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It's a Virtual Child!: Postgraduate students' experiences in a developmental psychology class

Abstract

The aim of this study was to explore postgraduate psychology students' development, as facilitated by the use of an interactive web-based simulation programme, My Virtual Child©. A social constructivist developmental approach, with specific focus on cognitive development towards self-authorship, served as the overarching framework for the study. Participants included postgraduate students enrolled in a developmental psychology module. Multiple sources of data, such as reflective exercises, summative portfolio assignments and a focus group, were analysed using thematic analysis. Participants indicated that the My Virtual Child© programme provided them with an excellent opportunity for authentic, relevant and challenging learning experiences, whilst balancing theory and practice. Furthermore, it provided room for deliberate reflective activities, group interaction and the integration of a diversity of experiences. This programme therefore created a practical and pragmatic teaching environment for more engaging and theoretically rich learning, preparing students for self-authorship in a complex world.

Keywords: *Cognitive development; constructivist developmental approaches; interpersonal and intrapersonal competence; self-authorship*

We live in a world of super complexity (Barnett, 2014). The explosion of knowledge and the emergence of a new and more open knowledge society require future professionals to act as holistically developed, well-integrated individuals with the competence to use critical and creative thinking in order to manage information and solve problems (Department of Education, 2002). The broad body of opinion in education theory and policy argues that radical transformation in higher education is needed to equip individuals to succeed in a transformed world. Educators are thus challenged to think critically about the purpose, outcomes and processes of education – providing students with the epistemological framework of the discipline, including interpersonal and intrapersonal competence.

In addition, the educational landscape has changed in order to accommodate a new generation of students with different interests in and expectations of higher education. According to Stoloff *et al.* (2012) educators wanting

to increase student satisfaction in graduate school should expand experiential learning opportunities. Furthermore, Stansbury and Munro (2013) found that implementing non-traditional teaching methods (such as a video game to teach research methods), increased students' knowledge, interest and motivation. Wilson (2013) added the positive impact of interactive activities on students' attitudes, and Blessing, Blessing and Fleck (2012) suggested the use of social networking sites (such as Twitter). Lastly, Twenge (2013), who did research regarding the teaching strategies applicable to *Generation Me* students, recommended the use of (amongst others) interactive learning material, images and video clips, as well as incorporating frequent and honest feedback on performance.

Thus, the aim of this study was to explore postgraduate psychology students' development, as facilitated by the use of an interactive web-based simulation programme, *My Virtual Child©.* A social constructivist developmental approach, with specific focus on cognitive development towards self-authorship, served as the overarching framework for the study.

1. Theoretical Grounding

The social constructivist perspective underpins the current study as it is hypothesised that the use of a non-traditional, interactive teaching method, the *My Virtual Child©* programme (as will be discussed in the next section), facilitates this collective construction of knowledge. More specifically, a social constructivist *developmental* approach is taken in order to also illustrate the link between social constructionism and students' cognitive development. The theory of Baxter-Magolda (1998) on the development of students' ways of knowing is especially relevant.

Learning is a process of constructing (rather than receiving) reality. Knowledge is therefore not static or given to passive observers, but constructive in its origin and development – in order to know something, it must be acted upon (Piaget, 1976). Theorists such as Dewey (1963), Kolb (1981; 1984) and Piaget (1976) all agree that learning happens when attention, energies and abilities are focused on solving real-world dilemmas, and that learning involves a transaction between the person and the environment. These ideas are marked by a shift towards social constructionism – the collective construction of knowledge, where the teacher is decentred and the search for knowledge is more dialogic, student-directed and reflective. Learning is further emphasised as a social practice based on ideas of connectedness, an ethic of care and the importance of community (Fear *et al.*, 2002; West, 2004).

