

QUEENSLAND TEACHERS' CONCEPTIONS OF CREATIVITY: A PHENOMENOGRAPHIC INVESTIGATION

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ABSTRACT

This thesis is a study of Queensland teachers' conceptions of creativity. In Australia, as throughout the world, governments, economists, educators and social theorists see creativity as critical for our economic and educational futures. However, across the scientific, academic and educational communities creativity has been, and continues to be, a contentious and poorly defined construct. The aim of this study has been to uncover how teachers conceptualise creativity. It was undertaken with a view to understanding why creativity is so contentious and improving prospects for the enhancement of creativity in Australian schools.

A phenomenographic approach was used to investigate conceptions of creativity within a group of primary and secondary school teachers in the Brisbane region in South East Queensland. Data was elicited through semi-structured interviews and analysed according to phenomenographic procedure in order to discover the limited number of ways in which creativity was understood within the group of participants.

The study has found that the teachers' ways of defining and valuing creativity were tied structurally to a central dimension described, in the research outcomes, as an evaluation of which location for rules/values/rewards is the most reliable – external or internal. Greater expansiveness in views of creativity involved greater focus on the benefits, for individuals and society, of attending to internal rules/values/rewards rather than external rules/values/rewards. From an internal rule perspective unreflective control by external rules/values/rewards was seen as *not* creative and was ideologically rejected as less beneficial than reflective regulation by internal rules/values/rewards. Seven categories of creativity conceptions were identified which describe the various ways that the teachers defined creativity *operationally*, that is, as an aspect of their lived experience. The variation between the identified categories is reflected as different combinations of values on several dimensions. The outcome space for the study has been constructed to reflect a hierarchy of categories wherein the more expansive ways of conceptualising creativity can be seen to include awareness of categories lower in the hierarchy. Teachers who expressed more expansive views of creative value conceptualised and endorsed “creativity” as *ownership* of learning/development or *autonomous and authentic* being.

Two supporting analyses suggest that greater reliance on external rewards, rules and values is consistent with both an external-rule (extrinsic value) focused view of creativity

and a teacher/transmission-focused view of teaching, whilst greater reliance on internal rewards, rules and values is consistent with both an internal-rule (intrinsic value) focused view of creativity and a student/enabling-focused view of teaching. These analyses suggest that conceptions of creative teaching and the enhancement of student creativity differ significantly when seen from externally ruled vs. internally ruled perspectives. It is recommended in lieu of these indications that teachers' conceptions of creative teaching and enhancing student creativity could be investigated in further studies, in order to more firmly establish how teachers interpret the phenomena of creative teaching and enhancing the creativity of students.

Also discussed are similarities between the internal rule-external rule dimension of variation, as identified in this study, and the autonomy-control dimension as defined in Self-determination Theory (SDT). The SDT research literature indicates that people exhibit tendencies towards taking either an intrinsic value focus or a more extrinsic value focus. SDT describes these tendencies in terms of an autonomy orientation vs. control orientation. It appears that, within SDT, autonomy and control are conceptualised in a similar way to the internal-external rule orientations as they emerged in the present study. The term "autonomy" has been utilised in the present research as a suitable referent to delimit a meaning of creativity emphasised in the internal-rule perspective. It is therefore suggested that SDT theory and research provides an additional means of apprehending and scrutinising the key dimension of variation as identified in the present study.

Given the intense current emphasis on the importance of creativity for economic and educational futures, and the wealth of research now demonstrating benefits of behavioural autonomy for learning, "creativity", health, relationships and socially responsible attitudes, the future implications of the study findings reach across many areas, including education, business, industry, creativity research and the reading of social theory around creativity.

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STATEMENT OF ORIGINAL AUTHORSHIP

The work contained in this thesis has not been previously submitted for a degree or diploma at any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

QUT Verified Signature

Signature: _____

Date: 08/04/2014

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FOREWORD: CAN WE SEE BEYOND “THE MATRIX”?

The study described in this thesis is a phenomenographic investigation. Phenomenographers concern themselves with trying to identify and describe critical variation in how phenomena appear to people. Phenomenographers are also interested in how such observations might be used to help learners to shift, from less contextually appropriate or less comprehensive ways of seeing something, to more appropriate, or more comprehensive, ways of seeing that thing – for example, from a layman’s understanding of a concept, such as speed or heat, to a physicist’s understanding of it.

If ever a movie represented spectacularly what it might be like to transition from one way of seeing something to a totally different way of seeing the same thing, surely that movie is *The Matrix* (Wachowski & Wachowski, 1999). Anyone who has seen the movie is likely to recall fairly vividly the moment where the movie’s computer-hacker hero, Neo, takes a “red pill” and spirals into a state of perception where the world as he has always known it is replaced by an altogether new way of seeing that world. He can now never see “The Matrix”, his old home, in the same way. Neo joins a group of fellow exiles from “The Matrix” in a space, or place, named “Zion”. From the vantage point of “Zion”, he and his compatriots can recall and even revisit “The Matrix”. Meanwhile, the residents of “The Matrix” continue on in the belief that the world as they see it is all there is. They are simply not aware that “Zion” exists.

Now, in 2014, that movie is fairly dated. But it still provides a relevant metaphor for the potential for variation in people’s ways of perceiving the world around them. Early in the formulation of the present research project I was intrigued and also inspired by *The Matrix* as a film. I spent much time thinking about, what I saw as, the deeper messages of the movie and also read scholarly explorations of these deeper messages. Some scholars discuss religious themes reflected in *The Matrix*, others discuss the movie’s references to philosophical paradigms and some discuss what the movie has to say about humanity and its relation to its technologies. I pondered on the significance of *The Matrix* as a cultural artefact that emerged at a time of global transitioning into the present era of electronic communication. At the same time I was thinking about the challenges faced by educators as we, like Neo, open our eyes to the new “reality” of a world “ruled” by electronic technology. I conjectured that education, as we know it, could not fail to be shaken in the wake of social change around the increasing use of electronic media and reflected on how

the creative capacities of educators might be tested over the coming years. I suspected that creativity must also impinge on students' lives, in diverse ways, in the age of electronic media. Thus began, in earnest, the thought processes and questions that led into the long process that has produced this thesis.

I cannot say that these thought processes *began* with contemplation of *The Matrix*. In actuality my interest in *The Matrix* – that is, what I took from it as significant – can be linked much further back to the days of my studies in Anglo-Saxon and Old Norse at James Cook University in North Queensland. In those studies, especially while translating medieval texts into modern English, I was brought abruptly into confrontation with differences between my own expectations about communication and what one finds in early writings. I saw and learned, with the help of my tutors and lecturers that it was necessary to put aside many of my assumptions about communication, if I wanted to see more clearly into the meanings expressed and the assumptions about communication reflected in these fragments of writing from earlier times. It was probably inevitable that my interest in media technology and how it relates to the ways people think about knowledge, communication and education, would be present, at least in the background, of this thesis. My interest in media and how media technology links to culture is also closely linked to my interest in, and approaches to thinking about, the main topic of this thesis: creativity. However, the overriding concern of the thesis has come to be with the question of how teachers experience creativity.

In this thesis it is argued that just as the notion of learning is undeniably central to the work of educators, the notion of creativity is equally important in education. It is not likely that one will find “creativity” listed as a subject in any schools. But, then, one is not likely to find “learning” listed as a school subject either. Creativity is not highlighted as an area of study in the new Australian curriculum. But neither is learning a subject of study in that curriculum. In the Australian curriculum creativity is seen as an important capability that interacts with learned content to serve the student and community beyond school (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014a). However, just as research has shown that there is significant variation in the ways teachers and students conceptualise and approach learning, the present research study underscores an issue that has proven to be problematic when dealing with creativity as a topic: Creativity is understood in a variety of ways. It has even been suggested that creativity may continue to evade the sort of definition that would facilitate its integration

into educational curricula (Kleiman, 2007; Sefton-Green, 2008). Given that there has been difficulty in discussing and dealing with creativity and that people see creativity in different ways, is it possible that some of that difficulty comes about because some meanings of creativity are either not shared or not valued? In the contexts of teaching and education in an era where information technology and creativity are seen as drivers of cultural change it seems important that educators understand each other when discussing creativity. By this I do not mean to suggest that we can all see creativity in exactly the same way. But where our interests in the educational value of creativity appear to differ markedly it seems important that we are able to describe and clarify what we mean when we discuss it and decide if we have similar or divergent meanings in mind.

The principal research question addressed in the present thesis is: How do teachers conceptualise creativity? Due to the researcher's location in Queensland, recent emphases on creativity, in this Australian state, and the fact that there appear to have been few investigations of creativity conceptions in Queensland, or Australia, the study has focused on Queensland teachers' conceptions. The purpose has been to uncover variation in teachers' ways of seeing creativity. If teachers were to see creativity differently from each other, whilst remaining unaware of how their conceptions of creativity differ, this would have import for policy making, teaching and teacher training at this time. We would have a situation like the one portrayed in *The Matrix* film where people are living in different perceptual worlds and unaware of other ways of seeing the phenomenon in question.

Here, at the outset of the present study it seems apt to frame the research in terms of "The Matrix" metaphor, for at this time when creativity is seen as important in education, a major concern is surely with whether teachers are – or if it is even possible for educators to be – "on the same page" when it comes to meanings of "creativity". If teachers cannot apprehend alternative conceptions of creativity how will decisions, about the educational importance of creativity, be made? Do we really know how other people conceptualise creativity and is there hope of seeing it from other perspectives? Are there equivalents of "The Matrix" when it comes to teachers' conceptions of creativity and can you see "Zion" from "The Matrix"?

CHAPTER 1: INTRODUCTION

The engine of cultural change is the human capacity for creative thought and action.

(National Advisory Committee on Creativity and Cultural Education [NACCCE], 1999, p.6)

1.1 CHAPTER OVERVIEW

This chapter begins with a brief outline of the research focus and the observation of a gap in the current literature. The rationale for this study is then stated in greater detail, with attention given to why creativity is an important topic for educators and why there is a need to investigate teachers' conceptions of creativity in Australia. This leads to a precise statement of the research aims, the central research question and an overview of the study as a whole.

1.2 THE RESEARCH FOCUS

This thesis reports on a phenomenographic investigation of Queensland teachers' conceptions of creativity. The investigation is situated within the context of present day global interest in creativity and culminates as Australian educators begin implementing a national curriculum which aims to equip students with skills for building "the social, intellectual and creative capital of our nation" (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014a, Cross-curriculum priorities, para.1). The rationale that has informed and driven the present study is that whilst creativity has become an important matter for educational consideration in Australia and elsewhere, it remains far from clear how educators conceptualise creativity.

In the Western world creativity has entered into, and receded from, education discourse at various times and for varying reasons over the past century and more (Albert & Runco, 1999; Craft, 2001, 2008a; Runco & Sakamoto, 1999). Across its educational incarnations creativity has proven to be a generally popular, notoriously difficult, often controversial, sometimes divisive topic (Craft, 2003; Gibson, 2005). Creativity seems to elude satisfactory definition (Ellis & Barrs, 2008; Runco, 2004a). Although creativity has appeared in the context of the latest version of the Australian curriculum as a seemingly uncontentious notion – specifically, as a general capability required for building the

nation's creative capital – to date, educators have not stopped debating the meaning and value of creativity as a construct (Banaji, 2008; Bleakley, 2004), or as an aspect of education (Cochrane, Craft, & Jefferey, 2008; Sefton-Green, 2008; Shaheen, 2010). Not at a societal, nor academic, nor teaching community level has creativity ever been uncontentious and the reasons why it is so contentious have never been resolved to an extent that is truly helpful for the purposes of education.

In the interests of not repeating the oversights of the past, the present study has been aimed towards resolving the difficulties educators have around creativity, by attempting to uncover how teachers experience or understand it. As teachers form a group that mediates between the policy world, the social world and the student world, insight into teachers' conceptions of creativity can potentially make clearer why it is that education has not managed to come to terms with creativity and what can be done to improve the way the teaching community approaches creativity issues.

1.3 SETTING THE SCENE: A GAP IN THE RESEARCH LITERATURE

To what extent those currently engaged in teaching and learning are able, willing and resourced to address wise, creative educational futures, will need careful consideration.

(Anna Craft, 2008a, p.11)

Recently creativity has become a global educational priority (Craft, Cremin, Burnard, Dragovic, & Chappell, 2012; Shaheen, 2010). It has been argued that the current educational interest in creativity is based on more complex social and cultural imperatives than in its previous education incarnations (Craft, 2008a; McWilliam & Haukka, 2008). Anna Craft's (2008a) quote, highlighted beneath the title of this section, helps set the scene for the present study for in it she expresses her concerns about "how able, willing and resourced" teachers are to deal with the complexities of creativity imperatives impinging on education. In one sense her comment relates directly to the research problem, because it highlights the key role of teachers, their knowledge and attitudes, in dealing with creativity in schools. But the quote helps set the scene of the educational context within which the present study has been undertaken for it points to an important aspect, of the current educational focus on creativity: complexity. Craft specifically mentions that teachers need to be "resourced" in order to address creative educational futures. It is argued here that amongst the resources teachers will need, will be the outcomes of specific kinds of

research which can help them when it comes to interpreting contemporary creativity discourse.

Prior to and since undertaking the task of reviewing the creativity literature for the UK's Qualifications and Curriculum Authority (QCA) (Craft, 2001) Anna Craft has reflected on the evolving relation of creativity to education in the UK and elsewhere. Whereas in her early books and articles she focused on creativity as receiving too little attention in education (Craft, 1997, 2000), after an interval of only a few years she sees educators dealing with a "creative tsunami" (Craft, 2008a), the result of fundamental shifts in the "values-plates which underpin educational provision" (p.1). Her views are illustrative and summative of a growing discourse, around creativity in education, which acknowledges the role of "creativity" in shaping and coping with ambiguous and uncertain cultural, economic and educational futures (Burnard & White, 2008; Craft, 2008a; McWilliam, 2007; McWilliam & Haukka, 2008). In this kind of discussion, scholars point to complex relationships between creativity and societies.

More recently Craft and colleagues (Craft, et al., 2012, p.3) observe that whilst, in the UK, the policy focus on creativity appears to have again shifted to a narrow marketised view of the creativity imperatives, a "professional commitment" to nurturing student creativity continues:

Whilst a change of government in 2010 signalled a change in perspective, a professional commitment to nurturing the creativity of students has continued to inform the development of pedagogy in the early years, primary and secondary education (e.g. Craft et al, 2011, Clack, 2011, Chappell et al, 2011).

They suggest that after a period of time at the forefront of researching and developing pedagogic practice around creativity, the UK education system is under threat of a reversal in this trend due to the return of a policy focus on a narrow, core skills-based curriculum. The authors stress that the need for nurturing creativity in education is linked to societal context and continues to be high in the priorities of education systems around the world. They are thus critical of their government's current directions which appear to them to be incompatible with the social and global situation.

With respect to Australia it could be argued similarly that the establishment of a standardised national curriculum seems at odds with its expressed aim of nurturing creativity. Nonetheless the aim of supporting students' creative capacities is clearly stated

in a number of areas and ways throughout Australian curriculum policy. This policy remains current and is viewable online at the ACARA website (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014a, 2014b). Addressing creativity is therefore an aspect of curriculum to be interpreted and acted upon by educators in this country. Furthermore, whether or not governments choose to acknowledge creativity-related issues in their educational policies, logically the cultural and social issues do not magically disappear when they are not being attended to.

But addressing creativity is not a straightforward issue. Although there has been a substantial creativity research effort during the past century (Amabile & Hennessey, 2010), with some of this research focused within education, (Craft, 2008b), defining creativity for the purposes of education has nonetheless proven to be a persistent problem (Ellis & Barrs, 2008; Fryer, 2012; Lucas, Claxton, & Spencer, 2012; McWilliam, 2007). Over the past decade much scholarly commentary on the importance of creativity as an aspect of contemporary education takes the position that whilst creativity can be plausibly linked to cultural change and student futures in a variety of ways, educators are placed in a very difficult bind where they are required to address creativity issues without really being able to define, in any simple way, what is meant by creativity (Gibson, 2005; Kleiman, 2005; McWilliam, 2007; McWilliam & Haukka, 2008). This approach, to thinking about creativity in education, focuses on the contemporary context and attempts to identify those aspects of the cultural milieu which reflect or implicate “creativity” as a driver of change or as a response to change. The next step taken in these arguments is often to ask how educators can address the imperative to enhance creativity and to offer ways of resolving the rift between the discerned imperatives and educators’ understanding of creativity. For example, Gibson (2005) argues that education needs to refer to a more complex “systems” framework (Csikszentmihalyi, 1999) for defining and envisioning creativity; McWilliam (2009) suggests taking a view of teaching as “meddling” in such a way as to facilitate deeper thinking and problem-solving in students; Kleiman (2005) argues that insight into educators’ meanings of creativity is needed.

However, another kind of response to claims that educators need to address “creativity” focuses more on the problem of diverse meanings in creativity rhetoric (Banaji, 2008; Banaji, Burn, & Buckingham, 2006; Bleakley, 2004; Sefton-Green, 2008). Sefton-Green (2008) has argued, for example, that views of creativity derive from different schools of thought, such as the arts tradition and the constructivist tradition and suggests that these

traditions sometimes present conflicting ideas about creativity. He argues further that ultimately such divergent views may be irreconcilable and that calls to address creativity in education may fail to filter through to make any noticeable impact on what happens in classrooms.

Such discussion, within the literature, points to a rift between the rhetorical level of creativity discourse – at which arguments are made about the importance or lack of importance of creativity – and the interpretive level. It is argued here that there is a requirement for a range of studies to help in bridging this rift, for although calls to address creativity have impacted educational policy around the world (Shaheen, 2010), the capacity of education systems to assess and address the imperatives is hampered by lack of, what could be described as, interpretive knowledge concerning how creativity appears to people. Arguably the creativity imperatives for education lie somewhat ambiguously between the phenomenon of creativity as it is understood, observed and then communicated at the rhetorical level and the phenomenon of creativity as it is understood by those who interpret the rhetoric. To support educators' interpretive knowledge, around meanings of creativity, investigations of both levels of discourse would be useful. The investigation of meanings of creativity would implicate the use of methodologies suited to uncovering and describing variation in views of creativity.

1.4 THE RATIONALE FOR THE RESEARCH

The rationale for the present study is based on seven pillars:

1. There is a requirement for teachers to address creativity within the Australian educational context.
2. Teachers' conceptions of teaching and/or learning-related phenomena matter in the educational context.
3. There are indications that teachers may have qualitatively different conceptions of creativity.
4. It appears that there is no serviceable, single, authorised definition of creativity which meets current educational needs.
5. Lack of a serviceable definition places the onus upon teachers to address creativity according to their own conceptions of creativity and could mean that there are significant differences in teachers' understanding of, or approaches to, *creative teaching* and *enhancing the creativity of students*.
6. Furthermore, because teachers are required to interpret what is meant when the term "creativity" arises in educational and/or scholarly discourse they will benefit from more information about different meanings of creativity than could

be gained from current definitions of creativity. It seems unlikely that a definition of creativity, even if devised and authorised for educational purposes, would or could convey the variety of ways in which the terms “creativity” or “creative” are actually used in education discourse nor provide insight into how they are used in the wider world, including in the scholarly arguments being made for educational interest in creativity. It would be beneficial, from a training and policy-making perspective, to have some insight into teachers’ ways of understanding these terms.

This latter issue of the need – whether one is a teacher, teacher trainer, scholar, or policy maker – to interpret, rather than assume, what is meant when the term “creativity” arises in educational and/or scholarly discourse is highlighted here in the rationale for the study. However, due to the complexity of this issue, it is taken up more explicitly in the literature review chapter.

7. Finally, whilst existing studies suggest that teachers conceptualise or experience creativity in different ways, further research is required to gain insights relevant to the Australian context and to more fully understand what it is that Australian teachers are seeing *as* creativity.

In summary, creativity as an aspect of Australian education is seen as an important capacity to be encouraged via the current national curriculum. The emphasis on creativity in the Australian curriculum is linked, as it is abroad, to cultural trends involving increasing use of information technology and the rise of the creative economy. In the wake of these global trends the emphasis on teacher and/or student creativity has intensified within education systems around the world (Shaheen, 2010). Knowing about creativity is therefore an aspect of the knowledge teachers require in order to teach effectively and interpret policy in the current context. However, as evidenced by a limited number of overseas studies (e.g. Fryer & Collings, 1991) and a very few Australian studies which have attempted to gain insight into teachers’ views of creativity, teachers appear to place varying degrees of emphasis on creativity as an aspect of teaching and learning. However, little is known about how teachers conceptualise creativity. Research into Australian teachers’ conceptions of creativity is required in order to better deal with creativity concerns in the Australian education context. Such insights would be useful for anticipating whether there are likely to be important differences in Australian teachers’ teaching practice around creativity and differences in teachers’ reading of the term “creativity” as it arises in discussion, policy documents or other literature.

This rationale is now elucidated under the following headings:

1. The need to address creativity in Australian education
 - a) addressing creativity by teaching creatively and enhancing student creativity
 - b) addressing creativity by becoming interpreters of creativity discourse
2. Creativity is a poorly defined construct within education
3. Teachers' conceptions matter
4. Teachers experience creativity in a variety of ways
5. Australian studies of teachers' creativity conceptions are needed.

1.4.1 The need to address creativity in Australian education

An important aspect of the rationale for the present study of teachers' conceptions of creativity is that there is a requirement, within Australian education, for teachers to address creativity. Given the degree to which creativity is presently seen as a critical factor in the functioning of global economies and for living well in the age of electronic media (Burnard & White, 2008; Craft, 2008a; McWilliam & Haukka, 2008), it seems inevitable that the perceived importance of creativity for students and for this nation would be reflected in the aims of the Australian curriculum. In recent decades interest in creativity in Western education has been buoyed, or perhaps re-energised, by developments in computer technology and global economics. Educators across the Western world have been urged to consider and interpret how creativity and culture are presently intertwined and what this means for education (NACCCE, 1999). In Australia, the perceived importance of these imperatives has been reflected in events such as the 2020 Summit, convened in Canberra in 2008 to discuss, and make recommendations about, Australia's creative future (Australian Government, 2010). Clearly these are not directives to build creative capacities in students in some simplistic way. There is a requirement to consider broad, complex issues concerning what is happening with creativity in the wider world.

The interest of Western educators in creativity has been mirrored by similar educational interest and discussion in the East, albeit with ongoing debate among educators from both cultural worlds concerning possible differences between Western and Eastern views of creativity (Craft, 2003; Ng & Smith, 2004; Tan, 2004). Shaheen (2010) finds that creativity is outlined as an essential learning or capacity in the educational policy documents of a broad cross section of developed countries, including Australia, Canada and the USA, major European countries such as Germany, France and the Netherlands, and East Asian countries such as Korea, China and Japan. Presently creativity is seen as not only

fundamental to the competitiveness of countries within the global economy (Shaheen, 2010), it is seen as becoming normal and endemic to people's daily and working lives (Florida, 2002). Educational interest in creativity is further implicated because of social change occurring as a consequence of the penetration of electronic media into the way people currently live (Bruns, 2011; Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009).

It might be useful to consider the set of “big picture” imperatives around creativity in education as relating to *teaching for* a world in which cultural change and knowledge work are becoming increasingly common, as a somewhat distinct agenda from *teaching for* creativity. It is useful to separate them because teaching to support student participation in a social milieu that is impacted by various types and consequences of “creativity” is not equivalent to attempting to support, build, inspire or otherwise encourage “creative” capacities. These two aspects of creativity issues at some point overlap. However, the big picture directs our attention to the broader context of contemporary living, which is now seen as much influenced by two factors: technological change and a shift in economic activity, which sees a large proportion of the working population involved in creative work (Florida, Mellander, & Adler, 2011; Howkins, 2001; Pink, 2005). The big picture is important for educators on many levels. A particularly important consideration is that there are many facets of contemporary life and work which raise new personal and social problems and require attention from educators (Florida, 2005).

Richard Florida has pointed out that in the emergence of creative economic systems, some aspects can be observed, which are “liberating” and some which are “divisive and stressful” (Florida, 2002, p. xvii). Florida (2005) emphasises the importance of understanding the social problems, which have arisen in the wake of the creative economy. Similarly, observers of the interconnections between culture and technology have noted that technology currently affords positive social potentials for creativity and brings new problems, which educators are advised to monitor in order to maximise benefits and minimise problems (Bruns, 2008; Jenkins, et al., 2009).

Creativity researchers have argued that creativity is associated with the kind of adaptive attitude and flexible thinking that is suited, not only to coping with life generally (Zhang & Sternberg, 2005), but to living with contemporary conditions (Runco, 2004a). This message is echoed in educational discourse. Craft (2008a) notes that creativity has been proposed as a means of “navigation” in a changing world. She notes also a discourse in

education, which defines creativity as engagement in “personal trajectories” with links to “effective learning”. On the other hand, she argues that these agendas present teachers with dilemmas, for example, around the conflict between performativity and enhancing creativity in a crowded curriculum. Thus creativity discourse of relevance for education seems, on the one hand, to attribute positive social value to creativity in terms of contributing to the economy and to individual adaptation in the current social climate. At the same time it is linked to social problems and to difficulties currently being experienced in education.

Education based scholarship on the relationship between creativity and education now often points to the issue of what extensive changes need to be made to educational provision in order to meet the conditions of teaching, learning and working in the 21st century (Bruns, 2011; Craft, 2008a, 2008b; McWilliam & Haukka, 2008; Shaheen, 2010). Craft (2008a) argues that educators are faced with the possibility that educational provision must change fundamentally. Some media theorists have suggested that educational and other institutions will undergo collapse if there is a failure to restructure them in response to the creative social and cultural movements of the electronic age (Bruns, 2011; Pesce, 2007).

It appears, then, that teachers have at least two interconnected tasks or roles when addressing creativity in education. The first is the role of enhancing the creativity of students – that is, supporting students’ capacities to be creative in the settings and ways that might prove adaptive for them in the contemporary social environment. It has been argued that this would implicate a high level of teacher creativity also (Jeffrey & Craft, 2004). Secondly, teachers need to bring their interpretive capacities to bear on the rhetoric that posits connections between creativity and culture. These two aspects of the rationale for the present study will now be discussed in more detail.

1.4.1.1 Addressing creativity by teaching creatively and enhancing student creativity

Consistently it has been suggested that key to dealing with the various complexities of contemporary culture and education will be the development of *teacher* and *student* creativity (Craft, 2008a; Jeffrey & Woods, 2003; NACCCE, 1999). The requirement for a teaching workforce with the capacity to teach for the contingencies of the present cultural environment implicates renewed attention to what it takes to be a creative practitioner (Craft, 2008a). These arguments focus attention, not only on what established “creative”

practitioners, such as teacher-artists, do when they are teaching creatively and enhancing creativity (Denmead, 2011), but also on what school teachers think is meant by teaching creatively and enhancing creativity.

On the basis of research undertaken in the UK it has been suggested that what needs to be seen as central to both student and teacher creativity is “ownership” of activities and learning (Jeffrey & Woods, 2003, 2009). Support for this view can also be found in the creativity research literature where much research work indicates that creative outcomes are more likely under conditions where people are fully engaged and experience a sense of freedom and personal control in what they are doing (Collins & Amabile, 1999; Ryan & Deci, 2000c). It has been argued that this kind of focus on teaching and learning presents great challenges for education, especially as teachers are often concerned or constrained by a perceived conflict between student-focused approaches and performativity in teaching (Burnard & White, 2008; Craft, 2008a). Nonetheless, as a critical aspect of the educational approach to dealing with creativity, a focus on ownership seems inescapable.

However, even before the 2010 change of government in the UK, when educational creativity initiatives were still strongly supported there (Craft, et al., 2012), it appears that there were signs that teachers differed in the extent to which they were committed to supporting ownership in learning. Craft (2008a, p.5) reports the persistence of both a marketised view of the creativity imperatives and teaching practices which, rather than being supportive of ownership, were more oriented toward the acquisition of propositional knowledge, the maintenance of discipline and driven by assessment-orientated outcomes. Nonetheless, Jeffrey and Woods, (2003, 2009) revealed that despite curriculum pressures some teachers and whole schools remained dedicated to ownership in teaching and learning, managing to resolve the supposed clash between creativity and performativity through creative teaching (Jeffrey & Woods, 2003, 2009).

The foregoing observations suggest that where there is persistent emphasis on marketised justifications for creativity and non-creative approaches to teaching, this may owe more to teachers’ and administrators’ *conceptions* of creativity and teaching than to restrictive conditions in the curriculum. Research of the kind undertaken in the present project would be beneficial for Australian education in terms of helping to identify and avoid such obstacles to the development of student and teacher creativity as have been part of the UK experience.

1.4.1.2 Addressing creativity by becoming interpreters of creativity discourse

As argued above the requirement to address creativity in education is not a narrow directive to enhance creativity but implicates engagement with complex discourse around creativity and culture. Addressing creativity in education means considering and dealing with these complex issues and doing so is as relevant for Australian educators as for educators in other countries. Inevitably this will involve Australian teachers in reading/hearing about creativity, interpreting policy related to creativity and ongoing collaboration with others in their workplaces as they consider the nature of the creativity-culture relationship and work towards supporting student participation in present day culture.

An inescapable difficulty in dealing with discourse around creativity is that people are not always using the term in the same way. Furthermore there are other terms such as “entrepreneurship” or “problem solving” which are sometimes substituted for creativity or with which some meanings of creativity share common ground (Craft, 2001). Despite this difficulty, arguments about creativity deserve to be considered on their merits. For teachers, a critical aspect of working effectively with creativity discourse will be interpreting what is meant by the term “creativity” when it arises and attempting to clarify what they themselves mean by creativity. Currently, it appears that this approach is rarely taken in creativity discourse. Meanings of creativity are often not clarified, even within the creativity research literature (Feldman, 1999; Runco & Sakamoto, 1999).

One of the conditions contributing to this confusing situation is that there has been little intensive research to define the range of ways in which creativity is understood. How can teachers decide if their own ways of understanding creativity are comparable with the views expressed across their groups and communities and in scholarly arguments about social conditions that have a bearing on educational provision? Research to consolidate understanding of the range of ways in which creativity is understood would be helpful in this regard.

1.4.2 Creativity is poorly defined in education

Where the reification of creativity involves striving for concrete definitions, in over half a century of formal research into creativity this has not resulted in consensus of opinion ...

(Bleakley, 2004)

Arguably, the problems teachers may have around enhancing creativity and interpreting messages about creativity are not helped by the lack of a useful definition of creativity within education. Lucas, Claxton and Spencer (2012) contend that “across the educational world there is no widely used definition of what creativity is, no agreed framework for assessing its development in schools” (p.2). Ellis and Barrs (2008) observe that attempts to generate definitions for creativity are usually unsatisfactory. Existing definitions generated for educational purposes reflect quite different views of creativity (Kleiman, 2008).

Problems arising from the lack of consensus around useful definitions for creativity are reflected nowhere more pointedly than where attempts have been made to address the issue of assessing creativity in educational settings. As a first step in generating guidelines for evaluating creativity, in the UK education context, Lucas et al. (2012) attempted to generate a suitable definition of creativity by first reviewing existing creativity literature. They nonetheless observed, first hand, how contentious is this issue of defining and assessing creativity. They observe that teachers have strong opinions concerning creativity and recount how at an “appreciative inquiry session” to show some of their preliminary assessment formats, teachers were sometimes in agreement and at other times “expressed anger, hostility and bewilderment” (p.2). They note further: “We got the strong sense that there is little appetite for the creation of a complex summative matrix against which the creativity of pupils can be compared and cross-checked” and suggest that “teachers who are interested in creativity may remain wary about assessing it” (p.22). They see the development of assessment tools for creativity as requiring considerable work in trials and collaborations into the future.

1.4.2.1 Definitions of creativity other than from education literature

The lack of a useful or comprehensive definition of creativity is not an issue peculiar to education. The creativity research literature can also be confusing in this regard (Csikszentmihalyi, 1996; Feldman, 1999; Mumford & Gustafson, 1988). Some recent reviews of the creativity research literature indicate that different investigators seem to be

defining creativity differently and this situation has resulted in a fragmented literature (Amabile & Hennessey, 2010; Sawyer, 2011). Beyond the research literature, the wider creativity literature is replete with observations about differences, or possible differences, in the way creativity is defined historically, within popular discourse, between popular and scientific discourse and cross-culturally.

On the issue of whether creativity is an old concept or a new concept, some commentators have suggested that, in the West, interest in creativity was expressed by early Greeks at around Plato's time (Albert, 1983; Albert & Runco, 1999), that it has links to early Judaic, Christian and Moslem traditions (Albert & Runco, 1999; Craft, 2001) and was promoted by Renaissance educators interested in the ideal of cultivating persons of genius (Albert, 1983). Lubart (1999) expresses the view that all cultural views of creativity may derive from creation myths and reasons that cross-cultural differences in definitions of creativity could reflect differences in the original mythologies. However, some discussion indicates that, because the meaning of creativity has evolved over time and has only recently come to be associated with originality (Albert & Runco, 1999), earlier conceptualisations might not be very close to modern day views of creativity. Hennessey (2004) states that just as there is no word for creativity in modern Arabic, neither did the word "creativity" exist in the Western world prior to 1870 and has only been in popular use since around 1950 (Weiner, 2000, cited in Hennessey, 2004, p.218). Hennessey contends that the speakers of Arabic "have not found the need to coin such a term" (Hennessey, 2004, p.218). By implication, she seems to suggest that in the West, such a need must have arisen.

However long the Western construct or concept of creativity has been in use, the current "scientific" (Sternberg & Lubart, 1999) view of creativity might be said to date from the time of Galton's (1869) studies of hereditary genius. Galton's work seems to have lifted a veil of mystery from the conceptualisation of genius and acted as a precursor or impetus to research into creativity, which moved gradually from initial interest in exceptional individuals to more recent interest in common or "everyday" creativity (Albert & Runco, 1999; Amabile & Hennessey, 2010; Sawyer, 2006). Sawyer (2006) observes that it is really only since the 1990s that creativity researchers have focused on common and ubiquitous indications of creativity, that is, creative thinking and problem-solving seen as common human capacities. Amabile and Hennessey (2010) have noted that, until recently the field of creativity research was focused on a few "big" questions. They now see the field of

creativity research as marked by fragmentation, with attention given to many small questions rather than big questions and lack of collaboration between investigators in various subfields. Rather than bringing us closer to a common understanding of creativity, research seems to be reflecting a variety of research interests and ways of understanding the construct.

The history and evolution of conceptualisations of creativity seems to continue to contribute to the confusion around creativity, with a mixture of older views and contemporary views of creativity in popular use. Conceptions associating creativity with genius, madness and spirituality persist in educational and popular discourse (Isaksen, 1997; Sternberg & Lubart, 1999) alongside conceptualisations focused on innovation and creative thinking. Sternberg and Lubart (1999) argue that spiritual and commercially promoted understandings of creativity have hindered the “scientific” investigation of creativity as they contribute to the popular perception that creativity “runs counter to the scientific spirit” (p.12).

Bleakley (2004) questions the extent to which the scientific view of creativity has itself “constructed” the object of its investigation. He suggests that the scientific interest has tended to promote a definition of creativity as the production of novelty and value whilst other possible meanings, such as transgression and serendipity, are not legitimised. Banaji and colleagues (Banaji, 2008; Banaji, et al., 2006) ask whether the current “rhetorics” of creativity actually correspond to anything in the “real” world. They too see creativity as “constructed through discourse”. They perceive several current rhetorics or discourses of creativity vying for educational attention.

