Using action research as process for sustaining knowledge production: A case study of a higher education qualification for academics

P. H. du Toit
University of Pretoria
Pretoria, South Africa
e-mail: pieter.dutoit@up.ac.za

Abstract

This article reports on an action research project being conducted at the University of Pretoria. The study focuses on the idea that I, as an academic specialising in higher education, monitor and gather data about my practice, alongside colleagues enrolled for a formal professional qualification in higher education, with a view to sustaining scholarly and professional development. I am doing this in order to improve my practice in an innovative and accountable way, which includes constructing new meaning and contributing to the production of knowledge in the fields of facilitating learning in higher education and academic staff development. The illustrative case study is the Postgraduate Certificate in Higher Education (PGCHE). Cultivating scholarly higher education practitioners is viewed as an important aim of the programme. The focus is on constructing one's own understanding of one's higher education practice in a scholarly way. Learning theories, including self-regulated professional learning and constructivist learning, as are found in the principles of action research, form an integral theoretical underpinning for scholarly development. Action research is used as a means of sustained professional learning for all participants. This study investigates how professional learning can be encouraged and sustained through the development and assessment of professional portfolios. The portfolios came to represent the living theories (McNiff 2002) of practice of all participants, substantiating educational values and claims of improved practice in a scholarly way. The process of compiling the portfolios, called professional portfolios, is based on the principles of action research. This process is in stark contrast with the notion that a portfolio is 'a file of evidence'; rather, these professional portfolios represent evidence of new knowledge produced/ constructed. A mix of research methods is used to obtain quantitative and qualitative data – gathered, *inter alia*, by means of a learning style questionnaire, text analysis and photo evidence. Other methods such as observation, student feedback questionnaires and interviews are not reported on in this article.

INTRODUCTION

As a scholar of teaching and learning in higher education for more than 20 years I am constantly aware of developing my full potential and instilling the same in my colleagues. The programme in question is a formal higher education qualification that focuses on the professional development of lecturers. As a lecturer, I view myself as a role-model to my student-colleagues.

With a view to enabling me to continuously construct new knowledge about my practice and contribute to the current body of knowledge on higher education, I became a proponent of action research. Action research has become the driving force behind almost everything I do in terms of my academic life: when researching my own teaching practice; engaging in community development; and working as a member of a research team or investigating the professional development workshops I continuously facilitate. Action research has become the preferred way of satisfying my quest to understand my practice. The core of my practice of which I continuously seek to deepen my understanding, revolves around the Postgraduate Certificate in Higher Education (PGCHE).

The PGCHE is a 120 credit programme that consists of nine modules. The programme is considered innovative in its design since it is the first of its kind in South Africa to include a module on Community-based Learning where concepts such as service learning and curricular community engagement are introduced. Another feature of the programme – and a flagship elective module presented by a colleague – is Entrepreneurship Practice where the focus is on educational entrepreneurship. Modules on Mediating Learning, Professional Development, Curriculum Development, Assessment Practice, Educational Technology, Leadership and Management, Community-based Learning and four electives constitute the programme. In this article, I touch on some of the modules and related theories that are applicable – as included in the theoretical framework.

RESEARCH QUESTIONS

The longitudinal nature of my action research and the fact that my practice is multidimensional does not allow me to list and address all the relevant research questions. I work in an exemplary fashion by means of the following listed questions and report some data to illustrate how I came to my conclusions. One example of the methods utilised to generate some of the answers is also indicated:

- What is my thinking preference? – questionnaire – Herrmann Brain Dominance Instrument (HBDI);

- What are my colleagues' thinking preferences? – questionnaire (HBDI);

- What evidence do I have for claiming that my colleagues practise self-regulated learning and that they construct new meaning and contribute to knowledge production of higher education practice? – text analysis;

- What evidence do I have for claiming that my colleagues implement principles of applicable theories in practice? – photo evidence;

- What do my colleagues say about the programme they enrolled for? – text analysis of portfolios.

Some theories that informed these questions and that navigate my research are discussed next.

THEORETICAL FRAMEWORK

From the outset it is important that I highlight the fact that the theories discussed in this section form the basis of my programme. Similarly, the principles of the same theories are applied by my colleagues in their practices.

Any higher education practice is multidimensional and consists of an array of educational aspects that should be kept in mind by all lecturers involved in teaching while executing academic tasks. It ranges from curriculum development, implementing the curriculum by means of facilitating learning, to assessing student learning – as it, *inter alia*, is outlined as one of the roles each lecturer has (South Africa 2000). Some of the learning theories that have become an integral part of my teaching practice are touched on next. I acknowledge that there is a rich body of knowledge documented in the extant literature that is applicable to my study, but due to the space limitation only a few are addressed here. Apart from the focus on whole brain learning as the principal theory that translates into professional learning/ development of academics in my context, several scholars have intensively studied related phenomena.