As students in higher education are challenged to construct knowledge, their cognitive development is facilitated through various positions of reasoning – from more dualistic divisions of life towards the ability to commit within relativity and embrace the tension of paradoxes and polarities (Perry, 1981; West, 2004). Considering students' ways of knowing, Baxter-Magolda (1998; 2004) proposed four stances of knowing. Firstly, *Absolute knowing* where knowledge is seen as certain, possessed by certain authorities, and information acquisition is prioritised. Secondly, *Transitional knowing* where some knowledge is seen as certain and some as uncertain, and the process of learning becomes more important than acquiring information. Thirdly, *Independent knowing* where most knowledge is seen as uncertain and independent thinking and the right to express views are favoured and lastly, *Contextual knowing* where knowledge claims are relative, ideas of others are interpreted in context and independent thinking is valued.

Baxter-Magolda (1998; 2007; 2008) referred to self-authorship as the manner in which individuals create meaning and form a sense of the nature of knowledge based on their experiences. This self-authorship requires trusting one's ability to make knowledge claims, the confidence to construct knowledge, the capacity to make decisions relating to one's personal views and the internal identity to act on one's beliefs. It also presupposes a capacity towards interdependence; hearing other's views without being consumed by those views and the ability to balance various different views. Meaning making is therefore a balancing process between individual worldview and the context (Baxter-Magolda, 2008; 2009). Higher education should prepare students to rise to the challenges of contemporary society by assisting them in authoring their own knowledge. Facilitation of the development of self-authorship requires higher education to validate students as knowers. This entails educators respecting students' current ways of knowing and thinking styles, situate learning in students' experiences, as well as engaging students in exploring multiple perspectives and the mutual construction of meaning (Baxter-Magolda, 1998).

2. Context of this Study

In this research study, the learning experiences of students in a developmental psychology module of a postgraduate programme are considered. The aim of the developmental psychology module is to equip students to form theoretically integrated perspectives regarding human development; describe the progression of physical, cognitive, personality and social development during the lifespan and demonstrate sensitivity regarding the genetic aspects, environmental factors and cultural contexts affecting human development. This six-month module entailed weekly contact sessions (consisting of lectures, class discussions, student presentations and debates), as well as individual and group assessment tasks (such as a semester test and a group portfolio).

The uniqueness of this module lies in the incorporation of the *My Virtual Child©* programme. *My Virtual Child©* is a comprehensive and interactive web-based simulation programme developed by Frank Manis (2011) and regulated by Pearson Publishers. The module coordinator decided to include the *My Virtual Child©* programme, since it provided an experiential learning opportunity enriching and deepening students' learning experiences. More specifically, the coordinator envisioned that this programme might be able to facilitate the development of self-authorship (Baxtor-Magolda, 1998) due to the programme encouraging students to construct knowledge, make decisions and act on their own beliefs.

Aligning with the aim of this developmental psychology module, the programme presented students with a growing child, demonstrating the progression of development in the physical, cognitive, personality and social domains of development. This interactive website is aligned with a chronologically organised textbook and simulates the classic sequences of normative development, the common experiences (and variations) of individuals from birth up to the age of 18 years. The conceptual foundations of the programme are eclectic, integrating various theoretical perspectives, such as ideas from Piaget, Vygotsky, Bronfenbrenner, Kohlberg, social learning theory, attachment theory, developmental systems theory and family systems theory (Manis, 2011). At the beginning of the module, students register and receive a password for accessing the programme. After completing a basic questionnaire regarding the student's personality and salient characteristics, each student creates a virtual child. Thereafter the student has the opportunity to take on the role of parent and raise this child from birth up to the age of 18 years. The programme randomly provides certain scenarios including immediate

parenting tasks, such as decisions regarding various milestones (e.g. whether to send a child to pre-school) and unplanned events (such as a teenage pregnancy). This prompts students to make decisions and respond via multiple-choice options. These decisions require the student to have an advanced knowledge base of normal development from infancy to late adolescence. The student's answers imply certain parenting actions that will affect the child's course of development over time. Students' responsibility to rely on their own knowledge and opinions to make decisions regarding their virtual children may facilitate a process of self-authorship as conceptualised by Baxtor-Magolda (2008).