Some recent research based on cross cultural psychological theories of creativity suggests that creativity discourse may be further complicated by “external” and “internal” implicit theories of creativity (Paletz, Peng, & Li, 2011). In this work researchers are investigating “the tendency to consider creativity to be prototypically expressed internally, via inner and personal processes, or externally, through products and interactions with others” (Paletz, et al., 2011). This observation raises the possibility of a fundamental divide in conceptions of creativity, which would be of considerable interest from an educational perspective should it prove to be the case. One of the implications of external and internal biases in creativity conceptions would be that the “rhetorics” of creativity would likely reflect both biases. Some “rhetoric” would focus, perhaps, on more internal definitions of

creativity, while others would focus on more external definitions of creativity. Teachers themselves might be prone to such “biases”.

Why should there be external and internal biases in people’s conceptions of creativity? Research has shown that the internal aspects of certain kinds of focused creative processes register at the level of personality and behaviour (Amabile, Hill, Hennessey, & Tighe, 1994; Nakamura & Csikszentmihalyi, 2002; Runco & Sakamoto, 1999). Frequent experience of “flow” and deep interest appears to promote an intrinsic orientation (Amabile, et al., 1994; Nakamura & Csikszentmihalyi, 2002), which is manifested in such areas as people’s choices of vocation, because intrinsically oriented people tend to seek the kind of work that allows them to experience interest and to further develop their areas of interest (Amabile, et al., 1994). Flow has been linked to patterns of culture (Nakamura & Csikszentmihalyi, 2002). It is therefore not improbable that intrinsic and extrinsic orientations could be linked to different ways of experiencing or conceptualising creativity. Investigative work on implicit theories of creativity does suggest that internal and external foci are somehow implicated in the variation that seems to exist in people’s creativity conceptions and that internality-externality may be a dimension implicated in cross-cultural differences in ways of conceptualising creativity (Lubart, 1999). However, it seems from the studies carried out so far that it is not yet clear how internal and external biases play out in Westerners’ conceptions of creativity, nor yet how they manifest across cultures (Paletz, et al., 2011).

It appears that although research has managed to demystify some aspects of creativity, definitions remain elusive and creativity remains contentious and poorly defined. As teachers collaborate and work on how to address creativity in education there is a need for further understanding of how teachers conceptualise and value creativity. As discussed in the following section, teachers’ ways of experiencing phenomena matter in education.

1.4.3 Teachers’ conceptions matter

A significant literature now shows that rather than being compliant and malleable implementers of policy, teachers filter and shape policy (Borko & Putnam, 1996; Coburn, 2001; Kelchtermans, 2005; van den Berg, 2002). Teachers do not cope invariantly with change. They do not teach with the same ideas about teaching. Teachers exhibit variation in how they understand learning and other phenomena. Therefore with respect to any valued educational initiative it is important to consider the role of teachers’ conceptions in

relation to it. Teachers' conceptions are critical in determining not only what aspects of policy will receive attention, but also what and how students will learn.

As noted earlier there is considerable variation in the degree to which teachers demonstrate support for creative teaching and the enhancement of student creativity. In order to understand such variation in teachers' attitudes towards creativity, there should be value in looking into how teachers understand creativity. It is further suggested that unless teachers and policy makers have some basis for understanding why there are differences between views of creativity, instead of receiving due and united consideration, creativity initiatives in education will continue to languish in the background of Australian education.

Research has shown that, teachers' beliefs, about learning and other phenomena, can affect how they implement policy and what they prioritise in the classroom. Richardson (1996) defines beliefs as "psychologically held understandings, premises, or propositions about the world that are felt to be true" (p.103). Pajares (1992) suggests that beliefs travel by many interchangeable names such as attitudes, values, judgements, axioms, opinions, ideology, perceptions, implicit theories and perspectives. He argues that while it is often presumed that knowledge and beliefs are different entities, there is actually little to distinguish between them. He states: "The conception of knowledge as somehow purer than belief and closer to the truth or falsity of a thing requires a mechanistic outlook not easily digested" (Pajares, 1992, p.310). Nespor (1987) contends that "belief" and "affect" are stronger evaluative components of thinking than the cognitive components of knowledge.

Where Pajares (1992) sees "conceptions" as another term for "beliefs", Thompson (1992) argues that "conceptions" denotes a general mental structure, which encompasses beliefs and other related concepts. This is reasonably consistent with the way the term has been used by phenomenographic researchers. The aim of phenomenography has been stated as "describing conceptions of the world around us" (Marton, 1981). Marton and Pong (2005, p.336) explain that phenomenographers use a variety of terms to point to what people "have in mind" when focusing on something:

A "conception", the basic unit of description in phenomenographic research, has been called various names, such as "ways of conceptualizing" {sic}, "ways of experiencing", "ways of seeing", "ways of apprehending", "ways of understanding", and so on. Now, it is perfectly clear that

“conceptualizing” is not identical with “experiencing”; learning to distinguish the taste of the same wine from two different years is not the same thing as to see the difference between a Newtonian and an Einsteinian concept of time. The reason for using so many different synonyms is that although none of them corresponds completely to what we have in mind, they all do to a certain extent.

As the present thesis supports a phenomenographic study of conceptions, it may avoid confusion to be guided by Thompson in regarding the word “conceptions” as the more encompassing term.

There is a great deal of support for the view, that uncovering teachers’ conceptions of various phenomena, is a critical goal for education research (G. Brown, 2003; Pajares, 1992; Richardson, 1996; Thompson, 1992). Borko and Putnam (1996) state: “The knowledge and beliefs that prospective and experienced teachers hold serve as filters through which their learning takes place. It is through these existing conceptions that teachers come to understand recommended new practices” (p.675).

From a phenomenographic perspective, conceptions are not “held”, as such. A person’s way of seeing something is a function of what they notice about it or what they are aware of with respect to that thing. An expert in something is likely to be aware of certain things about the phenomenon that are outside the awareness of non-experts. Marton and Pong (2005) suggest that when something is “felt” or seen with “ease” a person is more likely to express that meaning.

Teachers’ conceptions, are understood to be organised into systems, in which some aspects are central while others are more peripheral (Marton, 2000; Pajares, 1992; Pratt, 1992). Brown (2003) observes that the structure of teachers’ conceptions is not uniform and simple. Rather they are multi-faceted and interconnected. Conceptions may be individual, yet also socially and culturally shared. Conceptions may be complex. For example, Vermunt and Vermetten (2005, p.362) describe a conception of learning as a “coherent system”:

A conception of learning is a coherent system of knowledge and beliefs about learning and related phenomena (e.g. knowledge and beliefs about oneself as a learner, learning objectives, learning activities and strategies, learning tasks, learning and studying in general, and about the task division between students, teachers, and fellow students in learning processes).

Some researchers observe that a large proportion of a person's conceptual repertoire is drawn from experience and cultural sources of knowledge (Nespor, 1987; Pajares, 1992). Berger and Luckmann (1966) argue that socialisation "constructs" people's sense of reality. Connerton (1989) also argues that rituals, routines, objects and artefacts in the environment make up or construct people's view of reality, that is, they contribute to the sense that things are performed a certain way because that is the way they are performed. Plotkin (2002) refers to this aspect of perception as a "trick" of socialisation.

However, people demonstrate different degrees of awareness of socialisation effects and these may be reflected in their epistemological views (Unger, 2000). In turn, it has been shown that there are links between epistemological beliefs and beliefs about learning, which translate into vocational or teaching practice (Brownlee, Berthelsen, Dunbar, Boulton-Lewis, & McGahey, 2008).

Images and associations from one's past are also identified as screens through which new information is filtered (Goodman, 1988). Particularly influential moments are observed to produce detailed episodic memories, which later serve as inspiration for one's behaviour or teaching practices (Nespor, 1987). Memories of this kind have been revealed in interviews with pre-service teachers (Goodman, 1988).

Importantly, beliefs can determine how much time and energy a teacher is willing to expend on an activity (van den Berg, 2002). Pajares (1992) suggests that because teachers must often function on impulse and intuition rather than reflection, belief structures are particularly important in guiding teacher decision-making and action. He argues that even when teachers have declarative knowledge structures drawn from bodies of formal understanding, using this knowledge involves belief and affective components. Making use of declarative knowledge, he suggests, requires belief in the authority of its source and in one's own capabilities. Choosing which strategies to use in the classroom involves a series of judgements and evaluations of people, contexts and situations that are inevitably informed by beliefs.

Brown (2003) contends that understanding teachers' conceptions of a phenomenon independently of their conceptions of learning, curriculum and teaching provides only a partial understanding of teachers' significant education related views. Many influences on teacher education-related conceptions have been identified, including teachers' memories of their own schooling (Pajares, 1993); implicit theories of intelligence (Dweck &

Bempechat, 1983) and of the nature of abilities (Swann & Snyder, 1980). Van den Berg (2002) found that innovation in education can impact negatively on teachers' sense of professional identity and confidence and that teachers differ in the degree to which they cope effectively with change in education.

Studies have shown that teachers' conceptions of teaching, learning, subject content and various phenomena strongly influence how they teach (G. Brown, 2003; Pajares, 1992; Thompson, 1992). Richardson and colleagues found that teachers' beliefs about teaching and learning was related to the ways teachers taught reading (Richardson, Anders, Tidwell, & Lloyd, 1991). Brown (2002) identified teacher emphasis on *deep* versus *surface* learning to be related to teachers' views of assessment. Wilson and Wineberg (1988) found that history teachers' beliefs about the nature of history influenced how teachers taught their subject. It has also been found that how teachers teach is influential in how students approach learning (Prosser & Trigwell, 1999; Trigwell, Prosser, & Waterhouse, 1997).

It is therefore suggested that teachers' conceptions of creativity will likewise be related to their teaching practice and will in turn influence how teachers approach information about creativity and the ways that they attempt to encourage creativity in the classroom. Creativity is a complex notion or construct. But it is also seen as an important concept within education at this time, and one that teachers appear to see through different lenses.

1.4.4 Teachers experience creativity in a variety of ways

Although creative capabilities have been named as capacities to be encouraged through the Australian curriculum, such indications as there are to hand suggest that Australian teachers are likely to interpret policy directives on creativity in very different ways. Studies of teachers' creativity conceptions for the Australian context appear to be almost non-existent, but a limited number of overseas studies suggest that significant variation is to be expected in the degree of sophistication of teachers' views of creativity. Newton and Newton (2009) found, for example, that within a group of British trainee teachers, conceptions of creativity in science were, "narrow, focused mainly on practical investigations of matters of fact, and included misconceptions" (p. 45). They describe the trainee teachers' views as "grossly inadequate" and suggest that creativity may be a confusing idea for science teachers.

Newton and Newton's (2009) study also highlights, as have some other existing studies of teachers' conceptions of creativity, that across groups of teachers, not one, but a range

of views of creativity are reflected or expressed (Diakidoy & Kanari, 1999; Fryer & Collings, 1991). While studies confirm that teachers possess a range of different conceptions, there remains a lack of specificity of the precise parameters of those conceptions.

1.4.5 Australian studies of teachers' creativity conceptions are needed

Finally it is suggested that Australian studies of teachers' conceptions of creativity are needed on the bases that such studies have been scarce *and* there could be conditions within education here which require specific research attention. Cross-cultural research has indicated that there may be differences between conceptions of creativity across cultures or across social sectors (Lubart, 1999; Paletz & Peng, 2008) and perhaps on that basis alone it would be advisable to conduct research into conceptions of creativity within the Australian context.

Some commentary suggests that Australian education policy has tended to promote a "marketised" view of creativity (Burnard & White, 2008) as opposed to a more "democratic", student-focused view promoted recently in UK policy (Craft, et al., 2012). Burnard and White (2008) observe that "Creativity in Australian education is synonymous with innovation and invention. Policy documents consistently state the purpose of creativity as a necessity for enhancing science and technology and improving economic outcomes" (Burnard and White, 2008, p.670). Whilst these are important considerations there is considerable research support for the value to students of creativity where creativity is understood in the sense of ownership in learning (Cochrane, Craft, & Jeffery, 2008; Jeffrey & Woods, 2003, 2009). So it is confronting that Australian educational policy has reflected such a narrow marketised approach to creativity questions and taken so little note of more student-centred arguments and benefits. Relevant to the present rationale is the question of whether Australian teachers themselves share these views of creativity or whether there is conflict between teachers' ways of thinking about creativity and the views espoused at the policy level. Certainly, as mentioned earlier, Craft et al. (2012) refer to a distinct rift between the present UK government marketised focus on creativity and an ongoing professional interest in creativity. Do we have such a rift in Australia? Research aimed at finding out about Australian teachers' conceptions of creativity could be useful in illuminating how teachers' views might differ from or approximate views promoted at the policy level.

Whatever the impediments have been, in the Australian educational context, to engaging more seriously and openly with creativity questions it is conceivable that there could be trying times ahead for the support of creativity during implementation of the Australian curriculum. UK analysts have argued that the introduction of the national curriculum in England at the end of the 1980s contributed directly to a slump in creative approaches in education over the course of the 1980s and 1990s (Craft, 2008b). It may take considerable effort to ensure that Australian educators do not remain entrenched in a narrow, marketised view of creativity imperatives. The culture within education in some Australian regions could be more receptive to marketised approaches than others. There have been indications that conditions in Queensland education, for example, have tended to maintain fairly traditional styles of teaching over time. Meadmore (1978) chronicled a history of rigid, formalised schooling in Queensland and subsequent research has continued to point to a predominance of skills-focused rather than engagement-focused teaching in this state (Lingard et al., 2001). It could be useful to know more about how teachers' views of creativity sit within such an environment.

In order to respond to social imperatives in respect of Australia's creative future, educational attention to creativity needs to move beyond rhetoric. Research to support teachers in the development of teacher and student creativity and in their role as interpreters of creativity discourse is particularly relevant for Australian education at this time. Yet it appears that currently only a handful of studies can be seen as contributing to this effort.

1.5 THE AIMS OF THE STUDY

On the basis of existing studies it seems only possible to say that individual teachers may apprehend more than one meaning for "creativity" and some teachers appear to value "creativity" more than others. What is not clear from these studies is whether teachers are seeing creativity in ways that are really comparable. For one thing, it is not clear if teachers' different ways of *valuing* creativity are based on different ways of constituting, using or interpreting the terms "creativity" or "creative".

The aim and central research question for this study is: How do Queensland teachers conceptualise creativity? The study also hopes to gain insight into the reasons why the support of creativity has, historically, been a difficult and sometimes contentious issue in Western education.

1.6 THE CHOICE OF RESEARCH APPROACH

For the purposes of addressing the aims of the present research, phenomenography, a qualitative research approach has been implemented. The usefulness of the phenomenographic approach, for illuminating qualitative variation in people's conceptions of phenomena, has been illustrated across a large number of studies (Åkerlind, 2003; Van Rossum & Hamer, 2010). The variation identified by researchers has been reflected differently in different studies. Bruce (2003, p.6) states: "outcome spaces have, in different studies been found to represent historical views of a phenomenon, to represent a widening awareness or to represent a hierarchy of increasing complexity and sophistication." By illuminating variation across views of a given phenomenon, such as a concept or a process, phenomenographic studies have provided useful insights with respect to understanding what is in focus and how people are seeing that phenomenon. The phenomenographic approach is well suited to the researcher's aim of understanding how teachers conceptualise creativity and what makes creativity such a contentious issue. By discovering what it is that people are focusing on, with respect to a given phenomenon, it becomes possible to understand differences in people's various meanings of that phenomenon.

1.7 OVERVIEW OF THE STUDY

This thesis is one researcher's attempt to reconcile the need for educators to address creativity with the situation in which it is apparent that people – teachers and creativity researchers included – perceive creativity in different ways. The research reported is a phenomenographic investigation of Queensland teachers' conceptions of creativity. In keeping with phenomenographic procedures data was elicited in interviews with a group of participating teachers and the interview transcripts were analysed in order to uncover the limited number of ways in which creativity was conceptualised across the group. The participating teachers were sourced from schools in and around the Brisbane area and reflected a range of experience levels and disciplinary backgrounds. The group included teachers from primary school and secondary school backgrounds. Some of the teachers had experience of both primary and secondary school contexts.

The empirical analysis leads to the development of an outcome space delimiting variation in teachers' conceptions of creativity. A key dimension of variation across the conceptions has been identified as an evaluation of where rewards/rules/values are reliably

located – external or internal to the person. Conceptions of creativity constituted through a more internal rule focus are distinguished from a more external rule focus on the basis of greater breadth of awareness of personal and social benefit deriving from internal rewards and values. The study provides useful insights into how teachers conceptualise creativity, which are supported by explication of the structures of awareness involved in the different ways of seeing creativity.

In Chapter Two attention is given to two main areas of literature – the literature which currently expresses reasons for creativity moving from the fringes to the fore of educational provision and the, largely, psychology-based research literature, which has investigated the nature and value of creativity. In this review emphasis is placed on the need to interpret creativity discourse in an attempt to distil messages of import for student futures and the form of educational provision. Chapter Three describes the methodological underpinnings of the study undertaken by the researcher – or more appropriately, it details the qualitative *research approach* (Marton, 1986) used to investigate Queensland teachers' conceptions of creativity – and the steps taken to arrive at the research outcome. Chapter Four presents the research findings or outcomes. This comprises written and diagrammatic descriptions of the categories of description, which form the outcome of the study. Chapter Five provides a discussion of the study's outcomes and their relevance for education.

CHAPTER 2: LITERATURE REVIEW

2.1 REVIEW STRATEGY

For the purposes of providing a context for the present study, the review strategy is aimed at reporting on how creativity is claimed to be socially significant and valuable in the contemporary context. Many educators argue that creativity must be made central to education, but on what grounds are such arguments made and what would such curriculum involve? The question of how creativity may be understood to have *value* is also pertinent to thinking about how education relates to it, but here the concern shifts or expands to encompass the question of the value of being creative.

The review is, therefore, concerned with two main bodies of literature: the literature that articulates the “big picture” reasons for educational interest in creativity; and the literature that documents theory and research on the nature and value of creativity. Given the diversity of definitions of creativity, both areas present considerable scope in terms of what might be considered relevant to the present thesis. Selection of material for the review has, however, been guided by the presence, in both literatures, of an insistent theme or pattern: the relation of creativity to behavioural “autonomy” (Deci & Ryan, 2000; Ryan & Deci, 2006). While some discussions of creativity do not necessarily involve or acknowledge autonomy, there is a line of common interest in behavioural autonomy, which can be seen as reflected in some of the big picture arguments for educational interest in creativity and also in some areas of the research literature, which locate an important value for creativity in its relation to autonomy.

The first major focus of the literature review is the big picture. This includes brief commentary on some of the arguments that psychologists and educators have put forward, over the course of the past century, in favour of educational interest in creativity. But the reviewer’s main focus is on the issue of creativity in the contemporary context. It is arguments of the type presented in this part of the review which have intensified present day educational interest in creativity. Ideally, “creative teaching” would extend to teachers collaboratively problem-solving how to address big picture creativity issues in schools.

The second major focus is creativity *per se*. If teachers are to teach *for* creativity in connection with the big picture imperatives, can the literature inform about the nature and value of creativity? What would teachers do to enhance creativity? Given that the

curriculum is often described as crowded, how is creativity of benefit to students? Therefore the review focuses on some of the various directions that creativity research has taken and considers, not only what researchers and theorists have to say about the nature of the object of their investigation but, what can be discerned with respect to the value of creativity.

Some explanation about the *structure* of the review is also warranted. Behind every literature review is a background story of the reviewer's journey to understand the literature and to eventually decide what kind of message needs to be communicated through the selected literature. This story is worth acknowledging here because part of the message I have chosen to communicate reflects a feature of my situation in dealing with the literature which is in common with the situation of teachers and the reader of this thesis: we are all faced with the difficulties of interpreting discourse and rhetoric around creativity, which, as has already been stated, is a poorly defined and ambiguous construct.

The tale I have chosen to tell through the structure of the review is one that imitates the complexity of the challenges that educators face unless and until steps are taken to investigate and delimit the range of meanings of creativity that can be encountered in creativity discourse. Before us, are discussions and arguments about creativity and its relation to globalisation, to culture, to our economies, to our ways of communicating and being in community. Many of these concerns seem to require urgent attention from educators. But what are the meanings of creativity expressed in these arguments? This review can only highlight that there is a need to interpret what is meant by creativity at the rhetorical level and, at the same time, attempt to take an interpretive approach when discussing the presented arguments.

A dilemma was faced in trying to decide what should come first in this review: explication of the nature of creativity as reflected in the creativity research literature or consideration of the big picture arguments currently facing educators. Given that both literatures reflect ambiguity in defining creativity, it was decided to consider the imperatives first, separately from the creativity research, on two grounds: this is arguably the position most educators would face in trying to make sense of the creativity imperatives through the lenses of their current understandings about creativity. So this approach to structuring the review highlights the difficulty of teachers' positions in trying to make sense of these arguments. Secondly, the imperatives themselves are those aspects of the contemporary milieu that, as identified and communicated through creativity

discourse, have recently intensified educational concern with creativity. Therefore when it comes to interpreting the creativity rhetoric it is not some generic idea of creativity that we need to understand, but whatever view of creativity is reflected in the arguments. Considered in this light, whilst the findings from creativity research are useful and important, the articulated imperatives need to take precedence in our deliberations so that it can be decided what, of creativity research, is then valuable in helping to formulate our response in education

The review has been structured so that it moves from initial consideration of some of the diverse meanings for creativity that can be found in the creativity literature, to discussion of some of the main arguments that have been put forward for educational interest in creativity. Some prevalent psychological-educational arguments for educational interest in creativity are presented. Media perspectives are then addressed more fully, followed by an overview and discussion of Richard Florida's (2002, 2005) perspective on the creative economy. The issue of whether there are differences between conceptions of creativity in the East and the West is also discussed. From this overview and discussion a synthesis is made which affirms the importance of investigating conceptions of creativity and also the importance of recognising that "autonomous motivation" (Ryan & Deci, 2006) is a key concept when attempting to understand the arguments themselves and what is happening with creativity in the world. Consideration is then given to how the big picture issues may be addressed via education.

At Section 2.5 the focus of the review shifts to the creativity research literature with an emphasis on seeing how researchers understand the nature and value of creativity. Considerable attention is given to the notion of autonomous motivation and how it relates to the processes and products of creativity. Research around this area suggests that autonomous motivation (intrinsic or integrated motivation) (Ryan & Deci, 2006) is personally and socially valuable and is a foundational concept for the development of creative pedagogy. Other areas discussed are creative cognition, the creative personality, the relation of creativity to diversity and marginality, the relation of creativity to religion/spirituality and the relation of creativity to psychopathology. The link between psychopathology and creativity could be of concern to some teachers from the perspective that they would not want to encourage something that might be psychologically harmful and therefore not valuable to students. From the platform of the creativity research attention is given to what is involved in teaching *for* creativity. That is, how is student

creativity to be enhanced? This aspect of teaching would combine, ideally, with what is implicated in teaching for a changing and “creative” cultural environment.

Finally a review is presented of studies, which have examined conceptions of, or attitudes towards, creativity to date. Studies relevant to both non-teaching and teaching populations are considered. It is concluded that there is a need for further qualitative illumination of how creativity is apprehended in varying populations or contexts. Researchers have barely begun to uncover educators’ understandings of creativity and, in Australia, such studies are notably scarce.

2.2 MANY MEANINGS OF CREATIVITY

“Somehow it seems to fill my head with ideas – only I don’t know exactly what they are”.

Alice, Through the Looking Glass, (Carroll, 1872)

The words (quoted above), which Lewis Carroll has the fictional Alice say as she first encounters the nonsensical poem “Jabberwocky”, may seem like a strange headline for a review of the literature on creativity. But this is the quotation, which Mumford and Gustafson invoked to express their impressions of the creativity research literature as they undertook their 1988 review (Mumford & Gustafson, 1988). They found it difficult, they said, to understand what creativity researchers were actually investigating. To date, any number of reviews and discussions of the creativity literature can be found, which contain a reference to the difficulty of defining creativity or the perplexing nature of the creativity literature itself (e.g. Bleakley, 2004; Craft, 2001; Csikszentmihalyi, 1996; Dietrich, 2007; Ellis & Barrs, 2008; Feldman, 1999; Gibson, 2005).

But Mumford and Gustafson (1988) discerned, at least, that investigations of creativity seemed to share some common concern with the production of novel, socially valuable products. They concluded that creativity researchers seemed to be interested in outstanding occupational achievement. In a later review, Mayer (1999) found that definitions of creativity usually refer to producing something that is novel or original as well as useful, valuable or appropriate.

Despite this degree of consensus, definitions of creativity exhibit considerable variation. For example, Lubart (1999) observes that in the West, creativity is usually defined as “the ability to produce work that is novel and appropriate” (p.339). But taking an educational perspective, the NACCCE (1999) report places more emphasis on the role of imagination

in the act of creating, defining creativity as: “Imaginative activity fashioned so as to produce outcomes that are both original and of value” (p.30).

Definitional differences may often be related to the purposes for which the definition is intended. Runco (2004b) argues, for example, that many scientific definitions of creativity emphasise products, “probably because it is easy to count things and therefore easy to be objective about them” (p.10). As Mumford and Gustafson (1988) observed also, defining creativity in terms of its products has allowed scientific research on creativity to progress. Without a serviceable definition creativity is a difficult phenomenon to study experimentally. In the case of the NACCCE definition above, the purpose of the definition is not to study creativity but to guide educators with respect to how to think about and facilitate creative processes in the classroom. What is nonetheless a common feature of both of these definitions is that they emphasise the product as the valued outcome of a creative process.

Reflecting on the variation in definitions Runco (1994, 2004b) argues that the personal side of creativity tends to be obscured amidst the proliferation of social “consensual” views, which emphasise the product and its social or cultural value. In preference to emphasising the product, Runco emphasises “personal” creativity, seeing the interpretive capacities, discretion and intentions of individuals as the fundamentals of creativity (Runco, 2004b). He regards interpretive capacities as universal and the origin of all creativity, whilst discretion is tied to culture, because it involves choices and judgments.

Product value is not the only type of creative value discussed in the literature. Csikszentmihalyi (1996) observes that a common theme in the reports given by the ninety-one eminent creators, interviewed for his study, is that they all “love what they do” (p107). The regularity with which creativity is linked with love, pleasure, satisfaction or investment in the process is reflected in current models of creativity, which propose that intrinsic motivation or interest is a key component of complex creative processes (Amabile, 1983; Sternberg & Lubart, 1996). More recently, it has been shown that reflectively endorsed motivations, based on integrated values (Ryan & Deci, 2006) are also important in both product creativity and process satisfaction (Burton, Lydon, D'Alessandro, & Koestner, 2006).

The literature reflects that there is considerable difference in people’s implicit, or day-to-day, conceptions of creativity. In the NACCCE (1999) report, it is noted that, in their

implicit theories of creativity, people often associate creativity with the “arts” or “creative arts” – that is, creativity is mostly linked with such areas as music, dance, drama, visual art and literature. It is suggested in the report that this association can set up a separation in people’s minds between artistic domains of activity where creativity is thought to occur and other supposedly non-creative domains such as science, mathematics or accountancy. A second problem area pointed out in the report is an “elite” view of creativity, where creativity is associated with famous or influential creators only. However, in the scientific literature the term “creativity” can be used quite differently to signify, for example, creative thinking in everyday life or creative problem solving across domains (Sawyer, 2006).

Another type of problem with use of the term “creativity” is identified by Dietrich (2007) as the “monolithic entity fallacy” of creativity, by which he refers to the tendency to conceptualise creativity as a specific psychological or neurological property or mechanism. He observes, for example, how creativity is often equated with divergent thinking – the ability to generate many possible solutions to a problem. But Dietrich argues that the association of divergent thinking with creativity can be misleading as creativity also requires “convergent” or analytic thinking. Even if a person is generating ideas, assessments have to be made about the appropriateness or applicability of the ideas to the problem.

Csikszentmihalyi (1996) suggested that there may be different, virtually unrelated types of activity, which all qualify as creative. He contends that: “the term “creativity” as commonly used covers too much ground. It refers to very different entities, thus causing a great deal of confusion” (Csikszentmihalyi, 1996, p.25). He distinguishes, for example, between the behaviour of extremely agile and interesting thinkers, people who are engaged in being “personally creative” and people who perform culture-changing work. Similarly, Feldman (1994) points out that the development and functioning of precociously talented people can be quite different from the development and functioning of creative people with more usual capabilities. Precocious talent, he observes, involves close fit with the provisions of an existing domain of activity, whereas people who change culture in some way are often dealing with a lack of fit between some aspect of self and culture.

Other distinctions have been made concerning the nature of the work that counts as creative in different domains (Feldman, 1999) and between different kinds of creative work within domains, such as achieving mastery within a domain as compared with work

performed with the intention to influence or affect others (Policastro & Gardner, 1999). It has also been noted that there are differing degrees or levels of creative activity (Ghiselin, 1963) and the question arises as to just how similar creativity is at non-eminent and eminent levels (Craft, 2003; Sternberg & Lubart, 1999).

Significant differences between the processes and the affective experience of “reactive” versus “proactive” problem solving have also been noted (Heinzen, 1994). Heinzen (1994) observes that as well as feeling different from the point of view of the creator, different cognitive networks are used in these two types of problem solving.

The relationship between creativity and problem-solving is somewhat unclear. The literature appears to support two different ways of explaining the relationship: creativity is seen as a type of problem-solving or problem-solving is seen as a type of creativity (Nickerson, 1999; Runco & Sakamoto, 1999). How a given author resolves the issue, or whether they consider it as important to resolve the issue may not be made explicit.

There seems to be some confusion in the literature as to whether reward increases or decreases creativity and this relates to the question of whether or not creativity is intrinsically motivated. A great deal of research, suggests that intrinsic motivation increases the creativity of what is produced (Collins & Amabile, 1999; Ryan & Deci, 2000c) and complementary research has shown that various kinds of reward and reward strategies reduce creativity (Collins & Amabile, 1999). However, research conducted within the behaviourist tradition has shown that creativity can be increased using rewards (Cameron & Pierce, 1994; Eisenberger & Armeli, 1997; Eisenberger & Cameron, 1996; Eisenberger & Rhoades, 2001). Deci, Koestner and Ryan (2001) argue that what is at issue here is that where intrinsic motivation is involved, reward will tend to decrease creativity, because reward tends to interfere with intrinsic motivation. From their perspective, the behaviourist experiments show increases in creativity using reward, because the processes these studies examine are step-wise and controlled by the experimenters. Under such circumstances, they argue, reward *would* predictably increase creativity, as there is no intrinsic motivation involved (Deci, et al., 2001). This issue suggests that, when approaching the creativity literature, there is a need to be clear about what the scientific researchers are attempting to investigate and how they are defining creativity. Clearly both groups of researchers are defining creativity from the point of view of its outcome or external aspect, as is common in scientific research (Lidstone & Stoltman, 2007; Runco, 2004b). From the external or observer perspective creativity is a property of the product.

The perceived creativity of the product is not necessarily a clear indicator of the process involved and this does serve to confuse the issues of how to define creativity and how to decide the value of creativity as a process. How, for example, do we reconcile the ideas that creativity can eventuate from a step-wise process, which can be enhanced using incentives, but also from a non-step-wise process which may suffer if incentives are used? It would appear that “novelty and value” can be brought into the world in very different ways.

Another kind of conceptual confusion seems to surround the way creativity is understood as a characteristic or ability of people. Creativity is sometimes identified as a kind of wisdom or higher order thinking ability (Kunzmann & Baltes, 2003). Physicist David Bohm argued this way, suggesting that, on one hand, there are mechanical types of thinking and, on the other hand, there are types of thinking that are creative and less prone to outside control (Bohm, 1998; Bohm & Peat, 1989). Similarly Simonton (2000b) sees creativity as “optimal functioning”. Creativity has also been consistently linked to spirituality (Sternberg & Lubart, 1999). Banaji and Burn (2007) acknowledge that amongst the many observable “rhetorical constructions” of creativity is “a rich literature on religion and creation”. Some authors have suggested that some kinds of religious or spiritual experience share common ground with creative processes (Crook, 1980; Dietrich, 2004a; Jung, 1938; Maslow, 1964; Underhill, 1911). Some perspectives link creativity to happiness or well-being (Cacioppo, Hawkley, Rickett, & Masi, 2005; Lyubomirsky, Sheldon, & Schkade, 2005). It is difficult, at least on the surface, to reconcile these positive views of creativity as desirable or socially adaptive, with the view that creativity is also linked to psychopathology (Verhaegen, Joormann, & Kahn, 2005). Nonetheless there is a wealth of research to suggest that there are links between creativity and psychopathology (Kaufman & Baer, 2002; Ochse, 1990; Ott, Reuter, Hennig, & Vaitl, 2005; Rothenberg, 1990a, 1990b; Simonton, 2005; Verhaegen, et al., 2005).

But there are various ways of making the link between psychopathology and creativity and these are given attention later in the review. It is simply worth noting here that higher order thinking, wisdom, spirituality *and* psychopathology are all associated with creativity and that these connections sometimes come into the discussions and meanings of creativity touched on by the authors whose views are represented in the present review.

The various perspectives on the relation between creativity and cultural change outlined in the present literature review, all call the attention of educators to creativity in some way.

But the expressed meanings of creativity seem to vary. Sometimes the term is used in a general way that seems to encompass a number of possible meanings and sometimes there seems to be a specific definition or meaning in mind. Sometimes creativity is defined in terms of what is produced, but at other times the author is concerned with a process or attitude. Therefore a job of interpretation is necessary before the educational import of arguments concerning “creativity” can be ascertained.

2.2.1 More than one meaning of “autonomy” in the literature

Decades of creativity research have established that intrinsic motivation is a key aspect of complex creative activity (Collins & Amabile, 1999; Csikszentmihalyi, 1996; Runco & Sakamoto, 1999; Ryan & Deci, 2000c). However, recently it has been asserted that the persistence for complex endeavour is enhanced by the presence of *both* intrinsic motivation *and* identified or integrated values (Burton, et al., 2006). Within Self-determination theory (SDT) processes involving intrinsic motivation and processes involving integrated/identified values are described as “autonomous”, on the basis that people feel self-determined in carrying out actions of this type. Within SDT processes resulting from autonomous motives are contrasted with other kinds of processes which people experience as either internally pressured or externally controlled (Ryan & Deci, 2000c, 2006). It is also asserted, within SDT, that people exhibit tendencies towards either autonomous or controlled regulation. Autonomy orientation refers to the tendency to regulate with a focus on intrinsic motives and endorsed values, whereas a control orientation involves focusing on how one ought to behave and how one is seen by others (Ryan & Connell, 1989; Ryan & Deci, 2006).

This meaning of autonomy is clarified here because it is critical to the SDT paradigm, which is discussed in this literature review. Intrinsic motivation and other kinds of autonomous processes are seen as important components in creativity (Amabile, 1983, 1996; Collins & Amabile, 1999; Csikszentmihalyi, 1996; Runco & Sakamoto, 1999; Ryan & Deci, 2000c; Sternberg & Lubart, 1999). This meaning of autonomy is also relevant to interpreting the findings of the present study. However, the term “autonomy” is used with slightly different emphases or meanings by other authors whose views are presented in this review.

A different, though possibly related, use of the term “autonomous”, occurs in the writing of Walter Ong (Ong, 1982). Ong discusses the idea of the “autonomous argument”,

which is the capacity to make arguments that challenge or differ from the communal knowledge of one's tribe or group. Ong seems to be concerned with intellectual autonomy or objectivity more so than self-regulation. In the SDT paradigm "autonomy" is used as a descriptor of complex psychological, phenomenological and developmental processes, which are not specifically addressed in Ong's way of using the term. Burnard and White (2008), use the term with a different emphasis again, where they discuss the requirement for teachers to experience "autonomy" in their teaching roles. This meaning of autonomy seems to refer to the desirability of teachers being granted enough flexibility in their roles to be able to apply professional discretion. Whilst these three ways of using the term "autonomy" share some common ground they do not seem to reflect equivalent meanings.