I am, *inter alia*, responsible for the elective module on Mentorship that has become a vital point in terms of academic staff development. The focus is on mentoring a newly appointed academic staff member especially from a peer mentoring point of view. Peer mentoring is seen as an essential part of becoming an agent of change. An organisation such as a university should optimise the fertile soil it cultivates. Critical reflection by an individual and peers is an essential part of peer mentoring and it also forms an integral part of action research. My colleagues have established a community of practice in which they can share information, give collegial support, and engage in critical reflection. Professional communities of practice are built through cooperative learning, which I contextualise as professional cooperative learning. Therefore, peer mentoring becomes an enriching learning opportunity for everyone involved. Professional cooperative learning can be closely linked to action research. The interdependence found in professional cooperative learning should eventually be changed into independent professional learning with a view to promoting the notion of developing one's full potential as a lecturer and engaging in life-long learning. This would mean that the lecturer executes, among other actions, the strategies of self-regulated professional learning which Slabbert, De Kock and Hattingh (2009) describe as self-directed learning.

The PGHCE is a work-based programme offering colleagues (formally enrolled as students at the University of Pretoria) the opportunity to implement principles of applicable theories in their daily practice. As using the term student/learner and lecturer/academic/colleague for the same group of people is quite confusing, I use the term student when referring to the students whom lecturers have to teach. When referring to my student-colleagues enrolled for the PGCHE, I use the term colleagues as they are primary colleagues and employees of the University of Pretoria, or colleagues from other Higher Education Institutions (HEIs) whom I consider secondary colleagues.

The innovativeness of the programme is evident in the assessment opportunities that are offered. Most of the modules expect colleagues on the programme to write conference papers, journal articles, reports, monographs or book chapters, or to submit a professional portfolio as end products of their action research, rather than sit a written exam. Their action research is executed in their own contexts. I complement their action research by doing action research on my practice. Therefore, I call this multi-layered action research endeavour a synchronous process (Du Toit 1995). Action research as theory has become the core of the programme as it forms part of the learning process and its principles are used for negotiating the learning process. As reported in Du Toit (1995), I consider the curriculum as action research-driven.

As part of my living/lived theory (McNiff 2002), I have come to construct new meaning of the concepts with which I work. Working with Herrmann's (1996) theory on whole brain learning has enriched my thinking about these concepts and I have come to perceive them from a more holistic point of view. The whole brain theory of Herrmann forms part of my scholarship of teaching and research and also that of my colleagues. Therefore, I can account for the claim I make that both my colleagues and I are continuously constructing new meaning. Evidence of constructed meaning is to be found in conference papers presented (e.g., Bender and Du Toit 2007; De Vries and Du Toit 2007; Scherman and Du Toit 2007; Goode and Du Toit 2010; Pillay, Wolvaardt and Du Toit 2010; Wolvaardt and Du Toit 2011) by my PGCHE colleagues. For some it was their first time presenting at a conference; for some it was their first time attending an educational conference. In this way their scholarly confidence is built and the next step in terms of their professional development as lecturers is taken.

Integrating different aspects of my practice and therefore integrating different theories and constructing my own living theory (McNiff and Whitehead 2006) are typical of my learning style. In order to identify my learning style, I have used the HBDI (Herrmann 1996). As part of a baseline study my profile is reported in the section where the quantitative data is discussed. Knowledge about my learning style became part of the meta-cognitive knowledge (Biggs 1985) I needed to develop as a self-regulated practitioner. The term learning style is extensively discussed in Coffield, Moseley, Hall and Ecclestone (2004).

Herrmann's (1996) whole brain model informs my entire practice. I have realised that whole brain learning has become the palette that I use to colour my entire academic world – see the extensive list of constructs in the conclusion section of which some have been documented in a manuscript by De Boer, Du Toit, Bothma and Scheepers (2011).This list is offered as a final concluding premise.

It is not my intention here to report the whole brain model and the complementing principles that have implications for learning in detail as the model is discussed in more detail in the literature (De Boer, Steyn and Du Toit 2001; De Boer, Bothma and Du Toit 2011). However, with a view to elevating the line of thought, it is briefly outlined in Figure 1.
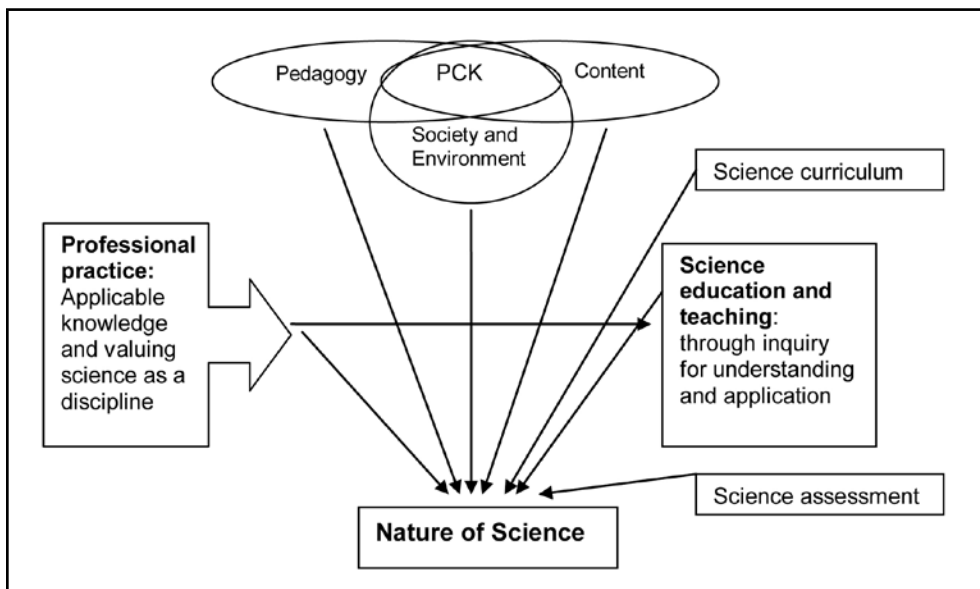
Figure 1: Whole brain learning model (adapted from Herrmann 1996)

