University of KwaZulu-Natal

TEACHING AND LEARNING IN THE COLLEGE OF LAW AND MANAGEMENT STUDIES:

SHARED APPROACHES, LESSONS AND GOOD PRACTICES

Volume II

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ACKNOWLEDGEMENTS

We are most grateful to the following journals who have so kindly granted permission for us to include previously published material in this in-house publication:

Routledge, Taylor & Francis Group


Kamla-Raj Enterprises, Delhi, India


Business perspectives


This paper can be found on their site:


Alternation: Interdisciplinary Journal for the Study of Arts and Humanities in South Africa

- Blewitt, C & Hugo, W. The Learning Affordances of a Facebook Environment. Accepted by Alternation.

Lastly, we would like to acknowledge Kriyanka Moodley for her invaluable editorial assistance, also Kerry Pentz for designing the cover and typesetting the manuscript in such a professional manner.
FOREWORD

This is the second compilation of its kind from the Teaching and Learning Office of the College of Law and Management Studies at the University of KwaZulu-Natal. Like the first, it is about sharing teaching and learning approaches and best practice as experienced, researched and presented by academics in the College. The topics and broad scholarly areas covered range from student experiences, to creative pedagogy, assessment, student access and throughput. By bringing these broad teaching and learning topics together, this volume achieves one of the strategic goals of the University, which is to promote innovation, creativity, scholarship and research in teaching and learning. It also highlights the growing importance of research in teaching and learning. This is because the scholarship of teaching and learning provides a mechanism to improve teaching effectiveness and to enhance student learning outcomes, and has the potential to change academic cultures and communities.

This publication is unique not only because it reflects the authors’ personal teaching and learning experiences with their students, but also because it poses questions about students’ learning with a view to increasing and improving the knowledge base of teaching and learning. In that regard, it is commendable that the articles in this volume cut across a range of disciplines, because the scholarship of teaching and learning may look different in different disciplines as most academics think about pedagogical issues within the framework of their own fields.

It has to be emphasised, as was done previously, that all the contributions in this volume were initially published in various peer-reviewed and accredited academic journals. Accordingly, we should thank the editors of the journals for graciously granting permission for the research and knowledge in those papers to be disseminated further through this publication. Needless to say that the authors of those papers should also be congratulated and commended for producing the knowledge in the first place. My most sincere thanks and appreciation to Professor Kriben Pillay for leading the project of compiling and editing this publication.

Professor John C. Mubangizi
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In many respects I am covering similar terrain as that of the Preface in the first volume (2014). Since then, however, inquiries have deepened and insights have flowered amidst a tottering social landscape marked, both nationally and globally, by increasing complexity that is characterised by intransigence, knee-jerk reactions and spiralling violence.

In re-reading the first Preface, I find that it captures much of the vision of the needed teaching and learning project, but that the language is still tentative around certain concepts like ‘interdependence’ and the allusion to creating learning contexts for higher level cognitive functioning. The discourse, I now realise, is still the discourse of the old paradigm, but here I am going to take a leap and present an argument that what is needed is far greater than what was previously articulated; that is, a need for fostering a worldview of interconnectedness through higher order cognitive development. This is not dismissed, but there is far more to take in.

Looking at the concept of interconnectedness, we see that it is premised on the current materialist worldview of separate parts connected to one another, and that is how it appears to conventional perception. But here’s the rub. This is so only in terms of the ordinary appearances of things; at another level, there is absolute inseparability and not just connection. There is just an energetic field of non-separation.

Why is it important to contemplate this? Because, in turning attention away from thought, which is the edifice on which the Academy stands, and which is the only domain that it considers valid and reliable, we enter the visceral world of the moment, of life as-it-is, and we cannot find any boundaries like those suggested by thought.

So, could it be that the one tool that we not only highly prize, but that has become the bedrock of our individual identity, is also the source of our manifold problems? This is by no means a new insight. It was hinted at by Socrates (for which he paid the price of imprisonment for being a heretic) and was given precise analytical treatment by the Buddha more than two thousand years ago, and, more recently, by J Krishnamurti and others, to the point where the Academy cannot hide in its ivory tower any longer, even though it still spits out invective on all those who dare challenge its domain. But this other way of non-fragmented knowing was also a lived experience of many ancient cultures until the very practical utility of thought’s ability to measure, and thus manipulate and control, an apparently fearful world took hold and became, de facto, the only way to be in the world. Marxism may have given analytical precision to the division of classes and the economic exploitation of labour, but little has been said about the domination of fragmentary thought on other ways of knowing.

Let’s be clear. The discourses that run through our many so-called critical disciplines about human freedom are impotent because they are imprisoned by thought. They may have originated in insight, and may still carry the perfume of clear seeing, but it’s rarely noticed that they are conceptual systems removed from the vitality of life that every human yearns for. It’s true that we can love ideas and their elegance and we can have beautiful minds, but that is living in a virtual reality; a fact that is almost totally ignored. And this tension, of wanting to be free in the here and now, but unable to let go of the seductions of our thought worlds with their promises of a hopeful
future, is our misery which, ironically, finds expression in great works of art that we applaud, but, more insidiously, also exist in the eminently preventable social forms that our ill will, greed and delusion have produced; all created and sustained by the belief in thought as the ultimate reality.

We can see, if we really inquire, what an affront all this is to thought. And thought, throughout the ages – in the forms of religious inquisitions, political witch hunts and academic myopia, but more intimately, in the form of the unobserved delusional thought-created self – will ever resist. But something is changing: more and more ordinary people in both ordinary and extraordinary ways are waking up to what’s really real prior to the stories of thought, and perceiving a life that is without the heartache of separation. And in small pockets, here and there, the Academy is beginning to take notice.

The Massachusetts Institute of Technology (MIT) has facilitated the genesis of the social change process called Theory U (see my article in this volume), which takes the active learner on the simple, but profound, journey of creative discovery. Here, thought has the potential to be the servant rather than the master, even though this is not always guaranteed. But it’s a promising start; and is probably not the only model in the Academy that has this orientation. But these are in the fledging stages, and there is a need for an acceleration in our teaching and learning for changing the perspective from the insularity of thought to the freedom of awareness that includes thought but is not dominated by it. It is simple, but not easy.

In a world of frightfully serious people scurrying about to fix, with great earnestness and good intentions, the myriad complex problems of a messy world, we need to pause and re-examine our assumptions about where they actually originate. Until that pause occurs, not much is going to change.

But that pause is no ordinary pause… it’s a kind of death to what we think we know. And for many in the Academy, that is a terror that we find difficult to face. And I’m suggesting that that avoidance is what we see as the mess of our social reality. After all, we’re educating in the image of society, not for the actuality of what is.

It’s simple, but it’s not easy.

Professor Kriben Pillay  
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This collection is the companion volume to *Teaching and Learning in the College of Law and Management Studies: Shared Approaches, Lessons and Good Practices* (Pillay and Farquharson, 2014), where for the first time ever a compilation of scholarly articles on teaching and learning pertaining to management studies was produced to reflect the growing body of home-grown literature of discipline-specific inquiries. In the cyclical model of *praxis* informing theory and theory informing *praxis*, the scholarship of teaching and learning (SoTL) thus emerges from deep actual engagements and critical reflections thereof of what occurs in the classroom; where the practitioner not only wants to enhance the quality of learning in all its facets, but wants to document it as a mirror for others to reflect on their own practice. While the reports collected here may have arisen from specific disciplines within management studies, we can all learn from essential principles of doing and researching which cut across disciplinary specifics to engage us in deeper contemplations of the creative methodologies of teaching and learning.

The papers are arranged in three parts reflecting three main themes, namely, creativity and leadership, approaches to learning and teaching and, finally, assessment.

**Part 1: Creativity and leadership** contains two papers related to the theme of developing creative leadership in educational settings. The papers use markedly different lenses to explore the issue. Kriben Pillay’s paper, *Learning the Whole and Theory U: Reflections on creating a space for deep learning*, takes an approach underpinned by the social change models of Theory U. Pillay describes a transformative process shared with youth in a workshop in KwaZulu-Natal in which outcomes resonated with theory and other research findings. Although there was no attempt to set up a longitudinal study, feedback from participants and from the school involved indicates evidence of deep change effected by the lived experience of the programme.

The second paper in this part, *Testing and operationalising a model to measure creativity at tertiary educational level*, is by Ziska Fields and Sulaiman Atiku. The authors recognise the vital role of creativity in developing young people to cope with change and uncertainty and to allow for innovation and creative thinking in a higher education context. Using a psychometric approach, they seek in their paper to establish a means of measuring creativity in a higher education context. Working with a conceptual framework developed by Fields (2012) in her doctoral thesis, the authors test and operationalise a model that is able to measure creativity of students at a tertiary education level. This model, developed using data from a South African university, could be used to develop holistic teaching and learning interventions and to expand assessment practices.
Part 2: Approaches to learning and teaching comprises three papers which present varied explorations of opportunities and constraints in the pedagogies located within two different disciplinary contexts.

Information and communication technologies provide a range of opportunities or affordances to enable learning to take place and Craig Blewett and Wayne Hugo’s paper, *The learning affordances of a Facebook environment*, explores how such an online learning environment offers students opportunities for action. The paper explores the comments and reflections of a fourth-year information technology class and maps the interconnected affordances in the Facebook environment. By taking into account in this way the reflexive effect of the various action opportunities available, the authors are able to make a new contribution to the theory of learning affordances.

Bargate and Maistry’s paper, *Effects of a writing-to-learn tutorial programme in a higher education setting: An interactive qualitative study*, deals with the learning opportunities offered to accounting students in a tutorial programme designed around writing opportunities. The authors show that a group of managerial accounting and financial management students undertaking a range of short writing tasks throughout a semester were not only able to develop deep understanding of the concepts they were learning but that they also experienced enjoyment in learning and the development of confidence in their abilities. This is of importance in view of the weight given by professional accounting bodies to the development of professional competencies, including communication.

The third paper in this part, *Professional accounting associations’ influence on higher education accounting pedagogy* by Nicholas Wood and Suriamurthee Maistry, like the previous paper, relates to the requirements of the regulative professional accounting body in the context of professional training at one South African university. Drawing on the accounts given of their practice by two accounting lecturers, the authors explore the South African Institute of Chartered Accountants’ (SAICA’s) influence on classroom pedagogy. While SAICA, like other professional accounting bodies globally, promotes a learner-centred approach, such an approach does not appear to be easily embraced in the classroom. The paper explores the possible reasons for this, some of which are related to SAICA’s own curriculum and assessment requirements, and at the same time demonstrates an interesting relationship between the data collection process and the enabling of critical reflection on their classroom practice by the participants.
Part 3: Assessment contains the paper by Josue Mbonigaba and Saidou Baba Oumar, *Exploring the reliability of self-assessment and peer-assessment in oral presentations in economics*. The authors’ review of the relevant research literature indicates that, while self- and peer-assessments frequently form part of programmes that employ active learning strategies, issues of bias may compromise the validity of these assessments. The focus of the authors’ statistical study of the assessment of oral presentations in a diverse classroom is the possible bias caused by perceptions of relationships within the class group. The inconsistencies found in the analysis of the marks given by the students seem to demonstrate bias based on racially-based perceptions. The authors therefore recommend that such assessments be used as a teaching and learning tool rather than as a means of allocating marks.

We trust that this second collection of papers and the analyses of pedagogies and practices presented here will once again succeed in stimulating further inquiry, critique and innovation in higher education teaching and learning in our teaching and learning community.
REFERENCES


Part 1

Creativity and leadership
Learning, the Whole and Theory U: Reflections on creating a space for deep learning

Kriben Pillay

ABSTRACT

Drawing on his experience of facilitating a two-day youth leadership development programme in a socially depressed rural district in the Midlands of KwaZulu-Natal, South Africa, the author critically reflects on the processes engaged in and how they align, theoretically and experientially, with the philosophical perspective of nonduality and the social change model, Theory U. This paper, while exploratory in nature, will seek to locate the outcomes of the workshop processes within a paradigm that asserts the primacy of consciousness and Being, drawing on the nondual perspective and Theory U as critical frameworks to validate this position. It is also argued that this work is becoming crucial in social contexts where the current learning paradigms and outdated worldviews are not only failing, but threatening to bring about the rapid collapse of our civil and social institutions. The paper is offered as a discussion document rather than as a traditional scientific study.

INTRODUCTION

The dominant worldview is that of scientific materialism, and in a work that attempts to challenge this position, co-editor Trish Pfeiffer writes that “the fundamental threat to human survival derives from a materialistic view that is altogether inadequate” (Pfeiffer, 2007:14). It is my contention that scientific materialism cannot be displaced simply by new conceptual models of reality, but by the lived experience of Being, also referred to as Essence (Almaas, 1986) or Presence (Senge et al., 2004). However, conceptual models that derive from the experience of Being carry a quality of authenticity where the word “points beyond itself” (Tolle, 1997).

It is within this view that I want to reflect on the processes engaged in when creating learning spaces, showing that Otto Scharmer’s Theory U (Scharmer, 2007a; Scharmer & Kaufer, 2013) provides an elegant model, which offers conceptual clarity for reflection on what has been largely intuitive teaching and learning processes’ (Pillay, 2007), as well as providing the tools for effecting critical action. But, more importantly, the model allows us to revisit the assumptions of leadership from the radical perspective of the primacy of consciousness.

In terms of theorising about the research methodology, the approach was that of a participant observer within an unstructured methodological context that was framed by self-reflective philosophical inquiry. This is about the closest one can get to theorising the research methodology because the process did not begin with a formal research agenda. A data evaluation section concludes this paper as updated information recently obtained helps to triangulate the data.

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1 This has been documented in a section of my book Nondualism and Educational Drama and Theatre.
WHERE ARE THE LEADERS?

In the Ufafa rural district of Ixopo, an area immortalised by South African writer Alan Paton’s poignant book *Cry The Beloved Country*, an NGO Woza Moya\(^2\) struggles to meet the ever-growing demand for orphan support, hospice care and training in an area ravaged not only by Aids-related deaths, but by the poverty that is a legacy of the country’s apartheid past. It may also be useful to consider the view that the Aids phenomenon in Africa is located within the social domains of poverty. In addition to all of this, local government bureaucracy is riddled with poor service delivery and corruption, so that basic amenities like water and electricity are seen as luxuries. This failure of socio-political leadership is counter-pointed by traditional, tribal leadership, which is now largely ceremonial in nature and generally characterised by male chauvinism. It is within this context that one must appraise what the average youth in the area is exposed to in terms of leadership models, where, given that many homes are without one or both of the parents, owing to death, even examples of family leadership are absent.

It is not surprising, therefore, that Woza Moya saw it fitting to invite the Leadership Centre from the University of KwaZulu-Natal to initiate a pilot training programme in Youth Leadership for thirteen participants – ten high school scholars, two unemployed young adults and the Woza Moya youth co-ordinator. This training took place over two days in July 2007. Although Zulu is the mother tongue of all the participants, they elected to use English as the medium of communication, a paradoxical fact which further highlights the depth of learning that occurred, because fluency of communication would have been compromised by the use of English.

LEARNING FROM WITHIN

The discussion of what took place in the training will be framed by Scharmer’s simplified schema\(^3\) for Theory U (Scharmer, 2007b), although it must be emphasized that it is only in retrospect that I am matching the processes of the training with the phases of the U process. It is my view that this not only validates Scharmer’s work, but also alerts us to its potential in refining our own social change processes.

We have in Theory U both a theoretical and an experiential perspective, which links up with my own work in nondualism and educational drama and theatre. This work, in turn, has been reinforced by Tracy Huston's Inside-Out (Huston, 2007), where Huston's background in drama and theatre (like mine) meets the dynamic of Theory U. This alone speaks about new configurations of transformative theory and practice in our social and cultural landscape, emerging in a dance of seemingly disparate elements – but this is itself another exciting exploration.

In this paper I want to share an account of the leadership training programme, not only as it specifically relates to Theory U, but also for allowing the interrogation of the concept of “the Whole” within the ontological perspective of nonduality. For easy reference, I am including here Scharmer’s simplified schema for Theory U (Scharmer, 2007b):

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\(^2\) Given the perspective of this article, “Woza Moya” is an interesting Zulu expression which means “Come Spirit”. The further link with Consciousness is the NGO's origins in the nearby Buddhist Retreat Centre; Buddhism, perhaps, provided the first empirical approach to establishing the primacy of consciousness.

\(^3\) I say simplified, because there are more detailed elaborations of the model in Scharmer’s book, *Theory U*. 
My work in change processes has specifically focused on the cognitive re-structuring process known as the work of Byron Katie (Pillay, 2001), where an elegant Socratic-like questioning, consisting of four questions and a turn-around (Katie & Mitchell, 2003), leads very often to deep transformative learnings and an undoing of mental models that cause psychological pain and block creative action.

At the start of the Woza Moya programme, after the brief introduction by the Centre Director, we first looked at the expectations of the participants in respect of the training programme. Some of these were (in more or less their own words):

- **To understand leadership; how to be a good leader.**
- **Dealing with poverty and crime.**
- **How to develop respect.**
- **How to deal with fear.**
- **To learn about drama and how it can help the community.**

It is interesting to note, that although almost all the participants have been affected by the death of a relative or friend through an Aids-related illness, no one listed death or grief as issues to deal with. Sue Heddon, Woza Moya’s director, observes that the entire community is largely in denial about the spate of Aids-related deaths, and that death, as in many communities, is a taboo subject.

After listing the expectations, we went straight into experiential learning activities: we engaged in ice-breaking exercises that were not only fun for the group, but surprised them because their only mode of learning is transmission teaching, where an authority figure imparts volumes of facts to be learnt for eventual regurgitation in an examination. Notwithstanding South Africa’s official educational focus on outcomes-based education and a learner-centred learning environment, learners from economically disadvantaged backgrounds, especially rural areas like Ufafa, are still subject to an 18th century, industrial age model of learning, which is largely the outcome of

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**Figure 1: The U process**

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4 The participants arrived with note books and pens, ready to learn about leadership by writing down the information they thought they were going to receive from the “teacher.”
of impoverished educational resources and historically poorly trained teachers. This learning model, in spite of the legislation in South Africa, is framed by corporal punishment in many disadvantaged schools.

The first few games are designed to teach us about emotions like fear and anxiety. We reflected on the fact that a game called “Wink Murder” – where participants are killed by an unknown killer who winks at them – has the potential to engender a great deal of anxiety, even though we know it is just a game. The question was raised: Why is this so? But this was not answered, simply left open to possible insights that could emerge as we engaged in further learning activities.

In my view, the exercise that had the greatest transformative impact, and which set the direction of learning, is a criticism exercise developed by Byron Katie called “Speaking Behind My Back”. In a variation of this exercise, participants first wrote down eight negative criticisms about people they know, but whose identity they were not asked to reveal, and eight positive criticisms about themselves. I noticed that there was some mild giggling in the group when doing the latter exercise, as if venturing into the terrain of positive self-introspection, coming from a social context primarily charged by negativity, was something that they found embarrassing. Next, the participants each took a plastic document sleeve, with string threaded through the punch holes, and hung it from their necks, with the sleeves dangling down their backs. They were then instructed to walk around and place their negative and positive criticisms into the sleeves of fellow participants. The participants had a lot of fun distributing their labels, but there was also a growing anxiety about what they had received.

When all the labels had been handed out, the group was instructed to work in pairs, exchanging the bag of criticisms with their partner. They were then shown how to receive the criticism, whether negative or positive. The steps are simple:

1. Partner A takes one of the criticisms and reads what is written, reconfiguring the criticism into a simple sentence. e.g.: “Someone says you are malicious.”
2. Partner B, the recipient, goes within to find whether there is any truth in the criticism, even if the act of being malicious occurred ten years before and lasted only five minutes. When the truth of the statement is found, Partner B simply says: “Thank you, I can find it.” If one cannot find the truth of a criticism within oneself, the response is: “Thank you, I cannot find it, but I am open to the possibility of it occurring in the future.”
3. Partners then swap roles after each criticism is processed.

The outcome of the exercise allowed each participant to see that taking ownership of a criticism, especially a negative one, reduces its apparent power – and the fear it creates – to a fiction. They also learnt that to accept fully a compliment can be an empowering process, especially in a social environment where negative self-images abound.

After the exercise, the participants, especially the school learners, playfully continued criticising their fellows, knowing that they now had the key to unlock their conditioned resistances to such labelling. They also understood the power of mental models that operated in the games like “Wink Murder”: how an uninvestigated story can produce an emotion like anxiety in a mere game. More important is the insight that what we think we are protecting in ourselves is an illusion, something that has only an apparent existence.

In effect, we had navigated the domain of Scharmer’s downloading: in this case the mental models of self and the other, which are, inevitably, the unquestioned constructions of our socio-psychological conditioning, and which, historically, have been the bases of many of our human conflicts. We have killed for being labelled by the
other; in areas like Ufafa, killings based on political allegiances were not uncommon. In particular, the criticism exercise deals directly with two of Scharmer’s “three enemies”; namely, the Voice of Judgement and Fear. I also do not think that Scharmer suggests that the phases that lead to presencing and realisation-action are linear and this is reflected upon later.

COLLAPSING THE REST OF THE U

For the next learning phase, I gave the participants the brief to create short dramatic scenes which had to reflect some understanding of leadership. No prior theory in leadership was given. They had to do this in groups of four (one was a group of five).

I observed that the participants quickly self-organised; there were no discernable leaders within the groups, but the contributions of each individual flowed in a movement of creativity, where Richard Courtney’s types of learning\(^5\) are observed. The dramatic scenes that emerged spoke of: servant leadership; the rejection of command and control; and the need to root out corrupt leaders (while cognisant of the fact that these leaders have the resources to eliminate their opposition through assassinations).

The participants took great delight in each group’s performance, and displayed innocence about the deep learnings that they had given rise to. But their learnings are significant against the backdrop of their actual experiences of leadership, where their community elders celebrate the corrupt politicians who have beaten the system with little or no legal consequences. I reflected that there is something within the Field of Whole that had led to this emergence, but more about this later.

At this point it is useful to examine this learning activity against Scharmer’s schema, which I have collapsed into one section because of the non-linear quality of the movement of learning. In order to create the dramatic scenes, the participants would have needed to bring in their own observations of the world. Scharmer suggests that this seeing is from the periphery of the “me”, which, in my view, is the initial activity of dislodging self-preoccupation and ushering in self-observation, and which, from the nondual perspective, is the witnessing mode that shifts consciousness from “thought/me” to “awareness/us” (Harrison, 2002:90).

It is difficult to pinpoint accurately the shift to sensing, which Scharmer describes as being sensitive to the field of existence and “accessing the deeper layers of experience” (Scharmer, 2007b). However, I am advocating that this must have occurred given the kinds of learnings displayed by the participants, notwithstanding their social conditioning. Because this can never be a linear process, and given my long and varied experiences with the work of Byron Katie, it can be reasonably hypothesised that the domain of presence/presencing actually emerged when addressing our habitual downloading through the criticism exercise, where a shift was effected from ‘thought/me’ to ‘awareness/us’. There is, I feel, also another ingredient, which I will interrogate later.

In a sense, then, I am arguing that a form of presencing framed seeing and sensing, leading to realisation-action; that is, the dramatic scenes which were created in under ninety minutes – dramatic scenes that reflected integral understandings of leadership, and which were definitely not mirrored by the participants’ common life experiences. These learnings took place on the first day, while the second day was given to embedding these insights. Length constraints do not allow a description of the second day’s activities, but in essence they would have contained the processes outlined above.

\(^5\) Intrinsic Learning: improvement of perception, awareness, concentration, creativity, motivation, problem identification and problem solving, etc.; Extrinsic Learning: improvement of understanding of subjects, such as history, literature and so on; Aesthetic Learning: improvement of the quality of feeling, (that is, response to outside stimulus) and thus the tacit level of insight and intuition; Artistic Learning: improvement of older students’ skills in creating theatre (in Richard, 1995, p. 265).
It is noteworthy to mention that when the group was asked to rehearse an appropriate song to close the workshop on the second day, they used their lunchtime to compose and rehearse an original song:

\[
\begin{align*}
I & \text{ need respect,} \\
& \text{Doing crime} \\
& \text{Doesn’t change poverty,} \\
& \text{I want to change my life} \\
& \text{From crime,} \\
& \text{For evermore.}
\end{align*}
\]

**NONDUALITY AND THE WHOLE**

By its very definition, nonduality, the philosophical perspective of non-separation, is about the Whole, which cannot be accessed by thought/me, but is the quality of awareness/us. But this is not a state to be attained, although within the domain of the conceptual it might appear that way. It is what exists right now as the fact of Being, of Presence, prior to thought. All nondual teachings say that this obvious fact is obscured by thought, especially that specific movement of thought’s incessant regurgitation of the past (downloading), so that the individual’s transformative work is about “cleansing the doors of perception.”\(^6\)

Peter Francis Dziuban makes an elegant case for the truth of the primacy of consciousness (Dziuban, 2006:104), which is worth quoting in its entirety:

In other words, you want to be certain that what is said here is really *the way it is*.

There’s a simple answer to that. It’s found in the word *is*.

Think it through for yourself. Whatever is Truth, Reality, or “the way Life is” must be that which actually *is*. Whatever is going to be true, or be Truth, has to truly *be*. It has to exist; it has to honestly *be present*, and never can change.

It doesn’t matter what word is used – Consciousness, Self, God, Reality – only what *really is being* can be what is *real*. There’s nothing deep or difficult about that. And if something isn’t *being*, that means it doesn’t even exist; it isn’t present anywhere. So how could it function, or be any kind of Truth or Reality? It couldn’t.

Notwithstanding the above, however, the identification with thought (that is, I think that I am my thoughts) is deep, and undoing the downloading of thought is easier said than done, and I alert the reader to Almaas’s (1986) work on the subject.

**PHASE HOLOGRAMS**

Given the above background to nonduality and the whole, there are a few loose ends that need tidying up in respect of the Woza Moya training as it relates to Theory U. What is important to investigate is the observation

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\(^6\) A phrase from William Blake’s “The Marriage of Heaven and Hell” and made popular in the title of Aldous Huxley’s book.
that there appears to have been no discernable linear movement from one phase on the U to the next after suspending the downloading of limiting though patterns. There is a sense that these phases were co-mingled, and I am suggesting here that, because consciousness, the Whole, is primary, this non-linearity can be understood by the holographic model (Bohm, 1980), not so much as a technical description, but as a plausible metaphor where the part contains the whole. This needs further clarification because of the conceptual confusion that could arise.