2.3 THE CREATIVITY IMPERATIVES

This section of the review is concerned with the reasons that have been, or are being, put forward as to why creativity is important for education. This part of the review relates to the rationale for investigation of teachers' conceptions of creativity for it demonstrates that:

- a) more than one meaning of creativity is discussed in these arguments;
- b) the failure to apprehend the *meaning* of creativity in these arguments would limit the interpretation of the arguments;
- c) the issues discussed in some of these arguments indicate that there would be negative consequences for students, teachers and, in some cases, for education institutions if the arguments are not apprehended and acted upon by educators.

Therefore the literature reviewed here points to the importance of identifying what is meant by creativity when expressed at the rhetorical level of creativity discourse. It also underscores the importance of supporting teachers' interpretive capacities by investigating and describing variation in the ways creativity is understood.

2.3.1 Psychological-educational perspectives

As noted in Chapter One, the literature is ambiguous on the topic of how long creativity has been of interest to educators. Some perspectives suggest that interest in creativity is quite a new educational trend (Noller & Isaksen, 1997). However, it is possible also to find perspectives suggesting that, to the contrary, educators have been interested in creativity in various times and places over the centuries. Albert (1983) observes, for example, that during the Renaissance educators became interested in cultivating persons of genius

through the education system. He suggests that this agenda mirrors modern day educational interest in encouraging giftedness and talent. In this sense there would appear to have been a long history of educational interest in creativity reaching back to the Renaissance, but possibly beyond (Albert, 1983; Craft, 2001). However, this section of the present review is mainly concerned with those psychology and education based rationales, which, over the past century or so, have argued for educational interest in creativity on the basis of perceived benefits for students and society.

Five main themes found in psychological-educational arguments for educational interest in creativity are noted here. Some or all of these may overlap – and there are undoubtedly more that are not mentioned. For example, one theme which will not be discussed is the specific consideration of creativity within giftedness education. Creativity has been seen as important, more generally, in education on the basis that addressing students' creativity would benefit them in one or more of the following five areas:

Development: Creativity is seen as important in the development of the child or person. In some views creativity is seen as an optimal form of development

Learning: Creativity is seen as important for quality and interest in learning;

Thinking capacities: Creativity is seen as part of the spectrum of human thinking capacities (sometimes leading to socially/personally valuable performance and products)

Life quality: Creativity is associated with quality of life and well-being;

Flexibility in thinking: Creativity is linked to the kind of flexible thinking seen as necessary for living well in the current global climate of rapid cultural change.

Each of these rationales will be briefly addressed in turn.

Development: Amongst those who have theorised and investigated how creativity functions as an aspect of development are psychologists Lev Vygotsky (e.g.1971) and Jean Piaget (1953), both of whom have been extremely influential in the field of education. Both Piaget and Vygotsky were interested in how the child actively constructs knowledge of the world. A key area of difference between their views is summed up by Moran and John-Steiner (2003): “Whereas Piaget said that maturational development precedes learning and a child independently constructs his or her knowledge of the world, Vygotsky theorized that learning jumpstarted mental development and knowledge construction was a

social, cooperative venture” (p.1). Vygotsky was thus looking beyond the child to the broader social context, hypothesising that somehow development involves interaction between the socio-cultural and individual contexts. According to Moran and John-Steiner (2003), Vygotsky was interested in the use of the “creative imagination” in this developmental process. He saw development as something that does not happen in a vacuum but is both individual and social/cultural, both subjective and objective, both “the goal and the means of personal and cultural development” (Moran & John-Steiner, 2003, p.5). He also saw development as an open-ended process. Moran and John-Steiner (2003) regard Vygotsky’s thinking on development through personal and cultural creative transformation as pertinent to the work of education in the 21st century.

Creativity has also been seen as important in education because it represents optimal development. This view was expressed in the humanistic tradition, which was articulated notably by Abraham Maslow (Maslow, 1954, 1964) and Carl Rogers (Rogers, 1954). This perspective emphasised self-development and realisation of the self. The view that people can experience optimal development through creativity, or that creativity represents optimal development and should be encouraged in schools, are claims (or implications) commonly found in the creativity literature (Simonton, 2000b). Feldman (1999) sees the education system as one of seven environmental aspects contributing to the creative development of the person.

Learning: A related argument, which is often raised in support of educational interest in creativity, is that creativity is important for interest and quality in learning – or to rephrase this relationship, interested and active learning is seen as quality learning, which is in itself understood as creative (Sefton-Green, 2008). The accomplishment of learning through active interest and creativity was central to the thinking of John Dewey (Savage, 2002). Dewey wrote on, amongst other creativity-related themes, the topic of *Interest and effort in education* (Dewey, 1913). Later in the 20th century the importance of interest for quality in learning was a central theme of recommendations for major educational reform in England as detailed in the Plowden Report (Central Advisory Council for Education, 1967). Craft (2008a) observes that although not aimed explicitly at creativity the impact of the report was that it “brought together an influential and deep-rooted collection of child-centred approaches to learning” and “influenced educational provision profoundly in terms of curriculum, learning, pedagogy including architecture, classroom organisation and management, nature and use of resources” (p.3). Subsequent “waves” of educational

interest in creativity (Craft, 2008a) have re-emphasised the value of interest as an aspect of learning (Jeffrey & Woods, 2003, 2009).

Research has shown that interest or some form of active (as opposed to passive) learning does improve the quality of conceptual understanding (Benware & Deci, 1984; Hidi & Renninger, 2006; Ryan & Deci, 2000c). The implication that this type of learning is creative may have to do with the perception that active learning involves active transformation of knowledge rather than passive memorisation or absorption. In the UK, the term “creative learning” was recently employed as a banner for educational initiatives aimed at arousing renewed attention to interest and quality in learning. Craft (2008a) reports that UK educators have come to view the idea of “creative learning” as problematic because it cannot be distinguished from *learning*, as defined by constructivists. But she notes that the term “creative learning” has remained in use to highlight:

... strategies and approaches to engage children and young people in stimulating, meaningful learning, developing generative and transformative dispositions and behaviours (Sefton-Green, 2008). Such strategies and approaches are harnessed so as to address a concern with student disengagement as one of the challenges for education identified as Europe-wide (Kendall and Kinder, 2005). (Craft, 2008a, p.2)

Thinking capacities: Guilford (1950) argued that creativity is a natural resource, which could be encouraged in education, but that this capacity does not simply emerge from IQ. In this view IQ represents only a part of the spectrum of human thinking capacities. Guilford proposed a complex model of the intellect, which acknowledged divergent, convergent and evaluative mental operations (Guilford, 1967, 1977). In line with the psychometric tradition of intelligence testing, Guilford and others, notably Torrance (Torrance, 1974, 1976), developed tests through which it was hoped to measure creative potential as divergent thinking ability. On one hand this kind of interest in creativity, as an aspect of intellect, may reflect the social interest in high level performance and technological innovation, which seems to have gained momentum in the mid 1900s (Shaheen, 2010). On the other hand, Guilford’s research interest in creativity also demonstrates concern with more accurately understanding human intelligence.

It appears that enthusiasm for the “paper and pencil” assessment of creativity in education has declined (Sternberg & Lubart, 1999). Ryhammar and Brolin (1991) contend that after the 1960s there arose a pronounced loss of faith in divergent thinking tests as

instruments for identifying creative talent and also in the usefulness of personality-based research focused on eminence. However, the value of Guilford's contribution to undermining the view that IQ equals intelligence can still be discerned. For example, recently, a group of researchers have made a case for the assessment of abstract/higher order thinking in school students on the basis of evidence from neuroscience, which suggests that "higher order" thinking capacities may not be evenly distributed in the population. The eight authors argue that currently favoured methods of assessment in schools target only rote-verbal skills and therefore perpetuate certain kinds of student disadvantage: "In school settings, students are typically evaluated using group achievement tests, IQ scales, and college entrance exams that focus more on rote-verbal skills (e.g. vocabulary, mathematical facts) than on higher level executive functions (e.g. abstract thinking, problem solving)" (Delis et al., 2007, p.29). They contend that students are not usually tested for both types of ability as it is assumed that both are aspects of general intelligence, which will show up in normal kinds of school assessment. However, they found, in their study of 470 school age students, groups of students showing strengths in one but not the other type of cognition. Part of their discussion is worth quoting in full for it illuminates the kinds of problems that current forms of assessment in schools may present for students with either form of "deficit":

The results suggest that a significant subgroup of school-age children exists who have relative strengths in more rote-verbal skills but who have relative weaknesses in their capacity for abstract, higher-level thinking. For these children, the current emphasis on IQ and achievement testing in our school systems likely results in academic promotions and honors for them without identifying and helping them in their areas of weaknesses. The current findings also suggest that there is another subgroup of children who could represent perhaps the most alarming fallout of our current school assessment practices. Specifically, a substantial number of youths likely have relative weaknesses in more rote-verbal skills but have strengths in higher-level executive functions such as abstract thinking, cognitive flexibility, and problem-solving skills. These children and adolescents are at risk for being hindered or precluded in their pursuit of higher levels of educational attainment in large part by the relatively low scores they obtain on IQ scales, group achievement tests, and college entrance exams. That is, these tests may represent roadblocks to areas of study that could benefit from the creativity that these students offer. It is not uncommon for these students to develop lower self esteem based on the scores they receive on these tests. (Delis et al., 2007, p. 37-38)

The authors reason further that, in contemporary society, many professions are in need of individuals with capabilities in higher level problem-solving skills. This situation demonstrates the value of thinking broadly about the nature of intelligence and recognising that some students may have strengths or weaknesses in the more “creative” thought processes, which Delis et al. define as higher executive functions believed to be governed within the frontal lobes of the human brain. The arguments presented by Delis and colleagues provide a strong rationale for paying attention to assessment and its role in encouraging or discouraging such creative operations, which appear to form part of the human thinking spectrum.

Another instance of this kind of approach to elaborating on the understanding of human intelligence is evident in Howard Gardner’s perspective on multiple intelligences (Gardner, 1983). In this perspective Gardner proposes that people have different kinds of intelligence. Some of these, such as kinesthetic intelligence, may be unrelated to the types of abilities usually assessed in tests of general intelligence. Both Guilford’s and Gardner’s efforts may be seen as attempts to understand human abilities/intelligence in a broader way, which allows for the identification of specific strengths and the development of enabling practices in relation to encouraging students’ abilities. Gardner has related these distinct “intelligences” to people’s different areas of creative work and achievement. Gardner (1993) examined the creative trajectories of seven influential creators who reflect differing intelligence profiles. Policastro and Gardner (1999) noted that creative contribution is often related to some kind of “fruitful asynchrony”, which a person evidences relative to the wider populace. They suggest that asynchronous thought and capacities can underpin a person’s ability to see things differently from others or do some things better than others. They contend that as every person is unique, everyone can potentially contribute to society in some unique way. The rationale for educational interest in creativity expressed in these perspectives, then, is firstly, that creative thinking and problem-solving is part of the spectrum of human thinking capacities and, secondly, that creative contribution may often be linked to individual thinking capacities, profiles and potentials. Creativity, seen this way, can therefore be supported in educational contexts.

Life quality: Recent investigations have linked creativity to quality of life. One of the main arguments here is that regular experience of “flow”, which can occur when people are focused on meaningful, optimally challenging activities or work conduces towards a sense of fulfilment or satisfaction (Csikszentmihalyi, 1975, 1990, 1996; Nakamura &

Csikszentmihalyi, 2002). A number of (Western and Eastern) studies indicate that people who regularly experience flow report higher levels of meaning in life or higher well-being relative to people who report little or no experience of flow (Asakawa, 2004; Nakamura & Csikszentmihalyi, 2002). Doing something enjoyable and interesting on a regular basis seems to be related to higher levels of experienced well-being and has been identified as a reliable strategy in the pursuit of happiness (Lyubomirsky, et al., 2005). In some educational contexts, such as Montessori schools, interventions are being sought and developed to harness the value of flow for students (Nakamura & Csikszentmihalyi, 2002). The Self-determination theory (SDT) perspective on well-being distinguishes between “hedonic” well-being (happiness) and “eudaimonic” well-being (fulfilment, self-regulation) (Deci & Ryan, 2000; Ryan, Huta, & Deci, 2008). These authors contend that thinking in terms of flow experiences is not quite enough. They suggest that it is important to consider the support of basic psychological needs for competence, relatedness and autonomy. They argue that flow theory does not give adequate consideration to the “what” and “why” of goal pursuits and observe that how people approach goals is an important aspect of attaining eudaimonic well-being – that is, a sense of wholeness and meaning, rather than just fun or happiness (Deci & Ryan, 2000).

Flexibility: Among the most vociferous psychology-based arguments for educational interest in creativity in recent times revolves around the need for flexible thinking and an internal centre of balance as a means of coping with the speed of cultural change and the ambiguity of cultural futures (Craft, 1997, 2008a; McWilliam & Haukka, 2008; Moran & John-Steiner, 2003; Runco, 2004a). Runco (2004a) states that “creative ideation allows the individual to remain flexible” and that “the flexibility of creative persons is what gives them the capacity to cope with the advances, opportunities, technologies, and changes that are a part of our current day-to-day lives” (p.658). Moran and John-Steiner (2003) see creativity as a necessity for psychological health in the present cultural milieu, which is characterised by “fast-paced change”, diversity, and having to deal with ambiguous futures.

These reasons for educational attention to creativity may be summarised as arguing that: creativity is part of human *development*, creativity is related to interest and quality in *learning*, creativity is part of the spectrum of *thinking* capacities, creativity is part of *quality in life*, and creativity contributes to living well by maintaining *flexibility* in the modern world. These arguments or themes may overlap depending on the paradigms on

which they are based. Vygotsky's view of creative development, for example, touches on most of these themes. Although each of these benefits is attributed to "creativity" it is not clear exactly what meanings of creativity are relevant in each case or whether any given meaning of creativity is applicable across all of the rationales.

2.3.2 The Media Massage

Attention will now be given to claims that have been made about the relation of creativity to old and new media. This section of the review looks at how creativity is conceptualised and discussed in media-theoretical accounts, such as the work of Marshall McLuhan. The section title, *The Media Massage*, is a direct reference to McLuhan's ideas about "the message" of the medium (e.g. McLuhan, 1964b), which he alternatively conceptualised as the "massage" of media (McLuhan & Fiore, 1967). The aim in this section is to draw attention to the diverse meanings of creativity that are applied, within the literature of media theory, when observations are made about connections between creativity and media. In so doing this section of the review will also highlight the need for taking an interpretive approach when engaging with discourse around creativity and its relation to media and culture.

Educators are faced with a plethora of arguments about the place of creativity in the global environment. Sometimes these arguments appear to be in conflict. It has been argued that creativity is important to countries for their economic competitiveness in the global economy (Florida, 2002, 2005; Shaheen, 2010). But it is also argued that creativity may be a construct linked to Western "individualistic" ideologies and therefore of lesser importance from a "collectivist" perspective (Craft, 2003). It has been suggested that the encouragement of creativity in some Asian cultures is impeded by Confucian teachings, collectivist outlook and focus on basic skills in education (Cheng, 2004). But it is also asserted that the notion that Asians are collectivist and impeded in their creativity by cultural ideologies is formed on the basis of an unfounded Western view of the Asian stereotype (Lau, Hui, & Ng, 2004). Some argue that collectivism-individualism is not a distinction that applies only across cultures, but is observable within Western *and* Eastern cultures (Lau et al., 2004; Triandis, 2006). However, it is claimed that as exposure to the mass media increases worldwide, those areas of the world that are currently described as collectivist are likely to become increasingly less collectivist and more individualistic in outlook (Triandis, 2006). Bruns (2008) observes that in the wake of the new electronic media and its penetration into the affairs of nations around the world, a global

“Renaissance” is occurring within which many cultural institutions and areas are being redefined through the “bottom-up” or “grass-roots” forms of creative activity which these new media support. He claims further that the creativity occurring within the new, global, electronic media environment is bringing industrial models of politics, production and education unstuck. Of particular concern, for educators, is the claim that the creative new media environment requires that teachers develop new approaches to educational provision and teaching (Bruns, 2008).

Perhaps because some of these arguments seem to conflict, the educational response to the issue of new media and its relation to creativity, has been uncertain. For example, in response to the considerable debate about whether the Western interest in creativity should be regarded as an individualistic, capitalist perspective that is in some way ethnocentric and colonialist in its assumptions (Chirkov, 2009; Chirkov, Ryan, Kim, & Kaplan, 2003), Craft (2003) argued that this may represent a limiting factor for the focus on creativity in Western education. Also, whilst scholars acknowledge that technological change has become a central aspect of the complex creativity-related issues that now confront education (Banaji & Burn, 2007; Bruns, 2008; Bryant, 1998; Craft, 2008b; Jenkins, et al., 2009; McWilliam & Haukka, 2008), as Banaji and Burn (2007) observe, educators express varying kinds of response to the idea that education has a part to play in mediating the relation between creativity and communication technology:

Additionally, it becomes apparent through a closer look at discourses of creativity which appeal to the potentials of technology that wider social concerns are never far from the minds of those who work with children and technology and that these concerns can lead in several directions. This leads for some to uniform approval and enthusiasm about information and communication technology’s innate creativity; for others to a wholesale rejection of the notion that any technology can be creative; and for yet others to the need for an understanding of technological potential in given social, cultural and psychological circumstances (p.69).

These authors suggest that teachers’ various concerns about technology and its effects on students and society may lead them to unreflectively embrace or reject the idea that technology has potentials for enhancing creativity.

However, such responses may often reflect a narrow reading of what is being asserted about the links between computing and creativity. In reading the arguments narrowly many educators may be overlooking issues of critical importance for education. For example, it

is sometimes argued that traditional forms of educational provision cannot cope with the needs of the information society (Bryant, 1998; Burnard & White, 2008; Craft, 2008a, 2008b; Jenkins, et al., 2009). Indeed it is argued that educational institutions are under threat of degeneration or collapse due to the role of new media in facilitating the widespread generation and dissemination of information outside the borders of formal education (Bruns, 2011). With such dire possibilities facing education, there is a degree of urgency to the argument that there is a need for educators with the capabilities and resources to read deeply into, and respond to, these issues (Bruns, 2011; Craft, 2008a). Bruns (2011) observes that in the current media environment, where information is widely generated and shared by “non-experts”, educators also need to be aware of important changes to their teaching roles. Firstly, he points out that teachers stand to lose their privileged positions as experts. He argues that this is because “knowledge”, or information, is no longer perceived to be a scarce commodity. But, he argues further that, nonetheless, teachers have an important role to play in computer-mediated society, because they are in a position to influence the *quality* of the content that people produce. Bruns argues that teachers need to help students to become more critical and capable builders and disseminators of information.

Given that the use of electronic media technology is increasing worldwide it seems important to consider how this trend may be influencing cultural patterns even in collectivist or developing countries (Triandis, 2006, 2011). As a precursor to considering the educational and global implications of the many “creativities” which are seen to be at work in the new, information rich, electronic media environment, the following section of the review explores the reasons behind some theorists’ claims that communication technologies have been involved in a general trend towards more “creative” human consciousness (McLuhan, 1964a, 1964b; Ong, 1982). In these arguments it is suggested that there are connections between the media people use and the consciousness of users. These views are addressed because they suggest that in a changing media environment there are reasons for expecting changes in people’s “consciousness” regardless of economic or colonialist agendas. Through such arguments media can be linked, not only to the creativity observed to be happening in the world, but also to Triandis’ (2006, 2011) suggestion that media can be involved in shifts from “collectivism” to “individualism”. However, as argued in the rationale for the present study, it is necessary to take an interpretive approach in order to apprehend what these authors mean by “creativity”.

2.3.2.1 From oral conservatism to electronic creativity

Our new electronic environment compels commitment and participation, and fulfills man's psychic and social needs at profound levels.

Marshall McLuhan, *The Playboy Interview* (1969).

In the 1960s, before the emergence of the Internet, media theorist Marshall McLuhan made a number of seemingly prophetic statements about the social effects of the continuing use and development of electronic media – predictions which included his vision of a shift toward greater cultural diversity and creativity (McLuhan, 1964a, 1964b; Norden, 1969). In an interview with journalist Eric Norden for *Playboy Magazine* (Norden, 1969) – a resource which is referenced here because in it McLuhan gives a cogent and approachable synthesis of his ideas – McLuhan claimed that significant new technologies tend to “penetrate” societies and “saturate” their institutions. On this basis he envisioned cultural shifts of such magnitude in the wake of global saturation by the electronic media, that he predicted trauma and identity crises for both younger and older generations. He was not talking only about what might happen as electronic media penetrates remote areas of the world. McLuhan was of the opinion that, as a logical consequence of the shift to electronically mediated communication, students habituated to the electronic age would find it difficult to engage deeply with the printed form and would tend to resist the traditions of print culture. But in addition to, and partly because of, this cultural trauma he envisaged that the electronic media would foster a cultural climate conducive to creativity.

Why did McLuhan think that media could have these effects? What is his understanding of the relation between media and consciousness? McLuhan believed that through our technologies, we humans “extend” aspects of our capacities and that in return our extensions shape us (McLuhan, 1964b). One of the central notions in McLuhan’s perspective on media is the idea that societies are shaped more by the media they use, than by the content communicated. This is apparently the idea encapsulated in his now famous phrase “the medium is the message” (McLuhan, 1964b), which later appeared in modified form as a book title: *The Medium is the Massage* (McLuhan & Fiore, 1967). Reflecting on the two versions Ong (1982) indicates that the latter pronouncement more closely conveys McLuhan’s awareness of the complex subjective and inter-subjective operations inherent in communication. McLuhan’s message was that communications media work on us like a subtle massage. He was concerned about the degree to which people tend, in general, to be

unaware of change in the media environment and oblivious to the extent of its effects on themselves and others.

So why did McLuhan think that the electronic age would also be a time of great creativity (Norden, 1969)? McLuhan had studied communication in early oral cultures (cultures without writing) and traced some of the key changes that had occurred, as he saw them, through the history of early literacy up to medieval times (McLuhan, 2009). In the interview with Norden (Norden, 1969), McLuhan first recounts his historical perspective on the differences between “oral” cultures and “literate” cultures. He then argues that the development of writing and the use of print technologies had played a large part in promoting the kind of consciousness wherein individuals see it as possible to establish their own views and inner worlds separately from their wider community or “tribe”. It is largely in this sense that McLuhan saw literate consciousness as more “creative” than the consciousness of orality. McLuhan is really talking about a kind of intellectual autonomy or tendency towards objectivity and experimentation. Whilst he saw Western print culture as one that has promoted individualism and specialisation he also regarded the print culture of the West as fragmented and lacking a sense of communality. He believed that, by contrast, the electronic media would have a “retribalizing” effect, blending human consciousness into a global, tribal sense of oneness. At the same time the electronic media would have a freeing effect conducive to creativity.

McLuhan, as revealed in the interview (Norden, 1969), believed that “creativity” would become ubiquitous, as the artists and writers who have historically been the ones to “sniff out” environmental change and relate it back to the masses, would be joined by many others in performing this work. Here McLuhan envisioned the spread of the kind of consciousness, which can be critically aware and creative because it has access to a broad range of perspectives, is aware of cultural content as changeable and sees itself as a separate knowing entity. It should be added here that creativity researchers have articulated that major creative work usually requires the belief that culture is changeable (Feldman, 1999) and is favoured in climates characterised by diversity (Simonton, 1999). But it is important to note that creativity researchers have usually been interested in a view of creativity as the development of new and valuable products (Mayer, 1999) whilst McLuhan is also thinking of creativity in terms of “consciousness” – in particular, what people know or understand about the nature of knowledge and communication. McLuhan makes an interesting observation in the Playboy interview when he discusses the shifts in

consciousness which must have taken place when images of the Earth were first beamed back from space. Such images, he argued, could not have failed to change our understanding of our place in the universe. This is the kind of distinction that McLuhan tries to convey when he discusses differences between the way information and culture are understood in an oral environment vs. how they came to be seen in a print environment vs. an electronic media environment. He envisaged that, as a result of such media-related shifts in consciousness, the inhabitants of the electronic age would scrutinise and overturn ideals from the print age – ideals such as the ideal of “progress.”

Throughout his discussion it is clear McLuhan was not thinking of creativity as something that only a few can do. He was emphasising a view of creativity as intellectual autonomy and widespread cultural participation. What he saw as remarkable about individual, creative participation in critiquing and contributing to the cultural matrix itself is that such a thing was unthinkable to all but a few in the age of print and virtually impossible before writing – that is, in the media environment of orality. From his perspective, the physical and mental media environments, which grew up around writing, then print and most recently the electronic media have all tended in some way to be more conducive, than the environment of orality, to promoting objectivity and the freedom to experiment with “knowledge”.

It could be objected that having a sense of freedom to experiment with knowledge could arise simply from having access to a variety of perspectives and not really from any properties of media per se. Perhaps the way to think about this is that McLuhan’s media theory grew from trying to understand differences between how people thought in oral times and how people thought once writing had developed. It does not really propose that media has properties that determine how people will think. McLuhan argued that the difference between oral thought and literate thought, as we can observe it historically, can largely be explained via the involvement of writing technology in how people habitually construct thoughts, view knowledge, view themselves and view the world – much of which is taken for granted whilst people inhabit their respective media environments. He was really talking about what is and is not in people’s awareness with respect to knowledge and communication and what has changed as people have embraced additional media technologies.

The contribution of Walter Ong (1982) to the interest in understanding differences between the consciousness of orality (never having any contact with, or awareness of,

writing) and the consciousness of literacy, was the development of a set of characteristics delimiting critical areas or dimensions of difference between “thought and expression” in these two cases. Ong’s (1982) book *Orality and Literacy: The Technologizing of the Word* illuminates the differences between “pristine” oral thought and later literate consciousness and teases out why it is that orality promotes a communal and conservative or traditionalist mindset and why, by contrast, modern literate thought can be seen as more creative in some ways. Such questions were also explored in detail by anthropologist Jack Goody in his 1977 book *The Domestication of the Savage Mind*. It should again be stressed that in discussing orality-literacy contrasts these authors were not simply discussing differences in the act of speaking and the act of writing. They were concerned with what it is like to live and think in a world where no-one has seen a “word”, where no-one has a mental representation of words in their heads and there is no means of recording knowledge in written form.

These authors’ views are worth noting from the perspective that they suggest that through the media people accommodate to themselves their “consciousness” changes. Ong (1982) believed that complex “psychodynamics” are implicated in the interrelations between humans and their media and that one of the identifiable differences between “oral” thought and “literate” thought, as it has developed over time, has been a drift towards greater “creativity”. Contrary to views implicating a colonialist Western agenda behind such change in the world, this media perspective suggests that such change in consciousness simply happens, whether people are aware or not that it is happening to them.

Ong (1982) and Goody (1977) argued that the conditions of orality inhibit intellectual experimentation with the accumulated knowledge of the tribe or community whilst, relatively speaking, the conditions of print and electronic culture conduce towards it. According to Ong, people who live without a means of recording their thoughts must invest a great deal of time and energy in saying things over and over in order to remember them and keep them for future generations, for “conceptualized knowledge that is not repeated aloud soon vanishes” (Ong, 1982, p.41). It is this need, he argued, that has promoted a highly traditionalist mindset in oral cultures.

Ong (1982) observed that the speech and thought forms, which arise spontaneously in oral cultures (and/or cultures high in oral residue) because they aid memorization, are not particularly conducive to innovation. He noted that whereas written arguments can be

sparse in form, because the reader can use the writing itself as a source for reference if a point is missed or forgotten, in oral discourse, the content of communication must be made memorable through what is uttered (or performed) and thus tends to be repetitive. Oral communication tends to be “additive” rather than “subordinative”, Ong observed, by which he meant that rather than using words such as when, while or thus to form nuanced narrative flow, oral narrative tends to use a lot of “ands”. He pointed out that the additive character of oral communication is preserved and observable in the Biblical book of Genesis. This, and other characteristics, made/make oral expression, “cumbersome and tiresomely redundant because of its aggregative weight” (Ong, 1982, p38). Ong argued further that oral thought favours the use of formulary elements, such as “epithets” and “type” characters in stories, which are important tools of the oral thinker. These formulas, he said, are “incessant” in oral thought, forming “the substance of thought itself” (Ong, 1982, p.35). He claimed, moreover, that when such formulas are established in an oral culture they are not meant to be disassembled. Once they have become part of shared communal understanding any thoughts that might possibly be built without the use of mnemonic formulas can only be “passing thoughts” (Ong, 1982, p.35). Goody (1977) doubted seriously whether, within the constraints of oral discourse, it would be possible to build a critical tradition that could be contemplated by others.

Ong suggested, in *Orality and Literacy*, that reading and writing are conducive to reflection and attention to the inner self (interiority) and that writing and print gave rise to the “autonomous” argument. In Ong’s perspective, autonomous argumentation is the point of view developed at a distance from the world of communal discourse. In the early days of the development of writing, observers commented on the difference between the “warmth” of the spoken word and the “coldness” and detachment of the written word (McNicholl, 2003; Ong, 1982). Writing was observed to “freeze” the processes of oral communication. It is mentioned, for example, in the Biblical New Testament, in 2 Corinthians 3:6 that “The letter kills but the spirit gives life” (Ong, 1982, p.80). Speech was seen as “alive”, written texts as inanimate (McNicholl, 2003). However, writing also lends itself to the making of nuanced and sequential argumentation and reflection. Thus, while early writers, such as Plato, bemoaned aspects of writing, at the same time their consciousness had been transformed by the use of writing (McNicholl, 2003; Ong, 1982). Plato and other early literates were able to argue the way they did because they were

readers and writers. McNicholl (2003) notes, however, that writing was regarded as useful but *inferior* to speech.

McNicholl (2003) argues that understanding the world through collectively maintained mythologies went hand-in-hand with understanding consciousness as co-extensive with the “body” and the “person”. He argues that in Plato’s words and thought, we can observe a shift away from this outlook. Plato begins to locate different aspects of consciousness in different parts of the body:

Plato distinguishes between the immortal and mortal parts of the soul. These parts of the soul are separated by being located in different parts of the body ... The immortal part of the soul, the rational or intellectual, is located in the head. The mortal part of the soul is in turn divided into two parts corresponding to the divisions in the *Republic*. The spirited part is located in the chest, and is separated from the rational immortal part by the neck. The appetitive part is located in the belly, and is separated from the spirited part by the midriff (McNicholl, 2003, p.140).

McNicholl notes how Plato divides the intellect, locating the *superior* reasoning aspect of intellect – which is also immortal and Divine – in the head, and the more emotional and bodily drives are located elsewhere in the body. Elucidated also in McNicholl’s thesis is a shift in the meaning of truth from truthfulness as something that inheres in the utterances of “persons of authority” to truth as something that is evaluated via sense-making. Some of Plato’s arguments therefore seem to parallel those of much more contemporary scholars and educators, who argue for the superiority of sense-making and deep learning over the accumulation of facts and surface approaches to learning (Biggs, 1987; Marton & Saljo, 1976; Prosser & Trigwell, 1999), and for the greater value of mindfulness over blind acceptance (Langer, 1989, 2000).

Whereas the oral communicator was “immersed unconsciously in communal structures” (Ong, 1982, p.175), Ong sees literate consciousness as one that is simultaneously separate and communally involved. Today the autonomous authorial argument, developed in relative detachment from the community, is accepted as normal. Thus, in the way Ong (1982) sees it, contemporary creativity has a certain character – it is reliant on a particular autonomous state of mind and has a community value that could not have emerged within the constraints of an oral “noetic” (thinking) economy.

But is the state of orality itself of much interest to us today given that most of the world is, to varying degrees, literate? The orality consciousness continues to be important to us today because the content and practices of many contemporary and historically important institutions, the world over, such as religion and education, originated in the oral past (Hawkes, 1977; Ong, 1982). We may not be able to fully and accurately understand early oral utterances, whilst we peer at them through the lenses of our literate bias (Ong, 1982). Nonetheless Ong (1982) argued that oral and literate communication does differ and that cultures and groups of people vary in the degree to which life and communication are tied to oral tradition and oral dynamics of communication. He claimed that most cultures reflect “residual orality” to different degrees – and that oral residue is reflected particularly in the degree of reliance on memorisation in a culture’s educational practices.

The foregoing perspectives suggest that the media one uses does matter in ways that have little to do with the “content”. Media seems to matter in terms of such things as how one habitually structures thoughts, one’s expectations about where to find knowledge, how to retain knowledge, whether one feels immersed in group norms or more like an objective observer, one’s understandings about what is more important in one’s culture: speaking or writing? If the broad thrust of such arguments is applied to the contemporary situation it could be suggested that with the advent of new media will have come conditions with the potential to engender change in “consciousness”. This could be an important matter for educators if practices deemed relevant to education in the past are retained unreflectively in such a way as to be counterproductive in the present. As McLuhan understood it, we can continue seeing and doing things in certain ways, unaware that our way of seeing has become “obsolete” (McLuhan & McLuhan, 1992). Back in the 1960s McLuhan regarded print-focused education and print-focused educators as already obsolete (Norden, 1969).

Whilst in 1955 McLuhan declared that the complexity of communication effects made it impossible to predict how communication shifts would manifest socially (McLuhan, 1955) he often appeared oracle-like in his ability to mentally model the interrelations between technology, mind, body, knowledge, and culture and then predict a given “future” on the basis of a change in one or more of the parts of the model (Logan, 2011). Eventually, he formalised some of his evaluative technique in the posthumously published *Laws of Media* (McLuhan & McLuhan, 1992). McLuhan suggested that understanding the ecological significance of a technology could be approached by considering four aspects: What the technology enhances, what it makes obsolete, what it retrieves or recovers from

obsolescence, and what it “flips” into when “pushed to extremes” (McLuhan & McLuhan, 1992). The “laws” imply a kind of closure or balance in the ecology of humanity and its technologies. As something is pushed out other things surface or re-emerge. How one might work with McLuhan’s tetrad of laws cannot be discussed here, but a number of scholars have continued to work in this tradition (e.g. Levinson, 1999; Logan, 2011).

McLuhan predicted, for *his* future, that the media “environment” which was characterised and delimited by the primacy of television and the printed book, would be superseded by an environment infused and delimited by the primacy of electronically encoded information and instantaneous information retrieval (McLuhan, 1964b). He predicted that television and the book would become part of the obsolete “content” of the new environment. He also anticipated increased “creativity”. He considered that creativity would be catalysed and expressed within the electronic media environment via dissension and disagreement, cultural diversity, cultural trauma, cultural participation and cultural transformation. Castells (2004) has since suggested that creativity, as an “emergent” skill or necessity, must be expected in an era where information is stored in data-base repositories outside the person.

Ong (1982) envisioned that the consciousness shifts he had observed would be maintained in a “creative” direction, towards interiority, towards what might be described as cultural objectivity or intellectual autonomy. But he did predict also that humanity was entering an era of “secondary orality” where communication would combine reliance on the more visual literacy aspects (reading, writing) with the re-emergence of reliance on oral-aural communication.

When considered from these perspectives it seems reasonable for these theorists to have anticipated that the electronic age would be a creative time. Whilst educators have interpreted this message in different ways (Banaji, 2008), the message assumes greater educational relevance and weight when read as referring to relations between creativity and ecologies of the media context, than when seen as a blanket prescription that computers have some kind of inherent ability to enhance creativity.

The nature of contemporary creative activity might be seen as distinguishable from creativity before the advent of electronic media technologies in terms of the degree of freedom people have to alter, contribute to or challenge knowledge itself. Some of our thinking might be changing on the basis of what our technological extensions allow us to

do. There might be change in our thinking on the basis of the “tools” that undergird thinking and how those tools are implicated in how we gain access to information, our exposure to cultural diversity, the value that accrues to “creativity” in such an environment and the speed and/or magnitude of cultural change acting as an impetus to creative thinking and problem-solving.