Guidelines provided in the *My Virtual Child©* instructor's manual were followed to structure the experience by using reflective questions such as "What theories of child development are you following?", written assignments and class discussions. One aspect in which this module deviated from the general instructions, was the incorporation of group work. At the beginning of the module, the module coordinator allocated students to diverse groups of three to four students. A virtual child was created for each group and the parenting of this child was assigned as a team effort. Exposure to multiple perspectives in such a team could therefore stimulate the development of self-authorship in the students. This project was completed over a period of six months, during which the students were expected to not only meet regularly, but also frequently visit the online site, complete weekly reflection reports and report on their learning at the end of the semester by compiling a group portfolio.

3. Method

A qualitative research approach was followed in order to explore postgraduate psychology students' development during the *My Virtual Child©* programme.

Participants and sampling: In this qualitative study, research participants included all the students registered for a postgraduate module in Developmental Psychology, in the Department of Psychology, University of the Free State. There were 29 registered students, with 23 being women and six being men. Furthermore, 14 were Afrikaans speaking, nine English and six participants spoke Sesotho and other indigenous African languages. Eight students were purposively sampled for the focus group at the end of the semester. The focus group consisted of three males and five females, of whom five were Afrikaans-, two English- and one Sesotho-speaking.

Data collection: Various forms of data were collected. Firstly, all students were expected to complete an individual weekly reflection report articulating their academic, social and personal learning processes. The reflection reports provided valuable information regarding the students' learning processes and their challenges experienced throughout the process. Secondly, the summative portfolios completed at the end of the semester were used to gain insight into students' final thoughts on their achievement of the overall outcomes of the module (such as the integration between theory and practice, evaluations of the group's ability to raise a child, and general reflections on human development). Thirdly, a focus group was conducted at the end of the semester. A semi-structured interview schedule with questions posed in order to facilitate the group discussion included questions regarding the learning experiences and challenges of the *My Virtual Child©* programme (e.g. in what way, if any, did *My Virtual Child©* contribute to your learning? How did you apply your knowledge to the decisions you made regarding your child? What did you learn from your group members? How did your group members challenge you? In hindsight, which decisions would you have made differently?).

Finally, the personal reflections of the module coordinator, who also acted as a participant observer in the learning experience, were used to corroborate information.

Ethical aspects: Students were informed about the intention to use this implementation of the module for research and evaluation purposes. All students were informed about the aim of the research process, what their participation would entail, and which information would be used. Respecting the autonomy of the students, each student's written informed consent was obtained; they were assured of the voluntary nature of the research, their right to withdraw at any moment in time and the confidential nature of the information.

Data analysis: Being interested in the complexity of students' ways of knowing, the researchers employed a constructivist developmental lens (Baxter-Magolda, 2009) in analysing the data. Data were analysed by means of a thematic analysis approach as proposed by Braun and Clark (2006). Thematic analysis provides a rigorous method for identifying and analysing patterns within data (Braun & Clark, 2006). The method allows flexibility in the choice of theoretical framework and results in a rich and complex description of the themes emerging from the data.

4. Results

In the following section, the eight themes emerging from the thematic analysis are presented. In order to provide authenticity to the analyses, direct quotes from participants are provided (some of these quotes have been translated from the original Afrikaans contributions; minor language editing was done for clarity).

Theme 1: A novel, challenging and authentic way of constructing knowledge

The *My Virtual Child©* experience provided a novel and original way of discovering and applying information that facilitated participants' eagerness to learn. Participants took the activity very serious due to the authenticity of the experience. They mentioned they "responded as I would to a real child" and "this module is so real, like you can apply it in reality". Students opined that these real-life experiences were in some ways more appropriate than the textbook. For example, a student stated, "Because the textbook goes very much like 'this is how psychologists do things' and this [*My Virtual Child©* programme] is as close to it as actually being a parent and experiencing all these things". Participants also enjoyed the challenge and admitted to learning more by "being thrown into the deep end". Using descriptive words such as visible and visceral learning, participants reported the real-life experiences aided memory, understanding, and insight: "Like when I studied for the exams, I remembered what my child did, and then it did somehow just make the work easier for me to understand".

