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'BUCKING THE ZEITGEIST'

POSITIONING DOCTORAL RESEARCH THROUGH CREATIVITY

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Abstract

Drawing from relevant theoretical discussions on creativity this paper promotes creativity as an essential foundation, instigator and positioner of doctoral research. Acknowledging and focusing on the role that creativity plays in positioning doctoral research can aid in dispelling the pressure on doctoral research to 'fit into the norm' and encourage research which 'bucks the zeitgeist'. Issues are identified which inhibit creativity, and suggestions are made for supervisors, mentors and doctoral researchers regarding how to support, promote and position innovative, creative doctoral research in education. Based upon these discussions this paper takes the position that doctoral research in education can provide benefits in not just traditionally accepted and supported ways of school or university research, but also in research that extends knowledge through the conceptual exploration of theoretical constructs. This Researcher's own PhD research in progress is referred to as an example of how creative processes are permeated throughout the study and are taken seriously by both the researcher and supervisor.

Keywords

post-graduate research and supervision

Introduction

The current milieu of doctoral research is immersed with discussions regarding the types of doctoral studies offered by universities, and the place of traditional PhD and professional doctorates (e.g., Anderson, 2002; Evans, 2001; Green, Maxwell, & Shanahan, 2001; Maxwell & Shanahan, 2001). It is not the aim of this paper to enter into this debate, but to highlight creativity as integral to the diversity of knowledge contributions made by all types of doctoral studies.

Different types of research challenge supervisors and other academics often bringing into question their epistemological beliefs regarding what constitutes research in education and how it can contribute to the development of new knowledge. Anderson (2002) argues for the need for practitioner based research to be taken more seriously "as an equal partner [with formal research] in the generation of new knowledge toward the improvement of schools" (p. 22). Many universities are recognizing the need for professional doctorates, the importance of practitioner research and its contribution to knowledge development in industry relevant contexts including education (Evans, 2001; Green et al., 2001; Maxwell & Shanahan, 2001). Although, in my opinion it is not just practitioner research that needs to be taken more seriously, but also PhD research studies which are viewed by some in

academe as too radical or different and do not 'fit into the norm' of what is generally expected in research in education.

In education one form of research study that is not too readily accepted by some academic camps is what I would term the 'theoretical thesis'. In my opinion the theoretical thesis is a long thesis PhD which is an in-depth investigation of a construct, including its connections to other related concepts. In some instances the benefits of such studies are questioned. I argue that their place in education is fundamental to future educational practice and empirical research. Drawing from creativity theory, I argue that different types of research in education should be encouraged bringing variety to the traditionally accepted research methodologies, processes, research questions and research contexts that have been and are currently being researched by doctoral students. The creative process of doctoral research from topic identification to completion of the degree is emphasized by Kiely (1983). Promoting creativity as an imbued process of doctoral research and drawing from initial conceptual discussions of creativity this paper also refers to this Researcher's PhD theoretical study on metacognition. The research intends to add clarity to the construct of metacognition drawing from the literature as its data.

A conceptual discussion of Creativity

There are many alternative views and definitions of what constitutes creativity. This paper will present elements of creativity, specifically from the field of cognitive psychology that in my opinion are relevant to this discussion of creativity in doctoral research.

From a cognitive psychology viewpoint Smith (1995) embodies what he considers elements of creativity, specifically creative cognition or creative thinking by using a number of descriptive words. He describes creativity as encompassing "novelty, imaginativeness, practicality, emergence (new qualities that can emerge when old elements are combined), ambiguity, meaningfulness, incongruity, and divergence (being different from the ordinary)" (p. 32). In the same vein Cohen (1977) discusses creativity as a cognitive process which relies upon intuition, originality and productivity. Runco (1990) also identifies originality as one of the core elements of creativity.

Another view espoused by Ruggiero (1988) which supports both Smith and Cohen's descriptions of creative thinking identifies creativity as comprising of three main features including uncommonness, originality and imagination. He explains that these features do not mean that the focus of the creative endeavour is a totally new concept or invention. Creativity can be imbued in improving or value adding to an existing product or invention, or relate to the development of a theoretical concept or new line of inquiry (Ruggiero, 1988). We are surrounded by creative ideas, concepts and theories which improve our lives, but their impact becomes less noticeable as time passes and new creative contributions become the focus of our amazement and attention.