Firstly, there is the Whole, which is Being, Presence, the ‘what is,’ and this, it is argued, is primary. But at the level of human doing, which is largely subordinated to thought/me (downloading), we can have movements down and up the U (provided downloading has been attended to) where any part can exhibit qualities of the whole. In the Woza Moya example, the creation of the dramatic scenes and the learnings contained therein exhibited qualities of the complete U process, but yet, at a macro level of change, the group may still have been at the seeing phase.

**The Observer is the Observed**

In this analytical description of the training, it would be fallacious to present the illusion of the detached facilitator who is removed from the learning process. So, in effect, I have to reflect on myself within the dynamic of the created context as participant observer. At the level of thought/me there were various expectations for the training, and possibly expectations of how I wanted to be received by the group. I would place this in the downloading phase, and my own transformative work is just to acknowledge that it is there, but rendering it impotent by not resisting its existence. This act of honest acknowledgement seems to shift one from thought/me to awareness/us, to a dynamic inner stillness that seems to hold the learning space, where something much larger than ‘me’ is directing the show. (This can be accounted for conceptually and logically, but would require an entire paper on its own.) In this mode there is a quality of deep attention that only fades many hours after a workshop is over, when normal consciousness returns. From the perspective of ‘me,’ it is an altered state of being; from the perspective of being, it is simply ‘what is.’ For the research currently being done on the U process, the role of the facilitator, then, has crucial implications.

**EXPERIENCING AN ALTERNATIVE VIEW OF LEADERSHIP**

In this experiencing of the primacy of consciousness, of the Whole, where is the other? Where are the leaders apart from me? If there is, factually, only the Whole, then leadership is contained in my very Being, in Presence. Certainly, in our social constructions, there are leaders of all kinds: such as, transactional, resonant, servant, participatory, transformational. But these would be expressions of personality and context, while the wisdom of leadership is that which is embedded in the Whole, in Source. Accessing this Source, as advocated by Theory U, and as experienced in the Woza Moya training, leads to actions in our social fields that shift the focus from thought/me (the part) to awareness/us (the whole) because they are, in a profound sense, a mirror of the Whole.

**THE DATA EVALUATED**

By the very nature of my role of facilitator of the workshop, I need to declare that researching the outcomes of the experiential processes engaged in were of secondary concern. That is, the main objective of the workshop was to impart skills through experiential learning that would bring about insights into leadership and different ways of seeing the world. It was only at a later stage that patterns were examined to account for what appears to have been deep learning in the group, and where the unfolding journey of learning could be mapped to the Theory U
model.

I see this secondary role of researcher as a positive element, because the initial intention was not to set up a learning space that would engender particular results (in this case, showing that the workshop processes can be mapped to the Theory U model), which could be construed as a form of research contamination in that the researcher in engaging in a form of confirmation bias. Furthermore, it would be naïve to ascribe any definitive causal effects of the workshop experience for the participants, and the question of whether the emancipatory outcomes had been achieved is perhaps best left to the individual participants.

However, it has to be said that the opportunities to stand back and observe as a participant observer were spread throughout the two-day workshop, and this is substantiated by the video recording of the experiential exercises engaged with by the group. A short summary of the video recording, which highlights the specific outcomes already mentioned in this paper, is available on YouTube (http://www.youtube.com/watch?v=4dnruXlnJqE). This video will also give the viewer a sense of the deep rural location of the area.

While this was not planned as a longitudinal study, it just so happens that other information emerged that allows for the triangulation of the data. Seven months after the workshop, at a youth rally hosted by Woza Moya in February 2008, I was approached by the principal of the local high school, a school that had one of the worst matric\textsuperscript{7} pass rates in the country. He remarked that all the learners who attended the workshop not only returned to the school and engaged in various forms of leadership activities – such as, cultural projects, Aids education, peer education – but that they had passed their examinations, which he felt was remarkable, as his school had an average pass rate of between 40\% and 48\% in all the grades. Finally, after seven years, in June 2014, I was able to meet with two of the learners who are now young adults and who work as Woza Moya youth co-ordinators. Firstly, they attribute their current position directly to the leadership training and are passionate about bringing about a change among the impoverished youth in the area. Furthermore, they were able to provide information about most of the workshop participants.

Of the two unemployed young adults who participated because they had nothing else to do, one (the male) is still an itinerant worker, while the female is in permanent employment. Of the ten learners, two are unaccounted for, but it is likely that they are in some form of employment as they moved to the big city of Durban. One of the eight females is helping her mother at home looking after her siblings while the mother works. The father died from an Aids-related illness. The rest of the learners are in stable employment, mainly cashiers at supermarkets or at the national road toll-gate. These are everyday blue-collar positions, but a far cry from the menial work of labourers or sellers of roadside produce. It is even more significant against the national statistics for employment, which show that the labour market status for those males and females aged 19-25 years who have a matric and live in rural areas are 13.8\% and 23.7\% for females and males respectively (Statistics South Africa, 2012). The current employment status of the group is in the region of 75\% (it could be higher if we include the two learners that are unaccounted for), and given that most of the participants were female (8 out of the 12), of whom six are in employment and one is unaccounted for, we have an employment statistic that far exceeds the average.

Of course, there could be a host of other variables that could account for the interpretation given here, but it has to be acknowledged that we have the following verifiable data:

- **Observed outcomes that are consistent with both the theory and research findings pertaining to the U model** (Scharmer and Kaufer, 2013);
- **Information about behaviour and scholastic success from the school principal**;
- **Two of the participants (one male and one female) gave feedback seven years after the**

\textsuperscript{7} Matric refers to the national exit secondary school examinations.
workshop on the learning that was engendered, which they see as directly relating to their current positions as youth co-ordinators at Woza Moya;

• Feedback about the employment status of the group.

CONCLUSION

My experiences in workshops like the Woza Moya programme as well as the evidence emerging in work like Theory U is that we can realistically approach change processes if we fully acknowledge the primacy of consciousness and wholeness, even at the conceptual level. (In fact, there would be no need to acknowledge this fact conceptually if we are living it experientially.) Theory U, as a conceptual model, helps to anchor understanding in an undertaking that historically has been fraught with difficulties, because at some level there is always the operation of “thought/me”, leading to practices that tend to be very fragmentary, where there is effectively no deep access to what Scharmer has termed “open mind, open heart and open will” (Scharmer, 2007b). But as many explorers of consciousness are now beginning to realise, shifting the focus away from thought to ‘what is’, Presence, allows thought to self-correct and subordinate itself to awareness/us. Thought, then, is a servant of the Whole, and learning is a movement of the Whole—and leadership would be an expression of this learning.
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Testing and operationalising a model to measure creativity at tertiary educational level

Ziska Fields and Sulaiman Atiku

ABSTRACT

Measuring creativity scientifically seems to be a challenging undertaking at the tertiary educational level. The purpose of the research reported in this article was to test and operationalise a model to measure creativity at the tertiary educational level using SPSS and AMOS. These software packages were used to run causal path analysis and cause-effect relationships using the Pearson’s product correlation coefficient (PPMC), a multiple regression analysis and structural equation modelling (SEM) which included a confirmatory factor analysis (CFA). The Fields Educational Creativity Model (FECM) was the result of the test and operationalisation and showed a mediating influence of cognitive psychology on the interplay between motivation and creativity. Creativity can be measured at tertiary educational level and this can positively influence the globalised knowledge economy because graduates will be critical, creative and imaginative thinkers and leaders who can work through complex problems and make creative and purposeful changes and adaptations.

KEYWORDS: Structural equation modelling; Fields Educational Creativity Model (FECM); Torrance Tests of Creative Thinking (TTCT); cognitive psychology; motivation; knowledge economy.

INTRODUCTION

Measuring creativity scientifically seems to be a challenging undertaking. Jones said: “What gets measured gets done. What gets measured and fed back gets done well. What gets rewarded gets repeated” (Williamson, 2009:2). Jones’s sentiment also applies to creativity. It is important to measure creativity to ensure it is used properly. It is critical to feed back the shortcomings of creativity to enable the development and enhancement of creativity, and finally to reward progress to ensure that creativity is sustained.

The primary business of higher education can be summarised as the creation of prepared minds (Fortino, n.d.) and to do this, higher education needs to prepare students for a lifetime of uncertainty and constant change (Jackson, 2008). Graduates need to be critical, creative and practical thinkers. This poses a challenge in higher education because the focus of teaching and learning is on critical and intellectual thinking, rather than creative thinking and problem-solving. This was proven with the Torrance Tests of Creative Thinking (TTCT) which show that since 1990, creativity has been decreasing significantly, although intelligence is increasing. Despite this challenge, higher education institutions, as well as governments and organisations, are realising that an increasing supply of highly educated and creative workers, as well as creative leadership, is critical to remain competitive in the global knowledge economy (TLRP, 2008; Bronson & Merryman, 2010; Brevis & Vrba, 2014).
An important link also exists between a government’s tertiary education strategy and its business growth agenda. However, not all governments, higher education institutions and organisations have been able to understand what creativity really means or what is needed for successful creativity (Christensen, Raynor & Anthony, 2003) and feel that establishing an environment to nurture and promote creativity is a challenging undertaking (Eppler, Hoffman & Resciani, 2011). In addition to the lack of understanding, Robinson, cited in Vilalba (2008), warns that education seems to be killing creativity. Tertiary education specifically barely seems to acknowledge the existence of creativity in most of the academic programs (Jackson, 2008).

Hadzigeorgiou, Fokialis and Kabouropoulou (2012) believe that a deeper understanding and appreciation of creativity and scientific creativity are required. Students should be taught to think creatively and transform creative thoughts into creative actions (Tsai, 2012). There should also be an appreciation of content knowledge in creative thinking (Rowlands, 2011), because fact-finding and deep research are vital stages in the creative process (Bronson & Merryman, 2010). So, tertiary education should be aimed at developing both convergent (left-brain thinking) and divergent thinking (right-brain thinking) to prepare students for the unknown future. It is therefore important to consider Jones’s view of measurement in terms of creativity, because creativity cannot be developed if it is not measured to determine the current level of creativity and then to inform teaching and learning interventions to develop, enhance and reward creativity.

The purpose of the research on which this article is based was to test and operationalise a model to measure creativity at the tertiary educational level using the Statistical Package for the Social Science (SPSS) and Analysis of Moment Structure (AMOS). The article starts with various views on creativity as a phenomenon and shows how these diverse views create various approaches and tests in an effort to explain creativity. Attempts to explain creativity at an educational level are then highlighted. They show that there is a need for a model to measure creativity at a tertiary educational level specifically. A conceptual framework developed by Fields (2012) is subsequently briefly discussed. This discussion is followed by sections on the method, results and discussions, focusing on the testing and operationalising of the conceptual framework in an effort to propose an improved model to measure creativity at a tertiary educational level.

UNDERSTANDING AND MEASURING CREATIVITY

The phenomenon of creativity appears to be complex and elusive because different perspectives and approaches are used to explain what creativity is (Kerr & Gagliardi, 2003; Vilalba, 2008). There is some agreement that creativity has to do with the production of something new and has some sort of value and that everybody can be creative to some extent (Vilalba, 2008). This view is supported by Bergh and Theron (2009) and Bronson and Merryman (2010). Creativity ultimately depends on the capacity of the individual to generate original solutions to complex problems that call for creative thought (Christiaans, 2002; Barrett et al., 2013). Torrance observed that creativity is “a successful step into the unknown, getting away from the main track, breaking out of the mold, being open to experience and permitting one thing to lead to another, recombining ideas or seeing new relationships among ideas” (Afolabi, Dionne & Lewis, 2009:2). From these explanations, it seems that creativity enables people to think differently, thus becoming capable of creating novel, better and sustainable solutions to deal with complex problems. This type of thinking is often expected from graduates at tertiary institutions.

The contemporary approach to creativity indicates that strong skills in practical, scientific, concrete and analytical thinking should be supplemented with new thinking to support the generation of novel insights and ideas (Adams, 2005). Heinze (2007), cited in Buriel (2009), refers to this approach as scientific creativity and identifies five types of scientific creativity: (1) the formulation of a new idea that explains and opens a new cognitive frame; (2) the discovery of a new empirical phenomenon that encourages the formulation of new theories; (3) the
development of a new methodology to empirically test theoretical problems; (4) the development of a novel instrument that encourages the development of new perspectives and research; (5) the synthesis of existing knowledge into general theoretical laws which enables the analyses of diverse phenomena within a common cognitive frame. These types are closely linked to what tertiary institutions do to create knowledge through various research activities. Scientific creativity skills are also required from PhD students and academics.

In addition, De Brabandere and Ivy (2013) indicate that creativity should not refer to “thinking outside the box” or “without a box”, but rather that the new paradigm for creativity is to “think in new boxes”. In other words, the brain needs to create new ways of thinking in a structured and multi-dimensional way. This requires specific theoretical knowledge, practical application of theoretical knowledge and the exposure to various ways of thinking, using both divergent and convergent thinking. Tertiary education aims to develop this in students.

The different views regarding the nature of creativity led to the development of five approaches. Each approach offers unique insights, understanding and application of creativity at a personal, organisational and educational level (Petrowski, 2000). The five approaches are the psychometric approach, the contextual approach, the experimental approach, the biographical approach and the biological approach.

The psychometric approach assumes that creativity is a measurable mental trait and focuses on developing tests which measure divergent thinking (Plucker & Renzulli, 1999, cited in Petrowski, 2000). Instruments measure aspects of divergent thinking such as ideational fluency and word association, as well as personality traits of creative individuals (Feist, 1999, cited in Petrowski, 2000). The contextual approach explains creativity as a systematic process involving individuals, gatekeepers (representing the field or society) and the culture (or domain), rather than an individual trait (Csikszentmihalyi, 1999, cited in Petrowski, 2000). Csikszentmihalyi (1999), cited in James, Gerard & Vagt-Traone (2009), explains that the interaction between domain and individual transmits information, the interaction between field and domain selects novelty, and the interaction between the individual and the field stimulates novelty. The experimental approach shows how creative thinking is dependent on generative processes, which include memory retrieval, association and mental synthesis (Petrowski, 2000). The biographical approach is aimed at identifying developmental experiences and environmental factors that contribute to extraordinary creative achievement such as birth order, childhood trauma, family background and education (Simonton, 1999, cited in Petrowski, 2000). The biological approach is based on the view that psychological traits have a biological basis and explains behaviors in terms of the physiology and structure of the brain (cortical brain activity) (Petrowski, 2000). These five approaches influenced the development of a variety of measurement instruments in an effort to determine whether an individual is creative or not, and to find the so-called creativity quotient (CQ).

Torrance and Goff (1989), cited in Cropley (2008), identified 255 different creativity tests. These tests include personality tests that contain various sorts of creativeness scales, tests that measure the different styles with which people express creativity, tests that measure divergent thinking, tests that measure how suitable various environments are for creative expression and tests that measure creative achievement (Epstein, Schmidt & Warfel, 2008:8). All these tests have merit; however, many reviewers have questioned their usefulness, usually on the grounds of technical shortcomings (Cropley, 2008) and the multidimensional nature of creativity (Fryer, 2012). However, despite these objections, it is important to determine a person’s level of creativity before plans can be put in place to develop or enhance creative ability and potential.

The problem at tertiary educational institutions appears to be that different disciplinary interpretations of creativity exist, which makes the identification and measurement of creativity difficult. In the arts there is a greater focus on creativity than in the sciences and it is a challenge to find agreement on how to measure creativity. In addition, there does not seem to be a specific tool to measure the creativity of students at higher education specifically.
Some researchers have attempted to explain creativity at educational and tertiary educational level. The Enrichment Triad Model (ETM) was developed by Renzulli in the 1970s. It is a program for infusing high-end learning strategies into existing educational programs to promote excellence, enhance self-confidence, and nurture creativity in students (Garcia-Cepero, 2008:295). The program was developed as an alternative to the available models for gifted education and has been transferred to the regular classroom as a model to develop students’ creative productivity. A conceptual map of creativity in teaching and learning was also created from Phenomenography in 2004 (Tan & Prosser, 2004). The conceptual map focuses on the ways in which individuals experience, perceive, apprehend, understand and conceptualise various phenomena. The central part of the research consisted of in-depth, semi-structured, face-to-face interviews undertaken with 12 academics from a range of disciplines. A phenomenographic analysis was also done on business students by Petocz, Reid and Taylor (2009). They found that although the notion of creativity makes an appearance in the lists of graduate attributes from many universities, it seems that it is rarely discussed as a concept with students, and rarely appears as part of the formal material of a course of tertiary study, at least in business. Rather, it is held up as a characteristic to aim for, and students are told that the highest marks will be reserved for work that displays creativity. The study highlights the importance for students to be aware of the contextual aspects of creativity and the different ways in which creativity is recognised in the particular domain in which they are working (Petocz et al., 2009). Research seems to still be emergent and requires further analysis, but it offers helpful clues regarding creativity in the context of learning and teaching at tertiary educational level. Despite some research attempts, a model to test creativity at tertiary educational level specifically has not been fully developed to meet the complex and diverse needs of tertiary institutions.

THE MODEL

Fields (2012) made an attempt to develop a conceptual framework to measure creativity at tertiary educational level. An exploratory factor analysis using Varimax rotation was used and the variance explained indicated that the measuring tool to measure creativity was valid. Cronbach’s coefficient alpha ($\alpha$) was used to test the reliability of the factors identified as part of the measuring tool and the overall reliability was good. The Kaiser, Meyer and Ohlin (KMO) also indicated that the sample that was used to generate data was adequate and the set of variables considered by the study are factorable. So it appears that the proposed conceptual framework can be a good tool to use. The value for KMO should be greater than 0.5 for the sample to be regarded as adequate for a pair of variables (Field, 2002). Values of 0.70 and higher are regarded to be acceptable, according to Field (2007).

Fields and Bisschoff (2013) explain that the conceptual framework to measure creativity at the tertiary educational level consists of 12 factors. Figure 1 below illustrates the 12 factors and the variance per factor pertaining to creativity at tertiary educational level. According to this conceptual framework, 12 factors are needed to measure creativity at tertiary educational level. Factor 1, challenging the status quo, is the most important factor with a favorable variance of 7.72%. This factor points to an individual’s willingness and motivation to challenge assumptions, to take initiative, to look at the big picture, being creative in an environment that tears down personal barriers to creative thinking and being motivated to be creative in his or her own interest areas. Factor 2, detachment, is the second most important factor and points to the ability to separate processes, resources, objects and dimensions in an effort to be creative. Factor 3, synthesis, is the third most important factor and points to the ability to combine processes and to look for uniqueness and similarity in processes to help find solutions or generate ideas, as well as the ability to combine concepts to find creative solutions. Factor 4, cognition, points to the ability to discover links and relationships by looking at a variety of information sources, as well as the ability to cope with complexities when a problem needs to be solved. Factor 5, associate and communicate, points to the ability to generate new ideas by looking actively for associations among concepts, the use of brainstorming to make associations and to propose new ideas regularly and the ability to convince
others of the value of the creative ideas that have been generated. Factor 6, awareness, points to the ability to
recognise gaps and contradictions in existing knowledge, to see different aspects of a problem and the ability
not to get stuck on a set of rules to solve a problem. Factor 7, similarity, points to the ability to look for similarities
in problems, solutions, patterns and concepts. Factor 8, external motivation, points to the impact of external
pressures and people to solve problems and to intentionally engage in unpopular ideas. Factor 9, sensitivity,
points to the sensitivity of a person to various aspects of a problem. Factor 10, experiment and combine, points
to the ability to find the best creative solution by experimenting and combining objects. Factor 11, dimensional
thinking, points to the ability to find the best creative solution by experimenting and combining objects. Factor 12, problem-solving, points to random attempts to solve a difficult problem. Cronbach's coefficient alpha
(α) could not be calculated for this factor and this factor might therefore not be present in repeated studies. Only
one item loaded onto Factor 12, albeit with a high loading of 0.88. This factor explains a variance of 2.93%.

The above-mentioned factors were grouped into three groups. Factors 1-7 and 10-12 fall into the cognitive
psychology group. Tertiary education requires more cognitive processes; therefore it is not surprising that more
cognitive psychological factors were identified in the model. Factor 8 falls into the external influences group.
Motivation can be seen as a cognitive psychology influence as well, but the model focuses on external motivation
specifically and therefore the impact of the external environment on creativity needs to be considered and
measured. Factor 9 falls into the personality characteristics group. This factor too has a link to cognitive psychology
even though it can be linked to personality traits.

The purpose of the research reported in this article was to test and operationalise a model to measure
creativity at the tertiary educational level using structural equation modeling (SEM). The method used to do this
is described below.
METHOD

The research was done in two stages. In stage one, the main objective was to develop a conceptual framework to measure creativity at tertiary educational level using a survey research design in testing and operationalising a model and an exploratory factor analysis (EFA). An EFA was used because the number of factors that were necessary to explain the interrelationships among the set of variables was not known and the underlying dimensions of the construct being researched needed to be determined. A university in South Africa was used as the target population and a total of 500 questionnaires were distributed, using the convenience sampling technique. Of these, 322 were completed (a response rate of 64.4%). The data were analysed with the SPSS version 18 (Fields, 2007). The collected data were analysed, purified and tested.

Stage one consisted of six steps. In step 1 the creativity influences were extracted and selected from literature. In step 2 the measuring criteria for each creativity influence was identified. A measuring instrument (a closed-ended questionnaire) was constructed from the literature to test creativity using the influences identified in step 3. In step 4 the questionnaire was distributed at one university and 322 were completed (a 64.4% response rate). The data collected were subjected to a principal component factor analysis using a Varimax normalised rotation in step 5. The measuring instruments were revised to enhance the reliability (Cronbach’s coefficient alpha (α)) of the scales in the questionnaire. For the study a reliability coefficient of 0.70 was set to conform to the general norm as explained by Schmitt (1996). It is important to note that the lower limit set by Cortina of above 0.57 was also set as a secondary acceptable reliability coefficient. The reliability of the 12 factors is shown in Table 1 (below).

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>CRONBACH’S COEFFICIENT ALPHA (α)</th>
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<tbody>
<tr>
<td>1</td>
<td>0.753</td>
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<tr>
<td>2</td>
<td>0.741</td>
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<tr>
<td>3</td>
<td>0.737</td>
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<tr>
<td>4</td>
<td>0.768</td>
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<tr>
<td>5</td>
<td>0.755</td>
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<tr>
<td>6</td>
<td>0.735</td>
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<tr>
<td>7</td>
<td>0.737</td>
</tr>
<tr>
<td>8</td>
<td>0.625</td>
</tr>
<tr>
<td>9</td>
<td>0.751</td>
</tr>
<tr>
<td>10</td>
<td>0.559</td>
</tr>
<tr>
<td>11</td>
<td>0.597</td>
</tr>
<tr>
<td>12</td>
<td>***</td>
</tr>
</tbody>
</table>

Table 1: Reliability of the factors

Factors 1-7 and 9 all have satisfactory reliability coefficients in excess of the required 0.70. Factors 8 and 11 are below the higher reliability coefficient of 0.70, but above the lower limit of 0.57 set by Cortina, and are thus accepted to be reliable factors. Factor 10 is marginally lower that the lower limit of 0.57 set by Cortina with a secondary acceptable reliability coefficient of 0.56; therefore this factor might not present itself in repeated research. However, this fact does not make a factor less important to the current study, and as such this factor should be interpreted with this possible constraint in mind (Field, 2007).
The Kaiser-Meyer Olkin (KMO) measure and the Bartlett test of sphericity were applied to determine whether the data were suitable for a factor analysis. Both the KMO and the Bartlett test showed very favorable values with KMO in excess of 0.80 in all three cases while improving the variance explained from 0.63 to 0.66 when the low and dual loading criteria were deleted. The Bartlett test of sphericity also remained below the required 0.000 level. The result of these steps was a conceptual framework to measure creativity at tertiary education (Fields & Bisschoff, 2014). This article focuses on what was done after the development of the conceptual framework (stage two). An additional analysis was conducted using the SPSS version 21 and AMOS 21. These software packages were used to run causal path analysis or cause-effect relationships using the Pearson’s product correlation coefficient (PPMC) and structural equation modeling (SEM) which included a confirmatory factor analysis (CFA).

The direction, strength and significance of bivariate associations among the constructs were examined utilising Pearson’s correlation coefficients via the IBM statistical package for the SPSS version 21. This was done before introducing the latent variables into the measurement and structural models in AMOS.

SEM (with AMOS) was instrumental in analysing the theoretical framework developed in stage one to determine the extent to which cognitive psychology mediates the relationship between motivation and creativity. AMOS is designed to evaluate or test structural equation models and determine the linear relationships among latent and manifest (observed) variables (Sekaran & Bougie, 2009). In this context, latent and manifest variables are synonyms of unobserved and observed variables respectively. The construct validity of the proposed model was assessed by appraising the percentage of the overall variability described by each dimension attained via CFA (Duff & Duffy, 2002). CFA is instrumental in examining the fitness of a proposed model as a form of structural equation modelling (Williams, Brown, & Onsman, 2012). Construct validity was determined using various model fit indices. It is illustrated in the section in which the results are discussed.

RESULTS

The results (represented as four models) are discussed after the statistical techniques, used as the indices to determine model fit have been briefly explained. The indices used to interpret the results were: chi-square (CMIN), normed-chi-square value (CMIN/DF), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), Root mean square error of approximation (RMSEA), normed fit index (NFI), comparative fit index (CFI), Tucker-Lewis Index (TLI), Incremental Fit Index (IFI) and p-value. It is advised that once at least four indices are good, one can conclude a good model fit.