Figure 1 depicts a metaphorical representation of the brain. It is divided into four quadrants. Quadrant A represents the so-called intellectual and content smart; quadrant B the safekeeping/process smart; emotional/affective smart is represented by quadrant C and quadrant D represents the experimental/holistic smart. The crux of the model is that no lecturer, including myself, can only teach from his/her preferred learning style. Each lecturer should be able to adapt in order to accommodate students with different preferences and furthermore be able to challenge students to learn by means of other modes in order to develop their full potential. This would mean that from time to time lecturers should 'think out of the box'. Typical of my constructivist stance to my practice I have critically evaluated this commonly used slogan, and realise that what it should actually say is: 'Think out of your/my box!' – with the concept of brain profiling in mind.

Constructing new meaning as a constructivist (Von Glasersfeld 2001) approach to professional learning has become a challenge as I expect my colleagues to construct new meaning from their experience. I contextualise my current understanding of self-regulated learning, described by scholars such as Slabbert, De Kock and Hattingh (2009) as self-directed learning, as I refer to it as professional self-regulated learning within the PGCHE. Slabbert, De Kock and Hattingh (2009); Barnett (2007) and Purpel and McLauren (2004) highlight that the construct 'authentic' refers to the importance of sustained learning which I consider is to be found in executing continuous cycles of action research. The reference to authentic learning in general becomes authentic professional learning within the higher education context of academic staff development. This mode of learning expects a lecturer to take responsibility at a scholarly level for planning his/her professional learning process;

executing the plan; monitoring and evaluating the plan in a continuous fashion; and making the progress public. These are typical actions to be found as part of the action research process and evidence of authentic action research which is to be observed from the portfolios.

It is evident that action research forms an essential part of the programme and its theoretical framework. As my own research, explained in more detail next, is action research, it is not addressed as a learning theory in this theoretical framework section.

RESEARCH DESIGN

For the purpose of following the argument in the article I refer mostly to myself in the first person, but often refer to the collective plural as my colleagues – who are my students – are following similar processes and are implementing the same principles. It is through my scholarly discourse with them over the years that I am able to construct new meaning and can contribute to the current body of knowledge on the practice of higher education within a community of practice.

Since professional development of academic staff is the key unit of analysis (Mouton 2001) in my research, action research has been chosen as the overarching research design. At the same time it serves as learning theory within the context of my practice. The professional development referred to is my own and that of my colleagues enrolled for the PGCHE. The roles we have as academic staff (South Africa 2002), such as the role of lecturer, leader, facilitator, curriculum designer and assessor, are given special attention since they are aligned with the different modules of the programme. By means of action research and continuous scholarly reflection on these roles all of us involved in the programme – my colleagues as students and myself alike – embarked on becoming independent scholars of our respective teaching practices. Scholarly reflection is an essential principle of action research and when blended with the term whole brain learning, it gives rise to the construct whole brain scholarly reflection.

I consider whole brain scholarly reflection as an intrapersonal act (Du Toit 2009) with a view to improving what we are doing. Furthermore, I regard our professional growth as an intrapersonal act that has to do with our becoming self-regulated, flexible, reflective practitioners/lecturers/action researchers who can monitor our own progress.

The basic principles used for action research formed the core of our self-regulated strategies. My colleagues and I were responsible for planning how to facilitate learning more effectively/transforming what we were doing; implementing the plan; monitoring the implementation by means of scholarly reflection; and evaluating it in the end to determine to what extent the implementation contributed to a more effective/transformative practice. From the lessons learned we constructed new meaning that contributed to developing our practice theory (Korthagen 2001) and living theory (McNiff and Whitehead 2006). New understandings were generated

through professional discourse with others. As peers engaged in such a mutual learning process they and I learned by reciprocity. As a 'give and take' situation was negotiated, professional jealousy was counteracted. The discourse was always one of equals – 'no one [told] another what to do in action enquiries; we all share[d] and value[d] one another's learning' (McNiff 2002).

According to McNiff (2002), the question 'How do I improve my work?' has a social intent. When one has the intention of improving one's work, it is not only for one's own benefit, but also for the benefit of others and the organisation at large.

The model I use for my action research is not used by all my colleagues, although it has been proposed as an alternative to the typical models read about in the literature as my model is considered asset-based (Du Toit 2009). The model is based on the work of Zuber-Skerritt (1992) and McNiff (2002). However, instead of using the phrase 'planning for change', as is generally used, or 'planning to improve', I prefer to use 'planning for innovation' or 'planning for transformation'. Most scholars of action research refer to problem identification (Zuber-Skerritt 2000; Burton and Bartlett 2005) or identifying a concern (McNiff and Whitehead 2006) as one of the steps or as a point of departure for an action research project. Identifying a problem and formulating a so-called research problem is typical of traditional research and to me a deficit-based approach to action research. Therefore, I focus on my own assets (e.g., knowing my learning style as reported as part of the quantitative section) or those of my colleagues, or on identifying an innovative idea as point of departure of the asset-based approach which I advocate. I prefer to work within a visionary model (Du Toit 2009) with innovative ideas in terms of facilitating learning and assessment with a view to either innovating my current practice or radically transforming it. To me it is more about experimenting with new ideas than solving existing problems.