Although McLuhan saw value in creativity and in the creative possibilities inherent in a diverse global environment, he declared that he was not particularly enamoured of electronic culture nor of the “maelstrom”, as he termed it, into which he saw humanity descending in the creative, electronic age (Norden, 1969). He acknowledged that his was an intellect shaped by, and comfortable in many ways, with print culture. However, he saw it as inevitable that massive environmental, social and psychic change would accompany the saturation of cultures by electronic media and he espoused taking a position of “detached involvement” when studying media. Detached involvement, he observed, is unlike the polarised, immersed thinking of orality and therefore precisely the kind of non-reactive state of mind that literate culture has made possible. He regarded it as a valuable mindset for “survival” and for making diagnoses in the times ahead. He suggested also that complaining about the changing media environment achieves nothing. However, he opined that it is necessary to study the changing media environment and to adapt media potentials where possible to serve humanity or – as he put it in the closing paragraphs of the Norden interview – to charge in and kick the media in “the electrodes”. This is perhaps a fitting attitude for educators to assume also as they attempt to make sense of the relation between creativity and the “new media” and the parts these are playing in cultural change.

2.3.2.2 New media creativities

New technologies are providing unprecedented access to ideas, information, people and organisations throughout the world, as well as to new modes of creativity, personal expression, cultural exchange and understanding.

(NACCCE, 1999, p.7)

This sub-section of the literature review explores the ways in which the “new media” may be understood as connected to “creativity”. On what bases might it be claimed that the new media support, engender or demand creativity? Whilst there may be many “sites” of creative activity not mentioned in the ensuing overview, the purpose here is not to point to all possible sites of creation in the contemporary media environment, but to indicate some

of the effects of new media to which the term “creative” has been, or might be, applied. Hence, as the title suggests, the section aims to show where new media supports not “creativity” but “creativities”. The concern is to identify capacities, attitudes or ways of thinking which could be described as creative and are either peculiar to the environment of “new” media or are aspects of human creative thinking which may be intensified by new media. In doing so it is hoped to underscore that there is a need for teachers to become interpreters of creativity discourse.

The secret to distinguishing between “new” and “old” electronic media, says Flew (2005), is to think beyond the delivery technologies themselves to what the technologies allow people to do and what people are doing with them. The “new” technologies allow people to access information, to do things with information and to interact with other people. The Internet is one of the central aspects of new media in this respect (Flew, 2005), but mobile phones are another major, versatile technology with interactive potentials (Flew, 2005; Pesce & Fraser, 2005). The particular perspectives highlighted here indicate that creativity and information technology are implicated in cultural change in a variety of ways – some in a passive or unintentional way and some where people are motivated to problem-solve or contribute content which then becomes communal property.

The term “creativity” may seem vague and overworked in this context (Banaji & Burn, 2007), but where linkages have been posited between creativity and technology it is often in the sense that information technology and creativity have come together to contribute to rapid cultural change (NACCCE, 1999) and may be predicted to do so into the future. In this sense creative thinking may be regarded as both an *agent* of change and a *product* of the current technology-infused, information-rich, changing cultural environment. Others have argued that creative thinking is desirable, if not essential, for survival in the current climate of cultural change (Moran & John-Steiner, 2003; Runco, 2004a), which suggests that creativity is also being seen as something to be cultivated or nurtured, as an adaptive *response* to environmental change. This section of the review looks at some of the more specific linkages that have been made between new media, creativity and culture. A meaning of “creativity” as autonomous thinking or contribution enabled by new media comes through in some of these linkages.

2.3.2.2.1 Creativity as passive transformation

Some commentary suggests that aspects of new media support elements of creativity, such as transformations in thinking or exchange of ideas, which are taking place outside people's awareness. New media has been linked to the presence of an increasingly fertile global environment for creativity, through its potential to support "weak ties" – which may be thought of as brief or infrequent connections between people with low levels of emotional entanglement (Perry-Smith & Shalley, 2003). New electronic media provisions make it possible for people who may never have met, to establish narrow connections around such areas as mutual interests or work related knowledge. This kind of contact increases people's exposure to diverse information (Dewett, 2003; Perry-Smith & Shalley, 2003).

In addition, electronic communications allow people to stay in contact with friends and family, even while living far apart and are therefore believed to be contributing to the emergence of new, less physically and culturally bound forms of community (Wang & Wellman, 2010). Under such conditions a certain amount of unconscious change in people's ideas and thinking could occur, which could be regarded as involving transformations, of a creative nature. Weisberg (1999), for example, has argued that creativity relies on the knowledge people have in their heads, which at any time may combine in an unexpected way with aspects of a given situation to produce a new combination of elements. Finke (1996) demonstrated the human capacity to create "emergent" structures at an imaginative level, thus generating previously unimagined combinations of objects or ideas. Transformations of this kind may not be observed by anyone at the time they occur but arguably have the potential to contribute to cultural change in a passive way.

Simonton (2000b) has observed that diverse cultural environments tend to loosen people's sense of social constraints and are therefore conducive to creativity. Within such environments the potential arises for more active forms of creativity as well. Simonton's research has shown that creativity, in the form of innovation, increases in times of cultural diversity.

2.3.2.2.2 Convergence and produsage: Creativity as acting in the cultural sphere

Two perspectives which emphasise how the new media relates to more active forms of creativity, are Jenkins' (2006) observations of "convergence culture" and Bruns' (2008)

proposal of a “produsage” model of user-led cultural content creation. Both of these perspectives take account of how the creative activity of individuals and groups is increasingly implicated in cultural processes. Cultural change is further assisted by the capacity of new media to support rapid “peer-to-peer” distribution of cultural content – that is, Bruns explains, intensification of “the perhaps fundamental, innate human tendency to share what interests, excites, and entertains us” (Bruns, 2008, p.244).

Jenkins (2006) explains patterns of contemporary cultural change in terms of “convergence” processes. In his view, what happens culturally is seen as increasingly constellated around the selective, creative and social activity of individuals. He coins the term “affective economics” thus making explicit the role that affect – what people like, don’t like and what they like to do – now has in shaping cultural activity. It has been noted that consumers have always exerted some sort of control commercially and culturally, but that their creative role has been more on the receiving end of things (Bruns, 2008; Jenkins, 2006). Consumers have usually been thought of as exerting little force over how things are done culturally and commercially and the business world has been able to depend on relatively stable consumer patterns to predict target audience consumption behaviour. Jenkins describes how this situation is changing in relation to media consumption:

Convergence requires media companies to rethink old assumptions about what it means to consume media, assumptions that shape both programming and marketing decisions. If old consumers were assumed to be passive, the new consumers are active. If old consumers were predictable and stayed where you told them to stay, then new consumers are migratory, showing a declining loyalty to networks or media. If old consumers were isolated individuals, the new consumers are more socially connected. If the work of media consumers was once silent and invisible, the new consumers are now noisy and public (Jenkins, 2006, pp.18-19).

In Jenkins’ opinion, what differs significantly now is the opportunity for media consumers to act in the cultural sphere, to do things in a visible way with the media they enjoy and to interact with others, sometimes building knowledge or content with others in like-minded groups and sometimes sharing information across social networks. Fan communities have emerged as particularly active groups in contemporary social and economic culture. Jenkins (2006) observes that new technology has made it possible for individuals to engage with large fan communities over new media platforms and for fan cultures to shape the behaviour of media producers. Some fan communities and

communities of practice have proven resistant to commercial manipulation. Media producers, Jenkins observes, have demonstrated uncertainty in how to deal with this new, assertive consumer and have pursued a variety of strategies in response to the new consumer behaviour.

As Bruns (2008) points out, consumers were probably never really just consumers at all. Our tendency to frame knowledge and cultural activity in terms of production and consumption can perhaps be related to the suggestion from Ong (1982) that text “freezes” the word contributing to the illusion that “knowledge” is encapsulated and frozen in artefacts/documents. In this way of thinking about knowledge, knowledge is contained where it is recorded, whilst creativity – in the sense of activity that builds new knowledge – becomes visible where new knowledge is reified and recognised. Stacey (1996, 2001) argues against the usefulness of this view of knowledge and creativity, insisting that knowledge is not contained in artefacts, but grows in interactions between people. Bruns (2008) expresses similar views, seeing knowledge development as an ongoing and fluid, interactive process.

Bruns (2008) also points to the role of industrial age production practices in embedding a “production” model rather than an interactive model of content development: “power structures in the production value chain were very strongly slanted in favor of producers and (to some extent) distributors rather than consumers” (p.10). Bruns has suggested that the production-consumption model is deceptive and furthermore is not properly indicative of the character of either cultural content or commodity production. He argues that via new media, cultural content is being “prodused.” By this he means that users of content are also making it and distributing it or taking part in how content is distributed. The new types of content are also not “products” in the sense that the industrial era trained us to think of products. Content is often now in an ongoing state of refinement and often collaboratively co-produced.

2.3.2.2.3 Creativity as collective intelligence, collaboration and “ad-hocracy”

An important cultural emergence attending the popular use of new media for cultural content creation and dissemination is the rise of on-line communities, within which distinct patterns of produsage and interaction can be observed. Bruns (2008) has examined a number of different sites of produsage such as the virtual world of *Second Life*, online gaming and fan communities. But his observations concerning the ongoing collaborative

work on the Wikipedia are informative and illustrative of produsage community principles and patterns.

The Wikipedia is an online encyclopaedia, which is built and maintained through the collective (group or combined) intelligence and maintenance activities of voluntary contributors. Interestingly, the Wikipedia combines communal input – which was a feature of oral knowledge transmission, as seen, for example, in the performer-audience interactions accompanying public oral epic performance (Ong, 1982) – with the objectivity associated with print encyclopaedias and can, perhaps, be seen as a working example of Ong’s “secondary orality” concept.

Two aspects of the Wikipedia project are particularly relevant to the present focus on creativity. Firstly, Wikipedia is being developed by a community of enthusiasts, volunteers and occasional contributors. Wikipedia, as Bruns (2008) notes, exists because people want it to exist. They are motivated in some personal way to contribute to the Wikipedia project and not because they are coerced or offered incentives. Secondly, as part of the ongoing operations of Wikipedia, Wikipedians “prognose” not only content but also the organisation and procedures for the project as they go. Bruns observes that an administrative structure has emerged with several levels of roles and types of contribution carried out at each level – anonymous contributors at the bottom and an arbitration committee and founder, Jimmy Wales, at the top: “At the very top of this pyramid, of course, remains Jimmy Wales himself, described by some Wikipedians as the site’s ‘god-king’” (Bruns, 2008, p.141).

On-the-hop and relatively fluid produsage of rules and procedures is, according to Bruns (2008), a feature of all produsage communities, whether those communities deliver open-source software or write *Harry Potter* sequels and share them on-line with other *Harry Potter* enthusiasts. The term “ad-hocracy” (Doctorow, 2005) has been coined to describe this kind of loose adaptive operating structure especially applicable to online environments. Produsage community members are often adapting, always potentially involved in ongoing adjustment to processes and procedures as well as creating new content. There are conditions in the functioning of online communities, which can be seen as conducive to the creativity that occurs within them: environmental appeal in terms of low entry requirements, loose rather than rigid operating structures, opportunities for activity consistent with the motivation or abilities of participants and potentials for solving problems when many minds are at work on a given problem. On this last condition, Bruns points out that the community of open source software developers adhere to the motto that

“given enough eyeballs, all bugs are shallow” (Bruns, 2008, p.24). Another condition conducive to creativity in some online communities is their capacity to drive up and/or expose competence levels. This condition for creativity is in evidence, for example, when particular individuals who consistently make contributions of high quality are then placed in positions of prominence by their peers where their contributions may then challenge others to produce similar quality.

The operation and existence of such communities may also be seen as changing the wider cultural environment, making it more conducive to creativity generally. On-line communities contribute to the flow of new content into the cultural arena adding generally to a diverse cultural environment. There may be cultural flow-on effects also, in terms of preference for the kind of loosely organised operating structures to which produsage community members may be becoming accustomed.

2.3.2.2.4 Creativity as a fluid approach to knowing

Another aspect of produsage that relates to creativity is that the “products” of produsage communities often require a different way of “reading” from the reading we have become used to in the age of print. Just as literate thinkers are no longer able to access or create epic poetry in the way oral poets were able to do (Ong, 1982), those of us accustomed to the conventions of print may struggle to fully appreciate the artefacts of digital produsage. In other words, reading digital produced artefacts often requires new “literacies” and less rigid ways of thinking about knowledge.

Bruns (2008) points out that the ability to read the information embedded in some produced artefacts requires understanding of the layered, often collaborative and ongoing nature of the process that has built or is building the artefact. He illustrates with the example of “wiki” formation. Because a wiki is an online application or platform, which allows one or more people to continually upgrade or change information displayed in the document – like an electronic “magic” blackboard but with the important difference that the history of the ongoing work is preserved and can be accessed by the viewer – this history of development and discussion is part of the information contained in the wiki. Being aware of this is, as Bruns points out, part of wiki literacy. Knowledge, he argues, can now be seen as “palimpsestic”. A palimpsest is essentially a document that can be, or has been, overwritten. Understanding knowledge and knowledge artefacts this way ultimately means recognising that human knowledge development is an ongoing, uncertain

and not necessarily unidirectional process. Knowledge at any time encompasses multiple perspectives and is not “fixed” but in a continual state of incompleteness, dissolution, reformation and renewal.

2.3.2.2.5 Creativity as intrinsically motivated innovation by hobbyists

The dynamics of produsage communities, including fan communities, have a significant presence culturally and commercially. They are changing commercial practice in a number of areas and ways. Understanding this aspect of cultural change is fundamental to thinking about how to live and work with these changes. Although a number of egoistic reasons have been suggested for people’s involvement in produsage activities – such as attention from peers, exposure of capabilities or establishing status (Bowman & Willis, 2003), it appears that intrinsic interest and the motivation to share those interests with others often underpins both online sociality and the work of people making significant contributions to cultural content creation and changing commercial practices (Bowman & Willis, 2003; Bruns, 2008; Franke & Shah, 2003; Jeppesen & Frederiksen, 2006; Morrison, Roberts, & von Hippel, 2000).

Findings from a study of user-led music software development provide illustration: Jeppeson and Frederiksen (2006) investigated what motivates people to put considerable time and energy into collaborating on projects, for which they receive no remuneration. They studied the motivation of users of “Propellorhead” music software who, as well as consuming, were also engaged in voluntary software development and voluntary collaboration with the software company to improve the product. The company encouraged these interactions and thus derived commercial gain from the interest and input of volunteers. Jeppeson and Frederikson observe that often hobbyists possess considerable expertise and are quite capable of coming up with valuable innovations. Consistent with the findings of an earlier study (Morrison, et al., 2000) they conclude that these hobbyists play a critical role in driving innovation because they are most often “early adopters and willing diffusers of new products, knowledge and practices” (p.58). They thus pilot faster adoption of new products and practices and are enabled in this by the provisions of new media.

Franke and Shah (2003) found in a study of innovative sports enthusiasts that user-innovators were not motivated by monetary profit but by “fun” and the “norm” of “giving assistance” to other community members. They argue that this is a common feature of

innovation by end users in both off-line and on-line voluntary communities. In this way it is possible to see how personal interest is related to the development of expertise, personal creation and also to cultural innovation and change via sharing across the electronic media.

Recent research has further illuminated how marginal interest profiles and perspectives of individuals are positively related to innovative problem-solving in electronically mediated environments: “Technical and social marginality, being a source of different perspectives and heuristics, plays an important role in explaining individual success in problem solving” (Jeppesen & Lakhani, 2010). This finding relates to understanding creativity in connection with the electronic media, but is in many respects a re-affirmation of an observation, which has been made many times with respect to creativity: that marginal perspectives can catalyse or facilitate creative thinking and the motivation to bring about innovation/social change (Csikszentmihalyi, 1999; Gardner, 1993; Mumford & Gustafson, 1988; Policastro & Gardner, 1999; Simonton, 2005; Unger, 2000).

An important concomitant effect of intrinsically motivated “produser” behaviour is that it has, as Jenkins and Bruns note above, made it necessary for companies to think about and change their marketing strategies and relations with consumers. Bruns (2008) suggests that companies are better served by understanding and working *with* the dynamics of user-led production and distribution than by trying to control and resist such behaviour.

The on-line environment has proven to be advantageous as a shop-front and distribution point for some companies such as the on-line book retailer Amazon.com (Bruns, 2008). The potentials of the online environment for supporting “niche markets” and the associated rise in niche marketing (Anderson, 2004) have also been observed. Consumers have much greater access to the objects that interest them and choice is less constrained than when marketing is to majority tastes. Although it is difficult to say exactly how such market conditions might relate to creativity, it seems likely that the effect is more towards encouraging individuality, diversity and tolerance of difference, than towards supporting conformity.

Online environments are used for many kinds of communication and activity. Some of these are productive. Some activities – such as “flaming”, “trolling”, virtual forms of vandalism, virtual theft and “cyberbullying”, where communicators appear to use the relative safety of online communication to vent and disrupt (Bruns, 2008) – are arguably less productive. The existence of new avenues for exhibiting bad form does not, however,

overturn the thesis that intrinsic and other forms of motivation also drive viable content production. Projects such as the Wikipedia have endured and overcome many instances of vandalism (Bruns, 2008).

What surfaces as being of primary importance in these observations is the shift from primarily top-down forms of management and control of both knowledge and other forms of culturally significant production, to consumer-led forms of selection and cultural input. In other words, a transition is occurring where the taxonomy gives way to the “folksonomy”, where the impetus for innovation is moving from the expert to the hobbyist and from production to produsage (Bruns, 2008) – or at least we are seeing the emergence of cultural patterns reflecting relations between these two modes of content creation.

2.3.2.2.6 An endless creative frontier?

The transition to electronic forms of mediation has brought into view many links between creativity, technology and cultural change. People around the world, young and old, are creating and networking using the potentials of online mediation (Jenkins, et al., 2009). The foregoing discussion has not dealt with all of the many important “sites” of creative activity and cultural change which have been specifically linked to the new media environment – sites such as citizen journalism, the Creative Commons, social media, virtual worlds and many others (e.g. Bruns, 2008). To do justice to these areas in terms of examining how they are contributing to change in the world would require a much larger and more detailed discussion than is possible here. What has been highlighted in the review is that to read into how media is related to creativity, it is important to recognise that creativity may take different forms and that the term creativity may be used in different ways.

As described above, creativity can be used to describe passive forms of recombination and contribution performed outside awareness. But it can also be applied to specific kinds of processes and contributions such as the innovative production of cultural content by enthusiasts. It is worth noting that Bruns’ (2008) definition of cultural content creation by users, as “produsage”, does not, on its own, distinguish between types of production. Thus, as Bruns (2008) himself observes, produsage is a descriptor for different kinds of “creative” production, some individual, some collaborative, some performed without the intent or awareness of being a contributor, some carried out with the intention to be noticed and so on.

Creation, however it is performed, can lead to cultural changes which can then open up new potentials and sometimes new problem issues, requiring, in turn, creative problem-solving. An example of this is the problem-solving that is currently being applied to resolve or manage the issues of information accumulation and overload which have arisen since electronic technologies have become central to everyday and organisational functioning (Dewett, 2003). Some have observed that the use of computer technology may be changing how people think (Jenkins, et al., 2009; Sefton-Green, 2005). Sefton-Green (2005) has noted, for example, that through their use of computer software young people may be using new imaging elements or developing new ways to imagine. We might relate this idea back to Ong's (1982) observation that in the media environment of orality formulas and epithets formed the "substance" of thought and that this pattern was a condition related to having to record knowledge in memory. At this juncture it seems relevant to reflect on how the scarcity of knowledge in the oral past and the requirement to conserve knowledge versus the current abundance and availability of information may be important factors in setting up, at least some, aspects of cross cultural and intra-cultural differences in ways of conceptualising, enacting and valuing creativity.

Views differ concerning whether the impact of Internet use on health, relationships, civic engagement and people's ways of being in community are positive or negative. The mixed results of research into these aspects of electronic culture suggest that the situation is neither decisively positive nor decisively negative (Boulianne, 2009; Wang & Wellman, 2010). Whether the age of electronic media will, as McLuhan forecast, help to "satisfy" the psychic needs of humanity (Norden, 1969) remains to be seen. But, so far, the electronic age has resulted in many outcomes and effects, which theorists and commentators have described as "creative". Much discussion has pointed to aspects of the electronic media environment which support, facilitate or encourage intrinsically motivated production, problem-solving and innovation. This is only one kind of creative production. But the research literature indicates that intrinsic motivation is an important process aspect to be aware of and to consider with respect to creativity because it tends to be a part of complex creative work and is often critical in the persistence required to make major contributions (Collins & Amabile, 1999; Csikszentmihalyi, 1996).

In summary, many observers with interests in both media effects and education have noted that the electronic environment affords opportunities to contribute to, what is summed up by Bruns (2008, p. 405) as, "the human commons of culture, information, and

knowledge.” Bruns sees value in this type of contribution. He acknowledges, however, that there are differences in the processes of produsage/innovation. The creativity research literature supports the view that innovation often, but not always, comes about as the result of an intrinsically motivated process. Later in this review, research that points to the personal and social value of intrinsically motivated creativity and other autonomous processes is presented. If creative processes can be of different types with different values for individuals and society, it follows that, teachers’ conceptions of creativity and creative processes could be critical in how they connect up the affordances of media with the notion of “creativity”. For example, if a teacher does not regard intrinsically motivated creativity as particularly valuable he/she may be less inclined, than Bruns (2008), to value new media potentials that support non-experts in contributing to the human commons of culture and information.

McLuhan suggested decades ago that educators need to detach from nostalgic commitment to the familiar world of print culture in order to meet the needs of students and societies in the age of electronic media (Norden, 1969). Contemporary media theorists have pointed out that electronic literacy builds on print literacy (Jenkins, et al., 2009) and McLuhan by no means promoted abandoning print literacies in schools. However, he believed that unless educators became aware of how electronic media was transforming the world around them, the “television child” would have “no future” in our schools (Norden, 1969). Since then, as McLuhan’s own laws of media describe (McLuhan & McLuhan, 1992), television has become the “content” of digital media. In other words it has been “obsolesced” (read: superseded rather than obliterated) by the new “environment” of computerisation. If, for “television child”, we substitute “Internet child” or “digital native”, McLuhan’s warning becomes this: Unless educators are aware of the electronic media environment our children will have no future in our schools. Whilst, as Banaji and Burn (2007) note, some teachers are unimpressed by the challenges of dealing with creativity and technology, the situation clearly demands consideration rather than disinterest. Educational consideration of the links between creativity and technology involves, among other things, interpreting what commentators really mean by the terms “creativity” or “creative”..

2.3.3 The Creative Economy

The task before us is to build new forms of social cohesion appropriate to the new Creative Age – the old forms don't work, because they no longer fit the people we've become ...

(Richard Florida, 2002, p.xviii)

Increased creative activity at the global level has been identified, not only by media watchers, but by economists as well. Among the most influential perspectives (Andersson & Mellander, 2011) in this respect is the work of North American economist, Richard Florida. In Florida's (2002, 2005, 2010) understanding of the creative economy, contemporary economic patterns are increasingly tied to the activities of a growing "creative class". The creative class refers to a category of workers whose work involves problem-solving, analysis and creating new content. The qualities of creative work and what it produces are often dependent in some way on the presence or absence of intrinsic motivation. Florida's thesis is overviewed here, not to suggest that his views are the only economic views of merit or importance, but because there is evidence that for many industry professionals and teachers, the dynamics of intrinsic motivation are counterintuitive (Frey & Jegen, 2001; Pink, 2009; Reeve, 2002; Ryan & Deci, 2000a). Florida has noted that much of the resistance to his thesis has arisen out of people's incomplete understanding of the nature of creative work and its relation to intrinsic motivation. To understand how student creativity might relate to Australia's "creative capital" (ACARA, 2012), it would seem critical that educators understand how intrinsic motivation may be linked to economic activity and creative work.

Florida (2002, 2005) identifies the emergence of the "creative economy" as a global trend and identifies the "rise" in high-tech societies of an influential, creative social sector with a particular ethos. He has continued to conduct economic analyses on the performance of three categories of workers in high-tech societies: creative, service and working classes. He sees the creative class as instrumental in changing cultural patterns (Florida, et al., 2011).

In his 2002 book, *The Rise of the Creative Class*, Florida charted the growth of creative cities and centres, which have attracted creative talent and creative industry. He observed growth rates there to be eclipsing the growth of industrial style centres. In the foreword to the Australian edition of the book, Cutler asserts that, as Florida observed for the US, the situation in Australia shows a correlation between concentrations of creative populations

and the location of “high tech” industries. Florida (2002, 2005) maintains that the central commodity in the present economic environment, human creativity, is shaping the creative centres themselves. The key to understanding this trend, he argues, is to recognise the nature of creativity and, in particular, the role of intrinsic motivation in creativity.

Florida (2002) defines the core of the creative class as including “people in science and engineering, architecture and design, education, arts, music and entertainment, whose economic function is to create new ideas, new technology and/or new creative content” (p.8). He describes the creative class as a group who share some common characteristics and a common ethos that values creativity, individuality, difference and merit. This ethos, he suggests, is significantly different from the mindset valued or promoted in the industrial age and is intricately tied to changes occurring in workplaces, city environments and population distributions.

In Florida’s (2002) view, creative people doing creative work appear to function best in time flexible, no-collar environments, where they can have some control over their own processes. He observes that work environments are changing. Office layouts are becoming more open, schedules are more flexible and management methods are less rigid. Some new management styles accept that organisations should operate according to the non-linear nature of the natural world, with all of the natural world’s unpredictability and instability (Mansfield, 2003). Others are geared towards supporting worker autonomy (Stone, Deci, & Ryan, 2009).

Florida (2002) contends that the more flexible, no-collar workplace is an adaptation to the rise of creative work. Creative work requires enormous concentration, is often project work, which tends to run in cycles and is hard to turn on and off. It therefore does not respond well to schedules. Creative work is often collaborative, requiring spaces where people can meet to generate ideas. In the creative workplace, flexibility, casual dress and a relaxed atmosphere does not translate into low productivity or low levels of effort. Florida observes that creative workers work the longest hours of all.

The no-collar workplace is also an adaptation to creative people. Florida (2002) suggests that much of the banter or resistance over casual dress codes misses the point that this evolution in work conditions is part of the shift towards environments that both support, and are shaped by, creative work and creative people. He suggests that workplaces

are developing a new code: “The new code is evolving toward none at all, or more accurately, toward a code of diversity and tolerance” (p. 120).

The attitude of diversity and tolerance among the creative class is a feature that registers at the level of economics and geography. Florida (2002, 2005) finds that creative people gravitate to places, which can offer them the lifestyle and diversity of experiences that will nurture their creativity. He suggests that creative people also seek “authenticity” in the venues they attend and in their life and leisure experiences. He has found that the places where creative people live tend to be characterised by diversity, often with high concentrations of Gay and Bohemian residents. Among Florida’s early controversial readings of the contemporary economic landscape, was the contention that concentrated Gay and Bohemian populations provide excellent predictors of economic growth:

A region’s Bohemian concentration in 1990 predicts both its high-tech industry concentration and its employment and population growth between 1990 and 2000. This provides strong support for the view that places with a flourishing artistic and cultural environment are the ones that generate creative economic outcomes and overall economic growth. (Florida, 2002, p.261)

In this view, the creative ethic that values diversity and tolerance transcends social boundaries, so that the places where creative people live and work are places where individuality is accepted.

Another of Florida’s interesting claims is that the emergence of the creative ethos is generating deep divides in high tech societies. He fears that “we may well be splitting into two distinct societies with different institutions, different economies, different incomes, ethnic and racial make-ups, social organizations, religious orientations and politics” (Florida, 2002, p.281). On the one hand is a group that is creative and diverse and on the other a more close-knit, older, church-based society of working people and rural dwellers. Florida argues that a strong creative economy cannot be sustained in such a divided society. His proposed solution to preventing the divides from generating strife and disadvantage is to ensure “that the creativity of the many is tapped and that the benefits of the Creative Age are extended to everyone” (Florida, 2002, p.318).

Thus, in *The Rise of the Creative Class*, Florida is optimistic about the possibilities offered to individuals in an economy reliant on creative work and creativity. He is concerned for those who could be left behind by what he sees as an inevitable change in

the nature of work and signals what could happen if nations fail to recognise the role of creativity in gaining economic advantage. But he is also concerned about possible negative aspects of an economy hungry for innovation and fuelled by creativity.

In his later 2005 book, *The Flight of the Creative Class*, Florida is even more focused on the challenges posed to countries by the global creative economy and the challenges to societies of understanding and managing the social consequences of the concomitant increase in creative work. He argues that the creative shift in the US has been mismanaged and that the creative class members who seek opportunities to “exercise” their creativity are now looking abroad (Florida, 2005). He argues that Australia is well positioned to benefit from the rise of the creative economy as it has a diverse and open culture, which is attractive to creative people. The problem he highlights is that in the present global climate a challenge for any country in a position to benefit from the creative economy is to encourage but also retain creative talent. Another challenge he sees is that creative work brings its own kind of work-related problems. Among them is the lack of understanding that many people have of the nature of creativity/creative work.

In this regard, economists and creativity researchers have noted the potential mismatch between the way creativity works and work management practices based on prevailing economic models (Frey & Jegen, 2001; Mumford, 2000). This may account, at least in part, for the very high levels of stress-related injury occurring in the world’s centres of innovation (Florida, 2005).

The conditions of work in industries geared toward harvesting the creative capacities of workers are often quite different from the familiar nine-to-five model and may be particularly hard on women and families (Thrift, 2001). The tension between creative work and family life has been noted in the creativity literature (Csikszentmihalyi, 1996; Policastro & Gardner, 1999) and is an important consideration for governments, education and industry.

A related issue is that while industry is demanding creative employees and education is attempting to answer the call (Dewett, Shin, Toh, & Semadeni, 2005; Reid & Petocz, 2004), there is a great deal yet to be discovered about how well employee creativity is being utilised, encouraged or managed at work. Florida (2005) points to the enormous personal, social and organizational costs that lie ahead if society as a whole does not come to terms with the issue of managing creativity in the workplace. He notes that

organizations are “scrambling” for solutions to the problem of anxiety and stress in the workplace and states emphatically that, “if we don’t appreciate the underlying motivations of creative people, we can’t think intelligently about work, period” (p.77). Florida observes that although creativity researchers have long recognised that intrinsic motivation underlies complex creative activity, many people do not recognise the underlying motivations of creativity. This, he contends, has been responsible for much of the misunderstanding around his creative economy thesis.

The response of universities to Florida’s creative economy thesis illustrates the importance of accurately understanding the basis of his reasoning. At the university level, the economic imperative seems to be often interpreted as a call to make creative students and commercialise outputs (Evans & Kamler, 2005). Attention has been focused on the doctorate as a site for generating needed innovation to boost the economy (Hockey, 1996; Usher, 2002). This perceived need has fuelled a push towards shorter and/or “professional” doctorates (Park, 2005). But Florida has met the development of a more industry-oriented, professional doctorate with, what Laing and Brabazon (2007) describe as, “disquiet”. His reasons for concern are partially revealed in a collaborative paper, which cautions against the movement that seeks “to make universities “engines of innovation,” and to enhance their ability to commercialize their research” (Florida, Gates, Knudsen, & Stolarick, 2006, p.1). Florida and colleagues point out that this view of the function of universities misses two things: There is not, first of all, a direct and discrete line of flow from university innovation to commercial innovation and secondly, universities make their contributions to social capital and the economy in deeper, more subtle ways: “By creating social environments of openness, self-expression and meritocratic norms, universities help to establish the regional milieu required to attract and retain talent and spur growth in the Creative Economy” (Florida, et al., 2006, p.17). In other words, they are concerned that the very aspect of university environments that makes them well-springs of creativity is in danger of being squeezed out by excessive concern with commercial interests and misinterpretation of their role in the creative economy.

Florida et al. (2006) present analyses of economic and demographic data showing that the economic and social function of the university is maximised when it performs as a “creative hub”, facilitating the flow of technology, talent and diversity within regional creative “ecosystems.” Florida (2002) earlier argued that creativity is a driving force or energy, which is driving economic growth and can be harnessed to fuel both social and

economic development. Florida et al. (2006) recommend that for optimal regional growth universities, local authorities and regional industry should work toward increasing their local region's capacity to absorb its innovations and talent. In other words, attract and build the talent, but also retain as much of it as possible. The catch is, as Florida (2005) has stressed, that in order to attract, keep and mobilise creative talent while avoiding the potential economic and human damage, which can be caused by overemphasis on the commercial interest in creativity, it is necessary to understand creativity and what motivates creative people. Florida (2005) throws down this challenge: "The society that can build the most productive and efficient mechanisms for harnessing human creative energy will move ahead of those continuing to make a fetish of the greed motive" (p.78).

In his advice to universities, Florida is again highlighting what he perceives as a lack of understanding that surrounds both creativity and his thesis. The principal shortfall in understanding, which he discerns, concerns the relationship between intrinsic motivation and creativity. As he sees it intrinsic motivation is a key driver of economic growth. Thus although Florida perceives that his work has focused attention on the creative economy, he sees also that attention is more often focused on product outcomes than on his broader message, which is about the involvement of intrinsic motivation in both innovation and the evolution of a socially influential "class". These aspects of creative economies are seen, by him, as potentially beneficial and potentially problematic given that intrinsically motivated processes and people benefit from specific kinds of handling. Creative work differs from the kind of work commonly performed in the time period from the industrial age to the present one and, according to Florida, understanding it is a major challenge for organisations and education in a world where it is recognised that creativity is increasingly implicated in both the nature of work and each nation's or region's capacity to be economically competitive.

2.3.4 Creativity East and West

It is sometimes too easy to resort to simple concepts and presumptions in explaining Asians' behaviours and the comparison of differences between East and West.

(Lau, et al., 2004)

Some scholars and educators have pondered what it means for the Western interest in creativity if, as some commentators have indicated, Eastern and Western views of

creativity appear to differ. Contrasts between collectivism and individualism are often raised in these discussions. Collectivists are said to see themselves as part of a whole and motivated by collective norms and duties, whereas individualists are motivated more by preferences and needs (Triandis, 1995). Eastern countries are often described as collectivist and collectivism is sometimes seen as antithetical to “creativity” as conceptualised in the West. Craft (2003) sees this situation as presenting Western educators with a dilemma. Some authors and researchers have entered into debates over whether the Western position on creativity and related constructs, such as individualism and autonomy, represents an ethnocentric or even colonialist attitude (Chirkov, 2009; Chirkov, et al., 2003; Deci & Ryan, 2000; Oishi, 2000).

However, there are variations in the extent to which, and on what grounds, Eastern and Western views of creativity are seen to differ and as Shaheen (2010) points out, if creativity is now important for economic competitiveness, most countries would probably want to compete. This might mean that each country will be faced with its own specific kinds of challenges in respect of participating in the global creative economy – but it would not mean that creativity would have no relevance for them. Another consideration around the issue of Eastern and Western views of creativity is the global effect of mass media. Current theory and research suggests that rapid change in global use of mass media is likely to result in a shift towards more “individualistic” or Western styles of thought and self-representation (Triandis, 2006). One of the educational challenges in this respect for countries high in collectivist outlook might be coping with loss of cultural identity and the grounding aspect of tradition – but again it would not mean that creativity has no relevance for those countries.

Lubart (1999) and Lubart and Georgsdottir (2004) contend that the Western view of creativity tends to focus on products or work that is novel and appropriate whereas in Eastern countries an alternative view is more commonly expressed. Lubart and Georgsdottir (2004) describe this Eastern view as relating to “a state of personal fulfilment, a connection to a primordial realm, or the expression of an inner essence or ultimate reality” (p.36) – and they describe this as a much more internal focus than the view more commonly expressed in the West. Lubart (1999) reviewed research which focused on groups of non-Western artists and religious spiritualists. He observes that culture plays a role in dictating the kinds of activities in which creativity is allowed. Where there are

taboos or norms that constrain how people are expected to deal with particular content, such as religious artefacts and traditions, creativity may not be allowed.

