmacist helped me to understand the language of science. ... The pharmacist allowed us to use his big book all about different drugs, although some of the scientific terms were barriers for us because we could not work out what they meant. (A2)

A student noted that she had raised the concern about pthalates with her doctor when, through the consumer choices assignment, she had learned that her son had the same

symptoms that the product was reputed to be responsible for. Her doctor had dismissed her concerns. The students noted that even though they were using the language of science which they had gained from the internet, the power of the scientific knowledge used by the medical fraternity excluded the concerned mother from entering the debate. (D3)

This experience resonates with the observation of Bourdieu (discussed above) of how the cultural norms of dominant social groups act in ways that exclude learners from subordinate groups.

Inhibitors and drivers of change

The following three extracts illustrate that students are aware of factors that inhibit change. Student 5 was concerned about factors that inhibit change with the observation that:

People do not want to change from buying their cosmetics and beauty products although they have been told that there is danger involved, the reason being that they are cheap and they are used to them.

In the *Consumer Choices* activity focussing on cosmetics, a student made the following observation which illustrates that consumers tend to be driven by an objective economic reality despite the potential risk to their personal health and that of the environment:

Consumers are deliberately misled by suppliers [in that they do not make explicit the dangers inherent in choosing a cheaper product] and are driven by the dictum 'value for money' which is also pushed by the suppliers. (A1)

In the extract below students noted that the economic reality of workers results in a dependency which tends to maintain the *status quo*:

Students commented that although farm workers are aware of pesticide dangers, their disempowerment and dependence on employment prevents them from doing anything to protect themselves. (D1)

Students also attempted to describe factors that are necessary for change. Student 7 said that: 'I've learnt that without knowledge and insight I won't be able to participate and act in a healthy society'.

Another student maintained a confidence in the value of awareness-raising to enable informed consumer choices:

We hope to empower communities into making informed decisions about the products they purchase. ... The intended purpose was to raise awareness among ourselves and the broader public, about the health risks that the products pose! (A9)

Student 3 drew on critiques of behaviourism with this comment:

Our interviews had the effect of raising awareness in the people interviewed as well as in other people in the supermarket who heard and saw the interview. ... Historically awareness did not necessarily lead to behaviour change, and this was our experience as well ... saving money was a stronger imperative than saving the Earth.

Sometimes it appeared that perhaps students were overly confident in the change potential of their activities. The following quote implies that the student equates attitude change to societal change without acknowledging the complexity of the societal structures that would need to be influenced in order for real change to manifest.

Environmental learning is an act for social transformation e.g. we managed to influence people and ourselves to change their attitudes towards certain products. (A8)

Another student did acknowledge the need to change these societal structures:

By creating awareness amongst consumers, we can empower them to make informed decisions about their own health in general. Hopefully the consumers' awareness levels would be raised to such an extent that they would critique the dominant economic and political structures. (A9)

Change as a personal experience

Student 2 identified personal experience as a possible circumstance under which awareness might lead to behaviour change: 'I think most of the time people change their behaviour after personal experience. Like someone is going to be aware of dangers of something if something happened to someone else.'

And Student 1 indicated the effect personal experience has on commitment to action:

Initially the enquiry started as an academic exercise, the shocking discovery that our student colleague was the victim of the toxic phthalates in the ... [product name withheld] gave this enquiry a moral and ethical perspective. We were more determined to find ways of ringing the public panic buttons against ... [product name withheld]. We wanted to know why SABS reneges on a constitutional mandate of protecting the public against toxic substances contained in the cosmetics.

Student 9 indicated an intention to change with the statement: 'After the rude awakening caused by our research, my new reality has caused me to want to find out more and to read labels, before I make purchases of any nature in general.'

Although the effectiveness of the *Consumer Choices* activity was not monitored, at a later session in the year, Student 10 presented clear evidence of change when she reported that:

she had been so influenced by the consumer choices activity that after she developed a rash from weight-loss pills, she had for the first time in her life questioned a doctor's authority and questioned the health risks with a particular drug. (D2)

Discussion of Findings: Can learning theory help students to make sense of teaching and learning?

The assignment extracts illustrated a consciousness of Charon's (2001) explanations of how reality can be differently represented (for example, the emphasis in product advertising can be on effectiveness, costs, or ecological impact) and even misrepresented (by redirecting people's focus away from health issues and towards cost-effectiveness, for example) by different groups. Extracts also illustrated a consciousness that in spite of different personal perspectives of reality, some perspectives can be argued to bring us closer to 'the truth' – another idea introduced to students through Charon (*ibid.*). This consciousness on the part of students did not extend to comment on how these different and dominant perspectives influenced the teaching and learning in the *Consumer Choices* activity.

The extracts provided indicate that some students found the learning theory useful in making sense of how knowledge is constructed. Vygotsky's notion of a zone of proximal development and Bruner's work on scaffolded learning (Capel, Leask & Turner, 1995) helped these students to express the value of teaching and learning support materials provided on the course, even though there was one case where there was some uncertainty over the meaning of the 'zone of proximal development'.

While no students specifically referred to the social construction of knowledge, the extracts indicated a good understanding of the value (increased knowledge, deeper insight, changed perspectives) of social processes amongst themselves as students and between them and the broader community. One student also mentioned the strategies that can support knowledge construction, namely co-operative learning and research.