The CMIN forms one of the criteria for assessing the general fitness of the model, as well as the degree of inconsistency between the sample and covariance matrices (Hu & Bentler, 1999). This is reported using the chi-square value, degree of freedom and the corresponding P value. In cases of large chi-square values and degree of freedoms, the normed-chi-square test was adopted, which is the chi-square value divided by the degree of freedom. The standard rule is that the CMIN/DF must not be greater than 5. If the CMIN/DF falls in the range of 2 to 1 or 3 to 1, it indicates acceptable fit between the hypothetical model and the sample data (Carmines & McIver, 1981, cited in anon, 2007).

The GFI was developed by Joreskog and Sorbom as an alternative criterion for measuring the degree of variance that emanates from the estimated population covariance (Hooper, Coughlan, & Mullen, 2008). The AGFI is another criterion for assessing the fitness of a measurement or structural model. The value for GFI and AGFI ranged between 0 and 1. An acceptable indicator of good model fit starts from 0.8 to a cut-off point of 0.95 (Hooper et al., 2008).

The RMSEA is seen as “one of the most informative fit indices” (Diamantopoulos & Siguaw, 2000:85) based on the RMSEA’s sensitivity to the number of estimated parameters in the model (Hooper et al., 2008). It shows how
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well a model is suited to the population covariance/correlation matrix. A RMSEA less than 0.05 indicates good fit, 0 indicates exact fit, from 0.08 to 0.10 indicates mediocre fit, and greater than 0.10 indicates poor fit. Katou and Budhwar (2010) indicated that values less than 0.08 suggest a model fit approximation. The NFI is one of the incremental fit indexes used to examine the fitness of models, measures the fitness of the model by comparing the chi-square values of the model and those of the null model (Hooper et al., 2008). The values also range from 0 to 1 and Bentler and Bonnet (1980), cited in Hooper et al. (2008), recommend that the values must be greater than 0.9 before a model can be regarded as a good model fit.

The CFI was designed as a revised form of NFI by Bentler with reasonable consideration of sample size appropriateness (Hooper et al., 2008). The values expected of incremental indexes also range from 0 to 1. However, a CFI value of greater than or equal to 0.9 is an acceptable indicator of good model fit, while a CFI value of greater than or equal to 0.95 is regarded as an indicator of perfect model fit (Hu & Bentler, 1999). Other incremental fit indexes used to assess the fitness of models are the TLI (Tucker & Lewis, 1973) and the IFI (Bollen, 1989) and both should be equal to or greater than 0.90 for the model to be accepted as a good model fit. The results of the model fit indices are indicated directly below after each of the four models. Once at least four indices are good, one can conclude a good model fit. The latent variables are represented by circles, while the manifest variables are represented by boxes in the measurement and structural models.

![Figure 2: Measurement model (confirmatory factor analysis)](image)

Note: DT = dimensional thinking, CSQ = challenging the status quo and PS = problem solving

Chi-square (CMIN) = 147.385; DF = 62; and p-value = 0.000.

CMIN/DF = 2.377 (<5); GFI = 0.938 (>0.90); NFI = 0.919 (>0.90); IFI = 0.951 (>0.90); TLI = 0.927 (>0.90); CFI = 0.950 (>0.90); RMSEA = 0.065 (slightly above .05)

Figure 2: Measurement model (confirmatory factor analysis)
Figure 2 (Model 1) shows the results of the CFA model appraising the percentage of the overall variability described by each dimension. The indexes, listed below Figure 2, suggest a good fit of the constructs to the data set. Statistically, all factor loadings in the measurement model were found positive, large (0.40 to 0.97) and highly significant ($p < 0.001$), which also confirmed the validity of the measurement model. This confirmed that the CFA of the constructs utilised in this study were led by the theoretical propositions, modification indices and factor loadings (Maiyaki, 2012). This suggests why all the indicators of goodness of fit reported below in Figure 2 were evidence of good model fit indices.

Having established that all model fit indices presented above are good, this implies that the underlined dimensions of the various factors considered in the measurement model are valid.

The structural model as illustrated in Figure 3 (below) shows that cognition has an impact on challenging the status quo (0.97), problem-solving (0.88) and fluency (0.70). Motivation has an impact on cognition (0.87) and dimensional thinking (0.70).

![Figure 3: Structural model indicating the direct impact of cognition and motivation on outcomes variables](image-url)

Chi-square = 155.917; DF = 72; $p$-value = 0.000;
CMIN/DF = 2.166 (<5); GFI = 0.935 (> .90); AGFI = 0.905 (> .90); NFI = 0.914 (> .90); IFI = 0.952 (> .90); TLI = 0.938 (> .90); CFI = 0.951 (> .90); RMSEA = 0.060 (slightly above .05)
Part 1: Creativity and leadership – Testing and operationalising a model to measure creativity at tertiary education level

The model fit indices, listed below Figure 3, suggest a good model fit.

Figure 4 shows the link between cognitive psychology and creativity. Cognitive psychology impacts on challenging the status quo (0.97), problem-solving (0.87), fluency (0.70) and dimensional thinking (0.63).

![Figure 4: Structural model indicating the link between cognitive psychology and creativity](image)

Chi-square = 122.250; DF = 50; p-value = 0.000;

CMIN/DF = 2.445 (<5); GFI = 0.941 (>0.90); AGFI = 0.908 (>0.90); NFI = 0.924 (>0.90); IFI = 0.954 (>0.90); TLI = 0.938 (>0.90); CFI = 0.953 (>0.90); RMSEA = 0.067 (slightly above .05)

The indices, listed below Figure 4, suggest a good model fit.

The standardised regression weights for latent and manifest variables are highlighted in Table 2 below. The table shows all standardised regression path estimates or beta loading from cognitive psychology to the factors measuring creativity. The highest contribution in the structural model is the direct influence of cognitive psychology on challenging the status quo (0.973). The next highest contribution in the structural model is the mediating influence of cognitive psychology on problem-solving (0.874).

The purpose of this article was to test a model to measure creativity at the tertiary educational level using SPSS and AMOS. The Fields Educational Creativity Model (FECM) was the result of the test and operationalisation and shows the mediating influence of cognitive psychology on the interplay between motivation and creativity. The new model, called the Fields Educational Creativity Model (FECM), is shown in Figure 5 (below).
### Table 2: Standardised Regression Weights:
(Groups number 1 – Default model)

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Chi-square (CMIN) = 31.548; DF = 17; p value = .017;

CMIN/DF = 1.856 (< 5); GFI = 0.976 (> .90); AGFI = 0.949 (> .90); NFI = 0.966 (> .90);

IFI = 0.984 (> .90); TLI = 0.973 (> .90); CFI = 0.984 (> .90); RMSEA = 0.052 (slightly above .05).

**Figure 5:** The Fields Educational Creativity Model (FE CM)
Part 1: Creativity and leadership – Testing and operationalising a model to measure creativity at tertiary education level

Focusing only on the three main concepts of the model (motivation, cognitive psychology and creativity), the following exogenous and endogenous variables were identified. Exogenous variables have an external origin and these show that causes are not included in the model. In Figure 5, the exogenous variable is motivation, so it is not clear what causes motivation.

Endogenous variables have an internal origin and are represented as the effects of other variables. In Figure 5, the endogenous variables are cognitive psychology and creativity. The figure shows that motivation has an effect on cognitive psychology and creativity. Cognitive psychology also effects creativity. The direct path from motivation to creativity (0.16) in the structural model is statistically insignificant (p value = 0.319). This was also established by the standardised direct effect – two-tailed insignificant value (p = 0.534). Hence, cognitive psychology fully mediates the relationship between motivation and creativity. Judging from the model fit indices listed in Figure 5, one can conclude a good fit and that the model can be used to measure creativity at tertiary educational level. The standardised regression weights of latent and manifest variables in FECM are presented in Table 3.

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<td>Extpressures &lt;--- Motivation_</td>
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Table 3: Standardised Regression Weights:
(Group number 1–Default model)

DISCUSSION

The purpose of this article was to test and operationalise a model to measure creativity at the tertiary educational level using SPSS and AMOS. The results showed that the conceptual framework can be used to identify creativity; however the results from FECM are even better to measure creativity at tertiary educational level. This is due to the additional statistical methods used, which include the PPMC, a multiple regression analysis, SEM and confirmatory factor analysis (CFA). The FECM (Figure 5) showed a good model fit and it can therefore be seen as a reliable and valid model to use to measure creativity at the tertiary educational level. The model shows the link between cognitive psychology, creativity and motivation. The strongest link exists between cognitive psychology and creativity and the weakest link exists between motivation and creativity.

The FECM revealed that cognitive psychology has a mediating influence on motivation and creativity at tertiary education level. Cognitive psychology focuses on the way humans process information and how behaviour is consequently influenced (McLeod, 2007). This means that motivation has an impact on creativity through cognitive psychology. There are two types of motivation: extrinsic and intrinsic. The results (Figure 3) showed that motivation has an impact on cognition (0.87) and dimensional thinking (0.70). The contextual approach supports this result and indicates that creative people are intrinsically motivated to be creative in a
specific domain (Petrowski, 2000). Hennessey’s (2003:266) view is that “intrinsic motivation is a primary driving force behind the creative process” and Mumford (2000:324) argues that “creative work calls for both intrinsic and extrinsic motivation”. Initially, the conceptual framework developed by Fields (2012) indicated that the external influences affect creativity, but the FECM model indicates that external pressures have a greater impact on motivation to be creative than inner drives (self-motivation) among students at tertiary institutions.

Creativity, according to Figure 4, is a result of challenging the status quo, problem-solving, fluency and dimensional thinking. The results indicate that cognitive psychology has a direct influence on challenging the status quo (0.97), problem-solving (0.87), fluency (0.70) and dimensional thinking (0.63). This supports Torrance’s view that creativity is “breaking out of the mold, being open to experience and permitting one thing to lead to another, recombining ideas or seeing new relationships among ideas” (Afolabi et al., 2009:2). The conceptual framework developed by Fields (2012) placed a lesser focus on problem-solving that the FECM model. In the conceptual framework problem-solving was identified as the 12th factor and it was indicated that this factor might not be present in repeated studies. This was not supported in the FECM model. While validating the data, sensitivity was excluded in the models because Cronbach’s coefficient alpha (α) was less than 0.700 and a creative mind set was also excluded in the models because Cronbach’s coefficient alpha (α) was less than 0.700. Manifest variables included in the models as factors measuring problem-solving (latent variable) were: (1) Thinking of a new development (TND), (2) Imagination – research (Iresearch) and (3) Imagination – initiative (Initiative). Creative problem-solving is critical in creativity to generate novel solutions. Osborn-Parnes developed the Creative Problem Solving (CPS) model to show the importance of creative problem-solving and this model is used extensively (Mitchell & Kowalik, 1999). Creative problem-solving is also important at tertiary educational level and can even be linked to Heinze’s scientific creativity (Heinze, 2007, cited in Burbiel, 2009).

CONCLUSION

In the knowledge economy, graduates need to be critical, creative and imaginative thinkers who can work through complex problems and make creative and purposeful changes and adaptations. It is therefore important to measure creativity at tertiary educational level to determine how it can be developed, enhanced and rewarded. This aspect is currently lacking. The purpose of the research on which this article is based was to test and operationalise a model to measure creativity at the tertiary educational level using the structural equation modelling.

The result of the testing and operationalisation was the Fields Educational Creativity Model (FECM) which is proposed as a model to measure creativity at tertiary institutions. The FECM showed a good overall model fit and showed that cognitive psychology fully mediates the relationship between motivation and creativity. To ensure that graduates are creative, tertiary institutions need to develop cognition in an effort to make students more creative. This involves the development of divergent thinking (e.g. conceptual skills) and convergent thinking (e.g. analytical skills). A whole-brain approach is therefore necessary to be creative and it requires using divergent and convergent thinking simultaneously.

It is recommended that the FECM be tested at various tertiary institutions and used to inform teaching and learning interventions to develop, enhance and reward creativity. Students should be taught to think creatively and transform creative thoughts into creative actions. This can be done by developing external cognitive processes where students can expand their normal cognitive processes with external aids (e.g. visualisation, work spaces) and internal cognitive processes, which involve perception, attention, language, memory and thinking. Teaching methods and assessment should focus on developing whole-brain thinking and learners should be encouraged to challenge the status quo, use dimensional thinking, creative problem-solving and fluency to generate viable
and sustainable ideas. Progress should be measured to determine creative development of all the students at tertiary institutions. This approach can further be supported if educators align teaching-learning materials with methods of testing that will promote memory, comprehension, skills for practical work and creativity. In addition to developing cognition and knowledge creation, tertiary institutions should develop creativity boosters for students to help develop creativity, especially at undergraduate level. This could involve: nurturing mental health; investing in teaching environments that enhance creativity (e.g. by using green in lecture venues to activate creative thinking and having a space where students can take ‘creative time out’ to allow for the incubation of ideas as part of the teaching and learning process); and stimulating curiosity by using different teaching techniques (e.g. exploration and conceptual conflict).

The contribution of this research is the FECM model that was developed as a proposed measure to determine the creativity of students. The model can assist in identifying ways of developing and enhancing students’ creativity. This is a very important contribution due to the impact creativity has on the competitiveness of nations and organisations in the global knowledge economy.

There are, however, limitations to all research activities and the FECM model is no exception. The research was done in South Africa and one university was used to collect data. However, the use of various statistical packages and techniques, as well as the result of a good model fit, confirmed that the FECM model is a reliable and valid model to propose. It is suggested that future research include more universities and various countries to compare results and to modify the model if needed.

Creativity can be measured and when creativity is measured and feedback is provided, it is developed, done better, done well and gets repeated. This starts a ripple effect which will open more students’ minds to new depths, richness and presence which will have a positive influence on the global knowledge economy and human existence.
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Part 1: Creativity and leadership – Testing and operationalising a model to measure creativity at tertiary education level


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Part 2

Approaches to learning and teaching
The learning affordances of a Facebook environment

Craig Blewett and Wayne Hugo

ABSTRACT

Facebook is the most widely used website in the world and its impact on social connections, information dissemination, and now education is being keenly felt. This research seeks to explore how students learn in a Facebook environment using an affordance-based theoretical lens. An ethnographic case study approach was used to explore how 4th year university students, doing a module on Computer Mediated Communication, used Facebook. The research identified 11 affordances that are arranged around an actant-activity affordance framing. This framing allows not only for the exploration of affordances across two dimensions but also for the exploration of interactions between affordances. These interactions between affordances reveal the importance of a new approach to affordance-based research into learning, where affordances are not considered in stasis but rather in relation to competing attractions and resistances.

KEYWORDS: e-learning, Facebook, affordances, ethnography, actants

INTRODUCTION

It is becoming increasingly important to discover how learning takes place in online environments. “More and more instructors are beginning to abandon traditional approaches to instruction…for cutting-edge strategies, which allow students to construct their own learning” (Heider, Laverick & Bennett, 2009:104). However, at the moment most approaches “are still based on a tool-paradigm…where technology is seen as a medium for delivering precast instructional content faster, cheaper, better managed and better targeted” (Lindner, 2006:41). If online learning is going to be explored, then simply replicating offline practices in online environments is likely to mask the opportunities and approaches within online learning.

One solution to this is to adopt an affordance-based approach to exploring online learning environments. An affordance-based approach fundamentally alters the way in which the research is undertaken from one based on features to one based on action opportunities. Rather than exploring what an online environment is designed to do, an affordance approach seeks to explore the affordances that arise, whether intentional or unintentional. Often it is in the unintentional affordances that the greatest insights can be gained into how learning takes place.

This paper seeks to explore learning within a Facebook learning environment, and to answer the critical question: What are the affordances of a Facebook learning environment?
LITERATURE REVIEW

This research focuses on the use of Facebook, a Social Network System (SNS), as a learning environment. While SNSs were designed primarily to allow people to connect, their applications have begun to extend into other areas such as politics, cultural studies, and more recently education. Facebook represents the single biggest example, not only of a SNS but of any online website. Facebook, which started in 2004, had 1.32 billion monthly active users as of June 30, 2014 (Facebook, 2014), making it the largest single website, according to membership, on the World Wide Web. The impact of the growth in Facebook is reflected in the recently increasing interest in Facebook’s use for education. In 2010, de Villiers (2010:175) reported that there “is a low level of use of Facebook for academic purposes in the South African academic community”. However, more recently, in 2012, Rambe (2012:295) indicated that Facebook is increasingly being used in South Africa by users “for the exchange of resource and informal learning”.

While there appears to be a move towards using Facebook for learning, the focus has been on Facebook’s support for open discussion, while the role of learning is still largely supported by official university learning management systems such as Moodle (Rambe, 2012). This led Rambe (2012:299) to conclude that Facebook is “about artefact sharing, academic networking and relationship building”. As such, Facebook usage by universities, and research into Facebook usage has centred around issues of networking, relationships, motivation etc. and not on learning per se. In fact some studies have suggested that teachers should remain passive, rather than active, when interacting with students on Facebook (Teclehaimanot & Torey, 2011).

AFFORDANCE THEORY AS A THEORETICAL LENS

It is the theory which decides what can be observed (Albert Einstein)

Researchers have brought a range of theoretical lenses to bear on research related to social networks and Facebook, such as activity theory (Rambe & Ng’ambi, 2011), communities of practice (Williams, Karousou & Mackness, 2011), and affinity spaces (Lammers, Curwood & Magnifico, 2012). While all of these provide useful perspectives into interaction and design issues, this research uses affordance theory with its focus on action possibilities.

Affordances, according to Gibson’s (1982) original conception of them, are action opportunities that exist in the environment. “The affordances of the environment are what it offers the animal, what it provides or furnishes, either good or ill” (Gibson, 1979:127). Adopting an affordance-based perspective fundamentally alters the way in which the research is viewed from one based on features to one based on action opportunities. “Facebook features are designed to trigger social behaviour, not create it…Facebook and Twitter aren’t social software systems, they are systems that afford certain social behaviour” (Appleseeed, 2013:para. 1). One of the key challenges of undertaking an exploration of learning in a new learning environment, such as Facebook, is the suspension of epistemological and pedagogical perspectives. Observing how learning takes place in a physical and social environment, such as Facebook, requires a lens that allows more than a simple feature-based view of the environment, but rather one that provides an insight into determining how the environment affords learning.

Affordances focus on action opportunities rather than features, which typically reflect designer intentions, and therefore it provides a useful perspective on how learning takes place in Facebook (Parchoma, 2013). In addition, affordances are not concerned with ‘judging’ one environment above another, but rather exploring the action opportunities that an environment offers to the students. However, understanding how affordances
operate does not go uncontested (Parchoma, 2013), and as such a brief discussion of how affordance theory is used in this research is necessary.

Affordance theory, while originating with Gibson (1977), was extended (or adjusted) by Norman (1988) and then further impacted by others. The first movement, object affordances, as originally conceptualised by Gibson (1977), is grounded in a positivist ontology (Parchoma, 2013) that suggests the objective and inherent affordances offered by an environment to the actor (Oliver, 2005). The affordances are really there in the environment, whether taken up or not. The second movement, primarily conceptualised by Norman (1988), saw an attempt to remain ontologically aligned with the first movement’s realist perspective but at the same time frame affordances within an interpretivist paradigm, thereby creating an interpretivist-realist dilemma (Oliver, 2005). The nub of the issue revolved around whether a subject needed to pick up on the affordances within the environment for the affordances to be really there, similar to the ‘if a tree falls in a forest and no-one witnesses the fall then can it really have fallen?’ debate.

The third movement can be seen as a response to calls to move away from subject-object and agency debates that have defined both the first and second movements of affordances (Sanders, 1997; Williams & Edge, 1996). However, it is not until more recently that developments in social theory have provided potentially appropriate framings to make this next move. Particularly useful is Latour’s (2005) actant perspective that argues against the object/subject dichotomy in favour of a construction that takes place between equally active objects and actors, termed actants (Alvesson & Sköldberg, 2009). The third movement is therefore a framing of affordances in terms of the “in between” rather than one or other side. While carrying over elements from the second movement’s interpretivist/constructivist approach, this third movement extends the framing to embrace the environment (technology) as an equal actor in the construction of the affordance, as espoused by the first movement. Hence this third movement elevates the role of connection in affordances between equally real and enabled actants. Such actant affordances are what is implied in this research by affordance and it is defined as actant action opportunities arising out of interactions, existing in the network of relations, and co-dependent on the environment and actor. Affordances provide a “particularly attractive framework for investigating salient questions about design and use of networked learning environments, despite the ongoing ontological debates” (Parchoma, 2013:1).

This research will use this new actant affordance theorisation as the framing lens to explore the use of Facebook for learning, with its focus on the space between.

RESEARCH METHODOLOGY

The best laid schemes of mice and men… (Robert Burns)

This research seeks to answer the question – What are the affordances of a Facebook learning environment? While there are a wide range of approaches that could be followed, this research adopts an ethnographic case study approach. Rybas & Gajjala (2007:1) in their study of Facebook say that “cyberethnographic engagement plays into the critical research agenda of examining the contextual manifestation of oppression.” They see cyberethnography as being based on an epistemology of doing, which resonates with the critical framing of this research, and our embedded role within the environment (explained below). So while this study involves a single case, it is not a classic, positivist case study but rather uses an ethnographic case study approach.

The research focuses on the learning experiences of a 4th year (Honours) information technology class, Computer Mediated Communication (CMC). The CMC course was purposefully chosen as the course involves 4th year students who are familiar with technology, and as such issues of technophobia were unlikely to arise and
students would most likely be familiar with and comfortable in Facebook. As this research is focused on learning in Facebook, and not on technology adoption, it was important to use a group who were already comfortable in the technological space. The CMC class consisted of 38 students, 2 lecturers and 1 tutor. However, in addition to this, due to the open nature of the Page, students from other modules, friends of students and lecturers from other modules also participated on the Facebook Page.

A Facebook Page, as opposed to a Group, was set up, called ‘Fab Space’ (hereafter referred to as Fabspace). The main source of data for this research is the activity within this Page. Fabspace contained 663 Posts and 1820 Comments, a total of 2483 content units. This also included 52 comments from people external to the course. In addition to Fabspace, two other sources of data were also used. The first were transcripts from two virtual focus group (VFG) discussions that took place at the beginning and end of the course and the second were student reflections as recorded in reflective journals (RJ).

The analysis was divided into two parts. The first part made use of the three initial focus group transcripts and the literature to develop seed affordance categories. The second part of the seed category analysis was to then compare the list emerging from the data with those identified in the literature to see what categories were not identified by the analysis or were identified in the analysis and not the literature. This process resulted in a comparative list of affordances that served as seed categories for the analysis and coding of the Fabspace data set. This first step of the analysis identified potential affordance categories based on both the student expectations arising from the focus group and the literature. The second step of the analysis involved using these seed categories and analysing the actual student usage of Facebook as reflected in the activity within Fabspace. This process resulted in coding 13368 elements and identifying 279 codes. Thereafter a process of merging and cleansing code categories was undertaken which resulted in a final list of 65 codes. These codes were then consolidated further, after comparison with the codes arising from the Part 1 analysis and this resulted in a list of 11 affordances (discussed below).

**FACEBOOK AFFORDANCES – ANALYTICAL MODEL**

Most researchers reporting on technological affordances tend to produce lists of affordances that are not arranged around any obvious framing. While there are some similarities between these lists, there is no organising mechanism, as Oliver (2005:409) points out in his critique of the use of affordances: “there seems to be no unifying concept behind the lists.”

A simple matrix was developed by the authors, building on extant frameworks such as McLoughlin and Lee’s (2008) Pedagogy 2.0 framework, Wang’s (2005) Cybergogy, and Scopes’ (2009) extended Cybergogy framework. A basic distinction between activities based around what is said (words) or what is done (works) within Facebook was made. A second basic distinction was made between actions that either solidify the connection between actants (people and environmental) or open the space between actants. As such, the affordances discussed in this analysis are categorised between two axes, the first being an activity axis that tends either towards the activity being word based or towards works/action based. In online social spaces such as Facebook, most activity is around what is said, that is, the words. ‘Words’ is used in a broad sense, not limited merely to text but includes the use of various word proxies such as emoticons, the ‘Like’ button, images, and so forth. Works are the activities users do in online social spaces such as creating spaces, customising the environment, uploading content and other artefacts.

The second axis, the actant axis, tends either towards solidifying actants’ connections or opening actant choices. Actants are deemed to tend towards solidifying when they draw together through words or become tangible through works. Actants are deemed to tend towards opening when they expose or share through
words or expand and extend actant spaces through works. This mapping of actants between solid and open not only frames a categorisation but also depicts tensions that lie between affordances where the tendency of an affordance to open is resisted by the tendency of another affordance to solidify. This interconnectedness of affordances will be explored in the discussion below. Using this categorisation, it is possible to position the affordances discussed below in the following actant-activity affordance framing (see Figure 1 below).

Figure 1: Actant-Activity Affordance framing

The five level 1 affordances, arising out of the analysis of the Fabspace transcript, were as follows;

- **Accessibility affordance**: The central affordance, accessibility, refers to the ability to gain access to the learning space. This is central to realising the other four affordances.

- **Connection affordance**: The connection affordance refers to action opportunities that tend towards solidifying the connections between actants by either removing barriers to connecting or by strengthening connections.

- **Communication affordance**: This affordance relates to action opportunities that allow the actants to expose or express themselves within the learning space.

- **Control affordance**: The control affordance is an affordance that relates to opportunities to control activities in the learning space by imposing or negotiating conformity and affecting changes to the space or other users.

- **Construction affordance**: This affordance relates to activities that open up the actant space through the construction of additional spaces.

Each of these affordances is discussed in more detail below.
Accessibility

The ability to access the Facebook space anytime and anywhere is central to students using the space and hence realising the other four affordances. Accessibility was identified 197 times within the 2483 posts and comments (8%), which illustrates the importance of this in students’ use of the Facebook learning space. The accessibility affordance will be analysed through the three contributing affordances: any-time-able, multi-place-able, and multi-medium-able.

Accessibility – Any-Time-able

Freedom of time features strongly in both the comments and in an analysis of posting time. Late night and weekend access saw students involved in a range of activity from general chat to late night discussions and debates such as the following:

This accessibility affordance is representative of the temporal relationship that exists between the human and technological actors in this Facebook environment (Parchoma, 2013). The environment offers ease of access at any time, an inherent need for the students as depicted in multi-place-able below.