Simply because an idea is original or uncommon and has relied upon imagination for its manifestation it must be “*uncommonly good*” to be considered a creative idea. It must be ingenious and clever in resolving an issue, and in providing a solution to a problem or extending knowledge and understanding to some novel extent (Ruggiero, 1988, p. 23). These creative ideas are developed from a source of curiosity and inquiry, and a need to bring about connections between sometimes “antithetical elements” (Ruggiero, 1988, p. 24). Similarly, Mednick (1962, p. 221) refers to connecting “associative elements” as an important creative process. He explains that there are higher levels of creative thinking processes applied in making new connections and associating elements between opposing or remote elements.

Smith, Cohen, Mednick and Ruggiero’s descriptions of creativity or creative thinking rely upon cognitive and metacognitive processes which can be specifically involved and instigated in complex, problem solving contexts. Mental imagery, reasoning, conceptualizing and reconceptualizing, mnemonic processes and strategies, drawing from expert knowledge and redefining knowledge and understandings through challenge are some of the metacognitive processes fundamental to creative thinking or creative cognition. Challenging, complex ill-structured problems provide rich and fruitful contexts for creative thinking and an avenue for the materialization of creative outcomes.

Sternberg and Ben-Zeev (2001) build upon their understandings of creativity theory and identify eight different forms of creative contribution (see Table 1). Their view of creative contributions especially relates to Ruggiero’s discussion of the creative processes of connecting antithetical elements. Table 1 provides a summary of the ideas that Sternberg and Ben-Zeev present (see p. 290-291). They explain that creative contributions can relate to more than one of the eight types.

Table 1 Creative Contribution is identified through various levels of Creativity

| Creative Contribution | Description |
|---------------------------------------|--|
| | The creative contribution is an effort or attempt to: |
| Replication | demonstrate that a field is where it should be |
| Redefinition | redefine from a new view point where a field currently is |
| Forward incrementation | move the field forward in the direction that it is currently moving and others are ready for the contribution and the move forward |
| Advance forward incrementation | move the field forward in the direction in that it is currently moving and others are <i>not</i> ready for the contribution and the move forward |
| Redirection | move the field from where it is toward a new and different direction |
| Reconstruction-redirection | move the field back to where it once was move the field forward from that point in a different direction |

Table 1 Creative Contribution is identified through various levels of Creativity

| Creative Contribution | Description |
|-----------------------|--|
| Reinitiation | <p>The creative contribution is an effort or attempt to:</p> <p>move the field to a different and as yet not reached starting point</p> <p>move the field in a different direction from that point</p> |
| Integration | <p>move the field by connecting elements of two or more past contributions considered distinct or opposed through dialectic</p> |

Reflecting on Sternberg and Ben-Zeev's (2001) creative contribution levels prompts a question. Should doctoral research demonstrate the higher levels of creativity beyond replication or redefining to forward and advanced incrementation and so on? In my opinion, Sternberg and Ben-Zeev's levels of creative contribution could be successfully used by supervisors, mentors and doctoral researchers to contemplate and determine the level of creative contribution they are making to educational research. This can be achieved, to some extent, by reflecting upon the research questions, aims, background to the study and proposed contributions to new knowledge. Viewing their research as a form of creative contribution may instigate or allow the flow of creativity. This could be reflected in focused engagement and motivation to be immersed in research processes, and allow new ideas to flourish and take form. This form of creative flow in research mirrors aspects of Csikszentmihalyi's (1991; 1992; 1996) flow theory.

Fundamentally, creativity is reliant upon the ability of the person to determine and formulate the problem and identify ways of working through the problem (Csikszentmihalyi, 1990; Root-Bernstein, 2003). Similarly, Simon (1979) states that "creative thinking is simply a special kind of problem solving" (p. 145). He identifies novelty, unconventionality, and motivation as necessary for creative thinking. If the problem is ill-structured and ill-defined it requires specific formulation of the problem itself reliant upon creative thinking.

Csikszentmihalyi (1990) states that:

Many creative individuals have pointed out that in their work the formulation of the problem is more important than its solution and that real advances in science and in art tend to come when new questions are asked or old problems are viewed from a new angle...one of the most interesting characteristics of the creative process – namely, the person's ability to define the nature of the problem. (p. 193)

Education research traditionally is based upon the creative identification of the particular, minute field of research and the formulation of specific research questions. Problem definition is probably one of the most important aspects of distinguishing and refining the focus of any study. Kiely (1983) believes that the "invention of a new problem is itself a

creative act, indeed one of the highest forms of creativity “(p. 5). The creativity imbued in the formation of the fundamental elements of the initial stages of doctoral research is either supported or not in the current research culture in education.