Theme 2: Absolute knowledge, subjective knowing and relativism

Interplay was observed between the value of theory and practice. On the one hand, many participants articulated the importance of textbook knowledge as a guide in directing their learning and decision-making processes. They mentioned the manner in which the theoretical knowledge assisted them in being prepared and making informed decisions. On the other hand, the practical experiences assisted in illuminating the theory. Through the practical activities, participants stated they "became more aware of theories" and experienced "an improved understanding of the topics covered, seeing that they become personally relevant with the raising of the virtual child". Through the practical experiences, the memorising of theories became easier. For example, one participant reported that, "cognitive schemas are

also now created for various developmental processes, which makes the studying of the topics somewhat easier".

However, an interesting contrast was observed regarding the importance participants attached to theory. While some participants regarded theory as the ultimate answer, others focused more on their personal experiences or their gut feeling. Those prioritising theory mentioned knowledge made it easier to be a better parent. With "textbooks lying all over," these participants leaned strongly on textbook information. They often went back to the textbook and said, "We found that the theory we learnt in class prepared us to be able to know in which developmental stages the child is. This made it easier for us to respond to the needs of our child. Without this knowledge, it probably would have been trial and error". Another participant mentioned, "I think if one wants to raise a perfect child, it would have been better to study first".

Some participants used prior experience, which they called "day-to-day theories of raising a child" and trusted their intuition: "We didn't apply any knowledge out of the textbook – we just answered the questions as we felt it was fitting to us".

A few participants attempted to balance prior experiences with textbook knowledge and realised the difficulty of integrating various truths (such as personal opinions and normal developmental patterns as described in the textbook). These participants mentioned, "It was difficult to make decisions where your heart tells you one thing and the book says something else," and "Even though we are trying to incorporate literature, it is interesting to see how motherly instincts overrule research".

Participants could clearly articulate which aspects of the theory assisted them, and they considered these theories on a deeper level. For example, this resulted in debates regarding nurture versus nature and arguments regarding the appropriateness of different parenting styles at different developmental stages. Furthermore, participants could comment on the relevance of the theories of Piaget, Vygotsky, Erikson and Bronfenbrenner. One group came up with the slogan: "WWPD? What would Piaget do?" Participants acknowledged that their existing knowledge and thought patterns were challenged and expanded. All these learning experiences assisted participants in realising the complexity of knowledge and parenting. One participant reflected: "I think I've just realised that there is a very thin line between being good and being bad. You can easily step over this line…"

Theme 3: Intra-personal reflections

The *My Virtual Child*© experience also provided participants with the opportunity to reflect on their own lives – past, present and future. Many participants described a deeper understanding of their own development from a theoretical perspective. They remembered significant events such as the birth of a sibling, a divorce, the influence of hormones on their behaviour, and being a terrible teenager. One participant said, "I realised that even virtual children struggle with their parents (I was not alone)". With statements such as "our choices were influenced by our upbringing," many participants referred to the prominence of their past experiences and the effect it still had on their present decisions.

Although participants could relate to parental activities either having a positive or negative effect on their development, most participants expressed empathy, respect and an appreciation for their parents. They referred to their parents' courage and sacrifices and realised "what a handful we were". The importance and complexity of parenting were also highlighted:

"I realised the difficult positions in which parents often find themselves when raising a child, and I feel it was a valuable experience having to put myself in the same shoes that my parents are in".