Accessibility – Multi-Place-able

The second aspect of the accessibility affordance is place. This refers to the range of physical places a student can be and still access the learning environment. The ability to access an online learning environment from anywhere is a key affordance of technology-mediated environments that resulted in comments such as the following:
Accessibility – Multi-Medium-able

The third aspect of accessibility is the medium of access. While Facebook’s main portal is web based, it has been optimised for both desktop and mobile access. 67 posts were tagged as “via Mobile” or “via Camera+” (a mobile app) or “via BlackBerry Smartphones App” and other applications. Affording mobile access to the students extends the ability of the students to engage with the course material from any location and at any time.

Having considered the accessibility affordance and the three contributing affordances, multi-medium-able, multi-place-able, any-time-able, the next sections will look at the four affordances that arise as a result of using the Facebook space for learning.

Connection

The connection affordance refers to action opportunities that tend towards solidifying connections between actants by either removing barriers to connecting or strengthening connections. An analysis of the student usage of Facebook reveals that this affordance consists of two key affordances that together assemble to offer the connection action potential, namely, conceal-able and confirm-able.

Connection – Conceal-able

The conceal-able affordance specifically indicates the usefulness of adopting an affordance framing rather than a feature-based perspective. This affordance is not a design intention of a Facebook Page but rather an unintentional affordance.

As all students were given administrator privileges to Fabspace so they could add applications and edit the Page, the result was that by default they all posted as the Page name (Fabspace) rather than their own username. While it was possible to change to post as the username, students now had a conceal-able affordance that afforded them an opportunity to conceal their identity, thereby reducing concerns of ‘looking silly’ or fearing consequence as a result of challenging others (lecturers included).

While all members of the Facebook Page started out as anonymous, posting as the generic Fabspace, most changed their name (28), with some (12) remaining anonymous the entire course. Anonymity afforded by Facebook enabled students to ask questions of the lecturer that they might have felt uncomfortable asking. The following is an example of a student using this affordance to ask for an extension to a project deadline:

![Facebook screenshot showing a message: Fab Space can we piz get an extension for the VW build, honours is bliss bt ryt nw its torture]

While this conceal-able affordance provided a way for students to express themselves, it was not always accepted. Students even went so far as to insist that other students reveal who they are, or as one student put it, “to man up” and use their real name.
**Connection – Confirm-able**

The second affordance contributing to the connection affordance is confirm-able. While face-to-face communication allows for the use of various non-verbal cues, such as nodding of the head or verbal cues such as ‘yes,’ ‘uh-huh’ to indicate confirmation or affirmation during a conversation, this need is fulfilled in several other ways in Facebook.

The easiest and often used way of doing this in Facebook, is clicking the Like button in response to a post or comment as depicted below:

![Example of a Facebook post with a Like count](image)

Doing this results in a count being displayed (2 people Liked the above comment). 19% (472 of 2483) of the posts/comments in Fabspace had one or more Likes associated with them indicating the extent to which this confirmation/head-nod was used.

While both the confirm-able and conceal-able affordances contribute to solidifying actant connections, there is, however, a tension between them. While the conceal-able affordance affords freedom of expression, it can result in fewer confirmations. In the following example, Ebrahim enquires as to who has Liked his post, illustrating the relationship between identification and confirmation:

![Example of a Facebook post with an enquiring comment](image)

So while both these affordances tend towards solidifying, the confirm-able affordance is resisted by the conceal-able affordance.

**Communication**

The second set of affordances are the communication affordances. These affordances relate to action opportunities that allow the actants to expose or express themselves within the learning space. Unlike the connection affordance that tends towards solidifying connections between individual actants, this affordance seeks to open actants to multiple others, both those within and without. The assemblage of affordances that contribute to the communication affordance are the expose-able and express-able affordances.
Communication – Expose-able

In Facebook, there is an ebb and flow of information between various spaces, such as the Facebook Page, a member’s home page, and Groups. The result is that, depending on privacy settings, posts to the Facebook Page are seen in various other places and by a wide range of people outside of the Page members. This resulted in 54 comments in Fabspace originating from non-students, as indicated below:

![Comment example 1](image1)

This expose-able affordance resulted in an opening of the space beyond the class, as such drawing in conversation and information from a wide range of people. However, while the expose-able affordance can result in enriching communication, it also has the danger of impeding communication either through additional ‘noise’ or language and behaviour that would not normally be expected in a course context:

![Comment example 2](image2)

The expose-able affordance, while part of many online environments, is not expected in learning environments. Learning is traditionally seen as closed and students are only exposed to those who are part of the course.

The expose-able affordance enables students to easily see content in a single space by creating bi-directional flows between multiple spaces, whether private, social, or educational. However, this affordance exists at tension with itself, so that on the one hand it affords a form of content singularity, a convenience, yet on the other hand it can result in content being exposed to those for whom it was not intended.

Communication – Express-able

The second affordance contributing to the communication affordance of Facebook is the express-able affordance. This describes the action opportunity for students to express themselves through Facebook.
Hugo (2013) discusses multiple pedagogic variables that can be brought to bear in a multiplicity of combinations in understanding the educational space. Three of these pedagogic variables that can be manipulated are selection, sequence and pacing. A solid instantiation of the variable indicates no choice, whereas an open instantiation indicates wide choice. Using this as a frame, it is possible to explore how the express-able affordance of Facebook opens up the selection, sequence and pacing variables despite a formalised (solid) curriculum and content.

In terms of selection, the content of the course was clearly framed (solid); however, there was much evidence of posts both on the core course content and on other topics. An analysis of the 663 posts reveals that 62% (408) were about core content, while 38% (255) were non-core content posts.

In terms of sequence, there was also little flexibility in the course structure (solid). However, as mentioned earlier, Facebook preferences conversations that have had recent activity through Likes or comments, over those with no activity. This results in these conversations rising in the stream and appearing on the walls of members of the Page. As a result of this, the sequencing of the engagement with the content is controlled by the students’ engagement with the posts. This resulted in topics that were considered ‘past’, re-entering the conversation space.

In terms of the third pedagogic variable, pacing, this too could be deemed as solid in that the dates for various activities were clearly delineated. However, as both the creation and consumption of course content was determinable by the students, they were also able to have some control over pacing. For example, in this post the student shared some content but chose to deal with the content in more detail at a later stage:

So for all three variables, selection, sequence, and pacing, the environment afforded an opening of the pedagogic space. In addition to these variables, Facebook also provided opportunities for students to express themselves in their native languages or to include rich content (images, videos, etc.).

As with the expose-able affordance, the express-able affordance sits in a network of attractions and resistances. On the one side it attracts affordances such as conceal-able and confirm-able while on the other side resisting affordances such as conduct-able.

Control

The third set of affordances are the control affordances. These affordances relate to opportunities to control activities in the learning space by modifying the environment or controlling what people do. This affordance consists of the conform-able and conduct-able affordances, as discussed below.

The conform-able affordances are the action opportunities that exist to get users to agree to a course of action. The conduct-able affordances are the action opportunities to act on both the users and the Facebook space.
These two affordances sit in relation to one another where conduct-able is ‘me doing what I want’ and conform-able is ‘me convincing you to do what I want’. The interplay between these affordances shows how the control affordance sits in relationship both to itself and with other attracting and resisting affordances. The relation between the conform-able and conduct-able affordance is so intertwined that both of them will be presented together in the discussion below.

**Control – Conform-able and Conduct-able**

The Facebook Page, as already discussed, was setup to provide a democratised learning environment in which all users were equal. Any user of the space could make any changes to the space they deemed necessary but this would also impact the experiences of their fellow users. This sets the predilections of one person’s conduct-able affordance at tension with another’s, unless the conform-able affordance is successful enacted.

The following example depicts a student jokingly brandishing her ‘admin’ rights as a threat to a fellow student:

![Image of a Facebook comment]

**Kaahsifa Ahmed** Remember that I have admin rights and can delete your submissions boy...

![Date and time of the post]

In addition to the joke, this comment indicates the intra-affordance tension that exists within the conduct-able affordance. The student that Kaahsifa is referring to has equal rights to delete her submissions and even her membership of the Page. So the conduct-able affordance exists at tension with itself amongst the various members.

An interesting effect of this intra-affordance tension is that the students were cautious about acting on this affordance. The result was that students acted on the conform-able affordance to try and negotiate agreement before acting on the conduct-able affordance as illustrated with the profile image decision below.

As all students could edit the Page, one of the elements they could set was the Page profile image. The students attempted various approaches to getting agreement on an image, such as launching a Poll (which received hardly any votes), asking for people’s opinion, or threatening to act unilaterally:

![Images of Facebook comments]

**Fab Space Votes for this as profile pic...???
17 February at 09:40 · Like**

**Ebrahim Hassan Adam** In favour :P

![Date and time of the comment]

**Kaahsifa Ahmed** No one is saying anything!!! Should i put it up anyways??? I AM ADMIN after all 8-) lol

![Date and time of the comment]
Here Kaahsifa is saying that she can act on the conduct-able affordance should she wish to. Kaahsifa commented on the tension between the conduct-able and conform-able affordances in the Focus Group discussion as illustrated below:

**Kaahsifa:** u know i was thinking can i change the profile pic?? then i was like but what if the others dont like it then i just left it lol. (P3:169).

So while on the one hand the conduct-able affordance imbued the students with control, acting on it preferences one choice over another and hence solidifies the actant’s action. The conduct-able affordance therefore sits both at tension with itself and the related conform-able affordance offered by Facebook.

**Construction**

The final set of affordances is related to the actant’s ability to construct the space and hence extend and expand actant opportunities. The construction affordance speaks to the actant’s ability to add to the learning space through apps and other spaces and hence construct their learning environment. Within Facebook the construction affordance is an assemblage of two main affordances, namely, the extend-able and expand-able affordances. The extend-able affordance relates to extending the functionality of Facebook through the use of ‘apps’ (applications), while expand-able affordance refers to being able to expand the space into a variety of other self-created spaces within Facebook.

**Construction – Extend-able**

Facebook offers a wide range of applications that are “designed to enhance your experience on Facebook with engaging games and useful features” (Facebook, 2013:para. 1). As Page admins the students had the ability to add applications to the page and thereby extend its functionality.

During the course, 6 apps were added: three were installed by the lecturer and three by a student. However, none of the student-added apps were ever used. So while Facebook affords the opportunity for users to extend its functionality through apps, and thereby potentially uncover additional affordances, there was nonetheless limited use of this extend-able affordance in the course. This seems to indicate that, rather than extending Facebook’s native functionality, students chose to respond to the affordances immediately enactable within the Facebook ecosystem. The extend-able affordance is resisted by both familiarity and other affordances such as the expose-able affordance, as activity within these extended app spaces is not automatically curated back into the Facebook feeds.

**Construction – Expand-able**

Facebook provides a number of spaces outside of the user’s home page that can be used to communicate, collaborate and organise, such as Groups, Pages, and Events. During the course students set up a variety of other spaces in which to interact. Some used Pages for group work, while others made use of Facebook Groups.

While the expand-able affordance allowed for groups to create other spaces to learn in, it does push against other affordances. For example, it is resisted by the conduct-able affordance in that there is less control of being able to get members into the Group as shown below:
It is also resisted by the expose-able affordance, as posts in private Groups/Pages will not appear back on the main page.

The extend-able and expand-able affordances provide action possibilities for users to increase the range of potential affordances of the Facebook environment. However, as with the other affordances, these affordances sit in a network of relationships that both attract and resist the other affordances. These affordances also resonate with the ‘openness’ principle of connectivist learning, demonstrating both the inclusion of others into the learning discussion and the ability to navigate multiple networks outside of the immediate course network.

**Actant-Activity Affordance Network**

The actant-activity affordance model presented above provided a framing for exploring the various affordances in stasis; however, what became clear in the analysis was that affordances do not exist in isolation but in a tension of attractions and resistances with other affordances. So while an affordance provides actant action opportunities, these action opportunities must be considered in relation to the network of action opportunities presented by the space. In a similar way to quantum physics’ uncertainty principle that states that the position and momentum of a particle cannot be known at the same time (Hilgevoord & Uffink, 2012), it is not possible to map the position and momentum of the affordances at the same time. So while the actant-activity model provides a useful framing for positioning the affordances, it does not depict the momentum caused by inter- and intra-affordance tensions.

<table>
<thead>
<tr>
<th>Affordance</th>
<th>concealable</th>
<th>confirmable</th>
<th>exposeable</th>
<th>expressable</th>
<th>conformable</th>
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</table>

**KEY**
-1: Resistor
1: Attractor
0: Attractor & Resistor

Figure 2: Actant-Activity Affordance Network

Figure 2 above attempts to depict the ‘momentum’ or network of relationships that exist between the affordances in the Actant-Activity affordance network. Some affordances resist one another (-1), where acting on one affordance
is resisted by another affordance, while other affordances attract one another (1), where acting on one affordance encourages acting on the other affordance. For example the confirm-able and conceal-able affordances tend to resist one another. Choosing to post anonymously (conceal-able) caused less Like's (confirm-able) of posts and often resulted in requests for an unmasking of the identity. However, the conceal-able affordance attracts the express-able affordance as it provided more opportunities to make comments to both fellow students and the lecturer in an incognito manner.

Some of the affordances exist in both a resisting and attracting relationship at the same time, for example, the expose-able and extend-able affordances. On the one hand, the extend-able affordance opens up new opportunities and spaces for the students to be exposed to the 'outside' through the use of apps. However, at the same time these external apps do not always integrate into the feed of the Page and hence push against the automated curation that is central to the expose-able affordance.

Interestingly, two of the affordances, expose-able and conduct-able, exist in an intra-affordance tension with themselves. This means that acting on the affordance can be resisted by others also acting on the same affordance. For example, a student considering enacting the conduct-able affordance to make a change to the Page weighs this against other students enacting the conduct-able affordance and also making changes to the Page.

What is clear from this network is the complex interplay between affordances, attracting and resisting, and attracting and resisting both one another and themselves. This network of affordances, in a web of competing attractions and resistances, is the set of action opportunities that students in the Facebook space activate as part of their learning experience.

Understanding student use of this Facebook environment for learning needs to be framed by the interconnected nature of the network of affordances, and not simply by individual affordances. This also illustrates that a connectivist-based view of learning which espouses a network perspective is not only limited to the internal neural networks and the external technological network, but also includes a network of affordances that also attract and resist, thereby impacting how learning is experienced. As Siemens (2004) argues, the “pipe is more important than the content within the pipe” and it might be added that learning to navigate the network of affordances that constitute the pipe is equally important to learning.

CONCLUSION

This research set out to determine the affordances that arise from using Facebook for learning. By using an actant-based affordance lens, the research explored student use of a Facebook Page.

While previous research has identified key affordances arising from using technology for learning, largely in the critical realist realm of the empirical, this research points to the need to consider the assemblage of affordances that interact, in the realm of the real, to provide these higher level affordances. As discussed, these affordances do not operate in isolation but in a network of attracting and resisting relationships. So while collaboration is an affordance of Facebook and other technological environments, the interplay between the assemblage of affordances is important as this impacts the manner in which the collaboration takes place.

Therefore, it is not simply sufficient to assume that Facebook, or any other online environment, will afford collaboration, without being aware of how the contributing affordances interact within the environment. Additionally, by considering the real mechanisms at works, key affordances that might be overlooked are identified. For example, simply saying collaboration is an affordance might signal the existence of expose-able,
express-able, confirm-able, and conduct-able affordances, however, on closer inspection it could, and does, include other affordances too. For example, in Facebook and other environments, the conceal-able affordance plays a key role in collaboration, one that is not mentioned by any of the above research. In fact the key role of the confirm-able affordance in collaboration is also not explicitly mentioned, yet it is germane to most collaboration. Yet as discussed in this paper, the conceal-able and confirm-able affordances resist one another, and as such it is important to understand how these affordances interact in their contribution to collaboration.

So while there are similarities to affordances identified in previous research, this research has shown that by identifying the assemblage of affordances in the realm of the real that constitute higher-level empirical ‘affordances’, a clearer picture of the action opportunities that can be navigated is produced. It becomes apparent that not only are there multiple affordances on offer but that enacting these affordances is itself a process of negotiating a web of interconnected affordances.
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Effects of a writing-to-learn tutorial programme in a higher education setting: An interactive qualitative study

Karen Bargate and Suriamurthee Maistry

ABSTRACT

Many higher education students embark on a study of accounting under the misconception that accounting requires a high level of proficiency in manipulating data and being good with numbers, believing that linguistic competence, especially as it relates to writing, is of less importance. This paper reports on a study that examined 15 managerial accounting and financial management (MAFM) students’ experiences of an 18-week writing intensive tutorial programme, based on writing-to-learn principles. Interactive qualitative analysis (IQA) informed the research design and data analysis. Following IQA protocols, nine affinities (themes) were generated. An account of how students’ experiences of a specific affinity, namely, written tasks, influenced their understanding of MAFM concepts is presented. The findings suggest that introducing writing-to-learn assignments contributed positively to students’ learning and understanding of MAFM concepts. This finding has implications for higher education pedagogy especially as it relates to the teaching of the accounting discipline.

KEYWORDS: Financial management, interactive qualitative analysis, management accounting, student learning, writing-intensive tutorial programme, writing-to-learn

INTRODUCTION – THE MYTH OF ACCOUNTING AS NUMBERS

Many students embark on a study of accounting believing that proficiency in numeracy skills alone, without reading, writing and critical thinking skills, will enhance success in accounting. The assumption is that they do not have to be good with words (Duff & Zidulka, 2008). However, the evolution of accounting has resulted in a shift to a discipline with a pronounced emphasis on written communication skills. The ability to write with clarity is an extremely important skill (Gabriel & Hirsch, 1992; Catanach & Golen, 1997; Faris, Golen & Lynch, 1999; Lillis & Turner, 2001; Ashbaugh, Johnstone & Warfield, 2002; Firch, Campbell, Filling & Lindsay, 2011; Ahlawat, Miller & Shahid, 2012). Gouws and Terblanche (1998:92) assert that “communication stands out as being crucial to the fulfilment of accounting responsibility”. The traditional role of the accountant, as ‘bean counter’ or ‘number cruncher’ is no longer sufficient (Saudagar, 1996; Chiurri & Varaksina, 2006; Firch et al., 2011). That the study of accounting is primarily about numbers, mathematics and techniques to be learnt (Lucas, 2001) is a misperception that causes “many students with so-called ‘left brain’ communication skills to shy away from the field” (Kranacher, 2007: 80).

The international literature on accountants and communication is comprehensive (Hirsch Jr. & Collins, 1988; Wygal & Stout, 1989; Stout, Sumutka & Wygal, 1991; Stout & Ruble, 1991; Scofield & Combes, 1993; Scofield, 1994; Baird, Zelin II & Ruggle, 1998; Stout & DaCrema, 2004; Firch, Campbell, Lindsay & Garner, 2010), and the general
consensus is that accounting students tend to exhibit fear of writing and fail to appreciate the importance of writing practices in the accounting profession (Scofield, 1994). For example, when students are completing an assessment, they “skip theory and go directly to the ‘canned’ formula or table needed to solve the problems” (Hall & Tiggeman, 1995:13). Accountants generally have good technical skills, but progress in their careers can be impeded because of an underestimation of the importance of communication skills (Gabriel & Hirsch, 1992; Stocks, Stoddard & Waters, 1992; Gouws & Terblanche, 1998; Stowers & White, 1999). The role of the accountant has expanded from being limited to stewardship to include providing information to a heterogeneous audience (Gouws, 1997) and accountants need to be effective writers and communicators, presenting work in a professional manner. This paper emanates from a larger study (Bargate, 2012) conducted at a residential university on the eastern seaboard of South Africa, which has a diverse academic and student body. This larger study investigated managerial accounting and financial management (MAFM) students’ experiences of learning in a writing-intensive tutorial (WIT) programme. Interactive qualitative analysis (IQA) was used as the methodology with IQA protocols being followed to develop ‘affinities’, which are “categories of meaning” (Northcutt & McCoy, 2004:44), as developed by the participants in the study. Affinities can be equated to the more conventional term ‘themes’, developed in qualitative research. Nine affinities were identified by the participants, namely: challenging, critique, enjoyment, interactive, personal confidence, positive structure, written tasks, study technique and test preparation, and understanding.

The objective of this paper is to describe MAFM students’ experiences of the affinity ‘written tasks’ in a WIT programme. The detailed description of the students’ experiences could be used as a basis for further studies incorporating written tasks into accounting tutorials. This paper is organised as follows: the next section discusses the effectiveness of writing interventions on examination scores; this is followed by the research methodology and then a description and analysis of the affinity ‘written tasks’ and its association with other affinities; a discussion of the findings follows; the final section draws conclusions from the analysis.

EVALUATING THE EFFECTIVENESS OF WRITING INTERVENTIONS ON EXAMINATION SCORES

Studies of the effect of writing-to-learn interventions on student grades in the discipline of accounting have reported varied results. One-minute papers were used by Almer, Jones and Moeckel (1998) and the results of students who had participated were compared with those who did not participate in the intervention. Students’ grades improved only on essay-type (subjective) questions, and there was no difference between the two groups with regard to multiple-choice (objective) questions. The authors also compared the performance of students whose papers had been graded with those whose papers had not been graded. Interestingly, the ungraded group achieved better results than the graded group. This finding contradicts the assumption that accounting students are strategic learners and that all work must count for assessment. Furthermore, the one-minute papers were beneficial to all students irrespective of academic ability, contradicting the results of Baird et al. (1998) and Sin, Jones and Petocz (2007). Baird et al. (1998) compared the test scores of students in three accounting courses who had completed one-minute papers with those who had not. For the students in the managerial accounting class there was a difference in performance and the top students performed ‘poorly’ after completing the written assignments. The authors questioned whether the overuse of papers could lead to student burnout but did not test this contention.

Stout, Sumutka and Wygal (1991) compared the examination scores of auditing and taxation students who completed freewrites with those who did not complete freewrites. For the auditing class, there was no statistical effect between the mean examination scores of the two groups. For the taxation course, the difference was statistically significant for the midterm examination only. Consistent with the results of Almer, Jones and Moeckel (1998), there was some positive benefit to students from the writing intervention. Braun and Simpson
(2004) concurred and noted further that when students participate in a writing-to-learn activity that appeals to them, they do benefit. The learning style preferences of students need to be considered when designing writing assignments to ensure that a variety of learning styles are catered for.

Cunningham (1991:322) compared the examination scores of a writing group with a non-writing group. On average, the writing group outperformed the non-writing group, especially in questions which covered more difficult material. The writing group “exhibited a more in-depth understanding of the material … than students in the more traditional classes”. The non-writing group tended to be “memorizers” and more interested in the “mechanics” and process of questions. The writing group focused on theory and implications when interpreting questions.

The studies reviewed indicate mixed results and suggest that writing assignments should be content and context specific. The majority of the writing interventions described in the accounting education literature are developed within the context of a single course, for a limited period of time and in isolation from the accounting curriculum as a whole. For writing to be valued, it must be integrated across the accounting curriculum and done on a regular basis as the benefits of writing-to-learn accrue with repetition (Woods McElroy & Coman, 2002). The caveat to integrating any writing initiative into an accounting programme is that “class size dictates both assignment design and feedback” (Gabriel & Hirsch, 1992:262). Despite the constraints, it is imperative that faculty integrate writing practices into accounting programmes with a model of ‘best fit’ for the goals and resources available.

METHODOLOGY

The study used IQA (Northcutt & McCoy, 2004) as the strategy of enquiry to evaluate MAFM students’ experiences of using written tasks in a WIT programme. IQA is essentially a qualitative method in which quantitative data are used in combination with qualitative data in a systematic process, the outcome of which is a systems diagram or mindmap representing the group view of the phenomenon being studied. IQA favours a social constructivist approach to data collection and analysis (Tabane & Human-Vogel, 2010). IQA minimises the power relations and biases traditionally associated with qualitative data analysis as, following IQA protocols, the participants’ voice is privileged over that of the researcher. The role of the researcher is merely as facilitator of the process.

In focus groups, participants are provided with issue statement/s which they engage with and then silently brainstorm their experiences of the phenomenon being studied and write one idea, word or thought per card or sticky note. This is done silently to ensure that the group is not influenced by dominant participants’ ideas. Through a process of inductive and axial coding, the participants organise the sticky notes into groups or affinities of meaning. Affinities are categories of meaning developed by the participants from the discourse units on the sticky notes. As consensus among the participants as to the grouping of the sticky notes is achieved, the affinities are named and thus meaning is socially constructed. From the affinities established in the focus groups, a protocol is developed for individual semi-structured interviews to probe each participant’s experiences of the affinities. Following IQA protocols, each affinity and its relationship with other affinities is then described with excerpts from the interviews. Separate discourse units are combined to give the sense of one participant talking. The interviews are edited for grammatical correctness and to remove distracting verbal tics. For a fuller description of the IQA methodology, refer to Northcutt and McCoy (2004), Lodewyckx (2005), Human-Vogel and Mahlangu (2009), du Preez (2011) and Bargate (2014), among others.

A purposive sample of 15 MAFM students was selected from volunteers who expressed an interest in participating in the 18-week WIT programme. The participants comprised a heterogeneous group of students in terms of gender, race and academic ability, mirroring the population of MAFM students. According to Kinchin
and Hay (2005:182), when groups are composed of individuals with very different knowledge structures, there is a greater improvement in student results than when groups are composed of individuals with similar knowledge structures. To facilitate small group teaching and learning in writing-intensive courses, a maximum student-to-staff ratio of 20:1 is recommended (English, Bonanno, Ihnatko, Webb & Jones, 1999; Brenner & Nichols, 2009; Hesketh, 2011; Ahlawat et al., 2012). Small group learning coheres with the principles of social constructivism.

**WRITTEN TASKS**

The WIT students were expected to complete written tasks each week. These tasks were designed in accordance with writing-to-learn principles (Bean, 2001). Written tasks encompassed reflections on learning and skill-related tasks, such as writing summaries. Reflective writing was new to most of students and it took time for students to embrace reflective writing and appreciate its benefits. The task most favoured by them was writing summaries as this aided them with test preparation by providing a quick revision list prior to writing tests. The written tasks also helped them identify their problem areas with MAFM. The affinity written tasks, the focus of this paper, impacted on four other affinities, namely, challenging, enjoyment, study technique and test preparation and personal confidence.