One of the innovative ideas that I wanted to investigate is the use of professional teaching portfolios (Costantino and Lorenzo 1998) as an alternative to the written examinations of the past. As an innovation it is not only about my transformed way of facilitating learning, but about incorporating assessment as an integral part of teaching and learning. Action research as process links all the learning and assessment opportunities into one integrated whole. For example, each assignment formed part of the cycles of the action research spiral that each colleague had to follow.

EVIDENCE TO SUBSTANTIATE MY KNOWLEDGE CLAIMS

Quantitative data

As a mixed-method approach is evident in my research I have gathered data by both quantitative and qualitative means. Quantitative sets of data obtained by means of a learning style questionnaire are reported as an example of this type of research method.

It is clear that my brain profile serves as both a baseline study and point of departure for my professional development. This brain profiling is aligned with the first research question listed above. In the same way, colleagues who could afford

to have their profiles determined by means of the HBDI could use their profiles as a baseline study for their respective action research projects. Collectively these sampled profiles serve as a data set that I used to substantiate the claim made that it is imperative to adapt one's style of facilitating learning. This is aligned with the second research question listed. My brain profile is represented in Figure 2, followed by a brief explanation.
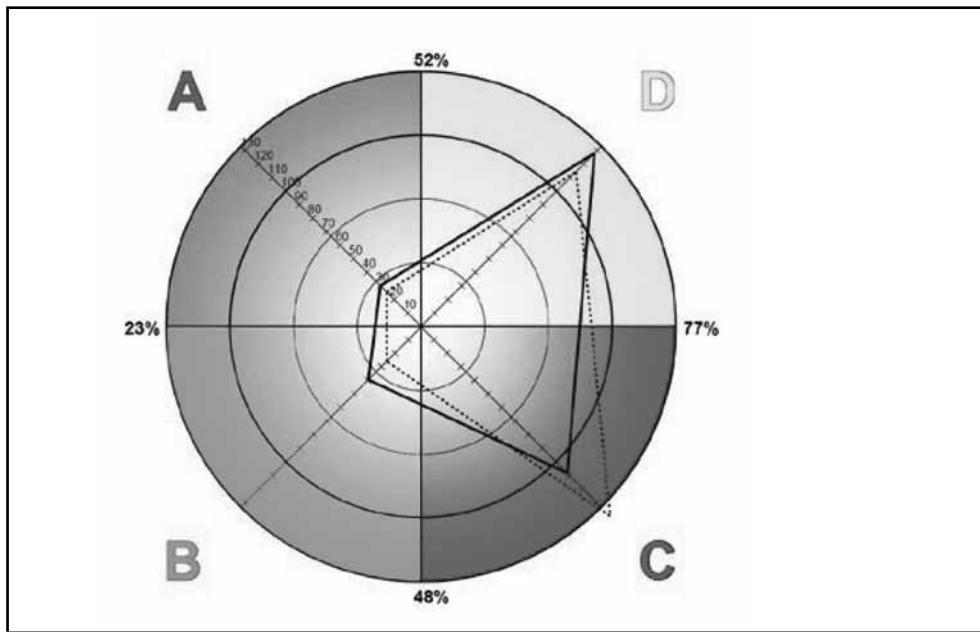

Figure 2: My brain profile

The visual in Figure 2 is the outcome of the quantitative data obtained from the HBDI that I completed. With this visual comes a preference code, indicating the level of preference for each quadrant (see Figure 1).

For quadrant A my preference is tertiary (almost indicating an avoidance), for quadrant B it is secondary and for both quadrants C and D primary

3	2	1	1

According to the narrative provided with the HBDI my most preferred thinking style is quadrant D. The descriptors I selected, namely, 'synthesiser', 'artistic', 'holistic' and 'intuitive' are indicative of my preferred way of dealing with day-to-day life situations. In terms of work-related situations, I selected descriptors such as 'creative', 'integrating' and 'innovative'. The second most dominant quadrant is C, where I chose the descriptors 'musical', 'talker', 'intuitive' and 'emotional', with 'emotional' as the key descriptor. Among the array of descriptors, 'emotional' is the most descriptive of me. In terms of work elements from this quadrant, I selected 'teaching', 'writing' and 'interpersonal'. The least preferred quadrant is A.

1223

In terms of communication, my most comfortable approaches may include allowing time to explore; giving a conceptual framework; establishing rapport; involving others; and anticipating how others feel. What I may overlook during communication are critical analysis; a written schedule and plan; a step-by-step approach; and technical accuracy.

As background for my profile it is significant to look at what the expectations of my colleagues (as my students) are for each quadrant and what they struggle with. In the same way students taught by my colleagues have these expectations and should be kept in mind while facilitating learning or assessing. This is highlighted in Table 1.