Some of the participants, being parents themselves, experienced the *My Virtual Child©* exercise as an opportunity to reflect on their current parenting styles and experiences. Many felt they understood their children better, whilst others considered their parenting styles more closely. For example: "I believe that I have grown as a mother, and it will help me in how I make decisions in the future in raising my kids". and "I have become so much more aware and sensitive to the development of the children around me. I find it enlightening to be able to understand them better."

In addition, many participants considered what it would be like to be parents one day. Some met this thought with excitement and feelings of being better equipped to be parents after the *My Virtual Child©* experience: "Hope. I think that is the emotion I felt the most this week. Hope that maybe in the future I will be lucky enough to have a child that I can raise as well as we raised this virtual one." Other participants considered the complexities of parenting (such as working with a partner, deciding about another human being's life and sacrificing their own independence) and realised they were not ready to be parents. They saw the experience as "eye opening" and some even mentioned fear at the thought of being a parent.

Theme 4: Connecting heads and hearts

Participants often mentioned how the work stirred some emotions (such as feeling proud, thankful, empowered and happy) in them: "The experience was only virtual, but the feelings we had for Ruby [name given to the virtual child] were real".

Various references were also made to how this programme made learning fun. It ignited students' interest and raised their curiosity: "I have never been so excited to do homework before – it really is a different educational experience". However, participants agreed that, "being a parent really is no laughing matter".

Theme 5: Having good company on the journey

The group work elicited various strong responses. Many participants valued group work, since it was a form of social support, motivation and persistence. In getting to know one another, participants could discuss personal problems and experienced the group sessions as a stress release: "Well, let's say this. If you came into our group at any time, you would find us not necessarily doing academic stuff. Our work revolved around a lot of other stuff as well, not only academic". and "…the project gives the opportunity to socially interact despite a busy schedule. This is the joking and laughing time, a chance to get to know your group members or friends better and not feeling guilty about work not done."

Most participants valued the different viewpoints provided by the various group members. They mentioned the importance of "listening to their ideas and opinions [that] helped me to make a decision". They appreciated others' experiences to "shed some light and make for an interesting final product". The groups celebrated their uniqueness and felt they "thought deeper about aspects when combining their skills" and learnt to "think outside the box". They enjoyed the unique perspectives and interesting ideas each member brought to the table. Participants saw how other students assumed different roles and styles, whilst some were there for advice or provided a reflective/thoughtful perspective. Others "would always like to

play devil's advocate": "…I noticed that each one of us have our own individuality and opinions regarding the health of the child..."

Theme 6: Finding one's own voice among others

It was interesting to note the different processes the groups employed. Some groups had easy-going styles. They mentioned, "We did not really challenge each other; we just talked and listened to each other; friendly bearing each other and we don't want to step on each other's toes". Some mentioned "finding the midway"; "reaching consensus decisions"; "compromising" and "working through a process of elimination". Some referred to the importance of patience during heated debating and intense deliberations: "We bumped heads very lightly ... but we ended up laughing … I think the most important thing I learnt was to negotiate."

However, this does not imply that there were no difficulties and challenging group processes. Participants admitted, "I think that with us, we were so tired. It's like, okay, just pick your option!" Some also took the discussions very personal: "I took some of the arguments very personal … So I got a bit like attacked to evaluate my parenting style".

Regarding value-laden topics such as discipline, religion and sexual relationships, "you could see that there was a lot of passion behind what we were arguing for". One student mentioned, "We didn't have an issue with anything in development until we hit moral development in adolescents, and we got the question that we got stuck on for an hour and a half. We argued that thing and we still didn't completely agree at the end of it. We kind of settled on an answer, because we just didn't agree on it". Some could reframe this as an important learning experience restoring their faith in others and challenging their stereotypical ideas. It also taught them to let go of complete control, work in a multi-disciplinary team, and be more open minded, for example: "We laughed about the journey we have travelled raising this baby. It has not been easy at all". and "…we have grown very close and understanding of each other's point of view. They have challenged my parenting style… which I have also looked into as well".