**Challenging**

The students found some written tasks difficult, but the challenging nature of the written tasks enhanced their understanding of concepts:

> The difficult written tasks made the programme challenging, especially the group debate. The capital budgeting test was also challenging but it helped us identify what we did and did not know. When we had to write, it challenged you (meaning us) because it made you realise where you were unsure about concepts. When we wrote in our books [journals] it creates a direct communication between me and you as my tutor so it is easier for me to say specifically to you what I find challenging. Your response would be directly to me and not generalised.

Students understood that when they were able to make substantive contact with the tutor, they could point to personal issues which they were struggling with; equally the tutor could respond directly to individual needs. There were two levels of learning to write that occurred at that point. One was to develop the ability to write a clearly constructed message describing the nature of the difficulty that was being experienced, which entailed students paying careful attention to scripting a self-diagnostic report on their weaknesses. This kind of written self-diagnosis can be regarded as a high-level skill. The participants reported that consequently they could communicate orally with the tutor about particular problems with increasing clarity. They found they had benefitted from the tutor's response to their specific, unique challenges and needs.

The second level of learning to write is directly related to learning to write in the discipline. Students were not averse to difficult tasks even when the challenge was high, again because it led to personal reflection and self-diagnosis of the status of their knowledge competence. Overall, the written tasks challenged students to confront concepts which they had assumed they were comfortable with until they had to formulate them in writing, an interesting development as the written tasks helped students move beyond superficial, low-level understandings towards a richer, deeper and fuller comprehension of accounting concepts and their application.
**Enjoyment**

The students indicated that they enjoyed the written tasks and the fact that the tasks had a practical orientation:

> The written tasks are interesting, fun and enjoyable because you learn something new each time and I express my point better. It was fun writing on the specific topic especially when the question was work-related, such as the capital budgeting and standard costing tasks. Writing gives rise to enjoyment and I am always talking to my mother about the programme. She says it was a good thing you were accepted for the programme.

Students expressed the fact that for the first time they were deriving pleasure and satisfaction from writing and they were starting to feel good about it. They claimed that the more written tasks they did, the more their writing competence increased. It became clear that students began to realise that learning to write, especially in the discipline of accounting, was indeed a process which, if frequently practiced, would result in constant improvement. They valued written tasks which were clearly related to their course. They shared their satisfaction, pleasure and enjoyment with their relatives, creating a new self-assurance.

**Study technique and test preparation**

The written tasks that students were requested to complete helped with improving study techniques and test preparation:

> Having the summaries made MAFM learning so much quicker and this helped when it came to learning for tests and the exam. I could run through the summaries on the day of the test for quick revision. The WIT programme helps us answer questions in the way the examiner wants the question answered. You told us we need to write based on the specific scenario and I realised that this was where most of us make mistakes in theory questions in test – we don’t write on the specific scenario. Now I read the scenario, write based on that situation, it is easier and I score more marks. As we did more, the written tasks become easier to complete and this helped me in the test to maximise my marks.

Students indicated that having engaged in deep, consistent learning all the way through the programme, when it came to preparing for assessment they did not feel stressed or under pressure, even though they had limited time to work on MAFM. The way the programme was designed created conditions for them to develop good examination technique, which prepared them well for assessment, leaving them time to devote to other subjects. They considered this especially helpful when time required for these subjects was more than was scheduled.

The students indicated that they had developed the ability to identify specific pieces of knowledge that they required, and could construct and apply it in a particular context. Rather than writing in general terms about the big issue, they were able to point to specific issues which emerged in the course of assessment, such as situation-specific context answers, which make more sense than broadly generalised answers. As a consequence of completing the written tasks, they learnt where they had made common errors in answering test questions and they had a better awareness of what the examiner was expecting as a possible answer. An awareness of these errors promoted an improvement in answering theory questions in the tests and examinations. During the course of the programme, as they were progressively exposed to this more sharply focused preparation, their growing competence and writing skill were continuously reinforced. They could see how continued written practice contributed to enhanced learning and the reward was a concomitant increase in test and examination marks.
Personal confidence

Students were requested to maintain a learning journal as an aid to continuing and regular reflection on their accumulating knowledge and competence, and this made it easier for them to identify problematic areas, in turn increasing their self-confidence:

I believe that if you don’t reflect you really don’t know where you are going to, where your mistakes are coming from, what you are missing out. When I read what I had written, it made it easier to identify those areas where I was having problems. The written tasks helped us to understand better, learn more clearly, which improves our confidence in writing and helped me to express myself better. The more you practice writing, the better you get at it, and your confidence increases. When you write it’s like cementing a foundation in your head. When you read something it does not get inside and hold on to your brain, but when you write it down it gets in and stays. I think the writing tasks will also help us in the work environment.

Several students commented that if reflection was absent in the learning process, then one was likely to struggle in working out how to plan for future learning. Students started to appreciate the value of both oral and written reflection, without which they would have been unaware of problem areas. They learnt to diagnose very specifically what their problems were. They came to recognise that the act of writing down their problems was in itself a learning process.

Students discerned an improvement in their writing, and with continued writing practice their confidence rose, a phenomenon that they began to identify with. They began to understand how writing is a deliberate, purposeful action and found that their cognitive framing became stronger to the extent that they were beginning to think conceptually about the discipline. Key concepts were progressively reinforced in ways that consolidated the new knowledge and skills. They realised that the writing was beginning to contribute significantly to material, deep learning. They were able to reassess their former approaches to working and studying, where much of what they did had been a merely passive, surface-level reading of text, whereas the act of writing resulted in the material now being more fully conceptualised. They commented that writing created a permanent record and the act of writing reinforces concepts.

DISCUSSION

In this study, writing-to-learn tasks were set for a series of 18 tutorials. Over this limited period of time, it is not possible to predict how enduring any changes in students’ attitudes and intellectual engagement might be. For fuller benefit from writing-to-learn programmes, students need sustained exposure to a new pedagogy; constant and consistent reinforcement stands the best chance of inculcating long-term behaviour change (Emig, 1977; Hirsch Jr. & Collins, 1988; Scofield & Combes, 1993; Baird et al., 1998; Ashbaugh et al, 2002; Firich et al., 2010).

Students indicated that they enjoyed being confronted with a range of assignments which challenged them in different ways. An appropriate mix of assignments is recommended so as to develop a range of abilities (Gabriel & Hirsch, 1992). The important implication for faculty is the need to provide a range of instructional materials, including a variety of writings that link new concepts and content with practical applications (Matas, Ng & Muurink, 2011). Students must be able to connect with an element of real-world authenticity in an assignment, whether written or oral, where the role/identity a student is being asked to adopt as writer/speaker must be clearly established (management accountant/student); the audience or interlocutor to whom their writing/speaking is addressed must be plainly recognisable (a client, an elderly relative); and the task must be a specific undertaking.
Writing-to-learn activities such as summarising and answering focused questions involve cognitive elaboration, which, as defined by Braun and Simpson (2004:74), is “any activity that supports, specifies, or clarifies the information to be learned”. When students are motivated to develop their own explanations, research shows that they are more likely to take ownership of the knowledge and retain it (Chu & Libby, 2010). Whilst writing about concepts, students understand them at a deeper cognitive level. Of the written assignments set, students identified summary writing as the most beneficial because it helped them learn course content, forcing them into “comprehending, retrieving, selecting and processing information and ideas” (English et al., 1999:233). Writing summaries also helps students recognise what they do or do not know about the material and in the retention of information (Baird et al, 1998). Developing appropriate writing assignments cannot simply be taken for granted; it takes skilled faculty to discern the students’ particular requirements and set tasks at an appropriate level – slightly above where the students are, so that they aspire to move to the next level.

Accounting students sometimes see accounting as having little inherent meaning and they focus instead on simply learning a technique (Lucas, 2001), hence the importance of linking the written assignments to real-world experiences. The WIT students said they enjoyed the writing assignments because they were connected with real-world contexts. When written educational assignments were matched with needs that would actually arise in professional writing, it heightened the subsequent recall of concepts by the students (Ashbaugh et al., 2002). Assignments that lack specificity and focus could compromise the quality of the written work which the students produce and thwart the objectives of the initiative. Discipline-specific writing helps induct students into the discourse community and enables them to learn discipline-specific writing mores and traditions (O’Connor & Ruchala, 1998). The written assignments used in this study were carefully selected to cover key concepts (May & Arevalo, 1983; Stout, Sumutka & Wygal, 1991; Gabriel & Hirsch, 1992). When the students see that the written assignments are well integrated with the curriculum and connected to context, intellectual concepts can begin to come alive. In other words, they liked assignments that bridged the gap between theory and practice (see May & Arevalo, 1983; Chu & Libby, 2010).

While students of all academic abilities in the WIT class articulated the point that they had drawn benefit from the programme, this assumption needs to be treated with caution owing to potential self-reporting bias. Students in the current study were unanimous that they valued the written assignments and that these assignments helped them learn by identifying important points. Because this was a qualitative study rather than quantitative, WIT students’ grades were not compared with those from nonparticipants to determine whether they outperformed students outside the programme. Nor was there a comparison between the grades of participant students with differing academic abilities. English, Luckett and Mladenovic (2004) question whether grades can measure the effectiveness of an intervention programme. Although more conventional accounting education research suggests that the outcome of learning should be reflected in examination grades, it remains the case that students continue to pass notwithstanding firmly lodged misconceptions about basic disciplinary concepts (Lucas, 2000).

Students commented on the value of a self-diagnosis or personal stocktake for measuring their progress against the programme requirements. In particular, they learn from the process of writing itself, which involves constant deep reflection. Framing and structuring a sentence to make it coherent and comprehensible for a potential reader could be said to slow down the brain (Emig, 1977) in an intrinsically self-reflective action of the mind. With active reflection students “realise that they do not understand the work as well as they might think” (Steenkamp, Baard & Frick, 2009:134). In the iterative process their self-diagnosis is increasingly sharpened, feeding confidence building and promoting understanding.
Writing assignments were helpful in other ways which cannot be measured by assessment results (Baird et al., 1998). The students themselves reported that they had begun to acquire transferable competencies such as formal writing, working in groups, dealing with uncertainty, note-taking and critical thinking skills, all of which would be an asset for them outside the realm of academia. They particularly acknowledged the benefit they found in enhanced writing practices, and more specifically in technical writing (see May & Arevalo, 1983), both for academe and in their envisaged future workplaces.

It is important to bear in mind the limitations of the study, which focused on participants’ own perceptions of their experiences of learning in a WIT programme. There is the potential bias of self-reporting as the participants’ responses were taken at face value as being indicative of their true intentions and understanding. The researcher was also the lecturer and tutor; hence the participants’ perceptions may have been tainted by the lecturer-student relationship in an effort to ‘please’ the researcher. Further, the study was a qualitative case study specifically restricted to one group of MAFM students taught by one tutor. Accordingly, such context-dependent results may not be generalisable to a wider population.

Despite these caveats, the benefits of developing and integrating writing-to-learn strategies in accounting disciplines hold much promise for deep learning. This study has demonstrated that careful selection and integration of writing as an important aspect of learning may help higher education accounting pedagogues to better respond to the new expectations outlined for the accounting profession as prescribed by regulatory bodies. Sustained writing-intensive programmes that emphasise reflection have the potential to eliminate aversion to writing among students and to improve student confidence as it relates to mastery of subject content and examination preparation.

CONCLUSION

This paper reports on students’ experiences of learning MAFM as a consequence of their engagement in a writing-intensive tutorial programme. The IQA methodology was used to determine the affinities that are contemporaneous with these experiences. The affinity, written tasks, and its relationship with the affinities challenging, enjoyment, study technique and test preparation, and personal confidence is described. The findings indicate that participants’ reflection on the challenge of the written tasks undertaken in the WIT programme enriched their understanding of MAFM concepts, which enhanced their study technique and test preparation and led to a concomitant increase in their enjoyment of MAFM and improved their self-confidence.
REFERENCES


Professional accounting associations’ influence on higher education accounting pedagogy

N A Wood and Suriamurthee Maistry

ABSTRACT

Few studies of higher education accounting pedagogy include classroom observations in their research design and in South Africa qualitative studies of accounting pedagogy are rare. The larger study from which this paper is drawn explored the pedagogy of managerial accounting and finance lecturers at the University of KwaZulu-Natal (UKZN). One of the significant influences upon the participants’ pedagogy was the curriculum and assessment requirements of the South African Institute of Chartered Accountants (SAICA), the regulatory professional association. This paper reports on the influence exerted upon pedagogues by those requirements. A qualitative case-study research design was used and the data collection methods included teaching materials and conventional and video-stimulated reflection (VSR) interviews as well as lecture and tutorial observations. Contrary to the learner-centred teaching approach advocated by SAICA, the participants’ pedagogy was found to be teacher-centred. This appears to be explained by their restricted pedagogical knowledge arising from inadequate teacher education and deficiencies in continuing professional development (CPD). VSR, however, proved to be a powerful means of prompting critical reflection from the participants and diagnosing inadequacies requiring CPD. SAICA’s curriculum and assessment requirements, given the participants’ inadequate teacher training and development, were a pervasive constraining influence on their pedagogy. In particular, pedagogues’ preoccupation with preparing students for SAICA’s examinations was of concern and warrants further research.

KEYWORDS: Professional accounting associations, accounting pedagogy, video-stimulated reflection, higher education, managerial accounting and finance, continuing professional development

INTRODUCTION

The extent to which professional accounting associations (PAAs) as regulatory bodies rely on higher education institutions to educate their prospective members varies across the world. South Africa represents one extreme, in which the South African Institute of Chartered Accountants (SAICA) has delegated full responsibility for academic education to accredited universities but has retained considerable control of the curriculum (Venter & de Villiers, 2013). At the other extreme, the Institute of Chartered Accountants of England and Wales (ICAEW) is fully responsible for professional education and does not require its aspirant members to hold a university degree (Annisette & Kirkham, 2007). Under those circumstances the professional association (PA) has considerably less influence over university programmes than does its counterpart in South Africa. The university–professional association relationship has been marked by contestation at times, particularly when universities have perceived their autonomy to be under threat (Annisette & Kirkham, 2007; Evans, 2008).
Accounting education change has in a number of countries been the focus of investigations and reports over the years and various recommendations have been made to better equip students for their professional careers and for executing their societal responsibilities (e.g., AECC, 1990; Albrecht & Sack, 2000; Botha, 2001; van der Schyf, 2008; Hesketh, 2011; AAA & AICPA, 2012; Coetzee & Schmulian, 2012; Venter & de Villiers, 2013). One of the consistent recommendations of this literature has been the need for faculty to transform their pedagogy from teacher-centred to learner-centred approaches. Research findings reveal, however, that changes have been slow and limited, with a number of impediments having been identified (e.g. May, Windal & Sylvestre, 1995; Adler, Milne & Stringer, 2000; Palm & Bisman, 2010; Coetzee & Schmulian, 2012). Most of the studies in this regard were survey- and/or interview-based and none appeared to include direct classroom observations, a shortcoming highlighted by some researchers (Kane, Sandretto & Heath, 2002; Leveson, 2004). With a view to remedying this deficiency, the larger study from which this paper is drawn included lecture and tutorial observations in the research design and methodology.

In this paper, we explore the pedagogy of academics involved in the Advanced Managerial Accounting & Finance (AMAF) module at UKZN. One of the most important factors affecting their pedagogy was the constraining influence exerted by the curriculum and assessment polices of SAICA, the accrediting body. This finding corroborates and adds to the existing body of evidence on the subject (Botha, 2001; Coetzee & Schmulian, 2012; Venter & de Villiers, 2013). This aspect is discussed in the paper as well as the participants’ progress in adopting more learner-centred approaches, SAICA’s influence and universities’ responsibility in this regard.

The paper is structured as follows: firstly, the difference between didactics and pedagogy is discussed, followed by a consideration of teacher- and student-centred pedagogy, which is further elaborated in the literature review; thereafter research into the relationship between PAAs and universities and their influence on accounting pedagogy is considered. This is followed by an explanation of the research methodology employed, the case study findings and implications and finally the conclusion and recommendations.

**DIDACTICS, PEDAGOGY, TEACHER- AND LEARNER-CENTRED APPROACHES TO TEACHING**

Didactics and pedagogy are separately identifiable concepts and streams of education research enquiry (Bertrand & Houssaye, 1999) but the degree of distinction between the two varies across countries. Whereas in continental Europe a clear distinction is drawn between the two concepts, this is not the case in Anglo-American countries, where the notion of didactics is downplayed (Uljens, 1997; Hamilton, 1999; Melissinopoulos, 2013).

Drawing on the work of Bengtsson (1997) and Bertrand and Houssaye (1999), Melissinopoulos (2013) distinguishes didactics from pedagogy as they developed in continental Europe. Whereas didactics is more focused on describing current teaching practices, what they are and why, that is, descriptive theorising, pedagogy focuses more on normative theorising, that is, what educational goals ought to be, for example, in respect of learners’ role in society and appropriate teaching content as well as teachers’ and learners’ roles in the educational endeavour. As Melissinopoulos (2013) explains, however, these concepts can be linked through what Imsen (1999) refers to as the Learning Circle, which consists of five stages. The first three stages involve describing, critically analysing and explaining the nature of teaching and learning in a particular setting (i.e. descriptive theorising) and the resulting new knowledge then forms the basis for evaluating the appropriateness of observed practice, for revising plans and recommending improvements (i.e. normative theorising).

Although in terms of the above distinction, this study would be classified rather as dealing with didactics than pedagogy because it focuses more on participants’ teaching practices, consistent with Anglo-American terminology and other similar accounting studies (e.g. Palm & Bisman, 2010; Coetzee & Schmulian, 2011), the term pedagogy will be used.
Two pedagogical orientations frequently encountered in education literature generally (Prosser, Trigwell & Taylor, 1994; Kember, 1997; Kember & Kwan, 2000; Lindblom-Ylänne, Trigwell, Nevgi & Ashwin, 2006; Virtanen & Lindblom-Ylänne, 2010) and also in accounting education literature (Bonk & Smith, 1998; Adler et al, 2000; Lucas, 2002; Leveson, 2004; Kastantin & Novicevic, 2008; Koma, 2009; Coetzee & Schmulian, 2012) are what is referred to as, on the one hand, a teacher-centred approach and, on the other, a learner-centred one. In essence, teacher-centred pedagogy, based on the principles of behaviourism, is characterised by teachers transmitting or transferring large bodies of knowledge to students who, for the most part, are passive recipients. The focus of this teaching approach is on what the teacher does to organise, structure and impart content to students. Conversely, in student-centred pedagogy, based on constructivist principles, teaching is focused on helping students to construct their own knowledge and understanding through active involvement in the teaching and learning process. In the literature review that follows, the contrasting dimensions of these two approaches will be further elaborated.

LITERATURE REVIEW

Before considering higher education accounting pedagogy, its development and the role played by professional associations, the broader issue of PAAs’ relationship with academic accounting units needs to be discussed.

PAA’s and higher education accounting units’ relationship

Because members of professional associations are generally regarded as possessing highly specialised complex knowledge, and universities are traditionally seen as the custodians of such knowledge (Friedson, 1986), it is generally expected that a strong collaborative relationship would exist between professions and universities (Abbott, 1988; Annisette & Kirkham, 2007). While this is the case for many professions (Annisette & Kirkham, 2007), the accounting profession university link is more tenuous and often a source of contestation around issues of curriculum and examination autonomy. (AAA, 1986; Arthur Andersen & Co. et al, 1986; Zeff, 1989; Botha, 2001; Cooper, Everett & Neu, 2005; Evans, 2008; van der Schyf, 2008; Coetzee & Schmulian, 2012; Venter & de Villiers, 2013). While accounting academics in other countries have by and large resisted the attempts of PAAs to exercise greater influence over their activities, the resistance of their South African counterparts to SAICA’s powerful influence has been rather muted. The historical reasons for this are explained below.

Employing institutional theory, Venter and de Villiers (2013) have explained how the South African accounting profession has managed to gain and maintain its powerful position in university accounting departments and why accounting faculty have offered relatively little resistance. Although SAICA was only formally constituted in 1980, from 1945 onwards the profession operated under the auspices of a national coordinating body, which in 1950 was able to successfully negotiate an arrangement under whose terms the universities took responsibility for preliminary professional accounting education while the profession took charge of the final qualifying examinations. Then in the 1970s and 1980s the profession was able to further cement its relationship with the universities because at that time foreign-based accounting associations were either not operating in South Africa, owing to the country’s apartheid-related pariah status, or, if they were in South Africa, they preferred to maintain a low profile. Also during this period, while other countries, for example, the UK, were appointing faculty with research-based higher degrees (Annisette & Kirkham, 2007), this was not the case in South African universities which were predominantly recruiting CA-qualified personnel. Thus SAICA members were well represented in university accounting departments, and this situation has persisted because one of SAICA’s accreditation requirements is that the majority of faculty teaching on a CA programme must be CA-qualified.
SAICA’s indirect legal authority for accrediting university accounting programmes has further placed it in a very powerful position vis-à-vis universities. Thus accounting programmes must demonstrate, among other requirements, that they address SAICA’s detailed competency requirements and achieve minimum pass rates in its external examination, the Initial Test of Competence (ITC). Not only is poor ITC performance a threat to a programme’s accreditation, but the manner in which SAICA publicly compares universities’ ITC results exerts considerable pressure to achieve and maintain high pass rates (Botha, 2001) and so enhance an institution’s reputation. Added to this is the fact that subvention payments to accounting faculty are significantly influenced by ITC performance. All these factors, then, combine to give considerable leverage to SAICA over university accounting programmes even as they encourage a ‘teaching to the test’ mentality among accounting lecturers (Botha, 2001; Venter & de Villiers, 2013). The focus on the external examination serves to narrow the curriculum to which students are exposed as they expect to be coached to success (Botha, 2001; Coetzee & Schmulian, 2012); hence, internal assessments replicate those set by the professional association (Coetzee & Schmulian, 2012). These are circumstances that tend to favour a teacher-centred pedagogical praxis even though a learner-centred one has far greater potential to empower and develop students (Botha, 2001; Hesketh, 2011; Coetzee & Schmulian, 2012) and prepare them for lifelong learning.

What further reinforces SAICA’s influence is the status it enjoys both locally and overseas, being highly regarded by South African employers (Venter & de Villiers, 2013) and the CA(SA) qualification being ranked first among 144 nations in respect of “Strength of auditing and reporting standards” (Schwab & Sala-i-Martin, 2013:347), one of the indicators used in determining the rankings of the 2013-2014 Global Competitiveness Index. Further cementing SAICA’s influence is the fact that most university accounting department heads are CAs who identify strongly with SAICA, since they “derive their status and financial benefits from their association with SAICA” (Venter & de Villiers, 2013:1266). Not surprisingly, then, meeting SAICA’s requirements has become institutionalised in South African university accounting departments, which explains why there is, and has been, relatively little resistance to the professional body’s powerful influence. Nevertheless, as will be shown below, SAICA’s influence on accounting education has not been without its critics (Botha, 2001; van der Schyf, 2008; Coetzee & Schmulian, 2012; Venter & de Villiers, 2013).

With regard to SAICA’s curriculum prior to the introduction of its competency-based model in 2010 and 2011 (SAICA, 2011), concern was expressed about the narrowing influence of SAICA’s requirements on accounting programme curricula (van der Schyf, 2008; Coetzee & Schmulian, 2012; Venter & de Villiers, 2013). Coetzee and Schmulian (2012) and Venter and de Villiers (2013) highlighted the overemphasis on technical content in the financial accounting syllabi and in SAICA’s qualifying examinations and hence the low priority accorded theoretical and social issues in the curriculum. They also drew attention to the volume of SAICA’s curriculum which thwarted efforts to broaden its scope, for example, by introducing an accounting theory course (Venter & de Villiers, 2013). In similar vein, though more generally, van der Schyf (2008:20) pointed out that the SAICA syllabi did not expose students “...to the conceptual foundations of accounting (accounting theory) and research methodology”, which resulted in accounting lecturers not gaining proficiency in those areas. In addition, most faculty members themselves, being CAs, had been taught according to SAICA’s curriculum which, as indicated above, did not foster the development of research skills (Venter & de Villiers, 2013). Thus the extensive technical requirements of SAICA’s curriculum have encouraged an emphasis on technical teaching at the expense of an exploration of wider accounting issues (Venter & de Villiers, 2013). Moreover, the volume of the curriculum combined with a lack of research expertise among accounting lecturers has resulted in restricted research activities so that accounting departments contribute very little to knowledge development, which is after all one of the primary functions of a university (van der Schyf, 2008; Venter & de Villiers, 2013).

A further narrowing effect of SAICA’s curriculum, identified by Botha (2001) and confirmed by Coetzee and Schmulian (2012), was its concentration on knowledge acquisition, with considerably less attention being directed to promoting professional skills and attitudes. In 2010, however, SAICA revised its curriculum
requirements, replacing its “knowledge-based” syllabi (SAICA, 2011: 3) with a competency-based framework. A significant change in the framework was the greater emphasis placed on developing students’ “pervasive qualities and skills” (SAICA, 2011: 20-34), listed in detail and grouped into three categories: “Ethical Behaviour and Professionalism, Personal Attributes and Professional Skills”. SAICA’s intention is that these qualities and skills, together with the required competencies in the core accounting disciplines, financial management, auditing and taxation, “...would combine to produce the technical excellence, integrity, objectivity and commitment to public interest for which the CA profession is known” (SAICA, 2011:20). However, the continued emphasis on technical requirements, particularly in financial accounting, auditing and taxation, as evidenced by lengthy examinable pronouncements1 as well as the continued voluminous curriculum requirements may hamper the development of the desired pervasive qualities and skills, which are indeed better fostered by student-centred teaching approaches, as emphasised in the accounting education change literature, details of which are discussed in the next section of the literature review.