Table 1: Expectations of colleagues per quadrant

A quadrant colleagues expect:	D quadrant colleagues expect:
- Precise, to the point information	- Fun and spontaneity
- Theory and logical rationales	- Playful, surprising approaches
- Proof of validity	- Pictures, metaphors, overviews
- Research references	- Discovering of the content
- Textbook readings	- Freedom to explore
- Numbers, data sets	- Quick pace and variety in format
- Challenging questions	- Opportunity to experiment
- Subject matter expertise	- New ideas and concepts
They struggle with:	**They struggle with:**
- Expressing emotions	- Time management and deadlines
- Lack of logic	- Administration and details
- Vague, imprecise concepts or ideas	- Lack of flexibility
B quadrant colleagues expect:	C quadrant colleagues expect:
- An organised, consistent approach	- Group discussion and involvement
- Staying on track, on time	- To share and express feelings/ideas
- Complete subject chunks	- Kinesthetics, moving around
- A beginning, middle and end	- Hands-on learning
- Opportunity to practise and evaluate	- Personal connection with lecturer/group
- Practical applications	- Emotional involvement
- Examples	- A user-friendly learning experience
- Clear instructions/expectations	- Use of all the senses
They struggle with:	**They struggle with:**
- Risk	- Too much data and detail
- Ambiguity	- Lack of personal feedback
- Unclear expectations/directions	- Pure lecture, lack of participation

The next group of profiles serve as examples from my colleagues sampled over the past few years. I have selected mainly those that differ from my profile since it can be deducted from the discussion above that I most probably would have accommodated those with profiles similar to mine. The individual profiles are not individually discussed since they are aligned with the content of Table 1. The profiles are reported to show that in my class I have colleagues with all the possible preferences, making up a composite whole brain group. Therefore, my challenge is to become more flexible and adaptable in terms of how I facilitate learning.
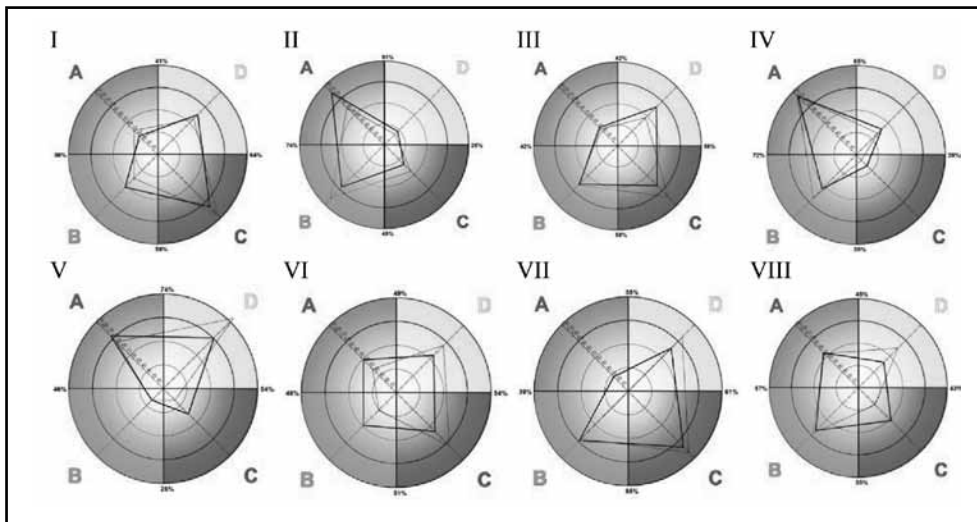
Figure 3: Examples of colleagues' profiles

It is clear from the above profiles that each colleague would have preferred to be accommodated by me in accordance with his or her thinking preference. Profile **I** indicates a preference for quadrant C that I most probably could accommodate, based on the descriptors of my profile. Profiles **II**, **IV** and **V** most probably presented a challenge to me as facilitator since I needed to work hard to accommodate the expectations of colleagues from quadrant A, while the expectations of colleagues with profiles **III**, **VII** and **VIII** would challenge me in working in a more structured fashion. Profile **VI** was included because such a profile indicates a balance in terms of all the quadrants and for the fact that only 5 per cent of all HBDI respondents, of which there have been up to now more than two million (Coffield et al. 2004), have this profile. Balance in my approach might have accommodated this colleague.

Qualitative data

The means of gathering qualitative data included feedback and text analysis. In general, I consider student feedback simply as feedback that students offer based on their perceptions and not as student evaluation that is generally used to describe this phenomenon that I would call an educational intervention. However, in the case of the PGCHE, I consider colleagues (my students) as peers who are enrolled for a qualification in a higher education context that expects them to be able to assess their peers' work that is included as a learning outcome at the higher levels of Bloom's taxonomy (Bloom et al. 1956). This is one of a few instances where I would consider the term 'student evaluation' as appropriate.

Colleague feedback was obtained by means of questionnaires (although not reported in this article), personal emails and text analysis. Text analysis was used, *inter alia*, for gathering data from colleagues' portfolios. The data sets do not span the entire period of conducting action research, nor do they reflect a composite

whole. They are mainly exemplary of the different options one has in action research to substantiate the claims researchers make, which is the ultimate purpose of the following data sets. The last three research questions listed above are applicable.