Others, however, did not experience the group work as fair. They referred to some group members as "seat warmers" and said, "I felt that was very unfair because it's rolling the dice on my academic success".

Theme 7: Taking it one step further

Many participants were inspired to take their learning one step further and mentioned applying the competence gained in this module in other fields such as practical work in the training programme and volunteering in community engagement projects. "I've started a project where I live to help parents understand their kids when they get to that adolescent stage … creating awareness for parents". Some also mentioned the opportunity for further research in the field: "What I'd like to do for my Master's research … this definitely ranks up there now".

Theme 8: Challenges

Time management was a real challenge: "…we are all busy… there would be a lot of dynamics. It will be arguing when we phone: 'I don't have time' … Make time!"

Apart from challenges regarding group work and time management, many participants felt the *My Virtual Child©* programme provided an American perspective limiting applicability in the South African context. However, the value of intercultural experiences was noticed in

statements such as the following: "With my one, we had issues with discipline, especially it came out as we are different cultures. Well, I am Zulu, the one is Sotho, the other one is Xhosa…" and "… The others may feel that it is good for her to know her peers better…. In my Zulu culture, allowing a child such privileges is like giving them a key to do what they want."

5. Discussion

In the following section, the eight themes presented above, will be linked to the theoretical framework employed in this study by referring specifically to a) the development of cognitive complexity; b) the positions of knowing followed in the learning process; c) the integration between cognitive and emotional experiences and d) collaborative learning practices.

a)   The development of cognitive complexity

Baxter-Magolda (2000) explained students' journeys of finding ways that are more complex in meaning making. She regarded it as a learning process including cognitive, intrapersonal and interpersonal dimensions, such as "how do I know? ... who am I? …what kind of relationships do I want?" (Baxter-Magolda, 2004: 39). As specifically witnessed in *Theme 1: A novel, challenging and authentic way of constructing knowledge*, the authenticity of the *My Virtual Child©* experience facilitated deep learning in each of these dimensions. Graves (2013) reported on the perceptions of pre-service teachers in a *My Virtual Child©* programme, also referred to the relevance of the real-life value of the experience. This corresponds with the work of various constructivist and experiential theorists emphasising the importance of real-life experiences (Dewey, 1963; Kolb, 1981; 1984; Piaget, 1976).

b)   The positions of knowing followed in the learning process

The development of cognitive complexity is a specific outcome of the *My Virtual Child©* experience. This was seen in *Theme 2: Absolute knowledge, subjective knowing and relativism*. Students were challenged to move beyond dualism. Owing to the reality of the situation, the balancing of theory and practice and the group discussions, participants realised early on the uncertainty of knowledge and the diversity of opinions. As Perry (1981; West, 2004) suggested, participants in this study used various avenues, such as analysing, comparing and judging different opinions in order to become more comfortable with multiple perspectives and reach a cognitive space of contextual relativism. One of the consequences was participants reporting deepened critical thinking about parenting and new perspectives regarding the implications of parenting on child development, similar to the findings of Graves (2013) and the intentions of the programme developer (Manis, 2011). Although some students committed to a reality within this relativity, others still found it difficult to embrace the tension of paradoxes and dilemmas. Evidence of the evolution of students' way of knowing was also seen according to the stances proposed by Baxter-Magolda (1998; 2004). It moved from absolute knowing (where trust was placed in textbook knowledge), to transitional knowing (where the process of learning became important during group discussions), to independent knowing (through students' expression of their own views) and finally to contextual knowing (where students' own ideas and those of others were placed in context).