Professional associations’ influence over accounting education has been criticised and contested in other countries too. In the US, for example, the American Institute of Chartered Professional Accountants (AICPA) has, like SAICA, delegated academic education to accredited universities but this process has not been without its critics. Cooper et al. (2005) pointed out that because of this arrangement the AICPA’s professional examinations have significantly influenced university curricula, and both the Bedford Committee (AAA, 1986) and the Big 8 accounting firms (Arthur Andersen & Co, et al., 1986) recommended that passing CPA examinations should not be a primary objective of accounting education. Kren, Tatum and Phillips (1993) reported that some of the 1980 accreditation standards were criticised for being over-prescriptive and hindering programme innovation and development. Subsequently, however, the standards were revised to allow for greater curriculum flexibility with respect to structure and content.

In the UK, the Institute of Chartered Accountants of England and Wales (ICAEW), like its counterparts in Scotland and Ireland, does not require aspirant members to hold university degrees; instead the Institute itself is responsible for their professional education. Because of this arrangement, UK universities are afforded much greater autonomy over accounting education than is the case in South Africa, and attempts by the professional association to impinge on their independence in the 1980s were rebuffed (Annisette & Kirkham, 2007:19). Similarly, in 1970, higher education institutions in Australia resisted attempts by the Australian Society of Accountants to introduce a qualifying examination for their students (Evans, 2008).

To summarise, SAICA exercises considerable influence over the activities of South African university accounting departments through its accreditation requirements, effective control of the curriculum, the reputational and financial pressures exerted by its ITC qualifying examinations, and its strong constituency of members who comprise the majority of departmental staff. In other countries, PAAs have considerably less influence either because aspirant professional accountants do not require a university accounting degree or, if they do, the universities enjoy more curriculum autonomy and are not subject to the same pressures related to performance in PAA-administered examinations.

With this as background, the current complexion and possible future development of higher education accounting pedagogy and the role of professional associations will now be discussed.

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1 The examinable pronouncements specify the scope and depth of relevant legislation, statements or standards that will apply to SAICA’s specific ITC examinations.
Accounting pedagogy's development and PAA's influence

There have been persistent calls over a long period of time for accounting faculty to transform their teacher-centred pedagogy and adopt more learner-centred approaches so as better to equip students for a work environment characterised by constant change and a demand for more than just technical proficiency (AAA, 1986; AECC, 1990; Albrecht & Sack, 2000; Botha, 2001; Parker, 2001; Howieson, 2003; Bui & Porter, 2010; Hesketh, 2011; AAA & AICPA, 2012; Coetzee & Schmulian, 2012). This body of literature highlights the ill-suitedness of teacher-centred pedagogy to the creation of learning experiences that will enable students to develop the required professional skills and attitudes, and thus points to the need to adopt learner-centred approaches conducive to the development of critical thinking, problem solving, leadership, team work and communication skills. In addition, Sharma's (1997; 1998) research revealed links between teacher-centred learning environments and students' superficial approach to learning on the one hand and, on the other, learner-centred environments and a deeper, more critically aware approach to learning. This finding is consistent with those in other higher-education disciplines (Ramsden, 2003; Trigwell & Prosser, 2004).

A teacher-centred pedagogical praxis in accounting is characterised by conventional lecture and tutorial strategies (Adler et al., 2000; Palm & Bisman, 2010), teacher-dominated communication (Williams, 1993) and textbook-intensive knowledge transmission during which students remain largely passive (May et al., 1995). Highly structured, naively straightforward and often contrived textbook problems with single correct answers are overemphasised to the detriment of exposing students to the kind of ambiguity that characterises much of real-world decision making (AAA, 1986; AECC, 1990; Williams, 1993; Albrecht & Sack, 2000; Springer & Borthick, 2007).

A student-centred teaching and learning environment on the other hand is characterised by learners' active participation and interaction in the teaching and learning process (Keddie & Trotter, 1998; Adler et al., 2000). In this way each learner, against the background of his/her personal experience, is able to socially construct his/her own understanding of concepts. Lecturers no longer attempt to transfer pre-packaged knowledge and understanding to students; instead they focus on facilitating students' personal meaning-making (Snowman & Biehler, 2000). Changing from teacher- to student-centred pedagogy requires the introduction of innovative teaching methods and assessment, examples of which include case studies and group work (IFAC, 1996), role plays, simulations, writing assignments (Bonk & Smith, 1998), and problem-based learning (Milne & McConnell, 2001). While subject content, assignments and assessments need to be challenging enough to develop students' critical thinking and problem-solving skills, at the same time, in order to emphasise their relevance, they need to be grounded in real-world practice (Springer & Borthick 2007; Hesketh, 2011).

Although some faculty over the years have heeded such recommendations and adopted more learner-centred approaches, it appears that teacher-centred pedagogy still dominates (May et al, 1995; Adler et al., 2000; Lucas, 2002; Palm & Bisman, 2010; Hesketh, 2011; AAA & AICPA, 2012; Coetzee & Schmulian, 2012). Adler et al. (2000) found some evidence of learner-centred activities such as seminar discussion groups and case studies, but these were the exceptions. Palm and Bisman (2010:192) concluded that although some faculty indicated adoption of more creative teaching and learning practices such as “... on-line quizzes, ...real-world case studies... and student group presentations”, the opportunities to effectively facilitate student-centred learning within the conventional large-class lecture environment appeared to be limited.

Researchers have identified a number of impediments to the more widespread adoption of learner-centred pedagogy (May et al., 1995; Stout, 1996; Adler et al., 2000; AAA & AICPA, 2012; Coetzee & Schmulian, 2012). These will now be discussed using Adler et al.'s (2000:118-128) classification framework, namely, “Student readiness, Educator support mechanisms and Non-reflective educator practices” as well as other categories where necessary.
Student readiness

Students’ conception of their role as passive recipients and of the role of faculty members as expert transmitters of knowledge acted as a deterrent to adopting learner-centred pedagogy (Adler et al., 2000). Similarly, as mentioned before, the high-stakes nature of the professional association’s examinations encouraged students to seek to be coached, thereby facilitating the entrenchment of a teacher-centred pedagogy (Coetzee & Schmulian, 2012).

Educator support mechanisms

A consistently reported impediment to adopting learner-centred approaches is that, compared to research accomplishments, teaching innovation and development is undervalued by educational institutions’ reward and recognition polices (Adler et al., 2000; AAA & AICPA, 2012). Similarly, SAICA’s subvention scheme, which places strong emphasis on rewarding success in the ITC examinations, may inadvertently be discouraging teaching innovation. To the extent that success in these exams is achievable through intensive coaching and ‘top-down’ teaching practices, there will be a continuing disincentive to implement a more progressive pedagogical regime. In addition, faculty members’ restricted pedagogical knowledge, arising from inadequate teacher training and development, contributes to the flagging implementation of effective teaching practices (Adler et al., 2000; AAA & AICPA, 2012; May et al., 1995).

Non-reflective teaching approaches

The tendency for faculty to teach as they were taught, coupled with inadequate higher education teaching development, results in teacher-centred methods being perpetuated (Adler et al., 2000; AAA & AICPA, 2012).

Professional Associations’ curriculum requirements

Although this category was not included by Adler et al. (2000), their study nonetheless revealed some of its drawbacks. Technically orientated, rules-based curricula encourage the perpetuation of teacher-centred approaches (Coetzee & Schmulian, 2012), and voluminous curricula in the quest to address the professional associations’ content requirements leave little time for learner-centred activities (Adler et al., 2000; Coetzee & Schmulian, 2012).

At a more general level, the Pathways Commission report (AAA & AICPA, 2012:14) attributed the slow pace of change in accounting education to the fact that “…most past efforts at renewal have lacked an explicit implementation strategy and structure to move their recommendations forward on a systematic and properly resourced basis”. They therefore recommended that the relevant stakeholders – academics, professional associations and practitioners – needed to devise and enact an appropriate implementation strategy.

SAICA’s curriculum revision – a possible catalyst for learner-centred pedagogy

SAICA’s revised curriculum, as it finds expression in the competency framework (SAICA, 2011), may perhaps act as a catalyst for pedagogical change, given its implied advocacy of learner-centred teaching strategies. For example, the educational philosophy informing the competency framework is based on:
... some of the core ideas of John Dewey… and if appropriately taught and assessed, the new requirement [of pervasive qualities and skills] will materially advance the students’ mastery of technical competencies. Students make sense of knowledge when...the first contact with new material involves some trial and error, ‘with something to do rather than to learn’... and requiring independent thought and noting of connections (SAICA, 2011: 9).

These sentiments are consistent with experiential learning and learner-centred teaching approaches. But, as noted above, the continued emphasis in the curriculum on technical issues, coupled with its sheer volume, may militate against the adoption of a student-centred pedagogy, particularly if the impediments identified previously are not addressed. This view is supported by Coetzee and Schmulian (2012:95):

...the extent to which such a change can be achieved is largely dependent on a reduction of the current level of technical knowledge expected of the students, and a fundamental revision of the nature of the professional accountancy examination and/or the academes’ focus thereon, particularly at an introductory level....

While some of the qualities and skills which SAICA would like to see students acquire in terms of its revised curriculum are better developed in the workplace (e.g. managing and supervising staff), accredited institutions of higher learning are required to show how their accounting curricula will foster the development of the desired qualities and skills and whether some of them might be beyond their power to address. SAICA for its part does not prescribe how the qualities and skills in question are to be transferred to students but expects the accredited institutions to design programmes that will incorporate learning opportunities conducive to their transfer and development.

METHODOLOGY

The study reported on here was located within an interpretative paradigm and consequently was qualitative in nature. Given the many and varied factors that impact individuals’ pedagogical praxis, an exploratory case-study research design was employed (Hitchcock & Hughes, 1995; Yin, 2009), involving originally four participants, two teaching the undergraduate module, Managerial Accounting and Finance 300 (MAF300) and two the postgraduate module, AMAF. Multiple data sources were used to explore the phenomena with each participant’s data set comprising: module outlines, lecture and tutorial materials (Rule & John, 2011); an initial interview (Patton, 1990; Bogden & Biklen, 1992); six hours of video-recorded observations, three for lectures and three for tutorials (Patton, 1990; Simpson & Tuson, 2003); as well as two video-stimulated reflection interviews (Lyle, 2003; Powell, 2005; Muir, Beswick & Williamson, 2010). Given the size and richness of each data set, it was decided to confine the study to the two participants teaching the postgraduate module, and for this paper only the lecture-related data were used. Each varied data set not only revealed different aspects of the phenomena studied but also contributed to the trustworthiness of the findings through triangulation.

FINDINGS

The professional association’s (namely, SAICA’s) general influence on the participants’ pedagogy will first be considered followed by a discussion of each participant’s practice. To preserve their anonymity the participants have been given the pseudonyms Dan and Sue.
The regulatory body’s dominant influence on teaching practices – perceived as constraining

In commenting on the influence of SAICA’s qualifying examination (QE) on his teaching, Dan stated:

...I mean, if you're teaching at an honours level, you know, most of these students are there because they want to firstly get to write the QE and then secondly to pass it. So, I don't know, rightly or wrongly, a lot of the emphasis is on what could be in the QE and how you need to prepare yourself for it (II 77-79).

From the students’ perspective, because they were in their final year of study, the prospect of gaining entry to and passing the QE was that much more real than in the earlier years of their degree and so for most of them that was an overriding objective. To meet their expectations, Dan felt compelled to give a great deal of attention to considering what aspects might or might not be examined in the QE and preparing his students accordingly. He, however, signalled some misgivings about the extent of the influence that the regulatory body’s examinations exerted on his teaching practice, implying that he would have preferred greater flexibility with regard to content and assessment than was currently the case.

Sue’s comments during the initial interview concerning changes in the nature of her lecturing over the years bear further witness to the dominant influence of the regulatory body’s requirements on her teaching practice:

I used to teach Strategy to the fourth years...at DUT [Durban University of Technology] and that was really, it was actually very nice lecturing to do because everything could be contextualised in terms of what was going on in the real world. And you didn't have to worry so much about a SAICA exam or whatever; it was your exam at the end of the day.... And I find that difficult now and I think it's for two reasons, because firstly I think there's a lot more work to cover so I think you don't have a lot of time.... And also you've got to think about the way it's examined at the end of the day so you're actually trying to get the level of understanding they need in order to answer the exam question. So there's a degree to which you are teaching to an exam at the end of the day (II 527-536).

Sue thoroughly enjoyed lecturing the Strategy module at her former employer, DUT, because she was able to relate theoretical content and principles to actual practices in the world at large. In addition, she was not burdened by concerns of ensuring compliance with an external regulatory body's curriculum or of preparing her students for that body's assessment. In her current situation, however, the regulatory body’s considerably larger curriculum allowed less time, in her opinion, for contextualising content. In addition, more time had to be devoted to ensuring that her students achieved the necessary level of understanding required by the external assessments. Thus, currently, her efforts were directed more towards preparing students for their external assessments than towards relating concepts and principles to actual business practices, which formerly she was able to do being unhampered by the requirements of an external regulatory body.

Paradoxically, the regulatory body’s Competency Framework (SAICA, 2011) strongly advocates the linking of theoretical content to its practical application and yet, as far as Sue was concerned, the body’s own curriculum and examination requirements were hindering her from realising the desired contextualisation. In further discussion on this matter during the interview, she added, however, that a contributing factor to her difficulty in contextualising lecture content currently was that, in her opinion, the Strategy module lent itself more easily to using current business illustrations than did Managerial Accounting.
It is, however, possible that the time constraints Sue experienced may have been principally related to what appear to be her content-coverage conception of teaching, as evidenced by her statement above: “there’s a lot more work to cover so I think you don’t have a lot of time.” This possibility will be further explored later.

An analysis of the teaching materials and of the interview and observation data revealed the pervasive influence of the regulatory body’s curriculum and examination requirements on Dan’s and Sue’s teaching practices: for example, Dan curtailed some of his more advanced lecture content because he adjudged it to be beyond the curriculum’s scope, and both Dan and Sue aligned tutorial content and internal assessment practices with recent trends and developments in the regulatory body’s external assessment policies and procedures.

Both Dan and Sue stressed the fact that a significant focus of their teaching practice was preparing their students for the regulatory body’s external assessments, but they also expressed some misgivings, either implicitly or directly, about the constraints that this imposed in terms of their content and assessment decisions.

From the above analysis we may infer that, although Dan and Sue had a degree of autonomy over their content and assessment decisions and, in theory, could have pursued the goal of promoting their students’ broader intellectual development instead of teaching towards SAICA’s requirements, in practice not only did the accreditation-related threat of the consequences of poor QE performance prevent them from doing so, but they also felt compelled to meet their students’ real-world expectations.

Having demonstrated the pervasive influence of the regulatory body’s requirements on the participants’ teaching practices, we shall now examine Dan’s and Sue’s lecturing praxis, the tensions experienced and the alternative pedagogies considered or implemented, together with their related constraints. Each case will be dealt with separately initially and then overall conclusions drawn in the discussion section.

CASE 1 – DAN’S PROGRESS TOWARDS IMPLEMENTING LEARNER-CENTRED PEDAGOGY

Conventional pedagogy restricts students’ engagement and understanding

As was evident from observing Dan’s lectures, he adopted a conventional teacher-centred approach in that he tended to transmit information to his students, who seldom actively participated through dialogue or interaction with either him or their peers. But his viewing of a particular episode during the VSR interview, in which a student asked him to re-explain a concept, prompted him to question the effectiveness of his lecturing in facilitating conceptual understanding:

> It actually makes you wonder how effective lecturing is as a teaching tool ... it’s [the principle he was re-explaining is] really a basic concept...if she just failed to understand the logic of it, then you really wonder how much do they actually grasp when you’re just lecturing continuously without any interaction with the class (LVSR 258-265).

The limitation of his pedagogy stood out with particular sharpness because he regarded the issue at hand as being a basic construct, implying thereby that the final-year student should have understood it without any need for further explanation. As will be explained later, the use of VSR interviews unexpectedly proved to be a useful means of collegial continuing professional development (CPD).
Time pressures constrain students' engagement: Content-coverage compulsion and inappropriate timetabling structure

Dan's comments above suggest that he regarded student engagement through interaction as an important facilitator of students' conceptual development and his statement below, explaining why he included lecture example solutions in students' notes, confirms this impression:

I think it's just time constraints, there's so much to go through during the lecture, if you're going to ask them to do the solution every time you're just not going to cover the material.... Ideally you would want to be as interactive as possible and for them to work out as much as possible, because that's really how they're going to learn, but it's just a matter of time constraints, nothing else (LVSR 276-280).

So Dan recognised the importance of ongoing interaction and student participation for knowledge development during lectures but was prevented from giving this educational imperative its due owing to time pressures related to his perception of the need to complete the regulatory body's required content. By emphasising his sense of a compulsion to make sure the required content was covered, Dan was disclosing an important element of his teaching conception, namely a content-coverage focus which may have been one of the underlying reasons for the time pressures he experienced, even though he attributed them to external and structural factors as explained below:

There are two issues, one is just the SAICA syllabus, I think, there's just so much in the syllabus the students are expected to know that it makes it very difficult to spend a lot of time on individual topics. And then the other issue...we've got a timetable that's traditionally been there. I mean, no one has really questioned it as to whether it should be like that, but maybe that's something we need to explore (LVSR 285-290).

In his opinion there were two contributing factors to the time pressures he experienced. The first was external, that is, SAICA's curriculum, and the second structural, namely, the timetable. We may infer from his comments that, if he were to make space for the kind of ongoing interaction he desired, not enough time would be left for him to address what he regarded as SAICA's vast curriculum requirements. The evident tension though is that by limiting interaction during lectures, students' ability to gain the necessary understanding and competencies would be compromised. Possibly if he had been more selective about what content to introduce into lectures and what to leave for students to address on their own, the time pressures would have been less severe, thus enabling him to interact more with his students. The more fundamental question, however, is the impact that SAICA's content-intensive and technically orientated curriculum has on accounting education more generally in the sense that, as discussed above, it is felt that there is no time to spare for engaging with more theoretical issues such as the conceptual foundations of management accounting and their impact on society. This will be considered in more detail in the discussion section.

The other issue Dan raised was that the long established timetable for his module and the diploma as a whole possibly contributed to his sense of always working against the clock. Though no one had questioned the suitability of the timetable structure, perhaps the time had come to do so, having regard to the time pressures he was experiencing.

The diploma's timetable allocates consecutive days to each of the programme's four modules, and each module's lectures and tutorials for the week all occur in the morning of the allocated day. For example, for Dan's module, the timetable specifies a double-period tutorial (90 minutes) followed by a triple lecture (135 minutes). One of the timetabling issues Dan alluded to in the course of the interview was the merits of packing so much into
a single morning. Perhaps student learning and engagement would be better served by spreading the module’s content over a more extended period, thus allowing time for reflection and the internalisation of one set of concepts before the introduction of others. A further possible benefit of a less concentrated timetable might be a more alert and attentive body of students, capable of grasping concepts more readily, thereby easing some of the time pressures weighing upon Dan.

These pressures, which contributed to his adopting a teacher-centred, content-focused lecturing approach, were driven firstly by a compulsion to cover the regulatory body’s oversized curriculum and secondly by a timetable design too concentrated to support optimally the teaching and – from the students’ standpoint – the learning of that curriculum.

**Time pressures: Instrumental learning necessitates re-teaching**

Further insights into the time pressures Dan experienced were revealed in his response concerning the role of students’ prior learning in alleviating them:

> I think it [prior learning] does [alleviate time pressures], but also the problem is... if you look at the question that was asked by the student where I had to explain a second time...you again wonder how much knowledge are they retaining...should I really even be covering this [Financial Statement Analysis] because they do this in first year, second year and third year. But I have to do it because I cannot assume that they know it, there is something missing...I think it goes back to that problem of exams and people are targeting the learning just to pass an exam and then nothing is retained after that (LVSR 295-300, 306-308).

Although Dan acknowledged that students’ prior learning did sometimes ease time pressures, he expressed doubt about students’ prior knowledge in the light, for example, of the above request for a re-explanation of something which would have been addressed in each of the student’s undergraduate years. Consequently, he felt compelled to re-teach this concept and suggested the problem stemmed from students’ instrumental approach to learning which targeted passing examinations at the expense, by inference, of acquiring conceptual mastery of the basic postulates of the discipline and their interrelationship. Thus, in his opinion, because of their superficial learning habits, students were often unable to transfer key knowledge from prior to subsequent years. His comments raise questions about the efficacy of undergraduate teaching and assessment given that, as previous studies have shown (Gow, Kember & Cooper, 1994; Friedlan, 1995; Sharma, 1997; Mladenovic, 2000), students’ approach to learning accounting is significantly influenced by the teaching and learning context.

**Catalysts for implementing learner-centred pedagogy: Enhanced learning opportunity and the professional body’s assessment practices**

Dan was then asked to suggest the type of learning activities that could be incorporated into the curriculum to foster better knowledge retention as well as transfer across academic levels. He replied:

> Maybe case studies which give a real-world scenario...and then group work.... So, that’s then more targeted towards understanding the problem and resolving the problem, rather than focusing on a typical type of question where you’ve got to work out certain numbers and then see whether you’ve got enough marks to pass that particular
question...and then presenting your solution to a complex... multidimensional problem that may incorporate strategy, tax, financial accounting and management accounting...I think they learn a lot more from that. And maybe that is the way that SAICA is moving now, so I think probably now we have to rethink what we’re teaching (LVSR 311-321).

Dan suggested that group-based case studies, simulating as far as possible actual business practices, would be appropriate tools for fostering deeper understanding and knowledge transfer. To be authentic, however, the issues to be resolved should be challenging and not confined to MAF but rather multidisciplinary in nature, incorporating the other core accounting disciplines and situated within a firm’s overall strategic context. By undertaking case studies in groups, students would be in a position to share knowledge and insights while grappling to identify and understand the issues to be resolved and then, through further discussion and debate, come up with feasible solutions to be presented to the class. Compared to existing learning activities, which, in Dan’s opinion, oversimplified business issues, were too discipline-specific and encouraged a superficial engagement by students, those he advocated had the potential to deepen significantly students’ knowledge base and at the same time to improve knowledge transfer. Furthermore, Dan was of the opinion that perhaps SAICA was moving in the direction of case-based assessment and because of that he and his colleagues should consider changing their teaching approach, which, by implication, would entail moving away from teacher-centred to learner-centred strategies.

**Catalyst for change—critical reflection prompted by VSR interview methodology**

Dan was then asked if, in his opinion, there were any constraints or hindrances that might prevent his implementing case-based teaching, to which he responded:

> No, I think it’s something we need to look at. I think it’s just that we’ve been caught up in this traditional mode, this is how we were taught and now we’re going to teach in the same way. So, I think maybe it’s time for a fundamental rethink about this model of just traditional lectures in front of the class and then tutorials (LVSR 328-331).

In Dan’s view, then, there were no specific obstacles to implementing case-based teaching. The reason it had not been considered as an alternative to the existing teacher-centred approach was that accounting academics were probably unaware of alternative approaches and so adopted the same teaching methods to which they had been exposed as students, in other words, teaching as they were taught. However, it was now time for a complete re-evaluation of the existing conventional pedagogy and, by using the phrase “a fundamental rethink”, Dan may have had in mind not just a switch to a different teaching strategy but also an interrogation of the underlying premises and conceptions of teaching and learning held by accounting academics.

The fact that, in his opinion, accounting lecturers had not considered alternative teaching approaches suggests not only inadequate reflection on the effectiveness of their teaching but also a lack of exposure to formal teacher training and continuing professional development (CPD), an issue that will be elaborated on later. It also points to their lack of engagement with the accounting education literature, suggesting perhaps a weak research culture within their academic home.

It is probable that Dan’s critical reflection on the weaknesses of the prevailing teacher-centred model of transmissive pedagogy, and the need to consider alternatives, was prompted by his realisation of the shortcomings of his own teaching approach, which the video-stimulated reflection (VSR) interview process thrust into vivid relief. This suggests that VSR interview methodology has the potential to be used for professional development
purposes and Dan’s comments below, at the end of the VSR interview, lend support to this notion:

And it’s actually been very interesting for me, you’ve got me thinking about certain things, which I think is good, because sometimes we just sort of get into this mode of doing it the same way we’ve done it every year and we carry on. So, at least, you know, if you ask us questions we start thinking about what we’re doing and why we’re doing it, which is something we don’t often do (LVSR 778-782).

Dan clearly found the VSR interview process worthwhile because it prompted him to critically reflect on his teaching praxis and its underlying rationale, something he had seldom done previously, as reflected in his tendency to adopt unquestioningly the same teaching habits year after year.

The context within which the VSR interview was conducted may have contributed to its success in prompting Dan’s critical reflections and thereby encouraging him to consider alternative pedagogies: Dan’s interviewer was a colleague involved in teaching the same module, who had similar teaching experience and emphasised that the purpose of the interview was research related and not in any way evaluative. In addition, confidentiality was assured. Thus it is possible that, because of the collegial setting and the mutual respect and trust that existed between interviewer and interviewee, Dan considered it safe to acknowledge limitations in his practice and to ponder alternatives. As a vehicle for professional development, the VSR interview, along with the particular format it assumed in Dan’s case, may be more effective at stimulating critical reflection than any other CPD activity.

**Case-based pedagogical knowledge gaps and the need for CPD**

Despite his openness to critical self-scrutiny, Dan’s comments regarding the implementation of case-based teaching reveal a rather limited understanding of this pedagogy and point accordingly to the need for training and professional development.

So, you know...you may end up in a situation where you’re not doing a lot of teaching, but you’re actually listening to students presenting to you and then you’re giving feedback to them, rather than it being the other way around which it currently is. So...does that make up your teaching? Well, I suppose it’s contact time, but is that going to be accepted now that you’re teaching, I don’t know? (LVSR 353-358).

Dan wondered whether a case-based pedagogy which entailed listening to student presentations and providing feedback, as opposed to his current teacher-led lecturing methodology, would be regarded as teaching in terms of workload protocols. He seemed to betray almost a sense of guilt that perhaps he would be failing in his teaching responsibilities if he were to embrace a case-study model. What Dan’s comments reveal is that his conception of teaching was so deeply embedded in teacher-centred paradigms that he found it difficult even to conceive that a case-based pedagogy could constitute teaching. This is not surprising given the fact that he had only ever been exposed to conventional teaching methodologies and had never participated in any formal CPD programmes.