I received several emails that reflected mainly a positive disposition in terms of a colleague's experience. The most significant one was a single sentence. The scenario of this correspondence is the following: I made contact with a former colleague (student) of mine to make an enquiry. He is a qualified medical practitioner and currently runs a private higher education institution that offers management programmes for health science practitioners. At the end of his email response to me I observed the array of qualifications he holds: MBChB (Pret), M.Med (Int) (Pret), FCP (SA), AMP (Manch), PGCHE (Pret). I immediately observed that the PGCHE was listed and my response was simply:

> *Ek is bly om te sien die PGCHE is nou ook een van jou kwalifikasies.*

> [I am glad to see that the PGCHE is now also listed as one of your qualifications.]

He sent me the following short response:

> *Dit is die een wat ek die meeste geniet het.*

> [That is the one I enjoyed most.]

What better feedback could I wish for?

The following qualitative feedback that is evident of deep learning, constructivist learning, self-regulated learning and authentic learning was obtained from the portfolios during text analysis:

***Respondent 1*:** This respondent's professional field of expertise is graphic design. I consider respondent 1 as the most critical student I have ever had on the programme – he questioned most of the educational ideas that he had to engage with, even videos I had shown. However, the title of his portfolio suggests that he did take his practice seriously and took responsibility for transforming it: 'Inclusivity, flexibility and accountability: A development towards a transformed ETDP'.

From the text of his portfolio the following evidence signals the effect of the PGCHE on his professional development. At the beginning of the portfolio he formulated the aim of his research in the form of a question:

Aim of research: How did this work help me learn more about the way I regulate and manage my own learning as a professional educator?

The following was also extracted from his portfolio:

> ... by transformation I do not mean an end in itself. Rather, it is hoped that the interventions and effects of these ... pave the way for a practice that is always in the process of progressive development.

This portfolio is intended as an antidote or serum to remedy the kind of muddled nightmarish paranoiac condition as presented in Goya's image above [The sleep of reason produces monsters]. It is planned as a beginning and not an end: a starting point for a journey of transformation that will present new and alternative perspectives on not only my ETDP but that of my colleagues as well.

Through my work in this year long learning experience I have gained a life time of potentially life long learning development. If I were asked to account for one specific aspect of this experience that was perhaps most beneficial in the way it has come to underpin my ETDP and transform it, I would have to pin point reflective practice. For me reflection ... is the means by which the progressive development of an ETDP gains momentum.

Respondent 2: This respondent's field of specialisation is in the health sciences. Her portfolio includes the module on Research Supervision and conveys the following significant aspects:

This assessment [brain profile] is of value and the sensitisation of this proved valuable for my understanding of facilitative research supervision as my current ... student also favours the right brain hemisphere.

The following was taken from the other sections of her portfolio:

This portfolio has been completed with the primary purpose of providing evidence of my personal journey in building meaning within the PGCHE ... to provide a "big picture" of the development that has taken place over what seems now in retrospect a very short time indeed.

... I have decided to explore other than my preferred ways to construct meaning while building the portfolio and I have written each section with a particular quadrant ... in mind.

As a metaphor for her practice, which was the result of one of the class activities, she formulated the following:

Metaphor: teaching is like organising a journey with a group of foreigners.

The following was extracted from her portfolio:

Through these action research cycles it became clear to me what the benefits of such a methodology is. I experienced problems when I thought there would be none and vice versa. I have learnt more about the context and facilitation within the field of andragogy both through my experiences, but also the contact sessions and the test.

The learning through reading, doing and talking this year has meant that although I might still say "learning styles" when I mean "learning theories" I actually do know the difference and much of the terminology has become less obscure.

> What I learnt is that the pre-hold [sic] concepts can be swept away by a single insight that came as a result of both learning from lecture and textbooks (the learning theories) and my past experience that was "recovered" from my memory from a chance conversation. Furthermore I learnt that this intuitive synthesis is very powerful, so powerful in fact that I know that I never will be able to accept the material that I have read to date on mentoring.

***Respondent 3*:** This respondent also has a professional background in the health sciences. He had the following to say:

> I wish to acknowledge the significant role played by my wife ... who encouraged me to enrol for the PGCHE thus launching me on a journey of exploration and growth.

> I wanted this action research to develop me as a mentor and agree that action research is a process that helps you ... to develop a deeper understanding about what you are doing as an insider researcher.

Respondent 4: As a title for her portfolio this respondent formulated the following that suggests her approach to her professional learning and that implies her field of specialisation: 'Making Accounting enjoyable: Living the theory of action research and learning style flexibility – critical reflection by ...'.
From the text of her portfolio the following was taken:

> It was also in the reflection phase where I discovered the true, practical meaning of self-regulated learning – I could see it in my own professional development, and saw it in my students' work, self-motivation and positive attitude.

***Respondent 5*:** This respondent is from a dentistry background. He wrote the following in his portfolio:

> I can conclude that my portfolio gives evidence of my professional development and intrapersonal leadership in the context of life-long learning. This portfolio displays aspects of meta-learning, reflective learning, action learning, intrinsic motivation, creative thinking, critical thinking, self-assessment and being meta-cognitively aware of my own learning and learning style preference.

He embarked on continuing his professional qualifications as a higher education practitioner by completing an MEd degree with a focus on using the principles of whole brain learning in the module Tooth Morphology for a group of third-year students.

***Respondent 6*:** From the portfolio compiled by this respondent the following serves as a reflection on the programme as a whole and not specifically my practice, but since I am the programme coordinator it is significant to me:

A word of thanks to the academic staff who I met on this course – you were often inspirational, sometimes infuriating and seldom frustrating. The best stimulated me to look at education in a different light. But the number of assignments now that was daunting.