‘Bucking the Zeitgeist’ in doctoral research

Reflecting on the zeitgeist in doctoral research brings to mind the current increase in professional doctorates and the development, structure, assessment and issues surrounding them. Although, I am referring to the zeitgeist or the cultural research climate in PhD doctoral research which generally supports research by doctoral students which is not too different and fits into the expected norm without being too challenging to paradigm and epistemological beliefs. Creative, intellectual exploration and research in doctoral studies is not only challenging for the doctoral student but in some instances can also challenge the current state of play in doing doctoral research.

Tesser (2001) refers to zeitgeist in research as the “broad point of view taken by a field at some particular point in time. The zeitgeist in psychology changed when a predominately behaviorist approach gave way to an openly cognitive approach” (p. 60). He uses the term “bucking the zeitgeist” (p. 75) in the context of presenting a new idea or way of thinking regarding a phenomena to those who have a particular point of view or explanation.

Ruggiero (1988) eloquently discusses the impact of creative ideas which buck the zeitgeist. He states:

Most people have their minds made up about many matters. As a result, their thinking is often constricted, and they are blinded to new and promising possibilities. Being flexible means being willing to let go of certainties and approach situations openly, without twisting them to fit preconceived notions. It means refusing to be controlled by tradition or fashion. Above all being flexible means being ready to challenge the obvious. (p. 27)

Supervisors and mentors should support diverse ideas and innovation, and be open to different research methodologies and welcome the challenge of diversity. Being open and flexible in viewing and understanding the purpose for different types of research is also important for creating a research climate which instigates and supports creativity in doctoral research (Morris, 2003; Neumann, 2002; Salmon, 1992). Openness to the diversity of ideas prevents initial negative reactions to new ideas from evolving into total resistance. Openness and acceptance of new ideas by supervisors and mentors enables innovative ideas to flourish into new creations and research discoveries.

Creativity in doctoral research

Doctoral research is imbued with creative processes and “the creative process is itself notoriously capricious” (Salmon, 1992, p. 22). Recognition by both supervisors and students that research itself is a creative process is fundamental to ensuring that alternative views, and different forms of research are supported and encouraged (Kiely, 1983; Morris, 2003). Creativity in research questions and design should be supported with the view that novel ideas bring richness and add value to minute areas of knowledge and practice. There can be long term future benefits to research and practice if innovative and creative research questions and design are encouraged by academia. Neumann (2002) refers to an aspect of academic culture where research is undertaken if essentially it is considered to be a “safe bet” (p. 168). She describes that ‘safe bet’ research “precludes the serendipity behind many of the more significant and productive [research] developments” (p. 168). Serendipitous discoveries are identified as essential to creative thinking and problem formulation (Mednick, 1962).

Kiely (1983) considers that supporting creativity in doctoral research, and viewing research as creative problem solving not only:

results in a creative product, but it also does something to the person, the effect of which may sometimes be more important than the concrete product which is produced. The individual may become sensitive to a new range of phenomena or may develop new strategies of problem solving, which are important outcomes in preparing for future creative activity. (p. 1)

Kiely’s comments highlight the process of developing a creative product and the affect of this process on allowing the exploration and generation of new ideas in doctoral research. For the doctoral student, it is essential that there is support from academia for these creative processes facilitating the development of a diverse and productive research climate. Supporting creativity in doctoral research enables the flow of experiences, development of one’s own personal knowledge and knowledge of the field, the development of understandings and skills enabling effective transition into academic life.

Without creative insight and openness to potentially new and fruitful research, including the identification of new ways of investigating, questioning, analyzing, and reporting findings; research could be rendered predictable, inconsequential, limited with few new and exciting contributions. Kiely (1983) considers that the public will lose now and in the future if creativity in research is not supported in our graduate students. Without mentoring graduate students, the future academics, and supporting their enthusiasm to enrich research with creative ideas and tackle relatively new problems and issues, the future of research and benefits to the public seem bleak and insignificant. Universities should aim to develop new academics that are not afraid of pursuing different lines of

inquiry that challenge current thinking progressing to novel and refined ways of viewing the world.