However, Paletz, Peng and Li (2011) argue that the research indications from cross-cultural work around collectivism-individualism run counter to Lubart's (1999) assessment that the common Eastern conception of creativity is more internal than the common Western conception. They suggest that in the West, where individuals are more likely to be individualistic, internal and analytic in their thinking styles, creativity conceptions would most likely focus on inner experience and self-awareness. In the East, where individuals are more likely to have a collectivist, holistic and somewhat external focus, creativity is more likely to be seen in the external world, in actions, leadership and socially valued products. These more external expressions of creativity, the authors argue, would be associated with such personal characteristics as productivity and social influence. They argue for a more complex set of distinctions than that proposed by Lubart: "Thus, the internal-external distinction overlaps both with an individual-collective dimension and other, related issues, such as the process-product dimension, the impractical-practical dimension, and the degree to which an activity is valued by society" (Paletz et al., 2011, p.85).

The view expressed by Lubart (1999) and the view expressed by Paletz et al. (2011) appear contradictory. Paletz and Peng (2008) argue that a problem can be seen with Lubart's view in that it compares "anthropological data and ancient philosophical works from Eastern countries with ideas held by modern Western (generally American) psychologists" (p.287). As Paletz et al. (2011) state, the review "compared Western *explicit* theories of creativity with Eastern *implicit* theories of creativity" (p. 85). In other words, they argue that it is inaccurate to take the Western scientific definition of creativity as being representative of the implicit theories of creativity held by Westerners in general.

In a study of college students' conceptions of creativity, which used quantitative methods, Paletz et al. (2011) found mild tendencies in support of their hypothesis that Eastern implicit theories of creativity would be more externally focused and Western implicit theories more internally focused. They also found indications of some similarities between some groups in both cultures. Unfortunately, this quantitative work by Paletz and colleagues seems to be limited by the problems of studying conceptions using questionnaires and checklists. Although it may be possible to say, as they do, that Anglo-Americans tend to select artists as creative, whilst, for example, Asian Americans tend to

select political leaders as creative, this observation still leaves many questions as to why such attributions are made. It may be that the conclusions of Lubart (1999) and the conclusions of Paletz et al. (2011) are both in some measure descriptive of the situation. Paletz et al., conclude that there needs to be further elaboration of the external-internal dimension in order to plan additional, more illuminating studies.

There are a number of aspects of the literature around cross-cultural implicit theories and approaches to creativity, which warn against taking a simplistic view of cultural differences in this respect. Firstly, as Paletz and Peng (2008) remind their readers, although China and Japan are often “lumped” together as Eastern, not all East Asian cultures are the same. Secondly, according to Triandis (2011), the mindsets which may be described as collectivist and individualist are not confined to specific countries but may be observed to differing extents in both Eastern and Western countries. This situation, he argues, is not fixed, but is subject to changes in education systems and levels of education in the populace, exposure to other cultures and, significantly, exposure to the mass media:

Mao’s China was collectivist in most domains but in the 21st century China is individualist in economics and aesthetics. Second, one must consider demographic factors. Specifically, age, gender, social class, education, amount of contact with other cultures, and exposure to the modern mass media can change the position of a sample on any of these dimensions of cultural variation. For example, lower class samples in many cultures are more collectivist than upper class samples in all cultures (Kohn, Naoi, Schoenbach, Schooler, & Slomczynski, 1990), so that an upper class sample from a collectivist culture might be more individualist than a lower class sample from an individualist culture. (Triandis, 2011, p.7)

To Triandis' observations might be added the media theory perspectives of Walter Ong and Marshall McLuhan which were elaborated earlier. It could be that the cultural effect identified as collectivism is, in large part, residual oral conservatism (Ong, 1982). On this basis, a shift towards the dispositions described, by Ong, as greater internality and reflectiveness, might be expected in collectivist cultures as education systems evolve in the new media environment and the mass media continues to permeate life-styles worldwide. Such a shift, if Ong was accurate in his observations, would stem largely from changes in perspectives on knowledge. The availability of information brought about via the affordances of new media would likely bring about an alleviation of the necessity to conserve knowledge. Bruns (2011) has also discussed this and describes this trend as a shift from seeing information as a scarce resource to seeing information as abundant. He

argues that this shift is engendering a changed relationship between learners and traditional sources of information.

Some studies of Asian teachers' attitudes towards creative students are certainly suggestive of intra-cultural variation in Asian teachers' conceptions of creativity --although this is not the explicit finding of the studies. Ng and Smith (2004) found that conservative-autocratic Asian teachers accustomed to the Confucian tradition dislike "creative" students: "nice" students are docile and passive and accept the authority of the teacher, thus disruptive students are creative/creative students are disruptive. They found that liberal-democratic teachers were more tolerant of challenging creative behaviours of students. Ng and Hor (2005) examined the view that liberal-democratic teachers cope better with creative students because they tend to exhibit more creative attitudes themselves and possess greater emotional intelligence than conservative teachers. They suggest that on the strength of these qualities the liberal-democratic teachers are more flexible and able to cope with creative students. Although these researchers observe that liberal-democratic teachers are more likely than conservative teachers to persevere in trying to liberate the "creative spirit" in students they do not explain whether the two groups of teachers have the same or different understandings of creativity in mind. The researchers link the style of the teachers to their effectiveness in dealing with creative students but they do not explore the question of differences in the conceptualisation of creativity.

Of additional interest for this debate about possible differences in East-West understandings of creativity is a growing body of research which shows that, intrinsically motivated or autonomous processes engender a sense of well-being irrespective of a person's culture (Asakawa, 2004; Chirkov, 2009; Chirkov, et al., 2003; Deci & Ryan, 2000). Studies across many cultures have shown that autonomous functioning reliably enhances people's sense of wellness and conduces towards positive outcomes for learning and performance (Chirkov, 2009). Chirkov (2009, p.257) concludes that far from being an ethnocentric Western construct, autonomy is "an essential condition for all people to flourish and grow." He argues that autonomy research provides an empirical basis for the cross-cultural promotion of autonomy on ethical grounds:

This proposition concerning the universality of autonomy is a fundamental humanistic thesis that has been endorsed by leading humanitarians and social scientists across various nations and times. Empirical research based on SDT strongly supports this proposition. (Chirkov, 2009, p.257)

He argues further that the claim that some people or cultures “prefer authoritarian ruling and control” represents a shallow reading of cultural dynamics.

Some research work focused on the facilitation of creativity/innovation in an Asian context, indicates that autonomy is both conducive to innovation *and* compatible with Eastern values. Liu, et al. (2011) have shown that autonomy-support functions to increase innovation in the Chinese context, just as it has been shown to do in Western contexts. The finding from their studies is that when autonomy, characterised by the authors as “harmonious passion,” is operationalised through autonomy support in the organisational environment it translates into job creativity. They found that autonomy support had a positive influence in converting weak individual autonomy orientations to stronger autonomy orientations and suggest that the support of harmonious passion would be, not only economically advantageous but also, socially advantageous, for China.

From this perspective, to the extent that creative acts or activities involve autonomous processes, creativity would be no less beneficial to individuals in one culture than in another. Furthermore, to the extent that the global creative economy engenders a cultural climate, which values creativity, we might expect an increase in opportunities to act and work in ways that are consistent with authentic goals (autonomy). Indeed, it is an aspect of Richard Florida’s thesis that he regards the potential benefits for people, in the increasing incidence of economically beneficial creative work, as being related to the integral role of intrinsic motivation (autonomy) in creative work:

Perhaps the most incredible thing about the creative age is that it holds the possibility not only for economic growth and prosperity, but also for a much fuller development of human potential in general ... In short people love to do creative work; it’s what we’re about. (Florida, 2005, p.27)

He conceptually grasps relationships between intrinsic motivation and the regulatory norms and values of creative people and beyond this envisions social benefits deriving from the expression of humanitarian/egalitarian values at a socially influential level:

The Creative Class is the norm-setting class of our time. But its norms are very different: Individuality, self-expression and openness to difference are favoured over the homogeneity, conformity and “fitting” in that defined the organizational [sic] age. (Florida, 2002, p.9)

Thus whilst Florida does not directly discuss his view of creativity in terms of authenticity and autonomy, his descriptions of the “creative ethos” and emphasis on a view

of creativity as involving intrinsic motivation suggest that a view of creativity as autonomy is very much what he has in mind. When this view is in turn related to the earlier mentioned body of research concerning the benefits of autonomy for humanity, Florida's particular argument for potential global benefits from the global creative economy is strengthened. The force of objections that the East stands to gain less from the creative economy than the West would need to be assessed with reference to the particular views of creativity contained in those arguments.

With these aspects in mind it seems reasonable, when interpreting discourse around "creativity" in the cross cultural context, to first of all be cautious about the kinds of broad claims that are made about differences between Eastern and Western conceptions of creativity. If one takes Triandis' view on board it seems as reasonable to expect that *intra*-cultural differences in creativity conceptions might be linked to collectivist-individualist or externally-internally focused dimensions within *both* Eastern and Western countries. Furthermore cross-cultural similarities between particular groups could be expected, such as between highly educated Eastern and Western people. But, it seems that, irrespective of culture, developmental benefits can be expected from the experience of autonomy.

2.4 SUPPORT FOR STUDIES OF CONCEPTIONS OF CREATIVITY

The previous part of the review has taken a broad overview of some of the arguments currently informing educational discourse around how creativity is relevant to education. The review has so far highlighted psychological and educational arguments for the importance of creativity as an aspect of student's development, cognition, quality in learning, quality in life and capacity to deal flexibly with contemporary social conditions. A number of influential perspectives on how creativity is linked to technology and cultural change have been discussed. Richard Florida's perspective on the creative economy, the changing nature and challenges of work and the role of creativity in driving contemporary economies was outlined. Some current thinking on differences between Eastern and Western conceptions of creativity has been observed.

The reviewed arguments and issues cannot be seen as explicating the full range of reasons for giving attention to creativity in education. However they can be seen as supportive of the view that shaping educational provision in a way that is fully responsive to these aspects of contemporary cultural discourse around creativity will be dependent on the capacities of teachers to interpret the meanings of creativity expressed. Teachers will

need to evaluate the degree to which such arguments represent issues important enough to be dealt with within schools. For example teachers would need to see that there are potential links between the creative use of new media and the required changes in educational provision. The consequences of not seeing these links at all could be potentially damaging for education. However, seeing the arguments implicates accurately apprehending the meanings of creativity being discussed.

Arguments in which the notion of creativity is discussed are not necessarily consistent in their use of the term nor do descriptions of creativity by different authors necessarily reflect similar meanings. However, within the reviewed literature a number of areas suggest the importance of apprehending the nature of autonomous motivation in order to appreciate how such motivation may be linked to innovation and contemporary trends relating to the use of new media technologies. For example, in order to assess whether the produsage of quality cultural content could conceivably emerge from hobbyists it would be helpful to recognise the role of intrinsic interest in gaining knowledge. It is therefore suggested that teachers would need to have some grasp on the relationship between autonomous motivation, creative processes and products in order to effectively engage with creativity discourse and consider what is required in teaching for a world in which creativity is a driver of rapid cultural change (NACCCE, 1999). However, the value and dynamics of autonomous motivation, especially intrinsic motivation, are often misunderstood. On this basis alone, the question of how teachers experience, conceptualise or understand creativity, which is central to the present thesis, is an important one. From a policy and training point of view it is not only important to understand how teachers conceptualise creativity, it is also practical, in the interests of building the resources that could help teachers in their role as interpreters of creativity discourse, to begin to build understanding of the various ways in which creativity is understood.

2.5 ADDRESSING THE IMPERATIVES VIA EDUCATION

Much commentary indicates that addressing these “big picture” issues implicates changes to educational provision that are extensive and challenging (Bruns, 2011; Burnard & White, 2008; Craft, 2008b; Jenkins, et al., 2009). The full extent of these recommended changes cannot be discussed here. However it seems important to acknowledge some perspectives in order to convey the general nature of the implicated changes. As the enhancement of student creativity is specifically treated later in the review some strategies outlined here do overlap with strategies discussed in the later section. However, as much as

possible, comment in this section is confined to consideration of what may be required in respect of the information society and creative work.

With respect to the teaching for the information society there are many aspects to consider. Of particular relevance for teachers is the observation that a “user-led” environment, in which content is produced and shared via the electronic media, implicates change in teachers’ knowledge, their understanding of their teaching role and their perceived status as “experts” (Bruns, 2011; McWilliam, 2009). The main thrust of Bruns’ (2011) argument is that in order to assist students to become reflective, informed, and critical, thus competent, “producers” of user-led content, teachers themselves need to develop “thorough” and “systematic” understanding of workings of user-led environments. He argues further that teachers would need to understand that the common perception of teachers’ privileged roles as experts is increasingly challenged by the growing quantity of quality information and expertise generated outside formal educational contexts. Bruns argues that rigid teacher/learner dichotomies are not appropriate to teaching for complex user-led information environments, as teachers would not thereby be modelling the more fluid processes of user-led produsage. Furthermore, such practices stand to be rejected by students as irrelevant and antiquated. McWilliam (2009) makes a similar argument that teachers need to move from the position of “sage” to “meddler” in order to facilitate deeper learning and problem-solving capacities.

Jenkins, et al. (2009) discuss change to educational provision in terms of educating for “participatory culture”. They identify new technical and thinking skills, skills for cultural participation and social awareness around the effects of widespread cultural participation as important areas for development in schools. They recommend that teaching for contemporary participatory culture implicates engagement with contemporary issues related to new media and cultural change. They argue that the challenges of teaching for an information society are not limited to the Information Technology subject areas. From the perspective of these authors, education for the challenges of participatory culture requires whole school approaches and community supports. The goals of education for participatory culture, in their view, involve the development of more than skills and knowledge. They argue that attention should be given to the ethical frameworks and self-confidence necessary for full participation in contemporary culture. They discuss the need for flexible, creative thinking skills and attitudes. The following list is their summary of important

needed skills and illustrates the extent of curricular change as envisioned by experts in the field of new media studies:

Play — the capacity to experiment with one’s surroundings as a form of problem-solving

Performance — the ability to adopt alternative identities for the purpose of improvisation and discovery

Simulation — the ability to interpret and construct dynamic models of real-world processes

Appropriation — the ability to meaningfully sample and remix media content

Multitasking — the ability to scan one’s environment and shift focus as needed to salient details.

Distributed Cognition — the ability to interact meaningfully with tools that expand mental capacities

Collective Intelligence — the ability to pool knowledge and compare notes with others toward a common goal

Judgment — the ability to evaluate the reliability and credibility of different information sources

Transmedia Navigation — the ability to follow the flow of stories and information across multiple modalities

Networking — the ability to search for, synthesize, and disseminate information

Negotiation — the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms.

(Jenkins, Clinton, Purushotma, Robison, & Weigel, 2006, p.4)

Some of these skills involve autonomous motivation: *play*, for example, is a prototypically intrinsically motivated activity (Ryan, 1995). Other skills in the list, such as *distributed cognition*, *collective intelligence* and *appropriation* would clearly benefit from intrinsic interest and independent thinking rather than merely rote learning skills. Moreover, understanding the educational value of these processes and skills and why they are integral to life and work in the contemporary world requires an understanding of autonomous motivation, its relation to the skill, its role in bringing about the kind of cultural milieu in which such skills are required/developed – and its value to the student.

Jenkins et al., (2006) describe a classroom that encourages *distributed cognition* as one that “encourages students to participate with a range of people, artefacts, and devices” (p.39) and “to acquire patterns of thought that regularly cycle through available sources of information as they make sense of developments in the world around them” (p.38). To encourage skills of this type, teachers themselves would need to value such fluid, flexible, meaning-seeking modes of thought.

Some of the skills listed above, such as *collective intelligence*, may conflict with present educational practices, such as evaluation practices in schools and universities. Mobilising *collective intelligence* involves working as part of a collaborative team. Jenkins et al. (2006/2009) point out that, in organisations, teams are often formed to deal with a specific problem. When working in teams within organisations, team members are often required to organise themselves and develop operating structures in an ad-hoc way. They may then disband and move to a different team with different members. Jenkins et al. (2006, p.41) observe that “schools do an excellent job, consciously or unconsciously, teaching youth how to function within bureaucracies. They do almost nothing to help youth learn how to operate within an ad-hocracy.”

In teaching for the imperatives of the *creative economy* there is much overlap with teaching for the imperatives of the electronic/information society as the skills required for creative or knowledge work are now often networking and IT skills (Dewett, 2003). But Florida’s (2002, 2005) argument is strongly focused on intrinsically motivated creativity. It is here that he sees, both, the greatest opportunities for people to experience the benefits of living at a time when creative work is common – and also some of the greatest challenges.

It may be beneficial to students and teachers to discuss creativity and its processes openly in the school context. Open discussion of creativity may be one of the strategies schools can implement in respect of Florida’s assertions that something needs to be done to combat the rise of stress related injury in the workplace. Long term creative processes often involve common stages and emotions and students may benefit from knowing about these elements in advance of any creative work they may undertake (Shaw, 1994). Shaw (1994) states: “it might aid students substantially in knowing that the process they are involved in is similar for all practitioners, no matter what stage of development they are in” (p.41). Fensham and Marton (1992) argue that meta-cognition and intuition, which are important to scientists and other people involved in high level problem-solving work, are largely neglected in schools. Reid and Petocz (2004) have also suggested that teachers in

various disciplines might discuss with students the meanings of creativity as they are envisioned within each discipline. They recommend that educators need to think about the role creativity plays in their discipline, examine their own understanding of creativity, set up situations where teachers and students can discuss ideas about creativity in the discipline and ensure that activities and assessments provide opportunity for creativity. Building greater openness, in the school context, about internal processes and about creativity may be a useful step towards giving the creative process shape and substance in the minds of teachers and students.

Much scholarly opinion supports the view that environment is important in fostering creativity. Florida (2002), for example, has argued that universities contribute to the creative economy in their role as creative hubs of ideas and talent, but that the university environment needs to provide support for the growth of intrinsic motivation. In a study of the effects of university environment on university teacher creativity, Ryhammar (1996) found that university teacher creativity is tied to the university climate. Ryhammar and Brolin (1999) report that creative activity within the university was supported in a climate with a high degree of freedom and debate and hindered by the presence of a high degree of emotional tension and a lack of openness in teachers' contacts with one another. Conditions of openness, diversity, flexible leadership and low strife have generally been found to be favourable to creativity in organisations (Klijn & Tomic, 2009). It seems reasonable to suggest, then, that a challenge for schools would be to maintain environments conducive to the autonomy of both teachers and students. An open, diverse and flexible school climate would seem to be an important aspect of structuring educational provision for contemporary conditions.

However, there appear to be significant obstacles to maintaining school environments conducive to autonomy (Craft, 2008a; Craft, et al., 2012; Reeve, 1998; Stone, et al., 2009). Stone, Ryan and Deci (2009) have commented that although it has become almost commonplace in schools and business organisations to find acknowledgement of the value of autonomous motivation, for some reason it is rare to find that this rhetorical demonstration is actualised within the organisation itself. They argue: "Unfortunately, we observe many managers and academics who doggedly cling to the now discredited tools of command-and-control methods" (Stone, Deci and Ryan, 2009, p.2). These authors suggest that the problem may lie in the difficulty of implementing autonomy supportive strategies. But it seems pertinent to wonder, in light of their observations, whether people would

“doggedly cling” to discredited command-and-control methods if they truly valued autonomous motivation?

An important concern with respect to tailoring school climate in a way that nurtures autonomy is the issue of evaluation. If an objective of supporting creativity is to support autonomous motivation, research indicates that care is needed to ensure that evaluation regimes in schools do not encourage shallow teaching and learning strategies (Ryan & Deci, 2000c). The explicit arguments of Delis et al., (2007), noted earlier, suggest that adjustments to current assessment practices are called for if students’ more “creative” cognitive capacities are to be identified and given the best chances of development. This may be one type of assessment which teachers with an interest in creativity would regard as necessary, whereas, as Lucas et al. (2012) have observed, some teachers may be wary about assessing other aspects or kinds of creativity. Different aspects of creativity may require different types of evaluation. Deciding evaluation strategies and which types or aspects of creativity to evaluate would be one of the important areas to be addressed within school and disciplinary contexts.

Craft (2008a) argues that it is important to commit to the challenge. She contends that educators need to be looking “beyond current horizons”, that doing so will require commitment, co-participation with other teachers and will “pose significant demands to visionaries as well as to practitioners” (Craft, 2008a, p.10). Past creativity initiatives in education appear to have suffered from lack of commitment, as indicated by the waxing and waning of educational interest in creativity over the course of its various incarnations (Craft, 2008a).

Burnard and White (2008) argue that supporting and sustaining teachers is an important practical consideration in implementing the current extensive changes to educational provision:

Professional pedagogical practices that foster and promote student creativity cannot be expected from teaching assistants and bureaucrats. Such practices are those arising from the professional artistry involved in valuing the process and outcomes of risk-taking, problematising knowledge, journeying from the known to the unknown, and sharing the process of education with students (Craft, 2005). If this longer-term thinking about our educational future is not pursued, and teachers are not professionally sustained, then the distressingly high numbers of teachers leaving the profession (in the UK and Australia) can be predicted to continue (Everton et al., 2007; Australian

Council of Deans of Education, 2005, pp. 33–36) ... While the policies of both countries reflect the particular dynamics of an information society as well as the global economy, both remain oblivious to the importance of teacher autonomy and transformative professionalism (Burnard and White, 2008, p.677).

As teaching for the skills outlined in the foregoing discussion may mean that teachers have to invent practices in various subject areas, teachers will need room for flexibility within their roles in order to take risks and experiment. As quoted above, Burnard and White point out that teachers will be moving from concern with what is easily measured to dealing with greater ambiguity – a major challenge in itself. They argue for giving teachers greater “autonomy”, by which they mean allowing teachers to make decisions about the what and how of teaching in their classrooms on the basis of their professional understandings. But as has been pointed out in this thesis, with respect to the support of creativity, this is also a problematic idea given the current lack of definitions and resources to help teachers in this work.

2.6 THE VALUE OF CREATIVITY: MANY DIRECTIONS OF CREATIVITY RESEARCH

It seems incontrovertible that educational futures need both to be inherently creative and also to enhance the creativity of children and young people – and of the adults who work with them. Educational futures however both reflect and construct the wider societal context and to this degree, the multiple futures that may be constructed or emerge, may reflect a variety of wider scenarios from environmental, health, conflict-based or economic collapse to more positive possibilities

(Anna Craft, 2008a)

The previous sections of the review have explored how creativity is seen, by various observers, to be implicated in contemporary cultural change. It was shown that the literature reflects a variety of different meanings of creativity. Furthermore, it is possible to see reflected in these arguments about creativity and meanings of creativity different criteria of creative value: the value of creativity may be seen to lie in what it produces and/or it may be seen to lie in process benefits to the person who creates. Some authors show concern with the social value dimension – that is, concern with what creativity means for social cohesiveness and harmony. But how one sees creativity, production, society and individuality, undoubtedly makes a difference as to how one might understand the relationships between creativity and society.

Anna Craft's (2008a) statement, quoted above, sets the scene for the present part of the literature review for it exemplifies the level of certainty, which many scholars presently express concerning the need for teacher and student creativity in education, whilst it juxtaposes that certainty against a vision of the future as inherently uncertain. If teachers cannot be certain about the future, then, in order to support creativity they would need to believe in the value of creativity itself, which leads to the issue of what is currently known about the value of creativity for individuals and for society. The focus of the review now turns to the issue of value in creativity and explores what is known about the value of creativity with reference to the research literature. However, the diversity of views of creativity which can be found in this literature, serves to further underscore the issue that creativity is a poorly defined construct.

The review now addresses:

- Types of creativity research
- Intrinsic motivation and autonomy
- Creative cognition
- Creative personality
- Psychopathology
- Diversity and marginality
- Spirituality, religion and creativity.

2.6.1 Types of creativity research

Creativity has been investigated using a variety of frameworks and methods. According to Plucker and Renzulli (1999) the majority of creativity studies can be categorised under five headings: psychometric, experimental, biographical, historiometric, and biometric. In recent times, computational approaches have also contributed to creativity research (Mayer, 1999). A problem for teachers and other professionals accessing this literature is that the different research interests contribute to a confused and fragmented view of creativity (Amabile & Hennessey, 2010).

Psychometric approaches view creativity as “a mental trait that can be quantified by appropriate measurement instruments” (Mayer, 1999, p.452). Psychometric research uses quantitative measurement and controlled environments. Creative ability is assessed using

test instruments, such as tests of divergent thinking ability – that is, the ability to make “remote associations” between disparate ideas. These measures are then used to compare people who score high and low in creativity and to determine relations to other measures – such as, of the environment.

Psychometric approaches were employed as early as Galton’s investigations into hereditary genius in the late 1800s (Albert & Runco, 1999; Plucker & Renzulli, 1999). There is consensus in the literature that psychometric approaches were the most prominent type of investigation into creativity from around 1950, when Guilford (1950) convinced the scientific community that creativity was an important area for study, until somewhere around the 1980’s when new interests in creativity arose (e.g. Amabile, 1983) and interest in psychometric studies declined. Gruber and Wallace (1999) suggest that there is little evidence concerning divergent thinking in highly creative people. Nor is it clear, they argue, “how the ability to produce many ideas is related to the ability to produce a few superb ones” (p.95).

Nevertheless, Plucker and Renzulli (1999) consider that psychometric research still offers valuable information to the field. They argue that it is important to understand the merits and limitations of all available methods. The predominance of psychometric approaches to the study of creativity until recently is, however, a potentially confusing aspect of the creativity literature for students of creativity for the literature reflects approaches which treat creativity as “innate”, while there are others, for example, the social psychology approach to creativity research, which treat creativity as a common potential (Collins & Amabile, 1999).

Experimental approaches to the study of creativity manipulate and control variables in order to reduce the complexity of creativity to a manageable level and to observe induced changes in performance (Runco & Sakamoto, 1999). Runco and Sakamoto explain that, in this respect experimental studies differ from psychometric studies, which focus on individual differences that exist without experimental manipulation.

Biological or cognitive neuroscience approaches “seek to determine the physiological correlates of creative problem solving” (Mayer, 1999, p.456). They look at what is happening in brain and body while creative problem solving is occurring.

Biographical studies provide a qualitative narrative of a case history of a creative person, or people, and then apply analyses to the data. Gruber and Wallace (1999) describe

this kind of approach as a “commitment to the study of the creative process, to the study of the creative person at work” (p.95). In contrast to the controlled environments and experimental manipulations of psychometric and experimental approaches, biographical methodologies investigate creativity in authentic environments (Mayer, 1999).

Historiometric studies apply “powerful” quantitative analyses to historical data (Runco, 2004a). Simonton (1999) describes historiometry as the “scientific discipline in which nomothetic hypotheses about human behaviour are tested by applying quantitative analyses to data concerning historical individuals” (p.117).

Computational approaches to creativity are based on the idea that creative thinking can be modelled using computer programs. Underlying this approach is a view of creativity and creative thought as mental computation (Mayer, 1999). A strength of the computational approach is its precision. However, there is debate concerning just how much computer models can inform about cognition by reducing it to mathematics, as this type of investigation fails to address non-cognitive aspects of creativity.

A fuller understanding of “creativity”, as a phenomenon, therefore requires that a range of approaches to creativity study be taken into account. Taking any one approach as the way to define creativity could, as Feldman (1994) suggests, have the effect of distorting one’s picture of creativity. It could be argued that few people have the available time to canvass and synthesise the amount of literature necessary to try to form a coherent view of the subject. If creativity has been seen, by educational scholars, as a “slippery”, indefinable or unstable construct (Bleakley, 2004; Ellis & Barrs, 2008; Gibson, 2005; Spendlove, 2008), it is hardly surprising. Nonetheless, as summarised in the following section, creativity research has accomplished some important “myth-busting” work, managing at least to show that creative acts and work are not confined to special people. In carrying out their interpretive role this is an important understanding for teachers for it has been observed, that, within education, creativity is often seen as dependent on innate talent and is therefore thought of as being relevant to the few rather than the many (Collins & Amabile, 1999; NACCCE, 1999).

2.6.2 Some common creativity myths “busted”

By the early 2000s reviews of the creativity research literature by leading creativity researchers (Runco, 2004a; Simonton, 2000a) indicated that a number of persistent myths about creativity could be laid to rest. These mysteries had guided researchers to investigate

such propositions as whether or not creativity is a mainly “right brain” activity involving divergent thinking, whether there is a relationship between intelligence and creativity and whether creativity requires special abilities. These reviewers suggest that the research supports a view of creativity as a “common potential” with value for both individuals and the wider society. Among the empirically supported understandings about creativity reported by Runco (2004a) and Simonton (2000b) are the following:

- Creativity is not a right-brain activity. It involves whole brain activity requiring divergent and convergent, generative and analytic forms of thinking, in order to produce novel concepts and evaluate them for appropriateness, usefulness or value.
- Creative thought is a capacity of almost everyone because it involves ordinary cognitive processes.
- Exceptional talents and creative activity are most often developed through practice and the attainment of well-developed skills and a rich body of domain-relevant knowledge.
- Consideration of the relationship of intelligence to creativity should also take account of such specific intelligences as emotional, musical, bodily-kinesthetic, interpersonal and intrapersonal.
- The development of creative potential requires the simultaneous contribution of both nature and nurture.
- Creative outcomes are favoured when individuals perform a task for inherent enjoyment rather than for external inducements.
- Original contributions to a field generally do not occur in isolation, but within a context of domain-specific rules and skills, other operators in the field, and wider socio-cultural circumstances.
- Simonton (2000) stresses that there is a relationship between creativity and cultural diversity.

These findings suggest that, whatever the value of creativity is, it lies within the reach of everyone and, therefore, the potential for creative production is spread across a populace, rather than isolated within a smaller group of exceptional people. However, it is notable that even taken as a whole, these understandings do not clearly convey what creativity is. Runco (2004a) indicates that the exact nature of creativity remains elusive.

The issues, which Amabile and Hennessey (2010) raise concerning the fragmentation of present day creativity research suggest that that situation has not yet changed.

There is, however, at least one finding from the creativity research literature which appears to speak to a common creative value amidst findings from a number of varying research directions and interests. This is the assertion that creativity often involves an intrinsically motivated or autonomous process. It appears that where a creative process is intrinsically or authentically motivated it is often experienced as valuable and tends to have valuable consequences in terms of learning and development. In the next section the theoretical aspect of intrinsic motivation and its role in creative processes is described.

2.6.3 Intrinsic motivation and autonomy

*“The reason I can work so hard at my writing is that it’s not work for me ...
Work is pleasure to me”*

John Irving (as quoted in Amabile, 2001).

There is a great deal of support for the opinion that intrinsic motivation is an important ingredient, if not the key ingredient, in complex creative endeavour (Albert & Runco, 1999; Amabile, 1983; Hennessey, 2000; Nickerson, 1999; Raven, 2002). Intrinsic motivation refers to the sense of doing something for the pleasure and satisfaction of performing the task itself: it “exists when people freely choose to perform an activity out of a sense of interest” (Burton, et al., 2006, p.750). In the context of the present thesis, it is important to include research and theory around intrinsic motivation in the literature review as this body of work supports the reader’s interpretation of the findings from the study. Furthermore this body of research relates to the rationale for the study, because many people regard it as counter-intuitive that intrinsic motivation is important in the performance of creative work (Florida, 2005; Pink, 2009) Therefore it is important to illuminate the relationship between intrinsic motivation and creativity in order to demonstrate that knowledge of this relationship is critical for accurately interpreting some key areas of creativity discourse.

The role of intrinsic motivation in creativity was noted at least as long ago as Galton’s (1869) studies of hereditary genius (Albert & Runco, 1999) and its importance for creativity has been consistently confirmed in experimental studies (Collins & Amabile, 1999). More recently, it has been shown that autonomous motivation, whether intrinsic or integrated is important in creativity. Integrated values/goals are those values and goals

which are fully endorsed by the “self” and therefore a person experiences a sense of freedom and autonomy in carrying them out (Ryan & Deci, 2006). While it is clear that intrinsic motivation is not an ingredient in the production of all products that may be judged as novel and appropriate in a given context, it has been observed that in long term or complex or culture-changing creative work it is a “crucial” ingredient (Collins & Amabile, 1999). Creators often report being motivated by some form of personally significant involvement, interest or pleasure in their work (Amabile, 2001; Csikszentmihalyi, 1996). Thus, the support for the crucial role of intrinsic motivation in complex creative work comes, not only from considerable experimental research but also, from the reports of recognised creative people.

The following nine sections of the review examine the literature around the areas of interest and intrinsic motivation in order to show, in detail, how intrinsic motivation can be linked, not only to people’s capacities to problem-solve and produce high quality work, but also to characteristics observed of “creative” people, such as the creative personality (Runco & Sakamoto, 1999), and the high value that creative people place on creativity (Csikszentmihalyi, 1996). Teachers’ knowledge of these relationships between intrinsic motivation and creativity would therefore be important in terms of their capacity to interpret what is being expressed, at the rhetorical level, about the value and character of intrinsically motivated creativity. In turn these understandings would be important for interpreting how the processes of creativity might relate to the contemporary cultural environment.

2.6.3.1 Self – determination Theory

Although conceptualisations of intrinsic motivation vary (Runco, 1994; Runco & Sakamoto, 1999), the Self determination theory (SDT) framework has proven robust in predicting outcomes of human behaviour and in creativity research (Amabile, et al., 1994; Hennessey, 2000; Ryan & Deci, 2000a). Within SDT, intrinsic motivation is conceptualised as a *developmental trajectory*, which encompasses personal growth, social integration and a transition from external control to *autonomy* – or internal control (Ryan & Deci, 2000d; Ryan, Kuhl, & Deci, 1997). According to SDT, internal control, also referred to as self-determination, is regarded as desirable for it leads to growth and greater well-being, whereas external control is associated with less desirable developmental outcomes.

Intrinsic motivation, as conceptualised within SDT, might be described simplistically as a propulsion mechanism by which humans become fully functional, autonomous beings within their social contexts. However, it is not necessarily the case that intrinsic motivation *precedes* the process. There has been some debate about the relation of *evaluations* to the processes that are sensed as intrinsically satisfying (Lazarus, 1991; Runco, 1994). Runco (1994) suggests that intrinsic motivation may be a feeling and/or an assessment based on more complex interrelations between internal appraisals, tensions, anticipation and affect and may involve retrospective evaluations of progress towards goals that have already been defined as important.

In whatever way evaluations are involved in an intrinsically motivated process SDT researchers regard it as important to study intrinsic motivation and understand the conditions which facilitate or catalyse it, on the basis that research has shown that intrinsic motivation has developmental and other benefits. Ryan and Deci (2000b) state: “Because intrinsic motivation results in high-quality learning and creativity, it is especially important to detail the factors and forces that engender versus undermine it” (p.55). It may be helpful at this juncture to use additional insights from SDT research in order to appreciate why the qualities of intrinsic motivation yield such benefits in comparison with the qualities of other processes.

Within SDT it is recognised that people do not always do things because they are intrinsically motivated to do them. SDT recognises a continuum of motivations for behaviour. The self-determination continuum describes different reasons for acting as being on a continuum from more externally controlled reasons for acting to more internally controlled reasons for acting. In some cases people feel pressured to act. In other cases they may feel that they are doing things because they value or enjoy the activity. Within SDT six types of regulation in activities are recognised: *impersonal, external, introjected, identified, integrated and intrinsic* (Deci & Ryan, 2000). Drawing on findings from their study of school-children’s reasons for doing homework Ryan and Connell (1989) illustrate four of these:

- Because the teacher will yell
- Because I’d be ashamed
- Because I want to learn
- Because it’s fun

The first two reasons provide examples of doing homework for more *externally controlled* reasons. Doing homework because the teacher would otherwise yell suggests that the child is acting in response to external pressure. Doing homework to avoid a sense of shame is seen by Ryan and Connell (1989) as focusing on how one appears to others – which they describe as an *introjected* motive. Whereas wanting to learn reflects doing homework for a reason *identified* and valued by the person. Acts of this type are experienced as more volitional than doing homework in response to external pressure. Doing homework because it is fun or enjoyable reflects an intrinsic interest in doing the work. The latter two examples represent more autonomous reasons for doing homework and are likely to support better learning outcomes and better experiences of learning overall. Whilst these are simple examples they nonetheless serve to illustrate how the more autonomous forms of regulation can lead to the benefits, to which SDT research attests, such as better quality learning and greater well-being (Ryan & Deci, 2000c).