What also emerges from his comments above is an incomplete understanding of his role in a case-based setting. It appears that he saw his role as being primarily to listen to case presentations and to provide feedback. This suggests that he did not fully appreciate how learning during case-study deliberations could be facilitated by, for example, posing strategic questions as a means of guiding students in their several groups to identify key issues and reach feasible solutions. Nor did he comment on the importance of his role as a facilitator of discussion and debate during case presentations. His comments suggest instead that he saw himself as the sole provider of
feedback, which perhaps betrays the abiding influence of a teacher-centred conception of his role, even in the context of a case-based pedagogy. Dan’s restricted understanding of his role reflects the absence of, and the need for, CPD as a means of exposing him to alternative teaching paradigms, in particular case-based teaching.

Dan’s biographical information, disclosed prior to the initial interview, indicated that he had never received any formal teacher education, training or guidance; and his comments below suggest that accounting lecturers’ lack of CPD has worked to the detriment of their proficiency as teachers:

So, I mean, accountants just came into academia and just taught intuitively without any formal training in education...so maybe we haven't really benefited by being exposed to the real educationists and different teaching models and teaching approaches. So, I think from that point of view perhaps there is some development that's lacking over there (LVSR 720-726).

In response to the lack of teacher training, not just of accountants but of most appointees to academic positions, UKZN has in recent years introduced formal teacher induction modules for all newly appointed lecturers, and it is anticipated that this initiative will to some extent address the problem of the limited pedagogical competence of appointees to academic positions in accounting.

**CASE 2 – SUE’S PROGRESS TOWARDS ADOPTING LEARNER-CENTRED PEDAGOGY**

In this section we will consider the nature of Sue’s existing lecturing pedagogy, the limitations that she identified and an intervention she implemented to address the perceived limitations.

**Teacher-centred, content-intensive lecturing approach**

Sue’s explanation of her role and that of her students in the lecture setting revealed her approach to lecturing AMAF:

So I kind of go through most of what the textbook covers on a particular section.... So for me the lecturing is explaining in a fair amount of detail what the topic is, why it's important and then whatever calculations are necessary, how to go about those calculations with examples (II 391-394).

...they’re [the students are] just there listening and trying to follow and understand whereas it could be more, they could be more participative (II 405-406).

Sue conceived of her lecturing role as involving the transmission of fairly detailed explanations of textbook content, its purpose and importance, and the demonstration, by way of examples, of the application of principles. Within this teacher-dominated context, her students played a largely passive role as they attempted to understand principles explained and techniques demonstrated. She expressed dissatisfaction, however, with her students’ passivity and would have preferred them to be more actively engaged and participative. It is also apparent from her comments that her content-intensive lectures were driven, as were Dan’s, by a felt need to cover large volumes of material. The lecture sessions observed confirmed her teacher-centred, content-intensive lecturing approach
which, however, she attempted to moderate with the introduction of a more learner-centred activity, namely use of concept questions, details of which are discussed below.

**Concept questions – A learner-centred intervention prompted by an accounting-specific initiative and critical reflection**

As Sue’s comments below indicate, her exposure to an intervention aimed at improving tutorial effectiveness in MAF 300, an undergraduate module, together with her reflections on the perceived ineffectiveness of her teacher-centred pedagogy, motivated her to introduce a lecture activity, referred to as concept questions, whose purpose was to raise the level of student engagement:

> It basically is an idea I got from, there were two things—firstly, they used to do a concept question in MAF 300 tutorials when they did that exercise with Rosy²...so the idea came from them... also when we were having... the bad pass rate...I couldn’t believe that these people had sat in my lectures for a whole year and then come out and they knew so little. And I thought, there’s got to be some way of making the lectures more effective, making them participate more in the classroom (II 457-458, 471-474).

The tutorial intervention for MAF 300 was an accounting-specific initiative suggested by experienced educational consultants whose ‘brief’ was to help undergraduate faculty to improve their tutorial effectiveness. The role it played in prompting Sue to initiate a learner-centred activity to improve her lecturing effectiveness demonstrates the importance of accounting lecturers being exposed to more progressive pedagogical ideas.

A further stimulus to Sue’s introducing a learner-centred activity was her students’ poor assessment performance, leading to critical reflection on her lecturing effectiveness. It seemed incredible to her that having been exposed to her teaching for a year, their knowledge and understanding appeared still to be so limited. She concluded, upon reflection, that getting her students to participate more actively in lectures would be a way of improving her lecturing effectiveness. It would seem from her comments, however, that the way she envisaged achieving greater levels of participation was more by compulsion than by facilitating and stimulating students’ voluntary involvement. If such was the case, it demonstrates the pervasive influence of a deep seated teacher-centred pedagogy and suggests that, if Sue is to successfully implement a more learner-centred pedagogy, there is a need to make her aware, through appropriate CPD, first of her conventional conditioning and second of the merits of alternative, more progressive teaching paradigms.

Sue explained how she had adapted the idea of concept questions as used in undergraduate tutorials and applied them to her postgraduate lecturing setting:

> ...because that was one of the motivations that Rosy... gave for having it [the concept question] in the tutorial...it would mean that when they [the students] were being taught [during lectures] they would realise that they were going to have to answer a question, so...I thought to myself, well if it’s right there in the context of the lecture surely that would work even better (II 465-468).

Sue reasoned that, if one of the motivations for introducing concept questions into MAF 300 tutorials was to encourage more active listening during lectures, so that students would be enabled to answer those questions in

² Name changed to preserve anonymity.
the follow-up tutorials, then requiring them to address concept questions directly in lectures should work to raise the level of student attentiveness and engagement.

**Concept questions – Problem-situated learning of a fundamental principle: Understanding not only the how but also the why**

She went on to clarify the nature and purpose of concept questions:

You can never cover everything that you're going to teach...it's one of the key new principles in the lecture...it's something you're going to do during that lecture but it needs to be obviously brief so that they can address it (II 289-290, 293-294).

As there was insufficient time to incorporate all the principles of a new topic into a concept question, Sue selected a fundamental aspect and constructed a short question around that, something students could answer in the time set aside for that activity during lectures. She realised, importantly, that the concept questions needed to focus less on issues of 'how' than on 'why':

When the marks were not so good I decided that the problem was that...they don't understand why they're learning all these things. So I try to phrase the concept questions in terms of why, not just how do I do something but what problem does it answer?

Reflecting on her students' poor assessment performance, Sue concluded that their key problem was a lack of understanding of the purpose and relevance of what they were learning. To address this shortcoming, she attempted to situate concept questions within actual problems so that students would learn not only how to use the appropriate techniques but would also be brought to see the point and purpose of their calculations. For example, the concept question for the topic risk and uncertainty was set in the context of a company's having to decide whether or not to accept a new project for which there were four possible outcomes, each with an assigned probability of occurrence. Students were required to calculate the expected value of the project, the probability or realising a profit or incurring a loss, and then were required to discuss whether or not the project should be accepted. Thus students had the opportunity to test their understanding and application of a key principle and to use their calculations to address a specific problem. In that way the point of their calculations came to the fore, rather than being a mere technical exercise. It was hoped by these and similar means to make the relevance of the principles and techniques communicated to students in the lecture setting more readily understood and appreciated.

**Implementation time constraints – Content-coverage compulsion**

Sue explained how she implemented concept questions in lectures, commenting on the attendant constraints as well as on the benefits:

Before I start teaching, they read it. Then the theory is that...they're going to listen in the context of the problem that they've been presented with. And then at the end there's supposed to be...at least ten minutes to answer and discuss. That's why it has to be very short (II 431-433).
The planned procedure for handling a concept question was that it be introduced at the start of the lecture so that students were made aware of the issues to focus on during the lecture and address later when answering the concept question. However, as she noted, she was not always able to execute this plan. Of the three lecture sessions observed, the above plan was followed only in the second and third because by then, as Sue explained, she had caught up with the planned lecture programme. As she observed during the initial interview, time constraints had prevented her from implementing the planned procedure earlier. It is possible that the time pressures she experienced resulted from her attempting to introduce too much lecture content in the earlier weeks of the semester. Lending support to this scenario was her comment after the third session that, in future, she would restructure the lecture programme to avoid such time squeezes.

Commenting on the benefits of the initiative, Sue again referred to the importance of timing:

The students have been very positive about it. And also...when you time it right and get it working properly you definitely get more discussion in class than I've ever had before.
So it does prompt discussion at least around that particular area if not about the whole lecture (II 481-484).

Sue's experience was that students found concept questions very helpful, possibly because by listening more attentively, then attempting the questions and participating during feedback periods, they were more actively involved than was normally the case during lectures, and this greater engagement not only enhanced their understanding of the particular issue(s) under consideration but also facilitated their general conceptual development. At the time the interview with Sue was conducted, she had not yet been able to implement concept questions as planned, and so her comments concerning students' strong endorsement of the initiative would have been in respect of the previous year's group.

Inability to sustain active student engagement – The need for CPD

Notwithstanding the benefits flowing from the introduction of concept questions, Sue found that she was unable to sustain the same raised level of student participation throughout her lectures, probably because, as was observed, she tended to slip back into her more familiar teacher-centred, transmissive mode of instruction. Thus, despite her clear desire for improved levels of student interaction and participation, Sue appeared to be unaware of how to achieve that outcome on an ongoing basis, possibly owing to inadequate teacher training and a lack of CPD.

As the analysis below will demonstrate, the VSR interview process prompted Sue to critically reflect on her questioning technique during concept-question feedback discussions and more generally during lectures.

VSR methodology prompts critical reflection and highlights the need for targeted and sustained CPD

During the VSR interview, while viewing the feedback discussion of a concept question, Sue commented: “Do I just give them [the students] all of it?... Did I ask them to answer at all?” Then, having watched students respond correctly to her questions concerning the numerical calculations but failing to respond to her decision-making questions, she commented:

This is definitely where I should have...just... pick[ed] on people...but I always feel that I don't want to put them under pressure...I never liked it as a student. (LVSR 898, 907-909).
The VSR interview allowed her to critically reflect on and diagnose a problem relating to her questioning technique and, although she identified an alternative approach, she also expressed some reservations about using it. Her hesitation and questioning of the alternative’s merits suggest perhaps a restricted questioning technique, an issue that becomes clearer in the analysis that follows. As is evident from her comments below during the VSR interview, she attributed her difficulty in facilitating class discussion to shortcomings in the current year’s student group, bearing in mind the fact that the previous year’s group, in engaging with the same topics, had been a good deal more responsive and participative:

I feel that this year’s group is more difficult and I certainly felt last year that I got much better feedback on concept questions...which has been a lot more difficult to generate with this group this year (LVSR 903-906).

While Sue’s difficulty in stimulating greater involvement and interaction among the current year’s batch of students may to a degree be attributable to shortcomings on their part, it could also point to unresolved deficiencies in her own questioning technique, which in turn could be related to a lack of teacher training and CPD. Her comments elsewhere during the VSR interview support this interpretation:

I know Rosy and them had this thing, well, if you want people to respond and you can’t get responses, then you must use the ‘blue shirt day’ technique...and I used that a bit last year...so I think discussion in the class is important, but years of finding it difficult to get any feedback has kind of – you just get, almost give up (LVSR 758-763).

Thanks to her awareness of the MAF 300 tutorial intervention, Sue borrowed one of its recommended techniques for stimulating student participation, and used it with a degree of success. Nonetheless, because of her ongoing difficulty over a long period of time in facilitating class discussion, she had become disillusioned despite recognising its value in the teaching and learning process.

The foregoing analysis has highlighted the valuable role that VSR interviews can play in prompting faculty to critically reflect on their teaching, diagnose shortcomings in their praxis, identify areas for improvement and propose possible strategies for addressing the problem(s). In Sue’s case, there was recognition that her questioning technique needed improvement but she was unsure of the merits of the alternative she put forward. This uncertainty, coupled with an analysis of the data gleaned from the VSR process and the interviews, suggested that her questioning technique in general was to some extent deficient and that she would have benefited from some targeted and sustained CPD.

DISCUSSION

A common phenomenon in the South African higher education setting, especially in programmes that offer professional qualifications like accounting, is the presence of highly qualified professionals, many with rich work experience but very limited pedagogical expertise. This particular scenario plays itself out in the UKZN context. Faculty employed in the accounting departments, who have historically been recruited directly from the corporate world, come to their posts with little or no teaching experience at any level. Their only exposure to pedagogy would have been what they experienced as students at both school and university. Their notion of what counts as normal teaching practice would thus have been acquired through what Lortie (1975) described as the process of ‘apprentice of observation’. Consequently, accounting lecturers, as was the case in this study, tend to adopt the conventional teacher-centred pedagogy to which they had been exposed as students. This situation
is not unique to South Africa; one finds parallels in, for example, the US (AAA & AICPA, 2012), Australia and New Zealand (Adler et al., 2000).

Furthermore, the absence of mechanisms and processes for implementing and monitoring CPD programmes for university lecturers, particularly in accounting departments, means that opportunities for, and even the notion of, critical reflection have rarely come to the fore in the discourse of university accounting departments. It is thus not unusual to find a perpetuation of lecturing approaches that are not geared to encouraging students' active participation, a conclusion supported by other studies' undertaken both locally and abroad (Adler et al., 2000; Palm & Bisman, 2010; AAA & AICPA, 2012; Coetzee & Schmulian, 2012).

A significant outcome of this study was the identification of the power of the video-stimulated reflection (VRS) sessions. While these served as a useful mechanism for generating rich data bearing upon the assumptions underlying the participants' praxis, they had the immediate benefit of enabling them to watch video-recorded footage of their teaching, something they had never experienced before. This proved to be a watershed moment in their careers as higher education pedagogues. For the first time ever, they had the opportunity to engage with a researcher (in this instance a trusted colleague) on aspects of their practice that they viewed together. Both participants pointed to the value of this kind of exercise, lamenting the fact that it had not happened earlier in their careers. The study highlighted the enormous potential that VSR has for diagnosing both the strengths and deficiencies of individuals' pedagogical praxis. This finding adds to the growing body of research confirming the value of VSR as a tool for stimulating critical reflection and thus for professional development (Powell, 2005; Muir et al., 2010). Participants declared openly that, while they were aware of alternative ways to approach their practice, they would benefit from CPD. Of importance in the present case was the fact that the VRS intervention occurred in a collegial, non-evaluative setting; of equal importance is that the data yielded by the VRS process should lead to CPD programmes that respond directly to the specific circumstances and background of accounting teachers at university level. In this connection, it is crucial that the process of CPD proceeds from the premise that accounting faculty are highly competent professionals who can lay claim to some, albeit limited, pedagogical knowledge. No purpose is served by insensitively harping on the pedagogical deficits of teachers in the higher education sector – something that has been a common feature of professional development initiatives in the school sector (Maistry, 2008; Adler & Reed, 2002).

At the higher education level, the role to be played and form to be taken by continuing professional development initiatives throws up some interesting research opportunities bearing upon a number of important – and contested – issues. For example, should CPD programmes be devised and packaged by institutionalised human resources management units or should they emerge ‘naturally’ from within departments in response to needs that colleagues identify? This gives rise to the question of whether sufficient pedagogic expertise exists within academic departments as well as the issue of duration and sustainability as it relates to the ability of CPD to fundamentally change higher education pedagogues' perspectives on teaching. It also raises the issue of whether professional associations should play a role in facilitating lecturers' CPD, particularly when, as in SAICA's case, the association advocates the adoption of more progressive pedagogies. The possibility of professional associations becoming actively involved in implementing pedagogical recommendations is hinted at in a recent investigation into accounting higher education in the US (AAA & AICPA, 2012).

With respect to the role played by SAICA, the present study found that its accreditation policies, its effective control of the accounting curriculum at the tertiary level and its assessment procedures and practices, taken together, exercised a pervasive and dominant influence on the participants' teaching (and, by implication, on that of their colleagues too), confirming the findings of Coetzee and Schmulian (2012) and Venter and de Villiers (2013). The participants had misgivings, either implied or expressed, about the constraints that SAICA's requirements imposed, in terms of both time pressures and of their limiting effect on content and assessment decisions, confirming the concerns expressed by others (Botha, 2001; van der Schyf, 2008; Coetzee & Schmulian,
This has important implications for accounting departments as they undertake their curriculum planning exercises. It is clear that viewing the curriculum as more than a matter simply of content coverage and assessment will be of benefit to faculty struggling to come to terms with how to manage externally imposed constraints within a highly structured university context. In this regard, universities should ensure that accounting appointees are trained to respond effectively to the pedagogical challenges presented by the requirements of the external accrediting body, in this case, SAICA. As mentioned earlier, UKZN, to its credit, has recently made it mandatory for new appointees as well as current faculty at or below lecturer level to attend the following teaching and learning induction modules: Designing and evaluating curricula in Higher Education (HE), Teaching and learning in HE, Assessing learning in HE and Supervising research in HE. While this training should better equip accounting lecturers to make appropriate pedagogical decisions generally within the constraints imposed by SAICA’s requirements, introducing accounting-specific CPD may be expected to further enhance their ability to implement a suitable pedagogy. In this regard, SAICA itself could play a more active role by devising CPD programmes that focus on appropriate pedagogy for accounting education.

As mentioned earlier, the impact that SAICA’s content intensive and technically orientated curriculum has on accounting education needs further consideration. The findings suggest that the scope, breadth and depth, of the curriculum impose significant time pressures on accounting lecturers and, as reported in Coetzee and Schmulian (2012) and Venter and de Villiers (2013), this limits the extent to which more conceptual and research related issues can be introduced into the curriculum. Consequently, students may well be technically competent but lack a deeper understanding of the accounting disciplines and their philosophical underpinnings. Rossouw (2006: 3), cited by van der Schyf (2008), made the following comment in this regard: whenever “the cultivation of the philosophical mind is neglected, the disciplines are likely to produce technocrats with knowledge and skills of limited shelf-life”. Thus equipping students to become life-long learners, as required by SAICA (2011), is unlikely to be achieved if the scope and nature of the curriculum does not include more theoretical disciplinary considerations.

While this study and others locally (Coetzee & Schmulian, 2012; Venter & de Villiers, 2013) have identified a ‘teaching to the test’ culture among accounting faculty, arising from the high-stakes character of SAICA’s qualifying examinations, the extent and ramifications of this culture require further study before firm conclusions can be drawn. Nevertheless, the South African accounting education fraternity needs to be cognisant of the constraining effect such a culture can exercise, and should bear in mind that too close a link between university accounting education and external professional organisations has long been discouraged abroad (AAA, 1986; Arthur Andersen & Co. et al., 1986; Cooper et al., 2005; Evans, 2008).

To conclude, despite SAICA’s implied recommendation to accounting lecturers to adopt a learner-centred pedagogy, the actual teaching practice of the participants in this study was found to be teacher-centred and content-intensive. This finding is not surprising given their restricted pedagogical ‘upbringing’, which encouraged them to believe that teaching as they themselves were taught was the right approach to adopt, and given also their limited pedagogical knowledge arising from inadequate teacher education and a lack of CPD. The VSR process was, however, found to be a powerful means of prompting critical reflection on their praxis, enabling inadequacies to be diagnosed and in that way identifying the specific needs to be addressed and goals to be met in a targeted CPD intervention. In the case of the present study, it would seem that the collegial non-evaluative context within which the VSR was conducted contributed importantly to the open and honest reflection that occurred.
REFERENCES


AECC see American Education Change Commission.

AICPA see American Institute of Certified Public Accountants.


IFAC see International Federation of Accountants.


Part 3

Assessment
Exploring the reliability of self-assessment and peer-assessment in oral presentations in economics: A sample of postgraduate students at a South African University

Josue Mbonigaba and Saidou Baba Oumar

ABSTRACT

This paper explores the reliability of self- and peer-assessment at the University of KwaZulu-Natal, in a context of perceived negative intra-class relationships, using data collected from multiracial cohorts of postgraduate students in economics over the period 2007-2013. The analysis is done with descriptive and inferential methods in which reliability of the marks from these assessments is judged in relation to the lecturer’s marks. While peer-assessment marks agree in ranking pattern with the lecturer’s marks overall, self-and peer-assessment marks are biased in an undiscernible pattern in each of the racial groups making up the sample. These results imply that caution should be exercised in using these assessments for marks in contexts where there are perceived intra-class negative connections.

Keywords: education, research, evidence, multiracial, KwaZulu-Natal, cohort

INTRODUCTION

Self- and peer-assessment in higher education have been used for two purposes, notably, enhancing competency-based learning, and aiding in producing students’ marks. Using self-and peer-assessment in marking has been achieved by asking students to provide a mark for their own or peers’ work. While concerns such as social loafing, free-riders and interaction disabilities may affect the first purpose (Salomon & Globerson, 1989), for the second purpose a crucial issue has been the reliability of the resulting mark. The literature documents that self-assessment and peer-assessment marks can be biased, depending on factors such as overconfidence in self-marking (Dunning, Heath & Suls, 2004) and, commonly, non-academic considerations in peer marking. Even if such assessments have become appealing in contemporary education literature with respect to enhancing competence-based learning, the evidence regarding their reliability in marking has been mixed. An aspect that has been often overlooked in this respect has been the reliability of the marks produced in such assessments in a multiracial class setting in the context of an antagonistic past, where self-assessment and non-blinded peer-assessment marks are likely to be affected by historical race relations. This paper contributes to the evidence by exploring the reliability of such assessments in oral presentations in a multiracial class of postgraduate students in economics at UKZN.

The benefits of self- and peer-assessment in higher education cannot be emphasised enough. These two types of assessment have been acclaimed in contemporary higher education because they engage students in active learning (see for instance, Boud & Falchikov, 2006; Kirby & Downs, 2007). Active learning is part of constructivist learning and teaching practices theories, and it is described in the literature as engaging students in information processing, reflective skills, problem solving and high-level long-term professional competencies.

(Brew, 1995; Boud & Falchikov, 2006; Kirby & Downs, 2007; Galbraith, Hawkins & Holmboe, 2008; Lew, Alwis & Schmidt, 2010; Spiller, 2012; Boud, Lawson & Thompson, 2013; Boud, Cohen & Sampson, 2014). Furthermore, there is evidence that these assessments have been enjoyable for students (Stefani, 1994:73), although recently students felt that the process is transferring onto them the onerous responsibility of marking (Cassidy, 2008:508). These assessments are consonant with changing expectations of graduates in the workplace and are believed to instil lifelong learning and the ability to work in teams. Practically, the two types of assessments are guided by the same principles where students self-assess or assess the work of peers on the basis of preset criteria. This is done through a process by which students make a judgement on the extent of self- or peer-performance (Andrade & Du, 2007:160). The literature also documents that self- and peer-assessments increase efficiency in the use of staff time when such assessments result in the production of marks (Boud & Falchikov, 1989:530; Hanrahan & Isaacs, 2001:55). In this regard, however, other literature (Stefani, 1994:75; Falchikov, 2001) cautions that a good self- and peer-assessment practice can eat up significant teacher’s time when preparing and implementing these assessments. Another potential benefit is that self- and peer-assessment were found to be instrumental in allocating a composite group work mark to individual students (Freeman, 1995; Rafic & Fullerton, 1996; Spatar, Penna, Mills, Kutija & Cooke, 2015:372).

Early reviews of self- and peer-assessment studies tended to support the reliability of these assessments. In a review of studies focusing on how the marks of the lecturers compare to the marks of self-marking, Boud and Falchikov (1989) found that there was an agreement between self-assessment and teachers’ marks in many studies, but noted that the concept ‘agreement’ was vague. They further found that strong students tended to underestimate themselves with the opposite being true among weak students. Stefani (1994:74), focusing the analysis across a range of subjects and involving students in setting up assessment criteria, reached similar findings, albeit with no evidence of under-rating among strong students or over-rating among weak students. In subsequent studies the main finding was that in only a minority of studies does the validity of these assessments fail (Topping, 1998; Dochy, Segers & Sluijsmans, 1999; Falchikov & Goldfinch, 2000). In a review by Sadler and Good (2006), 70 percent of the reviewed studies suggested that self-assessment is a valid tool to allocate marks. This validity was further documented in the high school sector (Tseng & Tsai, 2007). However, some of these studies (for instance, Boud & Falchikov, 1989; Falchikov & Goldfinch, 2000) noted specific tendencies, namely, that good students tended to underrate themselves, mature students tended to be more accurate, and students tended to overrate themselves more generally when the marks were to be recognised and when the process was more academic rather than professional practice. The review studies also noted inappropriateness and inconsistency in the methodologies applied by reviewed studies.

While one strand of studies emphasised the reliability (validity) of the marks, other studies investigated in greater depth factors affecting the reliability of self- and peer-assessment and how to deal with factors likely to affect this reliability. There are indeed many factors that can bias the outcomes of these assessments, including overconfidence in self-assessment where people tend to exaggerate their knowledge (Dunning et al., 2004). The issues of students being reluctant to be unpleasant to peers in peer assessments, of collusion among students to allocate each other above-average marks in peer assessment and of friendship bonds and enmity among students in peer assessment (Boud, 1995:182; Sadler, 2005; Topping, 2009:21) have also been identified as factors compromising the reliability of the process. Furthermore, Bushell (2006) identified bias in performance-ranking, where top performers downgrade their closest competitors in peer-assessment. Sadler (2009) mentioned non-academic considerations in peer-assessment, while Boud et al. (2013) observed strong students under-rating themselves and weak students over-rating themselves. Clearly, as has been found in the literature, factors such as differences in contexts, level of courses, performance being evaluated, contingencies associated with outcomes and the training provided to carry out these assessments, as well as other factors, underlie contradictory findings in the literature (Topping, 2009:25; Lawson et al., 2012). Concomitant research to address these factors has sought to involve students in the process of self-assessment and peer-assessment with more thoughtfulness (Bloxham &
West, 2004; Mok, Lung, Cheng, Cheung & Ng, 2006) and time inputs (Topping, 2009). These discussions hint that the context matters and impacts on the results observed.