The role that supervisors are encouraged to take in the creative process of PhD supervision is explained by Kiely (1983) who considers that supervisors and mentors should instigate the importance of creative processes from the outset of the doctoral research. This is reliant upon the supervisor having a level of “creative sensitivity” (p. 5) towards the whole process of the PhD. She considers that supervisors should outline the important role creativity takes from the determination of the research questions to the completion of the research study. If the doctoral researcher can view their research in both the minute and big picture and see the processes not as streamlined or prescribed, it allows creative processes to flow.

It is essential that supervisors and academic mentors recognize the creative process of doctoral studies, especially the long thesis PhD. We should recognize the importance of the creative processes imbued in research and allow the intellectual exploration to occur as a significant part of the conceptualization and determination of all the elements of thesis. This includes the thesis topic, structure, methodology, methods, data collection and analysis processes, and the drawing of conclusions and contributions to new knowledge.

Kiely (1983) especially refers to a PhD as comprising of creative problem solving processes. She specifically refers to the initial stages of a PhD, the determination of the area and questions of research and the refinement of these as “creative problem-solving” (p. 3). The creative problem solving of a PhD is not a prescribed process.

Support of, and the willingness, ability and openness to supervise or mentor innovative research can help to develop and maintain excitement and interest in all areas of educational research. Supervisor support including interest in the research topic, good interpersonal skills and relationship and understanding of the specific needs of the student are important in contributing to overall student satisfaction in doctoral studies (Lamm & Lewis, 1999; Styles & Radloff, 2000).

Neumann (2002) refers to the need for diversity in research to generate opportunity, innovation, creativity and originality to instigate change and promote flexibility towards the creative development of novel research studies. She considers that this can be done through encouraging the creative development of “research questions which challenge and promote risk-taking within a high quality learning and research environment” (p. 168).

Salmon (1992) considers that the formulation of research questions and research design is a difficult and demanding process but is a research phase which is “grossly truncated” (p. 14) because of time pressures and pressures to ‘fit into the norm’. She believes this has implications because some doctoral researchers then succumb to the pressure and reach for the nearest “hand-me-down research design” (p. 14).

Pressures of completing on time prevent students from straying too far from the path of 'safe bet', formula type studies (Leonard, 2001; Neumann, 2002). In describing these types of research studies Leonard (2001) uses the term "Kentucky fast research" (p. 41). Time constraints and completion pressures undermines the potential creative contributions that can be made to the development of new knowledge (Leonard, 2001; Neumann, 2002). There is an expectation that all PhD's "be pitched at a 'manageable level', with the capacity to succeed under pressure, and time management, of paramount importance – rather than a PhD at least tackling an issue of importance to the discipline and the individual student, however long it takes" (Leonard, 2001, p. 41).

This view is also supported by Neumann (2002) who states that:

It could also favor enrolment in disciplines or sub fields in which completion times are perceived to be shorter; encourage the selection of "safe" research questions with a narrow focus and no expected complications; and influence the styles and types of research. Intellectual ambition, and more speculative, "high risk" questions, which have more unknowns and uncertainties, will be discouraged. (p. 173)

The discussion so far has to some extent described the research milieu in which my doctoral research topic developed. My highly theoretical study draws its data from the literature investigating one of our most illusive constructs, metacognition. Experience has shown that skepticism in academia surfaces when doctoral research does not fit into what is considered to be traditional types of research in the field. Treating skepticism as a further instigator of creative thinking allows the doctoral researcher to understand, reflect on and prepare for the arguments for and against their study. Theoretical doctoral research can benefit the public, if not immediately through more traditional tangible outcomes and results (applied research), but through the dissemination and articulation of conceptualizations through proposed contributions to new knowledge (pure research).

An example of Creativity in Action

My doctoral research aims to provide researchers with a pellucid conceptualization of metacognition, illuminating the theory and ensuring its integrity as one of our prized psychological constructs. This illumination process relies upon creative thinking and entails an extensive critical review of the literature. This involves identifying the key conceptual contributors to the construct of metacognition by delving deeply into the theoretical core of the development of metacognition. The relationship between the related and interrelated concepts such as, for example, reflection, critical thinking, higher-order reasoning and metamemory will be identified. Where applicable the relationship between metacognition and ill-structured problem solving provides a context for discussion. The theorization process is fundamental to the outcomes of this study which will be depicted in a taxonomy of metacognition, conceptual framework of metacognition and a schema of metacognition and ill-structured problems.