Respondent 7: This respondent's field of specialisation is also Accounting. Her title reads as follows: 'My year spent in the spin cycle of the PGCHE washing machine'. As a metaphor for her practice she wrote the following:

Teaching and learning can best be described by means of a rubber band ... there is no beginning and no end ... Learning is also a continuous process ... sometimes you are the learner and sometimes you are the teacher ... When you pull on a rubber band, it will stretch way beyond the original size ... the objective is to stretch their mind to allow the person to create their own meaning and to decide what and how they are going to retain this newly constructed knowledge.

The following quote comes from the portfolio:

The PGCHE experience for me this year really felt like you were spun in a washing machine ... However, I am glad that I did go through the experience and I am looking forward to implementing the principles and methods even further in my practice.

I now truly regard myself as an educator and I am ready to accept the huge responsibility that this title places on you.

Next I show Photographs 1 and 2 as evidence of my claim that I expect my colleagues to participate actively in my classes. The first photograph shows how I engage colleagues in playing games; the second one shows how my colleagues have to present their ideas in class – in this case it is about a class activity to decide on a metaphor for teaching. This metaphoric thinking is aligned with quadrant D of the whole brain model.


Such metaphoric thinking is often to be found in my colleagues' portfolios as demonstrated in Photographs 3 and 4. Photographic evidence of Respondent 5's

transformative practice indicates how a group of dentistry students were challenged to become creative. Some worked in groups and submitted their assignment in the form of a painted clinical jacket; another group designed games as can be seen in the next photographs. (Examples taken from Oosthuizen 2001.)

Photographs 5 and 6 show how those students who would rather work as individuals came up with their creative ideas. One submitted his assignment in the form of an inflight magazine; another wrote a song, accompanied himself on guitar and submitted a CD. The answer to the next question is self-explanatory: Will he/she ever forget what he/she had to learn for the specific module?
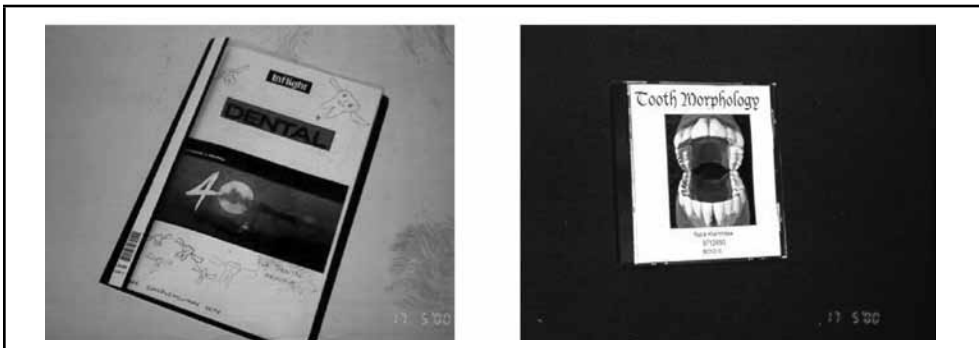
CONCLUSION

Usually, the literature indicates that the findings of a small-scale research intervention are not generalisable. However, I would like to argue that the process is generalisable as the evidence from my colleagues' portfolios shows. Although each colleague's experience in terms of professional development is authentic, other academics from similar disciplines and institutions may find significance for their practice in this work.

Furthermore, the different adult learning theories that form part of the PGCHE in terms of learning content and learning process enhance the professional development

of higher education practitioners. The PGCHE *per se* is a programme that offers such practitioners the opportunity to embark on a journey of continuous professional learning. This qualification can transform individual practices and an entire HEI. Enacting the scholarship of teaching may contribute to establishing a learning organisation in the deepest sense.

My final conclusion evolves from the claims that I make: firstly, that my colleagues do implement the principles of the theories they engaged with during the PGCHE in their respective practices; and secondly, my colleagues do sustain the construction of new knowledge in higher education theory more often than not, through a collaborative effort.

I have contributed to the process of constructing new meaning by adding, *inter alia*, the following terms to the current body of knowledge on higher education theory; by using a whole brain constructivist epistemology; and by acknowledging the fact that the terms 'whole brain'®, Herrmann›s Whole Brain Model® and instrument (HBDI™) that I use in this article, especially linked to the terms listed below, are registered and branded by Herrmann International©: whole brain reflection; whole brain action research; whole brain authentic learning; whole brain constructivist learning; whole brain self-regulated learning; whole brain professional learning; whole brain mentoring; facilitative mentoring; whole brain peer mentoring; whole brain community engagement; whole brain co-operative learning; wholebrain meta-learning; whole brain action learning; thinking out of your/my box; whole brain creative thinking; whole brain supervision; facilitative supervision; whole brain deep learning; whole brain self-assessment; whole brain peer assessment; whole brain service learning; whole brain community engagement; whole brain curricular community-based learning; whole brain work-based learning; whole brain entrepreneurship; whole brain educational entrepreneurship; whole brain observation; whole brain feedback; whole brain E-learning; whole brain learning programme; whole brain module; whole brain authentic professional development; whole brain independent learning; whole brain scholarly reflection; whole brain intrapersonal reflection; whole brain practitioner research; whole brain staff induction; and whole brain blended learning. Indeed these concepts still need to be implemented in practice and investigated by scholars of higher education in order to develop them as lived constructs. I am continuously investigating these in my practice and some of my postgraduate students and PGCHE students have embarked on similar scholarly journeys in their subject contexts. This list is my contribution to producing knowledge as part of my living theory that spans a wide range of educational aspects in the context of higher education in general and specifically in my context of academic staff development.