From an SDT perspective, the presence and functioning of intrinsic motivation as a developmental agent relies on fulfilment of three basic psychological needs – needs for competence, autonomy and relatedness (Ryan & Deci, 2000d). Adequate fulfilment of these needs promotes vitality, interest, learning and creativity (Ryan & Deci, 2000d). A great deal of research now supports these findings. It has been found that thwarted satisfaction of psychological needs has negative consequences for mental health and often undermines persistence and performance (Ryan & Deci, 2000d). Researchers in this field are interested in how people are best able to develop as healthy, self-regulating individuals and how they may be supported to do so.

A crucial aspect of the SDT theoretical position is its emphasis on the existence of a human need for autonomy. Healthy infants and children exhibit a propensity for curiosity, interest and learning (Ryan & Deci, 2000b) and research indicates that, irrespective of cultural background, people experience well-being and vitality and perform at a higher level when they feel autonomous in their actions (Chirkov, 2009; Chirkov, et al., 2003). Thwarted autonomy has been observed to result in anti-social behaviour, such as racism and controlling manipulations of others (Duriez, Vansteenkiste, Soenens, & De Witte, 2007).

Ryan and Deci (2000a) point out that the sense of autonomy is “functionally real” and can be sensed internally. According to them, people know when they feel controlled (externally or internally pressured) in their actions and know when they feel self-

determined for a task or action. Different mental processing occurs under each of these conditions. The cognitive processing associated with controlled states and autonomous states can be induced unconsciously and has been observed in experimental situations, where it has been induced using priming techniques (Levesque, Copeland, & Sutcliffe, 2008; Levesque & Pelletier, 2003).

2.6.3.2 Interest and competence

SDT has been applied to explain the qualities of focus and meaning experienced in the *interest* state. Krapp (2003) contends that a person will only be interested in something over a long period of time if the activity is rationally assessed as valuable and is continually experienced as emotionally satisfying. He reasons that for this to occur a person must experience sufficient fulfilment of the basic needs for competence, self-determination and relatedness, as postulated by SDT. As a complement to the motivating effects of interest, it appears that deeply integrated goals help maintain persistence through the tedious aspects of complex tasks (Burton, et al., 2006).

Interest is relevant for creativity in that it improves thinking ability (Hidi & Harackiewicz, 2000; Pintrich, Marx, & Boyle, 1993) and increases feelings of vitality (Nix, Ryan, Manly, & Deci, 1999). When people are interested they demonstrate increased ability to generate ideas, make connections between ideas, solve problems and cope flexibly with change or new situations (See Friedman & Forster, 2005; Ryan & Deci, 2000d). Furthermore, a person with a strong interest will tend to be unsatisfied with current levels of knowledge in his/her interest area and will be highly motivated to increase competence (Krapp, 2002). Over time the interest content is *internalised* (Renninger, 2000) and can, through being integrated into neural networks, become a stable part of the personality (Krapp, 2002, 2003). At the same time the person's sense of personal competence with respect to the interest area tends to increase (Renninger, 2000). Perspectives on the effect of cognitive load in learning tasks may also be relevant here, as it has been noted that as competence levels increase, need for structured instruction decreases and need for autonomy in learning increases (van Merriënboer & Sweller, 2005).

Krapp (2003) describes the deeply interested state as one in which there is no “gap” between what people wish to do and what they have to do and observes that when deeply interested in what they are doing, people sometimes experience a state of heightened mental performance and pleasure, which Csikszentmihalyi (1975, 1990) has termed, flow.

Dietrich (2004b) has hypothesised, from a neuroscience perspective, that flow is an altered mental state, induced by deep focus. The heightened clarity and efficiency of processing in the flow state may, Dietrich suggests, come about as the brain ceases to buffer awareness of the environment, the self-representation and the sense of temporal flow – that is, whichever mental processes keep track of our location in space and time are removed from processing and a larger quota of brain energies can then divert to the task at hand. Csikszentmihalyi (1990) has suggested that activities in which flow is experienced become “autotelic” or self-reinforcing. Csikszentmihalyi and colleagues have extrapolated possible broader cultural effects of flow, on the basis that people tend to invest time and effort in those activities that are experienced as interesting and rewarding (Csikszentmihalyi & Massimini, 1985). Ryan et al. (1997) have suggested that the enjoyable and energising phenomenology experienced as interest may have evolved to ensure investment in developing genetic talents.

Much of the research on links between intrinsic motivation and creativity of products and mental processing has been carried out in laboratories and/or under experimental conditions and often explores the relation of intrinsic motivation to “creativity” in the short term (Runco & Sakamoto, 1999). However, the indication that intrinsic motivation is linked to the increase of competence and interest over time, provides an explanation of how intrinsic motivation can also be linked to “creativity” in the long term – that is, how intrinsic motivation comes to be implicated in high level creative work (Amabile, 1983, 1996, 2001; Cox, 1929; Csikszentmihalyi, 1996; Galton, 1869) and creative personality (Runco & Sakamoto, 1999).

2.6.3.3 Interest and intra-personal intelligence

Whatever its biological determinants and social consequences may be, the phenomenology of interest is a critical aspect of certain types of creative activity. Without it, creators would probably not invest time in building competence and there would be no energising pleasure associated with exploration and learning. Even the experience of *insight*, the “Aha!” moment, which signals the resolution of a problem, has its own satisfying phenomenology (Schooler, Fallshore, & Fiore, 1995). Some researchers have observed that through creative work and associated activities, creators become adept at attending to, activating and working with the internal processes, which are part of creative processes (Csikszentmihalyi & Sawyer, 1995; Policastro & Gardner, 1999).

It appears that at high levels of complexity, creativity involves giving attention to this inner world of sensations and making “subtle distinctions among cognitive and emotional processes, as one means of understanding and guiding one’s own creative behavior [sic]” (Policastro & Gardner, 1999, p.218). Some sensations arise, perhaps, from the “traffic” between unconscious and conscious processes (Feldman, Csikszentmihalyi, & Gardner, 1994), with which creators often learn to work. Without the mental focus that accompanies consuming interest an entire dimension of experience needed for high level creativity may not be present. Creativity researchers have suggested that people need to experience doing something they “love” in order to develop a sense of what it is to be intrinsically motivated (Collins & Amabile, 1999) and to want to more deeply investigate an area of interest. It has, however, also been found that many people are not aware of having any interests (Renninger, 2000).

2.6.3.4 Intrinsic and extrinsic goals

When it comes to selecting goals there is evidence that what we value and why we value it can impact either positively or negatively on overall well-being and interest during creative work (Deci & Ryan, 2000). Goals that have intrinsic content – that is, goals that are directed at enhancing relationships, growth, community or health – appear to have positive effects on well-being and persistence. It has been suggested that this occurs because goals of this order “promote satisfaction of the basic psychological needs for autonomy, competence and relatedness; that is, they promote people’s natural growth tendencies” (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004, p.246). In contrast, vigorous pursuit of “extrinsic” goals, such as wealth, image and fame, is theorised to be less satisfying of the basic psychological needs. Such extrinsic goals tend to be associated with excessive comparison with others, leading to less stable self-image. Studies have shown that individuals who vigorously seek extrinsic goals tend to experience less vitality, self-actualisation and self-esteem and more psychological ill-being, such as depression, anxiety and narcissism (Vansteenkiste et al, p.246). Because extrinsic goals cannot satisfy psychological needs, an extrinsic orientation is also linked to social costs as people attempt to satisfy their needs in anti-social ways, such as the adoption of socially dominant attitudes towards others, materialistic competition with others and non-empathic manipulation of others (Duriez, et al., 2007).

It seems that extrinsic values tend to interfere with intrinsic motivation and focus. Although it is often observed that material rewards can be powerful motivators (Ryan &

Deci, 2000e), there is considerable accumulated evidence showing that, “when materialistic values direct one’s behaviour individuals are at increased risk for diminished well-being and psychopathology and become less concerned with the welfare of others” (Kashdan & Breen, 2007, p.522). Moreover, materialism is associated with lower ability “to take action in congruence with core interests and values” (Kashdan & Breen, 2007, p.533). This appears to hold even for business students whose extrinsic values match the values promoted by their university departments (Vansteenkiste, Duriez, Simons, & Soenens, 2006). The indication is that in a culture that gives high priority to materialistic values, such as we have in the Western world, people may easily pursue goals that are not ultimately able to fulfil their psychological needs.

Research indicates that excessive focus on self-image can be detrimental to well-being (Ryan & Brown, 2003). In SDT terms, autonomy is not a philosophical construct – it is experienced as a sensation of doing things of one’s own accord. Ryan and Brown (2003) suggest that a person who is overly concerned with how he/she appears to others is not easily able to experience a sense of freedom in working toward goals, whereas a person who feels competent, autonomous and related has self-esteem and so does not need to seek it. SDT researchers reject the idea that people need either self-esteem or power, identifying these as need substitutes, which people pursue when their actual needs are thwarted or left unsatisfied (Deci & Ryan, 2000).

SDT researchers therefore support the encouragement of intrinsic, rather than extrinsic, goals in schools. They further recommend that teachers adopt autonomy supportive teaching approaches. In a study of the effects of intrinsic goals and autonomy-supportive environments, Vansteenkiste et al. (2004) found that these two things together had a strong positive effect on learning and persistence. They report that although intrinsic goals had a positive effect even in a controlling context, they had a “synergistically” positive effect when administered in an autonomy-supportive context because, they reason, the context allowed people to experience the congruence of pursuing an intrinsic goal that is closely aligned with their basic psychological needs.

2.6.3.5 Phases of interest development

Interest has been found to exert a powerful influence on formal and informal learning. However, recent work has produced a four phase model of interest development (Hidi & Renninger, 2006), which shows that interest is not a unitary concept or process and that the

experience of interest may change or develop over time. People may experience mild levels of interest in a situation. But a person may come to see him/herself as a person who pursues particular content, such as, science, chess, or soccer, demonstrating that there can be links between interest content and identity (Renninger, 2009). This is consistent with the view noted earlier that knowledge and stored value for interest content may become ingrained in neural networks (Krapp, 2002, 2003, 2007).

The four phases of interest development, as identified by Hidi and Renninger (2006), progress from *triggered* interest in a situation, which may or may not evolve into the next phase, a *maintained situational* interest. The third phase is where maintained interest has developed into an *emerging individual* interest and the fourth phase is the establishment of a *well-developed individual* interest. The authors report that each phase is characterised by “varying amounts of affect, knowledge, and value” (Hidi & Renninger, 2006, p.112).

In this model, triggered situational interest is defined by focused attention and positive feelings. The authors note that in a substantial number of studies situational interest has been found to increase cognitive engagement and cognitive performance and is therefore seen as generally beneficial for learning. But as interest deepens it is characterised by “stored knowledge and repeated engagement, in addition to positive feelings” (Hidi & Renninger, 2006, p.114). The authors, while not allied with the SDT paradigm, indicate that deepening of interest is supported by feelings of competence, autonomy and social-relatedness.

In the two early phases of interest, as described in the four phase model, activities are typically (but not exclusively) externally supported, for example, by a teacher, whereas in the latter phases interest is more (but not exclusively) internally supported as individuals generate their own curiosity questions, develop more knowledge, become increasingly resourceful in finding answers to self-generated questions, choose to re-engage with particular content and produce work more effortlessly. The final phase is characterised by an “enduring predisposition to engage with particular classes of content over time” (Hidi and Renninger, 2006, p.115). The authors report that well-developed individual interest is positively related to sustaining long-term creative endeavours, strategic thinking, self-regulation and broadening of attentional awareness in both problem-solving and attending to information. Furthermore, the individual may, in the later stages of interest development, see him/herself as someone *who* pursues a particular kind of content (Renninger, 2009). Renninger argues that there are links between interest and self-

representation that could be exploited by teachers in the interests of students, to aid students' learning and age-related identity development. Renninger is interested in furthering research in this area, particularly in respect of how to help students to overcome a sense of themselves as people *who cannot* engage in certain subject areas or activities. She sees an important case in point as the situation where girls often see themselves as incapable of liking or doing science.

2.6.3.6 Flow and autotelic personality

Flow has been described as an “optimal experience” (e.g. Csikszentmihalyi, 1990) which arises in processes where there is an ideal level of challenge, loss of awareness of self and surroundings and, often, an associated enhancement of performance (Csikszentmihalyi, 1975, 1990). It has been observed that some people experience flow more easily and regularly than other people and the term “autotelic personality” has been used to describe this disposition. Autotelic personality has been associated with general curiosity, interest in life, persistence, low levels of self-centredness and doing things for intrinsic rather than extrinsic rewards (Nakamura & Csikszentmihalyi, 2002). In a study it was found that autotelic participants were uncomfortable in “apathy” situations (situations with low challenge and low skill requirement) whereas non-autotelic participants “did not find the apathy situation aversive” (Hektner, 1996, as reported in Nakamura & Csikszentmihalyi, 2002, p. 98). Autotelic personality is seen by Nakamura and Csikszentmihalyi (2002, p.92) as something that possibly emerges from the experience of flow itself:

The phenomenon of emergent motivation means we can come to experience a new or previously unengaging activity as intrinsically motivating if we once find flow in it. The motivation to persist in or return to the activity arises out of the experience itself. The flow experience is thus a force for expansion in relation to the individual's goal and interest structure, as well as for growth of skills in relation to an existing interest.

2.6.3.7 Creativity, integration and values

Earlier it was discussed that certain goals are more conducive to feelings of satisfaction and well-being than others. This section points to a different aspect of values, that is, the values that tend to be expressed in connection with an extrinsic or intrinsic orientation. Any task can be experienced as more extrinsically or intrinsically motivated, but it is also the case that people demonstrate tendencies to be either extrinsically or intrinsically oriented. Within SDT these orientations are usually referred to as causality orientations,

which are respectively designated as control and autonomy orientations (Deci & Ryan, 1985a). In connection with these orientations, people tend to express certain kinds of values.

Patterns of lifestyle and career choice emerge when comparing the value inclinations of more internally and more externally oriented people. Amabile and colleagues found that intrinsically oriented people are more likely to, “choose professions that will allow them active, self-reliant involvement in their work; continue their educations (formally and informally) beyond college ... and express higher levels of positive affect when engaged in complex challenging activities” (Amabile, et al., 1994, p.965). Thus there are empirically supported links between intrinsic motivation and the formulation of specific kinds of values and lifestyle and career choice. It is on this basis that we might understand the observation that creative people *value* creativity (Czikszenmihalyi, 1996; Florida, 2002).

Some psychologists argue that there are connections between intrinsic motivation and awareness of the internal world, which in turn influences how people relate to the external world and the values that they express. Internal orientations have been connected more strongly than extrinsic orientations to personality integration and the development of mindfulness. Brown and Kasser (2005) find that because mindful individuals perceive internal and external realities clearly they “exhibit higher personal well-being on a wide variety of indices” (p.351). They report that mindful individuals tend to express values, which are more intrinsic than extrinsic in nature. Mindful individuals tend to focus on growth, relationships and community rather than financial success, image and popularity. They also incline toward such behaviours as “choicefulness”, ecological responsibility and lower levels of material consumption.

2.6.3.8 Integration

Psychologists argue that intrinsic motivation is not only associated with the development of socially responsible values, it may assist in the growth of capacities for integration and reflection. Integration involves reflecting on and coming to endorse particular values and acting in accordance with those values. It is a dialectic process which may result in letting go of values that have been unreflectively taken in, that is, “introjected” (Ryan, 1995), while others are reflected upon and implemented as part of the self (Ryan & Deci, 2000c).

In his review of the literature on integration Ryan (1995) notes that across a number of psychological frameworks, including those of Freud, Jung, Rogers, Maslow and Piaget,

there is a shared assumption that “innate tendencies toward assimilation and integration play a critical role in social development” (p.398). Ryan contends that the impulse towards integration manifests via three main aspects of behaviour: intrinsic motivation, internalization and emotional integration.

Jung (e.g.1962) discussed this kind of trajectory as a process of *individuation* and Maslow (1954) conceptualised it in terms of *self-actualisation*. In more recent psychological work, integration and the development of reflective capacities are similarly viewed as desirable, higher order capacities linked to intrinsic motivation and creativity (K. Brown & Kasser, 2005; Langer, 1989, 2000; Ryan, 1995; Ryan & Deci, 2000e; Ryan, et al., 2008; Zhang & Sternberg, 2005). Interest development seems to be one of the pathways along which interests, competencies and values become integrated and develop into a strong sense of self (Hidi & Renninger, 2006; Krapp, 2002, 2003, 2007; Renninger, 2009).

2.6.3.9 Conclusions about the educational value of autonomy

There is therefore considerable accumulated research which suggests that, whether or not an autonomous process results in a product of value to the outside world, such processes have internal value. That is, autonomy is valuable to the person in terms of well-being, learning enhancements, self-regulation and developing a sense of self. Research also indicates that anti-social values tend to accompany the excessive pursuit of extrinsic goals/rewards, whereas greater mindfulness and tolerance of others is associated with the pursuit of intrinsic rewards. These are important considerations with respect to the enhancement of “creativity” in education. There are strong experimental research indications that intrinsically motivated processes tend to result in more “creative” (as externally judged) product outcomes and case studies indicate that complex “creative” work usually involves a combination of enjoyment and other autonomously regulated processes. On the basis of such research, teachers should feel confident in the knowledge that by supporting “autonomy” they are simultaneously supporting their students’ learning and development as well as their capacities to produce better quality and/or innovative outcomes.

However, in order to fully address big picture creativity imperatives, educators may need to take a broader perspective on creativity than the facilitation of autonomy. As indicated, at the beginning of the review, there appear to be different kinds of creative

and/or problem-solving and/or innovative processes. Whilst it does appear that autonomous processes conduce towards complexity in thinking, autonomous processes do not necessarily result in innovative products at the cultural level. Furthermore, innovations are not necessarily produced through the kinds of processes that facilitate well-being. Some innovative processes may be enacted for ego-enhancing or other instrumental reasons. Some innovation may be produced in a relatively step-wise manner.

Therefore, in order to engage with creativity discourse, to interpret the messages about creativity and decide on what can be done to address the issues, teachers would need to be aware that a range of meanings of creativity are reflected at the rhetorical level of creativity discourse. Available taxonomies, although helpful, offer limited insight into the meanings of creativity reflected at the rhetorical level.

Banaji and colleagues (Banaji, 2008; Banaji & Burn, 2007; Banaji, et al., 2006) identify and group various creativity “rhetorics”, according to the domains from which they originate. This kind of grouping is informative and more work of this type could be useful. But at the same time this kind of focus on creativity leaves unaddressed the similarities and differences in the meanings of creativity expressed across and within the groupings. For example, in the following quote Banaji and Burn (2007, pp. 55-56) discuss the conflicting views of creativity contained within the discourse of “the Creative Classroom rhetoric”:

In its most positive incarnation, the Creative Classroom rhetoric may be seen to promote forms of learning that are generally held to improve the experience of children in education – holistic learning, active learning, expanded notions of intelligence, attention to social and cultural contexts, social learning and ethical human development (Beetlestone, 1998; Starko, 2005). By the same token, though, it runs the risk of losing what is distinctive about “creativity” itself – if it cannot be distinguished from all these other things, where is its explanatory power? Additionally, in some formulations, process and product are set up as being in opposition to each other, rather than as in dialogue and this in turn leads to a seriously problematic relationship between creativity and evaluation, and creativity and critical literacy practice.

Bleakley (2004) takes the perspective that although some meanings of creativity are legitimised, any view of creativity is as legitimate as another, as they are all constructed through discourse. Whilst his typology may, as he claims, provide a snap-shot of current constructions of creativity, it does not account well for people’s various ways of enacting and valuing what they see as creativity. In other words, there seems to be an experiential

dimension to creativity conceptions that is not addressed in Bleakley's typology. It would be harder to counter Bleakley's view if there was no evidence that people's accounts of creative processes often agree concerning the internal qualities of the processes they identify as creative. Rather than creativity being "one idea" constructed discursively in so many different ways that it can be seen, as Bleakley argues, as an "unstable construct", it seems at least equally possible that different people discern particular phenomena to which they attach the terms "creativity" or "creative". On the basis of this reasoning the use of the term "creativity" to describe some phenomena could indeed be a matter of social convention, but the discerned *phenomenon* itself is experienced. In order to find out what people mean when they use the term "creative" it would be useful to investigate what people are experiencing when they identify something as creative.

2.6.4 Creative cognition

This section samples some of the work that has been carried out to investigate creative cognition. Research into creative cognition tends to use either biological (neuro-scientific) or experimental research methods. This literature contains much that is informative for educators depending on what one requires of it. But if one is interested in understanding what creativity "is" or how people, including the researchers working in this area, understand creativity, it seems that it would be difficult to find out about it from this literature. With specific reference to neuroimaging investigations, Sawyer (2011, p.151) contends that neuroscience studies show that "what people think of as *creativity* involves a wide variety of cognitive processes, each of which results in distinct patterns of brain activation." He reasons further that the short term investigative strategies used by neuroscientists may be able to tell us little about creativity overall because "it might be the case that there are many different neural pathways that result in behavior [sic] that is characterized [sic] as *creative* ... " He thus highlights some difficulties in engaging with the literature, in that much of this research sub-serves a range of different creativity research agendas, involves various meanings of creativity and that there is a disjunct between what researchers in these areas are able to investigate and how creativity is conceptualised more broadly. Experimental research in laboratories can investigate short term problem-solving and generation of creative outcomes but is not suited to investigating what is going on in long term creative efforts (Runco & Sakamoto, 1999; Sawyer, 2011) and therefore may only help us to understand more about certain meanings or aspects of creativity. The stated objective for this part of the literature review, which is locating the

value of creativity, is hard to apply to the research that has been carried out to investigate creative thinking.

However, it seems important to acknowledge this body of creativity research and what it has contributed to our understanding of creative thinking. Sawyer (2011) observes that there have been no comprehensive reviews of the creativity neuroscience literature prior to his 2011 review. He argues that much of the recent neuroscience research on creativity is interesting but often serves to show, in a different way, what has already been shown earlier in “classic” experimental studies of creative problem solving. He suggests that one of the clearest contributions of the neuroscience literature to understanding creativity is to show that the whole brain is active in creative processing. One major value of the investigative work has been the demystification of processes internal to creativity. However, the value of creative thinking itself is not illuminated in these investigations, except perhaps, in the sense that by knowing that creativity is “ordinary”, rather than outside human control, it can be seen as applicable in those areas and ways that individuals or societies see as valuable.

As presented below, some investigations of creative cognition have been experimental investigations of problem-solving. Some investigations have been to find out if people, who appear high in some measure of creativeness, use processes which differ from those of less creative people. Some work has helped to pinpoint the conditions under which more analytical and more global types of mental processes occur. Some work has shown that there are common phases that occur in problem-solving. Some work has opened up such internal experiences as intuition and incubation to research scrutiny.

The section is divided into three categories. The first groups together research suggesting that creative cognition may take different forms across the population; the second groups together some research, which illuminates the nature of creative cognitive processes; the third section groups together research which suggests that “interventions” are possible and that people can think more creatively under specific circumstances or with some form of training.

This section reviews creative cognition under the headings of:

- Creative cognition differences in the brain
- Creative cognition characteristics
- Creative cognition as malleable.

2.6.4.1 Creative cognition differences in the brain

The question arises as to whether people differ in their ability to access or mobilise particular processes. Certainly it seems that people may differ in the extent to which they are conscious of certain mental processes. Baars (1996) notes, for example that some people seem to be completely unaware of their mental images. Le Doux (1995) states that, “people have different degrees of insight into their emotions” (p.229) for which anatomical findings suggest possible explanations. Differences in people’s conscious awareness of mental processes could indicate something meaningful about people’s preferred cognitive modes.

Some comparative biological research indicates that there are differences between the mental processing of creative and less creative people. Martindale (1999) contends that creativity is actually a rare characteristic or mental trait. EEG monitoring in studies of more and less creative individuals indicates to him that when creative individuals engage in associative problem solving, such as continuous word association tests, they exhibit “defocused” attention, low cortical arousal and greater right-hemisphere activation than less creative people. In his view creative people have greater access to autistic, free associative, analogical and reverie-like cognitive states than less creative people. However he observes that, in general, creative people only exhibit these traits when engaged in creative activity.

There is some research suggesting that relatives of schizophrenics figure prominently in creative populations, perhaps pointing to a genetic predisposition for some people to use aspects of primary-process thinking (Martindale, 1999). Simonton (2005) similarly observes that in some cases mild pathologies may contribute to creative thinking, as elevated scores on psychoticism are associated with the capacity for defocused attention.

Dietrich (2004a) suggests that understanding the generative capacity of the human brain requires a broader neuro-scientific approach than can be attained from studies of hemispheric asymmetry, such as have been undertaken by Martindale (1999). Others have also expressed concerns about the extent to which hemispheric specialisation can inform about creativity (Runco, 1999; Sawyer, 2011). Therefore it may simply be a common misconception that creativity is located in a particular side of the brain, or that creative people have greater use of one side of the brain than the other.

Dietrich (2007) has hypothesised that as the brain stores both *cognitive* and *emotional* information, people's creative thinking may differ depending on where their strengths lie in terms of retrieving and using these two types of information. Dietrich suggests that main types of thinking processes, deliberate and spontaneous, combine with these strengths in using cognitive and/or emotional information and reasons that there may be four types of creative cognition involving different combinations of these four aspects. He suggests that people may therefore demonstrate strengths in one or more of these types of thinking.

Finke (1996) observes similarly that people exhibit different types of creative thinking. He contends that some people rely on *chaotic* thinking and "tend to view the world as an essentially unpredictable place that is filled with complex relationships and meaningful associations" (Finke, 1996, p.390). He observes that they are usually good at dealing with unexpected events and characterises their creativity as strikingly original. At the other end of the creative spectrum, he places "ordered" thinkers who are "organised, proactive, controlled, serious and literal" (Finke, 1996, p.390). He suggests that when ordered thinkers do creative things, their creativity is often highly structured and directly connected to previous ideas and concepts.

This limited selection of research outcomes and perspectives is representative of literature, which supports a view of creative cognition as different for different people. One educational consideration with respect to such observations could be that it may not be reasonable to expect that people can perform equally well on "creative" tasks requiring specific kinds of mental processes or sensitivities to particular kinds of internal states and information.

2.6.4.2 Creative cognition characteristics

Research has established a number of common characteristics of cognition during creative processes. Creative processes often involve periods of intuition, incubation and insights (Csikszentmihalyi & Sawyer, 1995; Finke, 1996). Incubation occurs when attention is turned away from a problem for a period of time in order to allow unconscious problem-solving to occur (Finke, 1996). It is alternatively described by Csikszentmihalyi and Sawyer (1995) as a period during which "information is processed in parallel at a subconscious level, and is followed by a period of conscious evaluation and elaboration" (p.358). The following quotations are by participants in a study of creative insight (Csikszentmihalyi & Sawyer, 1995, p.353) and illustrate that people sometimes sense

directions (Fensham & Marton, 1992) and are able to manipulate the brain's capacity to perform incubation and produce insights:

You have these ideas, and then you work on them. As you work on them, you get new ideas ... One makes the other one come out; it's as though creatures come out. If you don't work on it, they hide in there ... Something has begun to work, and you continue it, you feel the singing inside you. (Respondent H)

I would say that scientific intuition is more sort of half-conscious knowledge, where you can see connections between things where a connection is not obvious, almost unconsciously, almost like a dream. (Respondent I)

Studies on *intuitive* judgement have shown that it is possible to sense meaningful directions for exploration without being aware of the actual reasons underlying the choices (Finke, 1996). Studies also show that verbalisation and over-regulation of exploratory processes can discourage the emergence of relevant structures and problem solutions. Thus it is not helpful to *talk* through problems requiring insight.

Finke (1996) states that it now seems that the effectiveness of incubation results primarily from the decay of misleading, inappropriate or less viable forms of activation – a kind of “helpful forgetting” of less relevant approaches and associations. It appears also that as incubation occurs outside of consciousness one cannot know how long incubation will take (Csikszentmihalyi & Sawyer, 1995).

Finke (1996) reports on how people are able to mentally combine mental images to make discoveries and generate insights. An interesting finding from this research is the discovery of *emergent* structures in mental images. A person can discover details or properties of an object that were not intentionally committed to memory, by inspecting his/her image of the object. Finke (1996) notes, for example, that it is possible to scan one's image of the American flag to see if the top stripe is red or white. *Emergent* features can be discovered by mentally combining forms. According to him experimental subjects are not generally aware of emergent patterns contained in their images until the images have been consciously inspected.

Some neuro-scientific research suggests that the prefrontal cortex of the human brain is involved in various aspects of creative cognition, which are referred to as higher order functions (Dietrich, 2007). Dietrich (2004b) proposes, also, that flow is a focus-induced

state of “transient hypofrontality”, in which various functions of the prefrontal cortex that are nonessential for processing of a given task are “subtracted” from consciousness allowing maximum processing by the more efficient “implicit” system. He suggests that the feelings reported by people who have experienced flow – complete focus, disappearance of self-consciousness, no worry of failure and distortion of time – can be explained as inhibition of the prefrontal functions which support the self-construct, awareness of time and so forth. He asserts that understanding how the areas of the prefrontal cortex are involved in various types of creative thinking is essential for refining future creativity research.

Investigation of differences between problem-solving under duress and problem-solving for proactive purposes has been informative as it shows that creative processes can differ markedly at a neural and phenomenological level. Heinzen (1994) reports that *reactive* creativity uses different kinds of neural processes from those used in *proactive* creativity. Reactive creativity is experienced as having negative affect or feelings of desperation, while proactive creativity is marked by positive affect or pleasure. According to Heinzen reactive creativity triggers simple and rigid, coping type associations and processing, while proactive creativity triggers “rich and divergent” cognition. This indicates that creative products are not always produced through emotionally satisfying processes. “Creative” processes can be mobilised for different reasons and under different conditions of pressure and absence from pressure. However, there is considerable evidence demonstrating that the outcome of thinking occurring under conditions of “proactive” (Heinzen, 1994), “intrinsically motivated” (Collins & Amabile, 1999), “approach” (Friedman & Forster, 2002) or “autonomous” (Levesque, et al., 2008) mental states is likely to produce better quality, more effective or more interesting products or solutions.

Research of this type has been valuable in terms of showing that creative thinking involves ordinary processes. It also shows that there are commonalities in the processes that underlie some types of creative processes. However, there also appear to be differences in creative thinking involved in different kinds of creativity.

2.6.4.3 Creative cognition as malleable

The research findings reported in this section point to creative thinking as something which improves under certain conditions or can be improved through certain techniques, thereby

suggesting that creative thinking may be malleable. Seen this way, creative thinking is a capacity that could benefit from interventions in the education context.

Collins and Amabile (1999) use a “maze” metaphor to explain why intrinsically motivation or interest produces outcomes that are more “novel and appropriate” than when interest is not involved. They suggest that when engaged in a task requiring creative thinking, willingness to explore the task maze rather than rushing to the most obvious exit increases the likelihood of finding more unusual or creative solutions (Collins & Amabile, 1999, p.303). This suggests that to maximise problem-solving and generative capacities tasks could be geared to ensure interest, relevance and deep focus. Some researchers suggest that although more creative people demonstrate a capacity to consciously manipulate creative processes such as incubation and insight this capacity is learned through ordinary means – through education, mentoring, interest and engaging with problems (Csikszentmihalyi & Sawyer, 1995).

This view is further supported by experimental studies, which have demonstrated consistently that when the brain operates free from threat, pressure or stress, the focus of attention broadens and there is increased activation of relatively inaccessible mental representations (Friedman & Forster, 2001, 2005). Being in an *approach* frame of mind increases performance in tasks requiring abstract thinking, apparently irrespective of enjoying the task (Higgins, 1997). Research indicates that simple verbal or pictorial manipulations can induce an *approach* focus (Forster & Higgins, 2005; Friedman & Forster, 2005). Similar manipulations have been shown to induce an autonomous orientation with similar improvements in creative mental processing (Levesque, et al., 2008). Friedman and Forster (2005) contend that improvements in global processing are not due to positive affect, but to cognitive anticipation. Therefore although positive affect or good mood has been shown to correlate with higher creativity it may not be good mood that contributes to improved global processing but other anticipatory cognitive elements of approach-type processes, which shift processing to the right hemisphere (Friedman & Forster, 2005). Studies of this type suggest that simple strategies such as the way that instructions and feedback are given can be critical in stimulating more creative types of processing. In Self-determination theory research it has been demonstrated that instructions and feedback can be given in such a way that people feel more engaged and autonomous in the way they carry out tasks (Stone, et al., 2009)

Finke's (1996) "geneplore" model of cognition distinguishes between two types of cognitive processes – generative and exploratory processes. Generative processes such as visualised patterns, mental blends, mental models and verbal or conceptual combinations are used to develop "pre-inventive" structures, which can then be "examined and interpreted using various exploratory processes, and the forms can then be modified or replaced by further generative processes" (p.386). The model further distinguishes between *intentional* and *spontaneous* generation of forms. Some pre-inventive forms arrive in consciousness already completed and can be considered *spontaneous*, while others are *intentionally* generated. This model suggests that people could learn to use such strategies to generate solutions to problems.

Meditation has also been shown to improve creative thinking. Transcendental meditation (TM) practice appears to increase access to "a deeper level of mental functioning" (Dixon et al., 2005). Studies have shown a range of cognitive enhancements with TM practice, including improved working memory, reflectivity and flexibility in children aged 5–11 relative to a control group (Warner, 2005), significant increases in analytic ability, self-concept, and general intellectual performance over 45 weeks in another group of school children (Dixon, et al., 2005) and a shift from conformity to self-awareness in maximum security prison inmates (Alexander, Walton, & Goodman, 2003)

Merriënboer and Sweller (2005) are not primarily concerned with creativity as such. They are interested in what promotes efficient cognition, effective learning and transferability of information. Their studies assess how cognitive load is involved in the processing of tasks. Two of their findings are of interest for creative cognition: Firstly they observe that the transferability of information is dependent on the quality of mental schemas. The building of high quality schemas requires perseverance. Therefore motivation is important for building high quality, transferable schemas that can be used in associative tasks. Similarly Bargh and Chartrand (1999) note that the achievement of *automaticity* in the execution of tasks makes them "light" and effortless. Automaticity of execution is not to be confused with autonomy. However automatic execution of tasks is essential for carrying out complex tasks, independently and at high levels of competence. As Bargh and Chartrand state, "automatic mental processes free one's limited conscious attentional capacity" (p.464). Secondly, Merriënboer and Sweller (2005) report that as competence levels increase, the requirement for autonomous handling of tasks in order to reduce cognitive load, increases. If instruction continues in a structured way after learners

have achieved mastery, the effect is to increase cognitive load due to redundancy of information. In other words the support of creative cognition may require that appropriate attention be given to when to use structured instruction and when to allow freedom to choose how to engage in a task.

It appears that one cannot peer into the human brain and locate “creativity”. But research of the type highlighted in this section should be useful where it is perceived, in some context, such as in education, that a certain type of “creative” process or “creative outcome” is desirable. These observations suggest that “creative thinking” of various types can be improved or manipulated. There appear to be a number of avenues and strategies through which educators might seek to effect improvement in the short or long term.