Creativity is imbued in the theorization process and becomes a spontaneous part of the reconceptualization and demystification of the construct of metacognition. Theorization incorporates the intricate, multi-layered levels of being – a complexity that can be spontaneous and difficult to verbalize. The imbued creativity can be described by identifying a number of characteristics of the creative process of conceptualization in this doctoral study. The “maze of ambiguities” (Perkins, 1990, p. 423), which can also be described as metacognition, does not intimidate but is a challenge, and an enjoyment of the challenge which is a state of mind which is considered by Perkins (1990) to be an element of “creative thinking” (p. 422). This is reflected in the intrinsic motivation of this researcher. Creative thinking is considered to be derived from the process of problem finding including a high tolerance for complexity, ambiguity, intensity, disorganization, reorganization and intricacies. Metacognitive literature provides a rich source for creative thinking as its complexities, vagueness and ambiguities require any researcher attempting to tame the “many headed monster” (Brown, Bransford, Ferrara, & Campione, 1983, p. 124) to delve into oneself and draw not only upon knowledge derived from the conceptualization process but also the inner knowledge derived from a depth of introspection. The creative simplification process, and creative combination and reorganization processes are creative thinking processes which can be considered to be metacognitive in nature (Karmiloff-Smith & Inhelder, 1974-1975, p. 209; Mumford, 1998) and are applied in this study. Perkins (1990) makes a strong connection between metacognitive processes and creative thinking. It is logical to consider that the demystification and reconceptualization of metacognition would demand a level of creativity linked and dependant upon metacognitive processes.

Positioning and promoting creativity in doctoral research

In summary, the following are some suggestions on how to support and promote creativity in doctoral research.

- acknowledging creativity as imbued throughout the whole process of the study;
- identifying the creative contribution (Sternberg & Ben-Zeev, 2001) helping to clarify the aim of the study;
- recognizing and allowing creativity to aid in formulation of the research problem, topic, questions and design. Problem formulation relies upon creativity;
- fueling creative thinking through stimulating feedback and discussion regarding the research topic, the positioning of the research, and intended contributions;
- being enthusiastic, motivated and immersed in the research allowing creativity to flow (Csikszentmihalyi, 1996);
- recognizing the high level of creativity involved in making new connections between opposing or remote elements;
- identifying research gaps and benefits through creative thinking;

- acknowledging that doctoral research, especially the long thesis PhD, is an ill-structured task that has a multiplicity of paths, variables, hurdles, setbacks, challenges, and possible outcomes;
- being open and flexible to diversity and new approaches to doctoral research and
- being aware of the serendipitous nature of research.

Conclusion

Research in education should not be judged upon whether it fits into 'prescribed' or more commonly known methodologies and processes, but its potential to contribute to current and future knowledge and research. Understanding how creativity can stimulate doctoral research and the subsequent contributions to new knowledge is fundamental in helping doctoral students and supervisors identify research gaps, and be better able to position research to provide ongoing benefits to academia, industry and the wider community.

Acknowledging, supporting and integrating creativity as part of the whole process of doctoral research would provide positive benefits to research in education by limiting the pressure to 'fit into the norm' and therefore reducing the numbers of 'safe bet', 'Kentucky fast research' studies (Kiely, 1983; Leonard, 2001; Neumann, 2002). In addition it has been argued that theoretical studies can contribute by providing important conceptual advances to 'fuzzy', ill-defined constructs. It is envisaged that outcomes of theoretical doctorates in education can provide significant benefits to future empirical research studies.

References

- Anderson, G. L. (2002). Reflecting on research for doctoral students in education. *Educational Researcher*, 31(7), 22-25.
- Brown, A. L., Bransford, J. D., Ferrara, R. A., & Campione, J. C. (1983). Learning, remembering, and understanding. In J. H. Flavell & M. E. Markman (Eds.), *Handbook of child psychology* (4th ed., Vol. III Cognitive development, pp. 77-166). New York: Wiley.
- Cohen, G. (1977). *The Psychology of Cognition*. London: Academic Press, Inc.
- Csikszentmihalyi, M. (1990). The domain of creativity. In M. A. Runco & R. S. Albert (Eds.), *Theories of Creativity* (pp. 190-212). Newbury Park, California: Sage Publications.
- Csikszentmihalyi, M. (1991). *Flow : the psychology of optimal experience* (1st. Harper Perennial ed.). [New York]: Harper Collins.
- Csikszentmihalyi, M. (1992). *Flow : the psychology of happiness*. London: Rider.
- Csikszentmihalyi, M. (1996). *Creativity : flow and the psychology of discovery and invention* (1st ed.). New York: HarperCollinsPublishers.