Indeed, an often overlooked aspect in this literature is the effect of the design of self- and peer-assessment practices and the effects of intra-class social bonding on the reliability of self- and peer-assessment. Because the direction of the bias with regard to reliability (that is the deviation from or convergence with the marks of the lecturer) cannot be assumed a priori in any context, the effects need to be explored in peculiar contexts. In South Africa, for example, this exploration is particularly important given the perceived effects of historical race relations (because of apartheid) among different socio-demographic components of a class of students.

OBJECTIVE

There has not been thus far any paper in South Africa exploring the reliability of self- and peer-assessments in a class with previously antagonistic social groupings and where such assessments are not anonymised. Therefore, the objective of this paper is to explore the reliability of self- and peer-assessment at the University of KwaZulu-Natal, in a context of perceived negative intra-class relationships, using data collected from multiracial cohorts of postgraduate students in economics over the period 2007-2013. The remainder of the paper is structured as follows. The next section presents the methodology of the paper, then the results are presented and discussed, the conclusion is then presented and recommendations made, while the last section highlights the limitations of the paper.

MATERIALS AND METHODS

To explore the reliability of peer-assessment and self-assessment the study compared the marks allocated by these two types of assessment to the marks allocated by the lecturer. Such a comparative approach assumes that the marks of the lecturer constituted a best benchmark for reliability (although a doubtful assumption in some contexts), as has been the practice in the literature. The self-assessment, peer-assessment, and lecturer-assessment marks came from records of such marks in oral presentations kept over the period 2007-2013. These marks were collected as part of a teaching and learning exercise for 238 students from seven successive cohorts of postgraduate students enrolled in the course Economics of Health Care at UKZN. In each year, the composite mark from the three types of assessments for oral presentations constituted 5 percent of the final mark in this course. Table 1 shows the distribution of demographic characteristics for the students’ sample.

For each cohort, a student was asked to choose a topic among the 12 topics to be covered over the 12 weeks of the semester. Since in every cohort the number of students was greater than the number of topics, some students had to work on the same topic, albeit with individual oral presentations. The presenting students were then asked

<table>
<thead>
<tr>
<th>Social group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>13</td>
<td>42</td>
<td>55 (23%)</td>
</tr>
<tr>
<td>Coloured</td>
<td>4</td>
<td>17</td>
<td>21 (9%)</td>
</tr>
<tr>
<td>Asian</td>
<td>85</td>
<td>56</td>
<td>141 (59%)</td>
</tr>
<tr>
<td>White</td>
<td>10</td>
<td>11</td>
<td>21 (9%)</td>
</tr>
<tr>
<td>Total</td>
<td>112</td>
<td>126</td>
<td>238 100%</td>
</tr>
</tbody>
</table>
to self-assess their own oral presentation after presenting, while the rest of the students were asked to peer-assess the work during the presentation. All three types of assessment were made against preset criteria specified for each of the following intervals of performance: fair (20% - 39%), good (40% - 59%), very good (60% - 79%), and excellent (80% - 100%) (see details in the Appendix).

Two types of analysis were used, namely, descriptive and inferential. In the descriptive analysis, the reliability of self-assessment and peer-assessment marks was explored by examining, in relation to the lecturer’s marks, placement of the cohorts in intervals of performance, variability of marks, average marks of different cohorts and trends of marks from one cohort to another. So, independently, each presenting student was placed in an interval of performance and given a mark by each fellow student (peer-assessment), by him or herself (self-assessment) and by the lecturer (lecturer assessment). Descriptive analysis was conducted at a cohort level and the sample level using average values.

The second analysis consisted of formal tests on data for the whole sample (period 2007-2013) to determine whether or not the marks from the lecturer were indeed statistically different from peer-assessment and self-assessment marks. In this respect, two tests were performed, the t-test and the Wilcoxon signed-rank test. The t-test was used to compare the marks of the lecturer to the marks of the peer-assessment, while the Wilcoxon signed-rank test was used to compare the marks of the lecturer to the marks of the self-assessment. Also, the Wilcoxon signed-rank test was used to compare the marks from peer-assessment to the marks from self-assessment.

The use of the t-test in comparing two populations requires the populations to be normally distributed and have equal variances. These conditions were fulfilled for peer-assessment marks and lecturer marks, and therefore the t-test was used in their comparison. In contrast, the normal distribution requirement of the t-test was not satisfied for the self-assessment marks, which were skewed to the left. For skewed data, the literature suggests the use of the Wilcoxon signed-rank test and this test was used in all comparisons of marks that involved self-assessment marks.

For the whole sample, a test was applied to see whether or not the lecturer’s marks were on the average statistically lower than peer-assessment or self-assessment marks. This one-tailed test was based on the information from descriptive statistics that the lecturer’s marks were lower than the marks from self-assessment and peer-assessment. Two tests were conducted. The first (t-test) consisted of testing whether the lecturer’s marks were statistically lower than peer assessment marks, and the second (Wilcoxon signed-rank test) consisted of testing whether the lecturer’s mark were statistically lower than self-assessment marks. A third test (Wilcoxon signed-rank test) to test whether or not the peer assessment marks were statistically lower than self-assessment marks.

Of crucial interest in this study was the evidence concerning the reliability of peer- and self-assessment marks in subgroups of students. The class is made up of students from historically antagonistic demographic groups following the history of apartheid, a political system segregating the population according to demographic characteristics. Although apartheid ended in 1994, this paper is motivated by the suspicion that peer-assessment might bias groups’ marks depending on intra-class groups’ connections. For instance, we suspected that groups of students from a given social group might be favoured by groups of students from the same social group. Furthermore, cheating and collusion have been found to be possible in these types of assessment (Boud, 1995:182; Sadler, 2005). These collusions among racial groups could in turn trigger a response of self-over-marking. The latter could occur when a student anticipates under-rating by peers from other racial groups. Therefore, the study tested to see whether there was bias in the marks assigned to specific groups of students, who were stratified by gender and race groups, to understand whether their marks were higher or lower than the lecturer’s marks. The reliability of the marks was questioned if the results in these groups were different from the overall results. The null hypothesis in each testing case was: \( H_0: \) the average lecturer’s mark is equal to the average marks of a given
RESULTS

In exploring the reliability of self-assessment and peer-assessment, this section starts by examining, in relation to the lecturer’s marks, how these two types of assessment place the cohorts’ average marks in intervals of performance. Table 2 presents such results.

In Table 2 below, ‘x’, shown against each type of assessment and under a given interval of performance, means that the marks from that type of assessment place the cohort in that interval of performance. Thus, one can see that self-assessment marks deviate from the lecturer’s marks. Table 2 shows that the self-assessment marks and the lecturer’s marks have no cohort of students in common in any interval of performance. By contrast, Table 2 shows that peer-assessment marks and lecturer’s marks place some cohorts (2007, 2010, and 2013 cohorts) in the same interval of performance. Furthermore, the results suggest that self-assessment marks place cohorts in higher intervals of performance than lecturer’s marks do. It can be noted, however, that when the whole sample is considered, the lecturer’s marks and peer-assessment marks place the sample in the same interval of performance. Because self-assessment and peer-assessment marks do not place all cohorts in the same interval of performance as suggested by the lecturer’s marks, it can be said that their marks differ more generally from the lecturer’s marks.

The results in Table 2 show also the variability of marks around the average marks for each type of assessment.
Table 2: Comparison of self-assessment and peer-assessment marks to the lecturer’s marks

<table>
<thead>
<tr>
<th>Cohorts</th>
<th>Type of assessment</th>
<th>Average mark</th>
<th>Standard deviation</th>
<th>Level of performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80-100</td>
</tr>
<tr>
<td>Per cohort</td>
<td>Self-assessment</td>
<td>81</td>
<td>16</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>75</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>68</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>2007</td>
<td>Self-assessment</td>
<td>85</td>
<td>17</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>73</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>64</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>2008</td>
<td>Self-assessment</td>
<td>83</td>
<td>16</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>76</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>70</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>2009</td>
<td>Self-assessment</td>
<td>86</td>
<td>12</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>70</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>62</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>Self-assessment</td>
<td>83</td>
<td>15</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>77</td>
<td>9</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>71</td>
<td>6</td>
<td>x</td>
</tr>
<tr>
<td>2011</td>
<td>Self-assessment</td>
<td>85</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>74</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>65</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>2012</td>
<td>Self-assessment</td>
<td>84</td>
<td>16</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>75</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>67</td>
<td>5</td>
<td>x</td>
</tr>
<tr>
<td>2013</td>
<td>Self-assessment</td>
<td>84</td>
<td>17</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Peer-assessment</td>
<td>74</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Lecturer assessment</td>
<td>67</td>
<td>8</td>
<td>x</td>
</tr>
</tbody>
</table>

The variability of marks, measured by standard deviation, reflect how differently members of the cohort perform. Given that this variability across the three types of assessment is analysed on the same cohort or sample, variability of marks reflects variability of these types of assessment in allocating the marks. Keeping this caveat in mind, the results show greater variability in self-assessment marks than in the marks of the other two types of assessment. The evidence of greater variability in self-assessment and peer-assessment marks in relation to the variability of the lecturer’s marks suggests the unreliability of the marks from the former two assessments.
Exploring differences in the mean marks on each cohort, results in Table 2 highlight that the average marks of self-assessment and peer-assessment are greater than the average marks of the lecturer’s assessment. These results apply also to the whole sample although it is important to note that peer-assessment marks are closer to the lecturer’s marks and exhibit a more similar trend with lecturer’s marks than self-assessment marks do (see Figure 1).

![Figure 1: Trends in marks across three types of assessment](image)

Could this mean that peer-assessment marks are reliable and self-assessment marks unreliable? Until formal tests are done, this question cannot be answered at this stage. The reliability of peer-assessment marks and self-assessment marks can only be established based on the evidence as to whether or not the average mark of the lecturer is indeed statistically lower than the average mark from the other two types of assessment. This evidence is presented in Table 3.

| Table 3: Comparison of peer-assessment marks and self-assessment marks with the lecturer’s assessment marks |
|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Lecturer - peer assessment | Lecturer - self-assessment | Peer assessment - self-assessment |
| Left tail test | Left tail sign test | Left tail sign test |
| Hypotheses | t-stat | p-value | Hypotheses | z-stat | p-value | Hypotheses | z-stat | p-value |
| Ha: LM-PAM=0 | -3.228 | 0.0028 | Ha: LM-SAM=0 | -3.705 | 0.0002 | Ha: PAM-SAM=0 | - | 0.0014 |
| Ha: LM-PAM<0 | -3.228 | 0.0028 | Ha: LM-SAM<0 | -3.705 | 0.0002 | Ha: PAM-SAM<0 | 3.189 |

LM: The lecturer’s mark, PAM: peer-assessment mark, SAM: self-assessment mark, N/A: the test is not applicable in this case. Sources: Estimates obtained with STATA analyses.

The evidence from the sample data shows that the average marks from the lecturer are lower than the average marks of peer-assessment as indicated by a negative t-test statistic (t= -3.228). The p-value of 0.0028 suggests that this difference between the lecturer’s marks and peer-assessment marks is statistically significant at a 5 percent level of tolerance, implying that indeed the lecturer’s marks are lower than the peer-assessment marks. The same
conclusion applies to the other two tests. Specifically, the lecturer’s marks are statistically lower than the self-assessment marks on the basis of the Wilcoxon signed-rank test statistic ($z = -3.705$) with a corresponding $p$-value of 0.0002, and peer-assessment marks are lower than self-assessment marks on the basis of the Wilcoxon signed-rank test statistic ($z = -3.189$) with a corresponding $p$-value of 0.0014.

To test for the reliability of peer assessment, a test was conducted to see whether or not the finding for the whole sample was applicable to gender categories of students or whether the trend in the marks of peer-assessment or self-assessment followed the trends in the marks of the lecturer in each gender category. Table 4 shows the results.

### Table 4: Comparison of three types of assessment per gender

<table>
<thead>
<tr>
<th>Assessed gender</th>
<th>Average mark</th>
<th>Female peer assessor mark</th>
<th>Lecturer's mark</th>
<th>Male peer assessor mark</th>
<th>$z$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>78.1</td>
<td>73.73</td>
<td>76.43</td>
<td>73.73</td>
<td>-3.798</td>
<td>0.0001</td>
</tr>
<tr>
<td>Male</td>
<td>74.5</td>
<td>68.06</td>
<td>75.34</td>
<td>69.80</td>
<td>-3.725</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

$z$: test statistics for the Wilcoxon signed-rank test. Source: estimates from stats

Results in Table 4 show that the lecturer’s average mark of 73.73 for female students is lower than the female peer assessor’s mark of 78.1 for the same gender, and this difference is statistically significant at a 5 percent level of tolerance ($p$-value = 0.0001). Furthermore, the lecturer’s average marks of 73.73 for female students is lower than the average marks of the peer male assessors of 76.43 for the same category and this difference is statistically significant at 10 percent significant level ($p$-value = 0.078). Since these marks are consistent with the overall marks, there is no gender bias in the allocation of marks. This fact is also confirmed by the evidence that trends in marks of female peer assessors and male peer assessors are similar across gender. For instance, it is worth noting that female peer assessors allocate more marks to females (78.1%) than they do to males (74.5%). Likewise, male peer assessors allocate more marks to females (76.43%) than they do to males (75.34%). On the basis of these results, it can be concluded that there is no bias in allocation of marks across gender categories, although the results confirm that peer-assessments are not reliable since the lecturer’s marks are statistically lower than the peer-assessment marks.

In a sample with multi-social groupings, one would expect social group bias in the allocation of marks. To this end, tests were conducted to compare the average marks allocated by the lecturer to each social grouping and the marks allocated to those groupings from peer assessors from different social groups and the trends in marks of a given grouping. The results of such analysis are presented in Table 5.
The lecturer’s marks for different race-based groups were generally lower than the marks allocated to the same groups by peer Asian assessors, except when assessing the White students group. This result reveals that Asian students tended to overestimate the ability of race-based groups, except for the White student group. The results of the marks allocated to different race-based groups by the lecturer are generally lower than the marks allocated to these groups by Black peer assessors, except for the Coloured group, suggesting that Black students tended to overestimate the ability of other race-based groups, except the Coloured group. The marks allocated by the lecturer to the various race-based groups were higher than the marks allocated to the same groups by Coloured students. This indicates that the Coloured group tended to underestimate the ability of other race-based groups, except themselves. The marks allocated by the lecturer to these race-based groups were higher than the marks allocated to these groups by the White students. This result implies that White students underestimated the intellectual ability of other race-based groups.

Analysing the trends in the marks as one moves across these racial groupings, the results show that Asian assessors rank the groups, from lower to higher, in this order, Black, White, Coloured and Asian, while the lecturers rank them in the order, Coloured, Black, White and Asian. Black assessors rank the groups in this order, Coloured, White, Black, and Asian, while the lecturer’s ranking is in the order of White, Black, Coloured, and Asian. Since the ranking of race-based groups in terms of marks is not consistent with the lecturer’s ranking, these results indicate that there is a racial bias in the marks assigned by peer-assessment.

Briefly, the evidence presented in the results for race-based groups points not only to inconsistencies between the lecturer’s marks for the different groupings and the marks allocated by peer-assessment to these groupings, but that they are also inconsistent with the overall marks trends of the sample. For instance, not all the average lecturer’s marks for the different groups were statistically lower than the marks allocated by peer assessors, highlighting that some peer assessors overestimated the ability of students from different groups. This result deviates from the results obtained for the whole sample. Although the nature of the bias could not be detected, the results highlight that peer-assessment carries race-based group bias in this sample of students.

Table 5: Comparison of peer-assessment marks of social groups and the lecturer’s marks

<table>
<thead>
<tr>
<th>Assessed</th>
<th>Asian value assessors</th>
<th>Lecturer p-value</th>
<th>Black value assessors</th>
<th>Lecturer p-value</th>
<th>Coloured value assessors</th>
<th>Lecturer p-value</th>
<th>White value assessors</th>
<th>Lecturer p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>83.63</td>
<td>76.02</td>
<td>0.0000</td>
<td>79.16</td>
<td>74.52</td>
<td>0.0000</td>
<td>47.40</td>
<td>74.68</td>
</tr>
<tr>
<td>Black</td>
<td>71.79</td>
<td>70.89</td>
<td>0.2430</td>
<td>73.87</td>
<td>69.34</td>
<td>0.0032</td>
<td>69.9</td>
<td>70.14</td>
</tr>
<tr>
<td>Coloured</td>
<td>77.3</td>
<td>60.00</td>
<td>0.0048</td>
<td>66.23</td>
<td>69.76</td>
<td>0.6254</td>
<td>83</td>
<td>64.28</td>
</tr>
<tr>
<td>White</td>
<td>73.42</td>
<td>73.71</td>
<td>0.8190</td>
<td>72.91</td>
<td>66.52</td>
<td>0.0146</td>
<td>71.87</td>
<td>74.40</td>
</tr>
</tbody>
</table>

Coloured: Born from a marriage between a white person and a non-white person (or their descendants). Elsewhere the term “coloured” as used in South Africa, could be defined as “mixed race”. The study did not distinguish between the nationalities of students. Source: Authors based on STATA estimation.
DISCUSSION

The use of self-assessments and peer-assessments have been acclaimed in contemporary higher education for two main reasons: their potential to free up marking time for research on the lecturer’s side and their pedagogical advantages in nurturing critical thinking and professional development among students. In the most recent literature though, the contention has been that contextual and experimental design factors are likely to affect the marks from these assessments. The implication from this literature is, therefore, that these factors need to be taken into account before the marks arising from these assessments are recognised. One of the lingering questions in this respect is whether or not the reliability of these marks is affected by the contexts in which the assessments are conducted. This paper used a multiracial class in a South African university, where negative relationships between races making up the class is perceived to be one such context because of historical antagonism between races (due to apartheid). The experimental design involved marking a non-anonymised oral presentation where students self-marked themselves after their own presentation and were peer-marked during the presentation. The reliability of the resulting marks was judged with respect to the lecturer’s marks.

The main findings of the paper are as follows. The marks allocated from peer- and self-assessment in this sample of students were generally higher than the marks allocated by the lecturer, both at the cohort and sample levels. Both self- and peer-assessment marks overestimated the marks in oral presentations, in relation to the marks allocated by the lecturer. Peer-assessment marks, although also overestimating students’ marks in the oral presentations, trended more similarly to the lecturer’s marks than did the self-assessment (Figure 1). The reliability of peer assessment was further explored by focusing on whether or not there was a bias in the allocation of marks by assessors in a specific social group, such as gender groups, as they assessed males and females in the sample. The main finding in this respect was that, although marks were overestimated by groups of male and female students, there was no bias in the marks male students allocated to female students and vice versa. This conclusion is arrived at on the basis that trends in these marks were consistent with the trends in marks allocated by the lecturer (Table 4).

Comparing peer-assessment marks of peer assessors of a specific race group recorded for other racial groups in the class (Table 5), the trend resulted in a mixed picture (overestimation or underestimation). This result suggested additional bias in mark allocations to different race groups although the nature of the bias in terms of whether or not there was a specific group favoured by other groups was not established.

The results observed in this paper do not emerge as a surprise but rather meet the expectations outlined in the paper’s initial hypothesis. It was in fact the expectation of the paper that given the historical past between racial groups in the class, bias in peer-assessment would be present because of the possible perpetuation of past racial perceptions in the marking process. In fact, it has been the case that, in the past, non-white racial groups were looked down on because of apartheid. While the apartheid system favoured the white population, these sentiments can be believed to have been prevalent even in non-white social groups. The evidence of observed social connections being stronger within each of the groups in daily life, and in particular, recent observations of tense racial relations in the country as a whole (York, 2015) points to the fact that even today these perceptions persist in some people’s minds. Bias was expected in settings where peer-assessment was not anonymised in such a setting. While such perceived intra-class relations are expected to bias peer-assessment marks, the question remains as to how these perceived intra-class relationships link to the inflated self-assessment marks observed in the results of this paper. The answer to this lies in the compensatory behaviour of individuals in the face of expected loss. With individual students expecting peers to downgrade them, then in this context of the paper, the natural behaviour is to compensate themselves in their self-marking.

These results and their meaning are not in fact unrelated to the research literature. While most of the recent studies focused on pedagogical benefits of the assessments (Spiller, 2012; Boud et al., 2013; Boud et al., 2014),
there is some evidence related to using these assessments for allocating marks that shows that the reliability of the assessments depends on the context and design of the studies. Indeed, early reviews of the studies on this topic (Topping, 1998; Dochy et al., 1999; Falchikov & Goldfinch, 2000) hinted at the possibility of the effect of context by showing that good students tended to underrate themselves, mature students tended to be more accurate, and that students tended to overrate themselves more generally when the marks were to be recognised and when the process was more academic rather than in professional practice. Furthermore, successive reviews on the topic, one by Boud and Falchikov (1989), a second by Topping (1998) and yet another more recently by Sadler and Good (2006), constitute evidence of an unresolved topic. Collusion and peer competition for top place among students noted in recent studies (Sadler, 2005; Topping, 2009:21) have been some of contextual factors affecting the reliability of these marks. Other literature concluded that inflated marks in self-assessment are a result of the natural behaviour of human beings who commonly exaggerate their ability and knowledge (Dunning et al., 2004). In this study, this exaggeration took place in response to an anticipated downgrading by peers. Presumably, these contextual influences on the reliability of such assessments might underlie the recent focus on factors likely to influence bias, including more time inputs by students and lecturers (Topping 2009) and more thoughts on the process itself (Mok et al., 2006). On a positive note, it is worth noting the recent practice in education that relies on self- and peer-assessment to distribute a composite group mark among individual students making up the groups (Spatar et al., 2015) without referring to contexts.

Whether or not previous studies contextualise the reliability of these assessments, no study has analysed the question in a multiracial class with an antagonistic past. The only contribution of this paper to the literature lies in the fact that it presents intra-class racial self- and peer-marking, showing that even if overall peer-assessment follows the same pattern as the teacher’s marks as in previous evidence, this ‘agreement’ between the two marks could be hiding serious bias in intra-class peer assessments.

These findings have important implications with respect to using peer-assessment and self-assessment in allocating marks to students’ work. Specifically, in light of the findings, using these types of assessment in allocating marks to students means promoting inaccuracy in measuring students’ oral presentations’ marks, which may impact negatively on educational outcomes, if these marks account for a significant percentage of the course. In this experimental study, where these marks in fact constituted an insignificant portion of the course percentage, the evidence shows that these marks were biased. Therefore, while they might be good educational tools, these types of assessment should not be used in allocating marks, particularly in multiracial classes with possible inter-racial negative relationships.

CONCLUSION

Self-assessment marks are not reliable in oral presentations in classes where there are social groupings with perceived negative relationships and this is also the case for peer-assessment marks. While the bias is present in the overall marks arising from each of the assessments, this bias in peer-assessments is enhanced in intra-class racial groups with perceived negative relationships.

RECOMMENDATIONS

The results of this paper suggest two recommendations. Despite the evidence for the validity of marks from peer-assessment elsewhere, and more recommendations tending towards the use of self- and peer-assessment in producing students’ marks, this paper recommends that such use be restricted or used with caution in oral presentations in classes where intra-racial groupings’ relations are perceived negatively. The paper recommends
also more studies to establish the evidence in this area given the limitation of the present paper with respect to generalisation.

Limitations of the Paper

The experimental design of the paper and the racial composition of the class that was the subject of this paper could have exerted a significant effect on the results observed, as noted earlier. Due to profound transformation at UKZN since 2004, the composition of a postgraduate class at UKZN is most likely to be different from a typical class composition in terms of races at many other institutions in the country. Therefore, these results are not generalizable to other classes of postgraduate students in economics in South Africa.

Acknowledgements

The authors would like to thank in advance the anonymous reviewers for their valuable comments and Carol Brammage for English editing.
REFERENCES


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### Appendix

#### Criteria for assessing presentation

<table>
<thead>
<tr>
<th>Excellent (80-100%)</th>
<th>Very good (60-79%)</th>
<th>Good (40-59%)</th>
<th>Fair (20-39%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss a theory relevant and directly related to the topic</td>
<td>Discuss theory relevant and directly related to the topic</td>
<td>Discuss theory relevant and directly related to the topic</td>
<td>Discuss theory irrelevantly or in a vague way in relation to the topic</td>
</tr>
<tr>
<td>Discuss relevant application of the theory with a focus on few studies (3-4) discussed in depth</td>
<td>Discuss relevant application of the theory with a focus on few – studies (2-3) discussed in depth</td>
<td>Discuss relevant application of the theory with a focus on few – studies discussed in (1-2) depth</td>
<td>Limited discussion with respect to the application of the theory</td>
</tr>
<tr>
<td>Excellent coherence and logic in the discussion (intro-to conclusion)</td>
<td>Some coherence and logic in the discussion (intro-to conclusion), presentation clear</td>
<td>Some coherence and logic in the discussion (intro-to conclusion), presentation not very clear</td>
<td>Inadequate or no coherence or logic in the discussion (intro-to conclusion), presentation unclear</td>
</tr>
<tr>
<td>Many own critical reflections and opinion about the validity of the theory, relation between results of studies (consistent among themselves and with the theory)</td>
<td>Some critical reflection</td>
<td>Very limited or no critical reflection</td>
<td>No critical reflection</td>
</tr>
<tr>
<td>Confident and enthusiastic attitude about your topic and clarity of language</td>
<td>Limited confidence, enthusiasm and clarity</td>
<td>Very limited or no confidence, enthusiasm and clarity</td>
<td>Very limited or no confidence, enthusiasm and clarity</td>
</tr>
</tbody>
</table>
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The contribution of co-authors is gratefully acknowledged.

<table>
<thead>
<tr>
<th>Title</th>
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<th>Institution</th>
</tr>
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<tbody>
<tr>
<td>The learning affordances of a Facebook environment</td>
<td>Wayne Hugo</td>
<td>University of KwaZulu-Natal</td>
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<td>University of KwaZulu-Natal</td>
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<td>Exploring the reliability of self-assessment and peer-assessment in oral presentations in economics: A sample of postgraduate students at a South African University</td>
<td>Saidou Baba Oumar</td>
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</tr>
</tbody>
</table>
A unique must-read for any academic serious about the scholarship of teaching and learning of their discipline – from economics and accounting to leadership and management – and wants to stay abreast of current higher educational trends through creativity and technology.

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