2.6.5 Creative personality

The question of whether there is a creative personality has relevance for educators from the point of view that it is of interest to know if creativity is a general ability irrespective of personality or if it is more applicable in some way for people with certain personality characteristics. In this section an attempt is made to synthesize a range of views, some of which seem to support the key creativity research finding that creativity is a common potential, while others seem to be at odds with it. If creativity is a common potential, how is it that some researchers conclude that there is a creative personality?

Feist (1999) asserts that there *is* a creative personality and that this personality remains consistent over time. He observes that characteristics such as nurturance, autonomy and self-control appear to remain consistent for creative individuals from adolescence through to adulthood. Similarly after examining accumulated research Barron and Harrington (1981) concluded that certain core characteristics are consistently attributable to creative achievers, even across diverse fields. These characteristics include:

high valuation of esthetic [sic] qualities in experience, broad interests, attraction to complexity, high energy, independence of judgement, autonomy, intuition, self-confidence, ability to resolve antinomies or to accommodate apparently opposite or conflicting traits in one’s self-concept, and finally, a firm sense of self as “creative.” (p.453)

Mumford and Gustafson (1988) attempted to account for the consistent emergence of these core characteristics in creative people. Referring firstly to “broad interests, intellectual and artistic values”, they suggest that:

Attributes of this sort tend to increase the probability that the individual will (a) have multiple understandings available, (b) be willing to use multiple understandings in problem-solving efforts, (c) be sensitive to information that is inconsistent with a given understanding, and (d) be willing to resolve conflicting facts or understandings. Thus differential characteristics of this sort *might be conceived of as attributes contributing to development and use of complex schemata*. (Italics added) (p.35)

Secondly, they consider that autonomy, independence, self-confidence, energy and willingness to work would be essential for creative work because creative work often lacks social approval. They conceive of this set of core characteristics as “general personality attributes required for implementing both major and minor contributions within the broader context of the creator’s personal and social world” (p.35). From this perspective, the attainment of certain attributes makes it more possible or likely for a person to think unusual things or do difficult work that lacks social support.

The literature on intrinsic motivation, reviewed in the previous section, has provided substantial support for the view that there is a close association between high levels of creativity and the attainment of autonomous functioning. On this basis, we would expect to find that many highly creative people exhibit behaviours consistent with autonomy – behaviours such as curiosity, independence, self-confidence, non-conformity, interest in deep rather than surface learning, diverse interests and high energy for intrinsic rather than extrinsic goals. But is it, as Mumford and Gustafson (1988) seem to say, that people have these attributes as aspects of personality and this then allows them to be creative?

SDT theory makes another kind of framing of the relationship between personality attributes and creativity possible. Ryan et al. (1997) state that “the greater one’s autonomy, the more one acts in accord with self-endorsed values, needs and intentions” (p.702). Therefore, rather than viewing creativity-promoting personality attributes as a precondition of creative behaviour, an alternative explanation is that as a person becomes more autonomous he/she *simultaneously* develops independence of judgement, confidence, self-motivation, deep focus and engagement in learning, leading to expansion of personal interests and competencies.

Do autonomous attributes underlie creativity or might autonomy and creativity grow together? From Simonton’s (2005) perspective this need not be an either/or proposition. He observes that while creators need to have a certain cluster of traits such as “defocused attention, divergent thinking, openness to experience, independence and nonconformity”

(Simonton, 2005, p.2) this cluster can be attained in different ways. He suggests that because some psychopathologies are associated with high levels of these characteristics, possessing moderate levels of some psychopathological symptoms will be positively correlated with creativity, and to the extent that these symptoms have a genetic foundation, “creativity can be said to be partly biologically determined” (Simonton, 2005, p.3). However, he also reports that many environmental experiences and conditions can support the same cluster, for example, creativity is associated with traumatic childhood experience, but also with growing up in a culturally rich environment. Ryan and Deci (2000) report, in addition, that creativity and autonomy have been observed to increase when growing up in an autonomy supportive environment. Whichever way an autonomy orientation arises – whether due to genetic or environmental factors – there are strong indications that motivational orientation is a stable feature of personality. Amabile et al. (1994) found that an autonomy orientation is strongly correlated with people in creative professions.

The association of creativity with a relatively stable autonomy orientation is also reflected in a recent synthesis of research around cognitive and learning style theories (Zhang & Sternberg, 2005). Zhang and Sternberg (2005) use the term *intellectual style* to refer to all major “style” constructs that have been propagated over the past few decades. An intellectual style, they explain, refers to one’s preferred way of processing information and dealing with tasks. They suggest that intellectual styles are more like “states” than traits, because although they are quite stable they are, at least to some extent, modifiable. Their integrative model of intellectual styles sorts style characteristics into three categories: *Type 1* intellectual style characteristics include preferences for autonomy and non-conformity while *Type 2* intellectual style characteristics include preferences for structure and conformity. *Type 3* styles are flexible/neutral depending on the task or situation and include the intraversion/extraversion dimension.

Zhang and Sternberg (2005) suggest that teachers can cater to all possible styles by giving attention to five dimensions of preferences. These are preferences for:

- high degrees of structure vs. low degrees of structure
- cognitive simplicity vs. cognitive complexity
- conformity vs. nonconformity
- authority vs. autonomy
- group vs. individual.

They suggest, however, that student approaches may differ depending on activity-type. Merriënboer & Sweller (2005) also have explained that, depending on levels of expertise people may have different needs for structure versus freedom in tasks. Therefore, aside from any other likes or dislikes, students may prefer and need the opportunity to be autonomous in their areas of greatest competence and to be structured in areas for which they hold few high functioning schemas. Zhang and Sternberg suggest that styles can also be modified, at least, to some extent. They predict that most interventions would be toward promoting more *Type 1* creativity-supportive behaviours – for example, promoting reflectiveness rather than impulsiveness, autonomy rather than conformity – as these have been shown to have greater benefits for learning and socialisation than *Type 2* characteristics.

Csikszentmihalyi (1999) prefers not to view the personalities of creative people in a fixed way. On the basis of his studies, he suggests that creative people have the ability to operate through a range of personality dimensions. He assesses that their behaviour is not dictated by a rigid inner structure as much as by situational demands. Raven (2002) asserts that creativity must be understood in the kinds of activity a person is strongly predisposed to carry out and in his or her idiosyncratic motives.

On the basis of the views represented above, a description of the creative person in terms of a fixed personality that determines a person's ability to be creative seems unsupportable. But we need also to keep in mind how creativity is being defined. If we think of it in terms of outstanding occupational achievement or products, then perhaps we might consider that some entrenched personality characteristics will suit some occupations while other characteristics are better suited to other areas. Inherited structures that favour non-conformity or special ability may contribute to the creativeness of some people. Some high level performance may be due to special ability rather than autonomous functioning.

2.6.6 Psychopathology

A number of researchers have found evidence of higher than normal incidence of psychopathology, depression, alcoholism and suicide among creative populations (Eysenck, 1999; Rothenberg, 1990a, 1990b). Schizophrenia and autism appear also to have some relation to creative capacity (Ott, et al., 2005). There appears also to be an association between high levels of creativity and bipolar mood disorder (Bowden, 1994; Richards, 1994). Because creativity is now seen as a central aspect of work (Florida, 2002,

2005), the question of how psychopathology relates to creativity is more relevant for educators than it might seem at first. Here the reviewer explores three questions that can be asked about the relation of psychopathology to creativity: Is creativity a form of psychopathology? Are people with psychopathological disorders more creative? Can psychopathologies develop through creativity?

2.6.6.1 *Is creativity a form of psychopathology?*

On this question the consensus appears to be in the negative. There seems to be a much more resounding agreement that creativity represents optimal functioning (Bohm, 1998; Csikszentmihalyi, 1990; Ryan & Deci, 2000c; Simonton, 2000b; Zhang & Sternberg, 2005). Again we should be careful about trying to understand how the researchers claiming this are thinking about creativity. Bohm (1998) regards creativity as a type of adaptive attitude or consciousness. Csikszentmihalyi (e.g. 1990, 1996) is often concerned with creativity as high level, but also meaningful, creative achievement with deep roots into a person's sense of self via the experience of flow. SDT related research sees creativity resulting from processes of optimal development. Within the SDT framework it is *amotivation* and some types of extrinsically motivated orientations that are indicative of lack of functionality and associated more readily with psychopathological states. Thus in these views creativity is seen as indicative of behavioural functionality and capacity for positive social contribution.

Terror management theorists (TMT), on the other hand, have proposed that creativity can result from our need to manage anxiety around mortality and can result in anti-social behaviour, which then may raise our anxiety levels because we find ourselves outside our community (Arndt, Greenberg, Pyszczynski, Solomon, & Schimel, 1999). This is the situation in which, as Sternberg and Lubart (1995) put it, creators find that they are “defying the crowd”. Abra (1995) also considers whether the “muses” dwell in Elysium, that is, whether creative motivation and/or inspiration is connected to death concerns and suggests a number of ways in which the prospect of death may motivate creative effort.

SDT researchers respond to this line of thought by reasserting their concern with positive development and with making the kind of choices which promote well-being as opposed to ill-being (Ryan & Deci, 2000a). They contend that “people typically engage life – that is, they seek challenges, connections, authentic meaning and significance – not because they are trying to avoid the scent of death, but because they are healthy and alive”

(Ryan & Deci, 2004, p.473). In their view the well-being experienced in full engagement of life cannot be explained as avoiding the prospect of death. Furthermore they note that growth propensities such as curiosity, discovery and self reliance are in evidence in children well before they are aware of death and are also evident in the animal kingdom. Moreover, they observe that people who feel that they are living full lives tend to have lower levels of concern with death and this they suggest has to do with the attainment of satisfaction and meaning in life, rather than a deliberate attempt to obliterate awareness of death.

Nevertheless, Deci and Ryan (2002) have stated that there is a need for further research to understand those situations in which humans act in ways, which appear diametrically opposed to their own true value systems:

An interesting case in point concerns Nazi values that were apparently endorsed by many Germans during the 1930s and early 1940s. The espoused value of annihilating an ethnic minority within their culture was certainly inconsistent with values contained within the integrated selves of many of the individuals—values of kindness and promoting humanity, for example. (p.437)

Carl Jung (1963) revealed that he too experienced a struggle within his own value system around nationalistic hopes for Germany. Jung's example suggests that in the process of integration people sometimes have to confront difficult dilemmas, which outsiders might see very differently. Thus even highly reflective people can make bad choices in difficult situations. It is perhaps for reasons, such as this, that there have been calls for "values" education as part of any educational program aimed at facilitating creativity (Craft, 2003, 2008b; Gibson, 2005). SDT theorists (Ryan & Deci, 2000b) are adamant, however, on the basis of considerable research, that people with high levels of autonomy tend to be far less malleable, less easily led away from their internally assessed values than people with low levels of autonomous self-regulation.

A related question is whether the deep focused and satisfying affect of creative activity – flow for example – is qualitatively different from the absorption and pleasure that reinforces people's indulgence in, for example, gambling. Here again, SDT related research shows that while absorption appears quite similar in both situations, addictive gambling is ultimately unsatisfying, while meaningful creative endeavours tend to promote lasting well-being. The totality of the intentions and the affect somehow differ. It is

important to be engaged in activities which support a sense of eudaimonic well-being (Ryan, et al., 2008).

2.6.6.2 Are people with psychopathological disorders more creative?

Ochse (1990) reviewed the literature and stated that while psychopathology cannot be regarded as a prerequisite for creative achievement on the basis that some highly creative people are not disordered, neither can it be claimed that mental health is necessary for creative achievement as some creative achievers are indeed disordered. Simonton (2000b) supports this view, noting that while some creators demonstrate symptoms of psychopathologies many creators are not psychopathological. He adds that incidence rates of psychopathological symptoms in creators vary across domains, that creators who exhibit symptoms usually possess compensatory characteristics, and many characteristics that have the appearance of abnormality are often adaptive in the context of the person's life. He concludes that, "the creative personality often provides a fine illustration of how supposed psychological weaknesses can sometimes be converted into a form of optimal functioning" (Simonton, 2000b, p.153).

Simonton (2000b, 2005) explains the correlation between psychopathology and creativity with reference to his evolutionary model of creativity. He sees psychopathology as a form of marginality, which is sometimes fruitful. In terms of their ability to think differently from population norms and their tendency toward non-conformity, mildly psychotic individuals, for example, contribute conceptual variations for cultural selection.

2.6.6.3 Can one develop a psychopathology through creativity?

There are important links to be made between creativity and acquired psychopathologies – especially stress related conditions. The indications are strong that failure to maintain intrinsic motivation and authenticity when performing creative work can have seriously debilitating effects on both creativity and mental health. When people are not being propelled by authentic motivation in creative work – that is by intrinsic motivation or a combination of intrinsic motivation and deeply held values – their pleasure in the work and emotional health can be impaired (Kaufman & Baer, 2002; Ryan & Deci, 2000d).

Research indicates that intrinsic motivation can be eroded in many ways. Studies have also shown that a variety of extrinsic constraints and motivators can have decremental effects on creativity. It has been observed that creativity can be decreased by surveillance (Amabile, Goldfarb, & Brackfield, 1990), evaluation (Amabile, 1979), competition

(Amabile, 1982), reduced autonomy (Amabile & Gitomer, 1984; Greenberg, 1992), and contracting for a reward contingent on task engagement (Hennessey, 1989). Many studies have been conducted confirming the decremental effects of reward on creativity (Deci, et al., 2001).

Some aspects of creative jobs can be extremely stressful (Csikszentmihalyi, 1996; Kaufman, 2002; Policastro & Gardner, 1999). There are many pressures, for example, of being a leader in a field or in weathering the periods of boom and bust that can mark creative careers (Kaufman, 2002). Time pressures can reduce a person's ability to think creatively (Friedman & Forster, 2005; Policastro & Gardner, 1999). Some domains offer limited opportunity to make a reasonable living by being creative (Csikszentmihalyi, 1996). Furthermore, a person who creates, often has a great personal investment in his/her creative work, to the extent that the loss of creative motivation or criticism of that work can be experienced as painful – as seems to have been the situation leading up to the suicide of poet Sylvia Plath (Runco, 1998).

Plath's suicide has raised a great deal of speculation as to why she took that course. But suicide among female poets is apparently common enough that some psychologists have referred to the phenomenon as the "Sylvia Plath effect" (Kaufman & Baer, 2002). Although Kaufman and Baer (2002) identify this as a complex problem with many contributing factors, they indicate that the construction of women's social roles can intensify pressures surrounding creative women and make it difficult for them to ignore coercive or distracting extrinsic factors. They suggest that the problem of stress, which also affects male poets to a lesser degree, is at least partly due to the difficulty of maintaining authentic motivation during creative work.

Extrinsic pressures can undermine confidence and emotional health, which can in turn be debilitating for eminent creative people (Kaufman, 2002). Kaufman distinguishes between creative genius and more usual forms of creativity and cites investigations (eg., Kaufman, 2001; Ludwig, 1995), which have found that mental illness, especially depression-rates, are significantly higher "in the greater eminence condition than in the accomplished (but not genius) condition" (p.375). Kaufman suggests that depression and loss of confidence may be a price paid by many eminent people. Kaufman and Baer (2000) propose that to preserve mental health in creative work, creators, especially poets and writers and more especially female poets and writers, might need to learn to manage the

intrusion of extrinsic motivational constraints in order to allow the intrinsic motivational factors to predominate.

It is possible that dispositional factors come into the issue of psychopathology, stress and suicide in people who work in the “expressive” arts. Verhaegen, Joormann & Kahn (2005) found a link between artists’ depression and a tendency towards “rumination”. Ruminators become trapped in non-productive thoughts. They conclude that creativity itself is not the cause of depression in artists and writers. Rather they find that, “people who are more likely to have the blues are the ones who are more likely to sing (paint or write). Both – the blues and the singing – appear to be rooted in a maybe all-too-closely examined life” (Verhaegen, et al., 2005, p.231).

Simonton (2000a) has also pointed out that compared to the careers of domain experts, the careers of eminent creators are marked by unpredictability. He states that, “the career of the typical creator consists of a chaotic sequence of hits and misses, of successes and failures ... In fact, the ratio of hits to total attempts does not increase over the course of the career, but rather tends to fluctuate randomly” (p.286). Csikszentmihalyi (1999) suggests that domains such as music, drama and poetry receive little cultural support, can often only offer depressing careers, and attract persons who are exceptionally sensitive. He reasons that studies showing higher than expected rates of nervous disease in these professions “may have little or nothing to say about creativity itself” (p.331).

Stress in creative work is not limited to the arts areas. Shaw (1994) studied the affective elements of scientific creativity as reported in a group of mathematicians and found that although scientific creators report significant pleasure in their work and a sense of connection to others, they also report having to deal with external pressures and feelings of alienation, failure, rejection, shame and frustration.

Florida’s (2005) comments on the stress-related problems associated with creative work and the problems this poses within a creative economy were earlier cited. On this topic of creativity in organisational settings Frey and Jegen (2001) state that while there is extensive and compelling empirical evidence for the “crowding out” of intrinsic motivation by monetary rewards, this evidence has not been well integrated into economic thinking. They and others (Pink, 2009; Reeve, 2002) have suggested that intrinsic motivation seems counterintuitive to many people. It is more often believed that offering incentives is the way to increase supply (Frey & Jegen, 2001). Mumford (2000) indicates that managing

creative people in a way that allows the creative work-style to proceed, requires careful revision of common organizational practices involving evaluation, incentives, goals and schedules, for traditional management practices have the potential to reduce intrinsic motivation and induce stress in people carrying out creative work.

From an educational point of view there is clearly cause to be concerned about the preparation of students set to enter work environments where a tradition of applying coercive, extrinsic motivators to enhance work performance may persist alongside growing demands for creative work. Students also need to know what creative work is like, what challenges are posed by creative work within different domains. Shaw (1994) suggests that creative work requires the development of affect tolerance and sees this as a “critical parameter in allowing for the development of personal creativity” (p.41). He suggests that students, especially graduate students, should learn about the spectrum of emotional experiences that can be part of creating.

2.6.7 Diversity

The relation of diversity to creativity is relevant to the consideration of creativity in education because diversity is now seen as a condition of the contemporary cultural environment and is also regarded as an environmental factor that supports creativity. It seems that diversity relates to creativity in different ways. Diversity, as an aspect of the environment, has been shown to increase the incidence of creative outcomes and production (Simonton, 1984, 1994, 1999). Not only does exposure to diversity in the environment make the generation of new ideas more likely, it appears to facilitate autonomous, objective kinds of thought. Simonton (2000b, p.153) asserts that diverse experiences help weaken the constraints imposed by conventional socialization. Being able to choose among alternatives may promote the awareness that there are different ways of doing things. Feldman (1994a) notes that for any major form of creativity a person needs to see that the social and built world is not fixed and may be changeable.

Simonton (2000b) has examined the historical record using historiometric analysis and finds that cultural diversity facilitates creativity. He has observed that, “growing up when a civilization is fragmented into a large number of peacefully coexisting independent states tends to be conducive to creative potential” (Simonton, 2000b, p.155). Also, creative activity within a civilization tends to increase through interaction with outside influences. He reasons that the enrichment of the cultural environment encourages “new creative

syntheses” (p.155). Florida (2002) also argues that cultural and lifestyle diversity is important for creativity and notes that the places where creative people live tend to be characterised by diversity.

Also possessing diverse knowledge and experience seems to increase the likelihood of coming up with new ideas (Root-Bernstein & Root-Bernstein, 2004). Kashdan & Fincham (2002) observe:

If the wellsprings of creativity are the fusion of previously disparate ideas and concepts (Martindale, 2001), then the more ideas, categories, and/or domains accumulated and integrated by an individual, the greater the likelihood of finding novel or creative links among them. (p.373)

The importance of a diverse knowledge base to creators is supported by the research of Root-Bernstein and Root-Bernstein (2004) who found that “successful artists and scientists tend to be polymaths with unusually broad interests and training that transcend disciplinary boundaries” (p.128). However, fusion of ideas can occur under varying conditions and via varying mental processes. Heinzen (1994) raises the example of the ingenuity of people living through conditions of starvation or wartime, whose creativity may be driven by harsh necessity.

Mumford and Gustafson (1988) wanted to know why studies had revealed that major creative contributions, were most likely to occur in young adulthood, with a tendency for minor contributions to occur in middle age. Dissatisfied with the available range of hypotheses attempting to account for the high level of creativity in young adulthood, they conjectured that valuable insight could be gained by considering “what one age group has that the other might lack” (p.29). They cite Koestler’s (1964) argument that major achievements seem to occur when the “fusion of two or more schemata” brings about a reorganisation of existing understandings. It can be envisaged that upon entry to existing domains, the young bring with them a set of experiences that will often be substantially different from those of the previous generations. This increases the likelihood that young individuals entering the domain will explore or synthesise ideas in new ways.

2.6.7.1 Marginality

In his study of seven highly creative people responsible for significant contributions to separate cultural domains, Gardner (1994) observed two features common to all seven: they each possessed asynchronous intelligence profiles and each felt marginal in some way

in their culture. Gardner suggests that their lives were characterised by “lack of fit” (Gardner, 1994, p.79) and conjectures that marginality might have motivated these creative people to “prove” themselves. Csikszentmihalyi (1999) argues that dissatisfaction with the status quo is an ideal impetus for wanting to introduce novelty into a domain. Thus, a person’s marginality may not only predispose them to think in novel ways, but may also contribute motivational aspects to creative endeavour.

More complex connections between marginality and creativity are discussed by Unger (2000). Unger notes that marginality can have positive and negative aspects. On the negative side, marginality may be accompanied by stigmatisation and lack of social power. On the positive side, she argues that marginality can also engender a desire to bring about positive social change. She finds that people who have encountered problems with society are more likely, than people whose relationship with society is relatively problem-free, to question dominant social beliefs and hold a “constructionist epistemology”. She defines constructionism as: “belief in the relative nature of truths, concern for subjectivity, focus on the individual as a source of authenticity and authority, and acknowledgement of the role played by chance in the determination of events” (Unger, 2000, p.174). She frames the relationship between positive marginality, consciousness and social action as follows:

Positive marginality appears to promote constructionist epistemology; in particular, awareness that injustice is rooted in structural processes rather than personal inadequacy. Thus it supports a vision of collective as well as individual responsibility for change. (Unger, 2000, p.177)

Policastro and Gardner (1999) have observed that this relationship does not apply only for the seriously oppressed. Each of us, they point out, is a deviant from a hypothetical norm. They have suggested that our creative potentials often lie in our uniqueness, but that creative people are distinguished by their motivation to “convert differences into advantages” (Policastro & Gardner, 1999, p.223).

Simonton (2001) is emphatic about the importance of individual difference for the development of creativity: “Any developmental factor that enhances the capacity of an individual to generate numerous and diverse variations should have a positive impact on the development of creative potential” (p.7). He acknowledges that expertise is also extremely important, but stresses that, for creativity, expertise must be organised in such a way that the production of multiple perspectives are favoured. In Simonton’s view, the individual must be willing to develop his/her divergent variations and believes that

educational experience for the development of creative talent should include events and circumstances that encourage nonconformity, independence, appreciation of diverse perspectives and a variety of interests.

2.6.8 Creativity, religion and spirituality

A number of authors attest to the long history over which creativity and spirituality have been coupled in popular and scholarly thought (Albert & Runco, 1999; Csikszentmihalyi, 1996; Sternberg & Lubart, 1999). This issue impinges upon educators, from a number of angles. On one hand circumstances may have resulted in changes in the way that many humans experience their relationship with spiritual or supernatural deities (Csikszentmihalyi, 1996). However, people do continue to have spiritual and religious beliefs and experience these with varying degrees of faith, curiosity and interest. Some spiritual/religious beliefs can inform or be intertwined with beliefs about creativity.

Sternberg and Lubart (1999) argue that the popular association between creativity and divinity and/or spirituality has been an impediment to scientific creativity research. But this is an ambiguous lament, which cannot be taken as equivalent to saying that there are no conceivable or logical or even empirically verifiable connections to be made between creativity and some ways of thinking about spirituality. Lubart (1999) has himself reported that, cross culturally, ideas about spirituality and creativity interconnect in different ways and has suggested that in the East it is possible to identify a creative process, which differs from the typical Western creative process. Spirituality and creativity may interrelate in ways that bring about variation in the conceptualisation of creativity.

Albert and Runco (1999) note that defining creativity in a materialistic way is relatively recent even in the West. According to them there is some consensus among scholars that the earliest Western conception of creativity is the one contained in the Biblical story of Genesis and that this was the origin of “the idea of the artisan doing God’s work on Earth” (p.18). They observe that this way of thinking about creativity, where the impetus or source for human creativity is located with a divine entity external to the person, took a variety of different forms over time. They note, for example, that in the Middle Ages the idea arose that special talent is a manifestation of an external “spirit” using the person as a conduit. But they argue that such ideas had been contested and largely discredited by the end of the Renaissance.

However, such beliefs do still make their appearance, even in the scholarly literature, and the suggestion that this kind of thinking has died away does not seem to fully represent the situation. Sternberg and Lubart (1999) observe, for example, that Rudyard Kipling, author of *The Jungle Book* and other popular stories, wrote of the *daemon*, which was with him as he wrote his novels. Whether Kipling was speaking figuratively or not, the utterance reflects the continuing presence, into relatively recent times, of divine origin theories of creativity in the popular imagination.

It is not uncommon to find, even closer to the present day, that scholars/authors have framed their view of creativity with reference to some larger spiritual, religious or quasi-religious framework. Fiction writer and Oxford scholar, John R. R. Tolkien, author of *The Hobbit* and *The Lord of the Rings*, believed that humans, having been made in the image of a creator, can perform no more worthy work than that of, what he termed “sub-creation” (Tolkien, 2001, 1964). He shared this view with his colleague, C.S. Lewis, writer of the *Narnia* books (Carpenter, 1977). To Tolkien and Lewis the “sub-creation” of the fantasy worlds of “Middle Earth” and “Narnia” were acts of religious significance.

The work of Marshall McLuhan (McLuhan, 1962, 1964a, 1964b, 2009; McLuhan & Fiore, 1967; McLuhan & McLuhan, 1992) and Walter Ong (e.g. 1982), some of which has been discussed within the present review, has also been critiqued from the perspective that their views may be biased in favour of their religious beliefs (Sterne, 2011). In The Playboy interview (Norden, 1969) discussed earlier, McLuhan openly reveals his Catholic views and offers his thoughts on how they relate to the evolution of humanity (Norden, 1969). The theological interests of the Jesuit Father Walter Ong are proclaimed openly even in the title of his most influential work on media theory – *Orality and Literacy: The Technologizing of the Word* (Ong, 1982). Even if it can be said that in fairly recent history creativity came to be thought of, by some, as a process originating, not with a divine entity, but in the person, it is also the case that for many there is still a link between creativity and spiritual or religious ideas and that these ideas can influence the conceptualisation of creativity itself. The present reviewer has encountered the “real life” situation where people, curious about the topic of the present thesis, have expressed surprise that someone who is not of the Christian faith could consider herself equipped to undertake study on the subject of creativity.

Carl Jung, one of the pioneers of modern psychology, noted similarly to Sternberg and Lubart (1999) that many people regard spirituality as something which cannot or should

not be studied. He saw this as a complex problem and discussed the nature of this complexity at length in his essay *The Undiscovered Self* (Jung, 1957). In the essay, Jung expressed his intolerance of the attitude that shrugs spirituality off as non-scientific. It was his understanding that spirituality is a basic, even instinctual aspect of the psyche. He took the view that spirituality involves that realm of human experience which is underpinned by feelings of a “numinous” nature. Numinosity, as Jung used the term, is a quality of awe or inspired compulsion in the way one feels and it is around this quality of numinosity that creativity, spirituality and the perceived guiding or compelling effect of the numinous experience are linked together in the Jungian framework. For Jung, it is the “unconscious” that is the seat – the only source – of spiritual or religious experience (Jung, 1957). Despite his reports that he himself had experienced compulsions so powerful that he *felt* as though he was “assaulted” and compelled to obey “a higher will” (Jung, 1963), Jung explained the human tendency to attribute spiritual guidance and spiritual ecstasy to external rather than internal sources and objects, in terms of “projection”, that is, attributing one’s own feelings to objects in the outer world. Jung writes that in remote times, “the main body of psychic life was apparently in human and non-human objects: it was projected, as we should say now” (Jung, 1938, p.242). To Jung, God is a projected aspect of self and therefore any spiritual feelings one might attribute to God (or a god) as an external entity, actually arise internally.

Maslow (1964) observed that the “peak experience” – an instance where a profound sense of meaning is experienced – is often a common factor in propelling people into creative activity. Maslow argued that religious figures have often been “peak experiencers” trying to explain to others what life is like after the peak experience. Similarly to Jung, he also regards spirituality as related to experience and therefore a normal part of the world.

The observation that there is an intersection between creativity and spirituality has also been made outside psychology. For example, in her investigation of mysticism (Underhill, 1911), Underhill, a self-proclaimed mystic, concluded that the religious or spiritual mystic experience is much the same as other kinds of inspired creative experience.

Contemporary investigations of religiosity suggest that there is a great deal yet to understand about how creativity might appear to people when viewed through particular religious or spiritual lenses. Recent work on types of religious engagement suggest that there are more and less authentic ways of approaching engagement in religious or spiritual activities. Investigations suggest that people can engage with religion in controlled ways,

where doctrine is interpreted literally and religious control may be adhered to out of fear. But others experience authentic/autonomous religious engagement (Neyrinck, Lens, Vansteenkiste, & Soenens, 2010; Neyrinck, Vansteenkiste, Lens, Duriez, & Hutsebaut, 2006). However, there are aspects of individual approaches to religiosity, such as whether a position on transcendence is included in people's religious beliefs, which seem to complicate understanding of differences in religious experience.

2.7 SYNTHESIS: AUTONOMY HAS PERSONAL AND SOCIAL VALUE

The synthesis that is made here after considering all of the various aspects presented in this selection of perspectives is simply, that autonomy – which underlies creative processes which feel meaningful to the creator – has personal and social value. Autonomous processes, which may be either intrinsically motivated or involve purposes about which a person cares deeply, have been shown to promote deep learning, greater complexity and creativity in thinking, development and integration of pro-social values and to enhance well-being. Through this review of creativity research it was also noted that understanding the relation between autonomy and creativity is valuable for understanding the relationship between creativity and culture. Therefore in any complex view of creativity an understanding of autonomy is essential.

2.8 ENHANCING STUDENTS' CREATIVITY

Runco (2004a) suggests that the relationship between education and creativity may be one of the most important areas for research as “there are serious concerns about the impact of education on creativity”(p.670). Csikszentmihalyi (1995) argues that rather than increasing curiosity and interest schooling often dampens student interest and creativity. He argues that once this has happened, it may be hard to reverse the situation. These views suggest that it does matter how educators approach the support of creativity. As Kleiman (2005) reasons, it matters how educators approach “the design and delivery of educational provision if the stated desire to see more creativity in that provision is to be realised” (p.12).

The reviewed literature has pointed to the importance, for educators, of considering two main sets of issues related to creativity:

1. Teaching with awareness of a social/global environment within which “creativity” is becoming more common as an aspect of life and work. This aspect of creative curriculum was addressed earlier and involves a number of

aspects relating to work in a creative economy and life in an electronically mediated society.

2. Teaching *for* creativity. Teaching for creativity can, obviously, mean a number of things if creativity has a range of meanings, and a glance at the creativity literature quickly indicates that there are mixed views on both the means and the efficacy of approaches to teaching for creativity. It appears on the basis of the reviewed literature that schools might cover most bases by considering three main approaches:

- a problem-solving/creative thinking training approach
- an autonomy-supportive approach
- a domain-specific approach.

2.8.1 Training for problem-solving/creative thinking

Although “training” may seem like the most straightforward approach to teaching for creativity, a survey of the literature and consideration of the reasons for implementing such an approach soon suggests that the idea of training for problem-solving and/or creative thinking is not very straightforward at all. There are difficulties at the outset in defining the objectives of problem-solving and creativity training in education. The literature provides varying assessments of how effective such strategies really are (Nickerson, 1999). What kind of problem-solving/creative thinking is to be encouraged? Would the intention be to stimulate practical, everyday, kinds of problem-solving or some kind of generic problem-solving ability suitable for use across activities in a range of domains? How might students be supposed to benefit? Would this kind of training be *for* them or is training in creative thinking an attempt to build a kind of infrastructure for future innovation?

The relationship between creative thinking and problem-solving is not clear cut. Nickerson (1999) provides a succinct discussion of positions on this matter and suggests that the two constructs may be too closely related to be treated in isolation. In deciding whether to train for problem-solving and/or creative thinking the problem faced seems, to the present reviewer, to be of the same order as the issue of whether there are forms of training suitable as preparation for doctoral study (Hockey, 1991). Hockey (1991) notes that one of the arguments raised *against* the usefulness of training for the doctorate is that there is little training that could be common to all Ph.D. projects. Similarly, it could be difficult to settle on types of creativity training that would provide a general kind of underpinning for the various kinds of creative work and life situations for which students are bound.

Perhaps it is counterproductive to consider the development of creative thinking in isolation from the purposes to which it is put. Is it really possible to think of creativity as a “skill”, which can be applied in a number of situations? A sophisticated approach to *learning* is usually developed over many years, often through engagement in formal education and, as reflected in complex conceptions of learning (Van Rossum & Hamer, 2010), becomes an attitude based on conscious evaluation of its effectiveness and value. The reasons and methods for developing creative thinking, should, one would think, be given considerable thought if schools are entertaining the idea of using short term programs. It is perhaps because of discomfort with this kind of “training” approach that a number of educators and researchers have expressed reservations about teaching for “creativity” without also teaching for “values” (Craft, 2003; Gibson, 2005).

Having articulated these reservations, the possibility of teaching creative thinking through programs and direct strategies does receive support in the literature (Nickerson, 1999; Puccio & Gonzalez, 2004; Torrance, 1972). Torrance (1972) is highly supportive:

I know that it is possible to teach children to think creatively and that it can be done in a variety of ways. I have done it. I have seen my wife do it; I have seen other excellent teachers do it. I have seen children who had seemed previously to be “non-thinkers” learn to think creatively, and I have seen them continuing for years thereafter to think creatively. (p.114)

In this article Torrance reported on the success of a variety of strategies such as packages of materials, problem-solving programs, reading programs, manipulations of classroom variables, using the creative arts as vehicles, reward and competition. Similarly, there have been reports of favourable results from the Creative Problem-Solving (CPS) program, which over the years has been refined and represented through a number of versions (Isaksen & Treffinger, 2004; Puccio & Gonzalez, 2004). Nickerson (1999) is objective and reserved in his review of several such programs. He reports, nonetheless, that a number of programs and techniques are available to enhance a range of thinking elements and that some of these appear to have produced evidence of moderate to appreciable gains in aspects of creative thinking. Teacher enthusiasm and familiarity with the programs seems to be a moderating factor in achieving results on some of these programs (Isaksen & Treffinger, 2004; Nickerson, 1999; Puccio & Gonzalez, 2004).