Furthermore, many participants moved from a position of not knowing and depending on others or the textbook (received knowing) to trusting their intuitive and subjective knowing. They also discovered processes and techniques for acquiring, validating and evaluating knowledge (procedural knowing) in order to reach a place where truth is understood as

being contextual (constructed knowing) (Belenky *et al.,* 1997). In addition, Baxter-Magolda (2009: 632) described the learning process as starting with the focus on external formulas (before an internal voice can be cultivated). Next in the process, students enter the crossroads where they start to listen to their own voices and then develop their own voices by sifting through different beliefs, prioritising and integrating. This then helps students to move to the place of self-authorship where students 1) learn to trust their internal voices (and recognise the difference between reality and their reaction to reality), 2) build an internal foundation where they learn to trust their voices and commitments and 3) secure their internal commitments where choice becomes "second nature".

c)   The integration between cognitive and emotional experiences

As seen from *Theme 3: Intra-personal reflections* and *Theme 4: Connecting heads and hearts,* the construction of knowledge often starts in students' heads and later moves to their hearts. Indeed, clear evidence was found for the incorporation of the intrapersonal dimension and emotional component in the participants' learning process. These include the various emotions participants referred to, reflections on their own development, and honest evaluations of their own current or potential parenting. Manis (2011) also reported on students' emotional reactions to the programme, for example, students stating they became emotionally attached to their virtual child or experiencing emotions such as pride and sympathy. The *My Virtual Child©* programme definitely facilitated the integration between cognitive and emotional experiences. The use of reflective exercises in implementing the *My Virtual Child©* programme further contributed to this process. Connor-Greene (2000) advocated that journal writing increases student learning, since these exercises actively engage students, foster understanding and assist in connecting module material to personal experiences and observations (as presented in *Theme 7: Taking it one step further*).

d)   Collaborative learning practices

Collaborative learning practices were reflected in *Theme 5: Having good company on the journey* and *Theme 6: Finding one's own voice among others* (with the challenges highlighted in *Theme 8*). Baxter-Magolda (2002) proposed the notion of successful journeys requiring good company. Whilst the general implementation of the *My Virtual Child©* programme includes group work in the form of class discussions, this specific implementation had the added benefit of placing students in groups to parent their child together. This provided ample evidence for the value of dialogic, student-directed and reflective teaching and learning. Student interactions, social relations, collaborative learning, and the importance of community (Belenky *et al.*, Fear *et al.*, 2002; Vygotsky, 2004) were some of the most important drivers of learning. These interactions also emphasised the role of context and culture. The diversity of the groups (in terms of their language, ethnicity, previous experiences and moral beliefs) further added to the richness of the experience. Baxter-Magolda (2004) referred to the crossroads in describing students' experiences where external and internal frames of reference collide. Thereafter they move to "becoming the author of one's life" (Baxter-Magolda, 2004: 40) and form an internal foundation where they become comfortable with their own knowledge creation and its relation to that of others.

6. Concluding remarks: Implications for practice

The *My Virtual Child©* programme includes features of good teaching practices as previously proposed by various research studies, such as experiential learning opportunities

(Stoloff *et al.*, 2012), interactive activities (Wilson, 2013), social networking and interactive sites (Blessing *et al.,* 2012; Stansbury & Munro, 2013; Twenge, 2013).

Baxter-Magolda advised educators to "view students as capable participants in the journey to self-authorship, provide direction and practice in acquiring internal authority, establish communities of learning among peers and support the struggle inherent in the journey" (Baxter-Magolda, 2000: 94–96). In this study, The *My Virtual Child©* programme provided an excellent opportunity for authentic, relevant and challenging learning, whilst balancing theory and practice. Furthermore, it provided space for deliberate reflective activities, group interaction and the integration of a diversity of experiences. This programme therefore created a practical and pragmatic teaching environment for more engaging and theoretically rich learning, preparing students for self-authorship in a complex world.

Based on the literature and evidence provided in this article, our main recommendation for lecturers is the inclusion of non-traditional interactive teaching methods, such as simulation programmes in their modules. Although there is a need for continued research in this field in South Africa, the use of the *My Virtual Child©* programme provides preliminary evidence of the important role such a teaching method may play in facilitating students' self-authorship.

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