REFERENCES

Barnett, R. 2007. *The will to learn – being a student in the age of uncertainty*. Maidenhead: McGraw-Hill Open University Press.

Bender, C. J. G. and P. H. du Toit. 2006. Innovative scholarship development in curriculum-based service-learning. Paper presented at the HELTASA Conference: Learning and Teaching Innovation in Higher Education: Expanding the Frontiers, Pretoria, 27–29 November.

Biggs, J. B. 1985. The role of meta learning in study processes. *British Journal of Educational Psychology* 55:185–212.

Bloom, B. S., M. D. Engelhart, W. H. Hill, E. J. First and D. R. Krathwohl. 1956. *Taxonomy of educational objectives: Cognitive domain*. New York: Longman.

Burton, D. and S. Bartlett. 2005. *Practitioner research for teachers*. London: Paul Chapman.

Coffield, F., D. Moseley, E. Hall and K. Ecclestone. 2004. *Learning styles and pedagogy in post-16 learning. A systematic and critical review.* London: Learning and Skills Research Centre, United Kingdom.

Costantino, M. and M. N. Lorenzo. 1998. *Developing a professional teaching portfolio: A guide for educators*. College Park, MD: College of Education, University of Maryland.

De Boer, A., T. Bothma and P. H. du Toit. 2011. Enhancing information literacy through the application of whole brain strategies. *Libri* 61(March): 67–75.

De Boer, A., T. Steyn and P. H. du Toit. 2001. A whole brain approach to teaching and learning in higher education. *South African Journal of Higher Education* 15(3):185–193.

De Vries, M. and P. H. du Toit. 2006. Collaborative learning and the use of action learning: My zoo experience. Paper presented at the HELTASA Conference: Learning and Teaching Innovation in Higher Education: Expanding the Frontiers, Pretoria, 27–29 November.

Du Toit, P. H. 1995. Diagnostic assessment of learning: Reflection technique for the evaluation and development of a learning process-driven curriculum. Paper presented at the 21st Annual IAEA Conference: New Horizons in Learning Assessment, Montreal, 13–17 June.

—––. 2009. *An action research approach to monitoring one's professional development as manager*. Pretoria: Foundation for Professional Development.

Goode, H. and P. H. du Toit. 2010. How can I improve strategies of facilitating learning from a whole brain theory perspective? Paper presented at the Action Research: Exploring its Transformative Potential Seminar, Port Elizabeth, 19–20 August.

Herrmann, N. 1996. *The whole brain business book*. New York: McGraw-Hill.

Holbeche, L. 1996. Peer mentoring: The challenges and opportunities. *Career Development International* 1:24–27.

Kolb, D. A. 1984. *Experiential learning.* Englewood Cliffs, NJ: Prentice Hall.

Korthagen, F. A. J. 2001. *Linking practice to theory: The pedagogy of realistic teacher education*. Mahwah, NJ: Lawrence Erlbaum.

McNiff, J. 2002. *Action research for professional development: Concise advice for new action researchers.* Available at: http://www.jeanmcniff.com/booklet1.html#12 (accessed 2 June 2009).

McNiff, J. and J. Whitehead. 2006. *All you need to know about action research.* London: Sage.

Mouton, J. 2001. *How to succeed in your master's and doctoral studies*. Pretoria: Van Schaik.

Oosthuizen, M. 2001. An investigation into facilitating learning via the whole brain model in the study unit tooth morphology. MEd dissertation, University of Pretoria.

Pillay, V., G. Wolvaardt and P. H. du Toit. 2010. Introducing action research as process for higher learning in an advanced course for health managers offered by a private higher education institution. Paper presented at the Action Research: Exploring its Transformative Potential Seminar, Port Elizabeth,19–20 August.

Purpel, D. E. and W. M. McLauren. 2004. *Reflections on the moral and spiritual crisis in education*. New York: Peter Lang.

Scherman, V. and P. H. du Toit. 2007. Cooperative learning in postgraduate lectures: Possibilities and challenges. Paper presented at the HELTASA Conference: Learning and Teaching Innovation in Higher Education: Expanding the Frontiers, Pretoria, 27–29 November.

Slabbert, J. A., D. M. de Kock and A. Hattingh. 2009. *The brave 'new' world of education: Creating a unique professionalism*. Cape Town: Juta & Company.

South Africa. 2000. Norms and standards for educators. *Government Gazette*, 415: 20844. Pretoria: Government Printer.

Wolvaardt, G. and P. H. du Toit. 2011. Action research-driven professional development: Challenging health managers to transform their practices and creating learning organisations. Paper presented at the Knowledge Production Conference, Cape Town, 28–31 March.

Zuber-Skerritt, O. 1992. *Action research in higher education: Examples and reflections*. London: Kogan Page.

–––. 2000. *Action learning, action research and process management: Theory, practice, praxis*. Brisbane: Action Research Unit, Faculty of Education, Griffith University.