Another aspect of relevance to the social construction of knowledge, namely situated learning was also not explicitly mentioned, but two assignment extracts reflected an understanding of how an authentic setting (as articulated by Lave and Wenger, 1990) can lead to more meaningful learning. Another important aspect of teaching and learning processes founded on an understanding of the constructed nature of knowledge is a recognition of, and a mobilisation of, prior knowledge. One student commented on how prior knowledge had enabled and deepened research opportunities for her group.

Student 5 reflected an understanding of how a new experience, not consistent with existing beliefs, can lead to questions, learning and new knowledge. In another two cases, while the chosen extracts illustrated that students experienced states of disequilibrium (as introduced to them by O'Donoghue, 2001), students were not able to articulate the significance of those states for teaching and learning.

The assignment extracts provide examples of where language had been used to conjure images of products in consumers' minds that are beyond the concrete reality – such as images of

purity and nature. In his questioning of the value of an insecticide that kills all insects, Student 4 demonstrated the ability to challenge the conventional expected response to advertising. At a meta-level students could have increased the depth of their reflection of how language affects teaching and learning by commenting on how the act of interrogating a symbol or meaning of words is an educational experience in itself.

Assignment extracts show how some students drew on Charon to illustrate their experience of how language had been used to enhance teaching and learning. For example, language had been used for designation, conceptualisation, interpretation, consolidation, simplification and clarification. One student also commented on how the language of science had been a barrier to their learning. In the case of the mother concerned about the effect phthalates had had on her son, even though scientific discourse had been engaged, the person in question had experienced powerlessness in the face of a more dominant scientific discourse presented by a doctor.

In reflecting on change two students displayed behaviourist beliefs that awareness can lead to change (Student 9) and that changed attitudes can change society (Student 8). This is despite critiques of these beliefs shared during the course and reflected on by Student 3. Student 9 discussed the tendency of societal and political structures to maintain the status quo, while Student 5 and a class discussion (D3) detailed the nature of these structures through their respective reflections on the relationship between workers and employers, and between doctors and patients.

Students' reflections on notions of reality enabled them to focus on describing and critiquing the lifestyles, values and dispositions (the habitus) of the individuals or societies operating within these structures. This is evident in Student 1's critique of the promise of societal status used to sell certain products and in Student 3's reflections on the dominant factor amongst cost, effectiveness and ecological sustainability in product choices made by consumers.

Students reported a range of responses to the *Consumer Choices* activity on a personal level in terms of effecting change in their own lives. These responses ranged from questioning their habitus or comfort zone (Student 5), to indicating an intention to change (Student 9) to clear evidence of change (Student 10's report on how she had questioned and rejected a prescription given by her doctor based on her own rational analysis of her symptoms). One student felt that if the learning experience resonates strongly with the learner's reality or the reality of someone close to them, it is much more likely to effect change. Significantly absent from students' assignments was any reflection on active approaches to learning and action competence (Jensen & Schnack, 1997; Heck, 2004) which might have helped them to deepen their reflections as to the role of education in change processes.

Conclusion

The above data was selected in order to illustrate students' perspectives on ideas and concepts introduced through various learning theorists. It is noticeable that, in many of the described cases, students used the logic and not necessarily the language of theory. As no comparative analysis has been made between students' work before and after the intervention, this paper does not attempt to reflect on which of the students' insights are driven by prior knowledge and which are due to the ACE(EE) module. The study has also not included a qualitative analysis of

responses, and so does not make statements as to how representative of the student group the perspectives are. The value in this study is to illustrate how students have used learning theory (or not) in order to make sense of teaching and learning interactions.

Students made good use of the basic ideas of cognitive theorists in order to reflect on teaching and learning from a constructivist and social constructivist perspective. The notion of disequilibrium might have been more usefully explored, however, in terms of appropriate strategies for responding to, and capitalising on, instances of disequilibrium in teaching and learning.

The extracts selected for this research demonstrate evidence of the ability to *describe* values, dispositions, notions of reality, socio-economic status and language use; but the majority of extracts did not pursue these descriptions to the point of reflecting at a meta-level on their significance for teaching and learning. In other words these descriptions were not followed by reflections on how these situations might affect the roles of teachers and learners; relevant methods and strategies; or on the skills, values and attitudes that could be mobilised in response to these observations.

Students also successfully described how lifestyle, values and dispositions can preclude change, and how certain situations such as personal involvement can effect changed perceptions and relationships. A greater focus in the module on the dialectic between disposition and position (Bourdieu, 2000) might help students to further deepen their reflections at a meta-level on how habitus affects teaching and learning.

From the above descriptions and insights demonstrated by students, it seems that the ACE(EE)course developers should focus on how to scaffold ongoing critical engagement with the key ideas that enable educators to narrate teaching and learning interactions at a meta-level. One way in which to do this might be through focussing on the recommendation by Bourdieu (2000:52) that '... science should ... reconstruct ... knowledge theoretically by including in the theory the distance between practical logic and theoretical logic'.

In reflecting on the methodology of this study, it needs to be acknowledged that the data that is presented is anecdotal and illustrative of ways in which students are engaging with learning theory. It seems from the useful observations made above that this methodology of a double hermeneutic might be worth pursuing with more attention to triangulation and more in-depth case studies of particular students. This data would allow for a clearer picture of how students' skills for narrating their practice, through the use of theoretical logic, develops over the course of the module.

Notes on the Contributor

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Endnotes

- 1 Bourdieu (2000) describes a doxa as a set of fundamental beliefs.

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