- Evans, T. (2001). Tensions and pretensions in doctoral education. In B. Green, T. W. Maxwell & P. Shanahan (Eds.), *Doctoral Education and Professional Practice: The Next Generation?* (pp. 275-299). Armidale, NSW: Kardoorair Press.
- Green, B., Maxwell, T. W., & Shanahan, P. (Eds.). (2001). *Doctoral Education and Professional Practice: The Next Generation?* Armidale, NSW: Kardoorair Press.
- Karmiloff-Smith, A., & Inhelder, B. (1974-1975). If you want to get ahead, get a theory. *Cognition*, 3, 195-212.
- Kiely, M. C. (1983). *Creative sensitivity in doctoral research: The supervisor's contribution*. Paper presented at the Annual Meeting of the American Psychological Association, Washington, DC. (ERIC Document Reproduction Service No. ED 222155).
- Lamm, R., & Lewis, R. (1999). *The interpersonal relationship in doctoral supervision*. Paper presented at the joint Annual Conference of the Australian Association for Research in Education and New Zealand Association for Research in Education, 29 November - 2 December, Melbourne, Australia.
- Leonard, D. (2001). *A woman's guide to doctoral studies*. Buckingham, England: Open University Press.
- Maxwell, T. W., & Shanahan, P. (2001). Professional doctoral education in Australia and New Zealand: Reviewing the Scene. In B. Green, T. W. Maxwell & P. Shanahan (Eds.), *Doctoral Education and Professional Practice: The Next Generation?* (pp. 17-38). Armidale, NSW: Kardoorair Press.
- Mednick, S. A. (1962). The associative basis of the creative process. *Psychological Review*, 69(3), 220-232.
- Morris, L. V. (2003). On being innovative. *Innovative Higher Education*, 27(4), 211-214.
- Mumford, M. D. (1998). Creative thought: Structure, components, and educational implications. *Roeper Review*, 21(1), 14-19.
- Neumann, R. (2002). Diversity, doctoral education and policy. *Higher Education Research and Development*, 21(2), 167-178.
- Perkins, D. (1990). The nature and nurture of creativity. In B. F. Jones & L. Idol (Eds.), *Dimensions of thinking and cognitive instruction* (pp. 415-441). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Root-Bernstein, R. (2003). Problem generation and innovation. In L. V. Shavinina (Ed.), *The International Handbook on Innovation* (pp. 170-179). Oxford, United Kingdom: Elsevier Science.
- Ruggiero, V. R. (1988). *Teaching thinking across the curriculum*. New York, New York: Harper & Row, Publishers Inc.
- Runco, M. A. (1990). Implicit theories and ideational creativity. In M. A. Runco & R. S. Albert (Eds.), *Theories of Creativity* (pp. 234-252). Newbury Park, California: Sage Publications.

Salmon, P. (1992). *Achieving a PhD : ten students' experience*. Stoke-on-Trent, Staffordshire: Trentham Books.

Simon, H. A. (1979). *Models of thought*. New Haven: Yale University Press.

Smith, S. M. (1995). Creative cognition: Demystifying creativity. In Hedley, P. Antonacci & M. Rabinowitz (Eds.), *Thinking and literacy the mind at work* (pp. 31-46). Hillsdale New Jersey: Lawrence Erlbaum Associates.

Sternberg, R. J., & Ben-Zeev, T. (2001). *Complex cognition: The psychology of human thought*. New York, New York: Oxford University Press.

Styles, I., & Radloff, A. (2000). Jabba the Hut: Research students' feelings about doing a thesis. In A. Herrmann & M. M. Kulski (Eds.), *Flexible Futures in Tertiary Teaching. Proceedings of the 9th Annual Teaching Learning Forum, 2-4 February 2000*. Perth, WA: Curtin University of Technology.

Tesser, A. (2001). Theories and hypotheses. In R. J. Sternberg (Ed.), *Guide to Publishing in Psychology Journals* (pp. 58-80). Cambridge, England: Cambridge University Press.