The extent to which training programs promote the use of surface strategies versus depth may be an issue to consider. Nickerson (1999) draws attention to a cautionary note,

expressed by Cropley (1992), to the effect that attempts to train in creative thinking could have the opposite effect if students learn instead to give the *appearance* of originality. Shalley (1995) has found that in organizational contexts creative outcomes increase if people are simply given the instruction that a creative product is required. When choosing strategies to increase “creativity” it seems important to consider what people are learning about creativity. Puccio and Gonzalez (2004) observe, interestingly, that although creative thinking does appear to increase through their structured training for creative problem-solving, there seems also to be a horizon at which many learners become “stuck”. They report that for these learners, “CPS remains a model to be applied to others (i.e. facilitating CPS sessions), but does not necessarily become a way of life” (p.406). Puccio and Gonzalez argue that to take people beyond this stage they need to develop: “an openness to ongoing learning” (p.407). This suggests that if schools were to employ training programs of this type, it would also be important to implement more global strategies to help facilitate such attitudes to learning. Treffinger and Isaksen (2005) point out that, in any case, “the most powerful applications of CPS for students involve them in dealing with real opportunities and challenges ...” (p.349). Perhaps, after all, an environment geared towards the facilitation of quality in learning is the most important aspect of enhancing creativity. But it should also benefit educators to be aware of what has been learned through decades of refinement and research (e.g. Isaksen & Treffinger, 2004) in the understanding and training of problem-solving and creative thinking. Perhaps a specific benefit of some training programs is in raising awareness of stages, phases and thinking processes specific to creative processes as distinct from other processes. Presumably schools wishing to utilise structured strategies for building problem-solving/creative thinking would need to decide what kind of outcome is relevant for students and investigate the various merits of available programs and strategies.

2.8.2 Autonomy-supportive approach

The term *autonomy-supportive approach* to enhancing creativity is used here to outline a more generalised approach to the support of creativity through the support of autonomy. The aim of this strategy is to provide the kinds of environmental supports and instruction, which, by facilitating autonomous functioning simultaneously enhance conceptual understanding, ownership and complex creative capacities. Almost any strategy could be included here if it helps to promote engagement and challenge, depth and ownership in learning, if it facilitates interest, curiosity, self-direction, and growth of the self.

McWilliam's (2009) advocacy of the teacher as a "meddler" who promotes challenge and problem-solving, would qualify as an element in an autonomy supportive approach. To this kind of focus on teaching and learning would ideally be added a wider field of concern with the school environment, evaluation and the quality of teacher-student relations.

Nickerson (1999) discussed a range of strategies for enhancing creativity, most of which aim not only at increasing student's ability to generate quality ideas and outcomes, but more fundamentally at the development of deeper approaches to learning. The strategies he suggests range from building basic skills and domain specific knowledge to those aimed at facilitating deep learning and interest. He argues, for example, for the importance of establishing purpose and intention in activities and for stimulating curiosity, interest and exploration.

Since Nickerson wrote his chapter for the *Handbook of Creativity* in 1999, the research around autonomy-support has burgeoned and a nuanced literature is now available to inform autonomy-support in schools and teaching. Much of this literature provides explicit insight into the differences between autonomous and controlled approaches to tasks and learning and illuminates how autonomy may be facilitated in preference to control. For example, researchers have explicated differences between maladaptive and adaptive forms of "perfectionism" (Vansteenkiste et al., 2010) and between obsessive and harmonious forms of "passion" (Vallerand et al., 2003). Maladaptive forms of engagement in tasks and learning appear invariably to relate to more controlled motivations for engagement. The increasingly clear message from this literature is that there are effective and healthy ways of approaching tasks, learning and creativity, which may be facilitated within the teaching context.

Stone, Deci and Ryan (2009) outline five key strategies for autonomy-support in organisations, which relate as well to the school environment as to corporations and business. These are: establishing open exploratory dialogue by asking open questions and inviting participation in solving important problems; establishing empathy through active and reflective listening; offering choices within structure; providing sincere positive feedback that acknowledges initiative, and includes factual, non-judgmental feedback about problems; and minimizing coercive controls such as rewards and comparisons with others. These strategies allow the effective functioning of people's natural inclinations towards active, authentic engagement. In the same article, the authors note how accountability pressures, within educational and other organisations, have been observed to

increase teacher/managers' tendencies to pressure and control others and undermine inclinations to support self-determination.

SDT researchers have also noted that activities are often unavoidably dull or difficult, but that in such circumstances autonomy-supportive facilitation can significantly improve people's ability to feel autonomous in carrying out the tasks (Deci, Eghrari, Patrick, & Leone, 1994). The three main contextual supports in this respect are providing a rationale, acknowledging people's feelings and conveying choice. Contextual supports for autonomy therefore appear to be as effective in enabling more autonomous performance on dull tasks as for enabling authentic interest and engagement.

Over the years many suggestions have been made with respect to how to enrich the school environment and student's experiences of schooling so that "creative" outcomes and thinking are favoured. Much of this discussion is applicable to the aim of creating autonomy-supportive school environments. It has been argued that students should be assisted to develop a long-term interest in some form of creative expression (Nickerson, 1999) , that they should be allowed opportunity to do something they "love" (Collins & Amabile, 1999) and that they should be encouraged in finding pleasure in playing with ideas (Gardner, 1993). It has been suggested that students may benefit from seeing linkages across content areas (Lubart & Guignard, 2004), from exposure to diverse information and experiences (Simonton, 2001) and from focusing on self-mastery rather than competition with others (Nickerson, 1999). SDT researchers strongly advocate the use of intrinsic rather than extrinsic goals when designing activities as they promote engagement and are experienced as congruent with the self (Vansteenkiste, et al., 2004).

The principles of autonomy-support, which are now well researched, therefore indicate that the school environment and teacher-student relations are critical aspects in the general support of, "creativity", quality in learning and development of greater autonomy in functioning. Autonomy-supportive teaching involves giving attention to many aspects of the school environment including how instructions are given, the careful use of extrinsic rewards and the quality of teacher-student relations.

2.8.3 Domain specific approach

Although little can be said here about how creativity is constituted within various domains it seems inevitable that within different domains there will be specific ideas about what constitutes a "creative" outcome or product, the reasons for desiring "creative" outcomes

and specific procedures governing how best to achieve such outcomes. For example, in his study of three exceptional designers with experience in diverse fields of engineering, Cross (2002), demonstrates that although there are identifiable similarities across the design process for all three individuals, there are specific considerations when designing to achieve “creative” outcomes in a given field. As Cross notes experts are not necessarily able to successfully “switch” between domains. Therefore an additional aspect in creativity support would involve developing familiarity with the specific ways creativity is understood in different areas of study and work (Reid & Petocz, 2004).

2.9 STUDIES OF CREATIVITY CONCEPTIONS

Pajares (1992) reported that studies aimed at understanding teachers’ beliefs had been scarce. Commenting only a decade ago, Plucker and Renzulli (1999) suggested that overall “creative attitude research within education and psychology are limited, perhaps because of the perceived lack of application” (p.43). Since then there has been growing interest in examining teachers’ conceptions of creativity and related phenomena. Recently, in the context of his own phenomenographic research project, Kleiman (2008) claimed, nonetheless, that research into teachers’ conceptions of creativity has been limited to a handful of studies.

2.9.1 Non-teachers

In examining the research around creativity conceptions, the researcher has not restricted interest to studies of the teaching community, but has looked more broadly to studies of the creativity conceptions of professionals, academics, students and the general public. Three types of findings from this research are seen as relevant to understanding implicit theories of creativity among teachers: those that help to define the conceptual territory of creativity, those that highlight differences in understandings between groups of people and those that highlight common ground in conceptions of creativity.

In an oft-cited study, conducted in the United States, Sternberg (1985) attempted to find out about the conceptual territory of creativity by examining how people understand the concepts of intelligence, creativity and wisdom. He sent questionnaires to professors in various disciplines and to lay people. Sternberg found that, “people have systematic theories of intelligence, creativity, and wisdom, and that they use these implicit theories accurately both in evaluating themselves and in evaluating hypothetical others” (p.607). The findings demonstrated that, although the constructs are overlapping, people do see

creativity as different from either intelligence or wisdom. Sternberg found differences in the extent to which professors from various disciplines saw creativity as related to either intelligence or wisdom. Business professors linked creativity and intelligence less strongly than did physics, philosophy and art professors. Business professors also saw an inverse relationship between creativity and wisdom: that is, wiser people are seen as less creative. These findings are of interest for they suggest that creativity may be conceptualised differently by practitioners in different domains. Secondly, they arouse interest about what it is that professors in the different disciplines are seeing as creativity. The study does not provide insight into this aspect.

Two qualitative studies are seen as relevant and interesting from the perspective that they highlight commonalities in some people's experience of the process of "high stakes" problem-solving. These are Shaw's (1994) study of scientific problem-solving and a study by Marton, Fensham and Chaitlin (1993) of Nobel laureate's understandings of scientific intuition. This work suggests that although creativity is seen by some as a "slippery" concept, at an experiential level, there can be commonalities in people's experiences of the processes they regard as creative. Shaw (1994) immersed himself in the transcripts of interviews with eleven scientists, to perform a "formal heuristic investigation" of the "cognitive and emotional features of the scientifically creative process" (p.3). He discerned ten major and five minor themes in the scientists' descriptions of their creative processes. The ten major themes he describes as: "the requirements for becoming immersed, the trusting of intuition, the role of unconscious incubation, getting stuck, letting go and the use of recreation, illumination, emotional reaction to illumination and body sensations, explication and creative synthesis, rejection, and validation and acceptance". The five minor themes are described as: "recognizing the problem, pushing for a solution, external pressure, failure, and the general subject of creativity" (Shaw, 1994, p.10). Among the most informative of Shaw's determinations is his suggestion that "there might very well be a unified process associated with all types of creative behavior [sic]" (Shaw, 1994, p.41). Shaw's analysis appears to show that similar features can be discerned across individual experiences of the scientific creative process.

An ethnographic study of 83 Nobel laureates' experiences of scientific intuition (Marton, et al., 1993) demonstrates that across a group of scientists, the understandings expressed concerning the experience of intuition in the creative process, showed many similarities. The scientists commonly talked about their feelings of rightness and certitude

at times in the process, about having a sense of direction and paying attention to “quasi sensory” qualities. Fensham and Marton (1992) relate these findings to the context of teaching and learning in science, suggesting that because intuition is important to scientists it ought to be important in the teaching and learning of science. They observe that rather than setting up the kind of challenges, which could possibly stimulate such thinking, science teachers often take a “step by step” approach to teaching science and that “probably only a few science teachers model intuition to their students or could recognise intuition in their students if and when they think in that way”(p.120). The relevance, for the present research interest, of studies which show such commonalities in some people’s experiences of creative processes, is that it might be expected that such commonalities exist in teachers’ experiences of creativity also and, if they do, that teachers might draw on these understandings to inform their teaching in the way that Fensham and Marton envisage.

Another kind of identified commonality relates creative outcomes to deep learning. Australian researchers, Reid and Petocz (2004) found that university students evidencing a deep approach to learning produced work that was more creative, as judged externally, than that of students with a surface approach to learning. This suggests that where university student’s work is judged as creative, the student’s approach to learning will be a deep approach. However, this work does not show what teachers and supervisors are seeing as creativity.

Petocz, Reid and Taylor (2009) use a phenomenographic approach to examine business student’s conceptions of creativity. The researchers identify three increasingly complex levels of understanding of creativity, which they describe as *definitions*, *attributes* and *comprehensive*. Thus the categories they identify indicate that the least sophisticated student conceptions of creativity involve a focus on definitions and a more sophisticated approach focuses on attributes. In the most inclusive category, described as comprehensive, students were able to discuss creativity in a way which suggests that they are aware of the less comprehensive views. What does not emerge from the study is a clear way of understanding what has changed in the more comprehensive view. The authors suggest that “at this broadest conception of creativity, it may be possible to learn about the nature of creativity itself, as well as learning about how students see creativity in the contexts of their life, studies and work” (Petocz, et al., 2009). However, it appears that

ongoing work would be necessary to understand what students are focusing on when seeing creativity from a comprehensive framework.

2.9.2 Teachers

Some researchers have attempted to illuminate aspects of teachers' understandings of creativity. As research of this type is fairly limited, the survey includes creative attitude and implicit theory research with pre-service, school and university teachers. As with the studies for non-teaching groups presented above, some studies use quantitative methods and others use qualitative methods.

Runco and Johnson's (1993) study, conducted in the United States, required parents and teachers to choose from a list of 300 adjectives, that describe characteristics of creative children. Both parents and teachers saw creative children as being active, adventurous, curious, enthusiastic, and imaginative. However, teachers tended to focus on social characteristics such as cheerfulness, while parents focused on intrapersonal characteristics such as being self-confident. Runco and Johnson state that teachers have idiosyncratic, implicit theories about children's creativity that "probably act as standards against which children's behaviours and performances are judged. These in turn are important because they can significantly influence children's performance" (p.91). However, the study supplies little information about how teachers formulate their ideas or how they apply them.

Fryer and Collings (1991) report on a study in which over a thousand teachers and further education teachers in Wales and England completed a survey questionnaire. Teachers were asked questions about their views of creativity and also about their styles of teaching. Fryer and Collings report that although most of the teachers indicated that creativity could be developed, around three-quarters apparently saw creativity as a "rare gift". They report also that teachers "highly oriented" to creativity displayed a preference for pupil-centred learning.

Diakidoy and Kanari (1999) employed similar quantitative methods to investigate implicit theories about creativity in a group of 49 trainee teachers enrolled at the University of Cyprus. They found that the student teachers believed a number of things about creativity, which the authors see as being at variance with scientific understandings, such as that "creative outcomes are not necessarily appropriate outcomes" and "creativity is more likely to be manifested through artistic and literary endeavours or in the context of

artistic and literary domains” (p. 239). They reason that, therefore, teachers might not see creativity as related to learning. However, over half of the student teachers also indicated that creativity could occur in domains such as mathematics. Diakidoy and Kanari note that the data did not allow inferences to be made about how the students are conceptualising creativity. They suggest that further research would be necessary to examine the relation of beliefs about creativity to beliefs about learning and instructional practice. The authors do not appear to have followed up on this research direction.

A number of studies have found that teachers hold negative attitudes concerning creative students (Kwang & Smith, 2005; Scott, 1999; Westby & Dawson, 1995). In an Eastern study, Ng and Smith (2005) investigated, what they regard as an anomalous or paradoxical situation observed in some studies: “Teachers in the East are encouraged to nurture creativity in students. Yet many studies reveal that, in general, teachers do not like creative students’ (p.324). They contend that this is due to the Confucian tradition in which teacher and student are expected to enact the designated roles of moral exemplar and docile, teachable student. Students who ask difficult questions, who act in an individualistic way – that is, are opinionated or disruptive – are considered both “creative” and not “nice”. The researchers also found differences in the ways novice and longer-serving teachers view creative behaviours, with novice teachers being more tolerant of “creative but undesirable” characteristics.

Kleiman (2008) interviewed 12 university academics in the UK and used a phenomenographic approach to distil five main categories of description from a large number of possible conceptions, which emerged initially from the data. He identifies:

- A constraint-focused experience
- A process-focused experience
- A product-focused experience
- A transformation-focused experience
- A fulfilment focused experience

He concludes, however, that the research is still emergent, requiring further analysis. To date an update to this work appears not to be available. At the time of publication it had not yet been determined how to depict the relational and hierarchical aspects of the variation between categories. Kleiman suggests that looking at the categories in terms of inclusivity

– that is, which categories would subsume others lower in the hierarchy – “would almost certainly situate creativity as a constraint-focused experience at the “lower” end, and creativity as a fulfilment-focused experience at the “higher” end” (Kleiman, 2008, p.212). He reasons that there might be a parallel with Maslow’s identification of self-actualisation as topping the human hierarchy of needs. However, he sees difficulties with determining how product-focused and process-focused categories would sit within that hierarchy and has not identified a key dimension of variation across the conceptions of creativity emerging from the study.

Using a phenomenographic approach to investigate trainee science teachers’ conceptions of creativity, Newton and Newton (2009) found that within the group conceptions were, “narrow, focused mainly on practical investigations of matters of fact, and included misconceptions” (p. 45). They describe the trainee teachers’ views as “grossly inadequate”.

A persistent issue for quantitative research into creativity conceptions seems to be that it is difficult, with quantitative methods, to find out what it is that the participant or respondent sees *as* creativity. As Portillo (2002) points out, a problem with using inventories such as the Adjective Check List (ACL) is that “respondents may want to use adjectives that do not appear on the checklist to describe the creative person” (p.24). Furthermore, people can understand adjectives in different ways. At the completion of her study of professionals’ views of professional designers and designing, she recommends the use of qualitative investigations to find out just what respondents mean by the adjectives they choose. Therefore, although the quantitative work is of value it leaves many questions open.

Qualitative researchers, at least in the UK (Craft, 2008b), have begun to explore aspects of pedagogy and conceptions relating to creativity. Craft (2008b) relates this growing research interest to the size and complexity of the current wave of educational interest in creativity:

The third wave [of educational interest in creativity], in its volume, speed, density and potential for massive impact, might be likened to a tsunami, i.e. a huge and overwhelming wall of change caused by seismic shifts in the underpinning foundations in relation to what we aim for in education (Craft 2008b, 2008c, 2008d) rather than a mere wave, and is characterised by its attention to complexity and to particularistic detail through increasingly qualitative empirical investigation (Martin, 2008) ... (p.4)

In such a changing educational climate there are many questions which need to be raised and answered about such issues as what teachers are making of these changes, what is effective in terms of teaching strategies and what is not. But as has been argued in this thesis, basic questions are how do teachers understand creativity and how do they relate their understandings of creativity to the teaching context? Answers to these questions are needed in order to facilitate training, collaboration and progress with respect to creativity-related agendas in education. It seems important, also, that Australia contributes to the global effort to understand teachers' and others conceptions creativity. A third consideration, not directly addressed in the present study, is how, or if conceptions of creativity differ from domain to domain and cross culturally.

CHAPTER 3: THE RESEARCH APPROACH

3.1 OVERVIEW OF THE CHAPTER

This chapter addresses the researcher's choice of a qualitative research method, provides a brief history and general description of the phenomenographic approach used and details how this research approach was employed in the present study. Phenomenography is an interpretative approach in which it is acknowledged that the researcher's own interpretations play a major role in formulating the study findings (Collier-Reed, Ingerman & Berglund, 2009) and as such various questions and discussions have arisen in the phenomenography literature with respect to how to ensure the trustworthiness and usability of the research outcomes in phenomenographic studies. Phenomenographers have attempted to address these concerns, suggesting different ways of meeting the needs for rigour in a phenomenographic, as in any, research project. To this end the directive to provide a full and open disclosure of the specific approach taken in any given study (Bruce, 2003; Cope, 2004), has been taken as a general guide to the writing of this chapter.

3.2 CHOOSING A QUALITATIVE RESEARCH APPROACH

Burns (2000) observes that research in the professional social sciences has generally been conducted using quantitative research methods, in order to establish general laws or principles, but that, more recently, qualitative research emphasising the subjective experience of individuals has arisen as a viable research approach, and has been particularly influential in conducting educational research. A qualitative research protocol was employed in the present study as it suits the researcher's aim of investigating teachers' subjective experience relating to creativity.

Glesne (1999) characterises the difference between the paradigms underlying quantitative and qualitative research as differences in "ways of knowing". Paradigms are described by Usher (1996) as historically and culturally located frameworks that guide investigation within scientific communities. The paradigm underlying quantitative research has often been referred to as *positivist* (Burns, 2000). The positivist paradigm supposes that the world is objectively observable and measurable. In contrast, qualitative research emphasises the importance of subjective, human experience and seeks to discover these experiential levels of meaning (Burns, 2000). Qualitative methods are generally supported

by the *interpretivist*, or alternatively termed *constructivist*, paradigm, which views the world as socially constructed and changing (Glesne, 1999).

Burns (2000) suggests that the practice of polarising social science research into quantitative and qualitative categories is misleading to the extent that it characterises quantitative designs as more rigorous and legitimate than qualitative designs. Burns emphasises that all scientific research, whether quantitative or qualitative, is empirical. The term “empirical” refers to “whether phenomenon are capable of being found in the real world and assessed by means of the senses” (Burns, 2000, p.14). Researchers are commonly advised to be guided in their choice of methodology, by the research problem – the specific aims and focus of the study (Denzin & Lincoln, 1994). Glesne (1999) recognises nonetheless that researchers may be attracted to research problems that match their personal view of the world.

When conducting qualitative research it is the “lifeworld of the participants that constitutes the investigative field” (Burns, 2000, p.11). Qualitative approaches recognise that humans construct multiple subjective realities and that human activity occurs within social contexts. The variability of human experience and perception is not easily accessed or understood using conventional scientific methods (Burns, 2000).

Acknowledged strengths of the qualitative approach for studying the complexity of the human lifeworld and educational experience are: its broad focus, hypothesis-free orientation and the closeness of the researcher to the field. The qualitative researcher is therefore able to observe qualities of interaction that may be missed by more positivistic inquiries (Burns, 2000).

In order to understand and interpret how participants in a particular social setting construct and perceive the world around them, researchers need to gain access to the participant’s perspectives. There are a variety of modes of qualitative inquiry each with their own forms of data gathering, which include participant-observation, interviews, non-participant observation and archival strategies (Glesne, 1999). Data gathering may involve long-term interactions with research participants, in-depth interviews and observations requiring that the researcher becomes the interpreter of events. Therefore, “the concern with researcher objectivity is replaced by a focus on the role of subjectivity in the research process” (Glesne, 1999, p.5). This feature of qualitative research, combined with the subjective nature of qualitative data, impacts on requirements for establishing reliability

and validity, which need to be differentially addressed according to the methods used in various forms of qualitative research (Burns, 2000). This aspect of qualitative research is often viewed by quantitative researchers as a limitation (Burns, 2000). Burns, however takes the view that investigation of subjective experience is simply not amenable to the usual scientific criteria.

Denzin and Lincoln (1994) advise that the choice of methodology should be guided by the aims of the research. Previous investigations of teachers' conceptions of creativity have often used quantitative methods to test specific hypotheses about observed differences in teachers' attitudes to creativity, or have elicited teachers' implicit theories about creativity using pre-existing lists of descriptors. In the present study the researcher has sought to discover and describe the various ways that teachers in public schools in Queensland conceptualise creativity. The researcher has not been interested in finding out about creativity itself or in testing a pre-determined hypothesis regarding the different ways creativity is understood. The interest has been in gaining a greater understanding of ways teachers' experience, think about or conceptualise creativity.

The aim of achieving insight into teachers' experiences of creativity therefore guided the researcher to the choice of a qualitative research approach. For various reasons, phenomenography was the qualitative approach selected. Phenomenography is regarded as an effective means of uncovering and representing qualitative variations in the ways that a phenomenon, such as creativity, is understood within a group of people (Walsh et al., 1993). It is also useful for understanding variations between educators' or learners' experiences and the preferred disciplinary meaning of a phenomenon (Walsh, et al., 1993). Although disciplinary meanings of creativity may vary and require clarification in localised settings (Reid & Petocz, 2004) it has been suggested in this thesis that there are educationally critical aspects to teachers' understanding of creativity, which may be regarded as representing a more complete or higher order approach to conceptualising creativity within education.

Phenomenographic inquiry involves gathering data through interviews in a manner that permits interviewees to "choose the dimensions of the subject they want to answer" (Marton, 1986, p.42). Therefore it allows a kind of information to surface that is not attainable through questionnaires. Researchers who have been interested in accessing the full range of dimensions of experience in relation to a phenomenon and have used a phenomenographic approach, have reported that phenomenography offers greater scope for

identifying aspects of discourse and experience within a group of people than other methods (Dunkin, 2000; Patrick, 2000; Trigwell, 2000). Furthermore, a phenomenographic study results in the presentation of a set of categories or classifications describing people's ways of experiencing something. Because the educational creativity agenda has been marked by debate and considerable confusion over the meanings of creativity and diverse justifications for its place in school curricula, the prospect of developing a parsimonious set of categories showing a limited number of ways that creativity is conceptualised within a representative sample of teachers, was seen by the researcher as a highly useful research direction. Such a parsimonious set would be particularly informative if it could provide insight into why creativity is so contentious.

3.3 PHENOMENOGRAPHY

Phenomenography is a research approach, which evolved as a research specialisation from a set of empirical studies of learning conducted in the 1970s in Sweden (Marton, 1994; Svensson, 1997). Marton (1994) describes phenomenography as the empirical study of the limited number of qualitatively different ways in which various phenomena in the world around us are experienced, conceptualised, understood, perceived or apprehended (p.4424).

3.3.1 Theoretical aspects

The ontological perspective taken by phenomenography is described as non-dualistic (Marton, 2000). In this view there is only one world, which exists, but is experienced differently by different observers. Subject and object are not separate in this view and therefore, in studying phenomena, the experience to be identified and described is a relation between the two. Phenomenographers are interested in the *phe-noumenon* (Bruce, 2003), that is, how the object appears to the perceiving subject (Bruce, 2003; Marton & Booth, 1997; Pang, 2003). In studying this relation of subject and object, the researcher is looking for its structure and relations, figures and grounds (Marton, 2000). Different people can perceive a given phenomenon in different ways. Alternatively an individual may view a single phenomenon in different ways (Marton & Pong, 2005). In a phenomenographic study "it is the researcher who senses this variation" (Pang, 2003, p.146).

Phenomenography is unconcerned with the psychological aspects of individual views or with describing the "richness" of individual experience (Marton & Booth, 1997). It is instead concerned with discerning structures of awareness. Marton (1994) describes the

structure of awareness as an *internal relation* between subject and object, which has an *internal horizon* or focus and an *external horizon*, in which the focal object is “delimited from and related to a context” (Marton, 2000, p.113):

What surrounds a specific experience, what is its external horizon, is the individual’s total experience of the world. In this sense we are aware of everything all the time. But we are definitely not aware of everything in the same way (Marton, 2000, p.114).

Bowden and Marton (1998) elaborate:

Awareness has a certain structure. You are focally aware of certain things; they are in the foreground, they make a figure; these things are few. Other things you are more or less peripherally aware of on, in principle, an infinitely diminishing gradient (p.36).

Patrick (2000) suggests that differences in how people understand a phenomenon are visible in what they *notice* about it and how they see its parts as being related. This observation takes on additional significance, when considered in connection with the view that people are more likely to see something a certain way if that way of seeing is “felt” with ease (Marton & Pong, 2005). These observations are critical, for they suggest that rather than all of human experience being “there” for people to see, if a possible way of seeing something is not “felt” with ease, a given individual is not likely to see or notice that possibility. This feature of human awareness opens up the further possibility, that not only will people see a particular phenomenon in different ways, but also that some ways of seeing could be more comprehensive than others.

Over time some of the theoretical underpinnings of phenomenography have been questioned and discussion has been generated leading to a number of attempts to refine the theoretical and procedural aspects of the approach. Some of this discussion has concerned the nature of “conceptions”, which are seen as the basic units of phenomenographic description (Marton & Pong, 2005). As Marton and Pong (2005) note, questions have been asked about how conceptions should be denoted and how conceptions relate to the categories of description, which make up the outcome of the study – the outcome space.

Categories of description are generally distinguished from conceptions in that categories may contain multiple conceptions and the set of categories is *internally related*, representing the variation in the ways the phenomenon is conceptualised, understood or experienced across a group of people (Trigwell, 2000; Walsh, 2000). Nonetheless, this

leaves open the ways in which conceptions might be organised into categories and differentiated from each other.

Different studies have depicted variation between categories in different ways. Bruce (2006) notes that different studies have delimited categories by:

a) identifying categories as simple or complex, b) positioning categories as reflecting historical development c) positioning categories as identifying increasing complexity or levels of understanding d) reflecting the broadening of the space of variation or indeed a combination of some of these. (p.15)

As the onus of interpretation and description of categories rests with the investigator, it has been suggested that in writing up their completed projects, phenomenographic researchers “need to take care to articulate the character of the framework guiding [their] analyses as much as possible for specific projects” (Bruce, 2003, p.11). Cope (2002) advises that rigour and usability of research can be best assured by paying attention to and clearly defining the observed structures of awareness, showing carefully the dimensions that are observed to vary from category to category. Therefore, presently phenomenographers appear to be dealing with the question of how conceptions relate to categories more through procedural and accountability measures, than through specific theoretical stipulations.

The question of “what is a conception?” has received considerable theoretical consideration. Pang (2003) and Marton and Pong (2005) have articulated, for example, how the subjective discernment of variation, as a basic element of perception, relates to the researcher’s identification of conceptions. It has been suggested that phenomenographers might be interested in two “faces” of variation: the variation not only *between* identified categories, but also “the variation that corresponds to the critical aspects of the phenomenon, i.e. the dimensions of variation as experienced by the “experiencer” (Pang, 2003, p.146). Marton and Pong (2005) discuss this second face of variation in some depth in conjunction with a study of student’s conceptions of price and trade (Pong, 2000). They show how variation in the things focused upon can be used to delimit conceptions.

However, they leave the issue of how to describe, what might be referred to as, “meta-conceptualisation”, largely unresolved. They note that students in the study “did not see a need for a general concept of price (or trade)” (p.347), and that the model of description used in the study does not capture the difference between context specific views of price or trade and more abstract analytical views of these concepts/phenomena. Presumably the

researcher possessed such an analytical understanding of price and trade. This highlighted difference between novice and sophisticated views of a concept underscores the complexity of the phenomenographic enterprise. Marton and Pong point to the necessity of resolving the problem, in phenomenographic study outcomes, of how to reflect both the pared down basis of conceptions revealed through variations focussed upon and the other kinds of variation that the researcher sees as existing between people's ways of experiencing the phenomenon. Thus, at the end of their discussion, the interpretive awareness of the researcher is once again brought into view.

3.3.2 Procedural aspects

The aim of phenomenographic analysis is to arrive at a description of the limited number of qualitatively different ways in which a phenomenon is understood within a group of people. Bowden (2000) emphasises that the purpose of generating these descriptions is so that they can be used for some educational purpose. There are methodological variants and varying accounts of this process to be found in the literature. However, most accounts of phenomenographic analysis describe similar phases from the gathering of data through to the presentation of findings.

In phenomenographic research, data is usually gathered through interviews (Booth, 1997). But other methods are considered appropriate. For example, Bruce (1996) utilised open-ended writing produced by students in response to specific questions. Where interviews are the main form of data gathering, the aim is usually for openness and depth in the interview (Booth, 1997). An "open" interview may be semi-structured but allows the interviewee to follow his/her own lines of thought. "Depth" refers to the interviewer and interviewee reaching common understanding of what is discussed and, ideally, following lines of inquiry until the interviewee has nothing left to say about a topic (Orgill, 2002).

The gathered data, if in audio-taped form, is transcribed and subsequently analysed to *discover* conceptions and *construct* categories (Bruce, 2003) describing a/the limited number of ways in which the phenomenon is understood. In the initial phase of analysis the researcher will read the transcripts, often many times in order to become very familiar with the content (Alsop & Tompsett, 2006; Sandberg, 2005). Marton (1986) refers to the early phase as a "selection procedure" based on criteria of relevance. In his description of phenomenographic procedure, utterances found to be "of interest for the question being investigated ... are selected and marked" (p. 42). He emphasises that interpretation of

quotes must nonetheless be made in relation to the context from which the utterance was made.

The selected quotes from the initial phase constitute the data pool for the second stage. Marton (1986) specifies that the researcher now abandons the boundaries separating individuals to focus instead on the “pool of meanings” and gives attention to the meaning embedded in the quotes themselves until finally utterances are brought together into categories on the basis of their similarities. However, other researchers take issue with the “pool of meanings” approach and argue that it is difficult to separate utterances from their transcripts in this way and still retaining their meaning (Bowden, 2000).

Whichever approach is used, in the latter stages of analysis, categories are formed on the basis of perceived similarities in what is meant. Categories are also “differentiated from one another in terms of their differences” (Marton, 1986, p.43). Marton (1994) expands on this last point, stressing that it is important to determine what are the distinguishing features between groups, in order to develop the set of categories of description and characterise the *variation* in how a phenomenon is experienced. Watkins, Dahlin and Ekholm (2005) contend that while interviewees may not espouse the same conceptions at all times or in all contexts, the variation of conceptions obtained from the phenomenographic analysis is regarded as generalisable across contexts.

Elements of an appropriate phenomenographic attitude have been articulated. During analysis phenomenographers have been advised to *bracket* or hold aside prior experience and knowledge of the literature, so that the data may speak for itself (Ashworth & Lucas, 2000). In other words, they should be reflectively aware of their own expectations or knowledge in order to avoid imposing their own views on the data. Another advocated principle and mental attitude is to initially view all statements as carrying equal weight. This is referred to as *horizontalization* (Sandberg, 1994).

Marton (1986) describes the process of analysis as time-consuming, labour-intensive and involving continual sorting of data and repeated testing of categories against the data (p.42). Many accounts can be found in the literature where researchers refer to the prolonged, iterative nature of the process of phenomenographic analysis (Akerlind, 2005; Barrie, 2007).

The resulting range of perspectives is presented, often diagrammatically, in a set of categories of description known as an outcome space. The aim with the outcome space is

to capture the essences of the different ways of experiencing the phenomenon (Dunkin, 2000). The outcome space is the product of the research.

3.3.3 Assuring validity and reliability in phenomenographic studies

There has been considerable discussion in the phenomenography literature on the question of how to ensure validity and reliability in phenomenographic studies (Cope, 2004; Sandberg, 1997, 2005). A comprehensive approach in this regard is detailed by Cope (2004). He suggests that ensuring validity and reliability in phenomenographic studies becomes more “straightforward” if all aspects of the research sub-serve the aim of seeking to uncover the dimensions of variation implicated in a particular *structure of awareness*. If key dimensions of variation appear to the researcher to make sense of various ways of experiencing a given phenomenon within a group of people, those structures should then be verifiable by other observers. Being able to identify and describe the dimensions of variation is the task before the researcher:

One way of describing a way of experiencing a phenomenon, then, is in terms of a structure of awareness. The description should incorporate a structural aspect (the internal and external horizons), and a referential aspect (the meaning inherent in the structure). The detail of the structural aspect should include the dimensions of variation simultaneously present in the internal horizon, the “values” of each dimension of variation, and the nature of the boundary between the internal and external horizons (Cope, 2004, p.12). If, in a given study, dimensions of variation underpinning structures of awareness can be demonstrated, the issue of demonstrating the credibility and trustworthiness of the findings then becomes one of showing how standards of rigour have been maintained throughout the study process.

Cope (2004) outlines how researchers may provide a “full and open account” of the study process and method in order to show that standards of rigour are at a level which would support the validity and reliability of the findings. According to him a full and open account involves providing details of eight areas, which are here reduced to seven and listed below, albeit not in the exact order or using the identical terms found in Cope’s article:

- Characteristics of participants.
- Design of interview/interview questions.
- Strategies to collect unbiased data.

- Data analysis method.
- Management of interpretive awareness: Researcher's background/prior knowledge; how data analysis was undertaken with an open mind; processes used to control and check interpretations.
- Presenting the results in a manner that permits informed scrutiny. This includes ensuring that categories of description are adequately illustrated with quotes.
- Establishing interjudge communicability: As a verification strategy for the usefulness of the outcome space, Cope (2004) also suggests establishing interjudge communicability, which is where the opinion of researchers external to the study are used to verify identified structures of awareness.

For the purposes of assuring validity and reliability for the present study, all of Cope's suggestions have been observed or addressed – except one. Interjudge communicability has not been employed. Instead, because it is a finding of the present study that the identified creativity conceptions can be seen as reflecting an inclusive hierarchy it is proposed, in line with the reasoning of Åkerlind (2003), that empirical support for the researcher's interpretations and analysis is best achieved where transcripts provide evidence that participants are aware of the potential for variation in one or more key dimensions of variation. The reasoning here is that if participants demonstrate that they are aware of some aspect of the variance between the ways of experiencing a phenomenon, as identified by the researcher, they are providing the requisite support for the researcher's interpretations. The value of this approach is that the empirical evidence is contained in the transcripts themselves and can be scrutinized by others. Therefore, instead of interjudge communicability, the final detail in establishing a *structure of awareness* framework as support for validity and reliability in this study will be: *7.Evidence for a hierarchy of conceptions in the present study.*

3.4 THE STUDY

This section provides the detail of the design and process of the study and follows Cope's (2004) recommendations, as outlined above, for “ensuring validity and reliability in phenomenographic research using the analytical framework of a structure of awareness” (p.5). The aim is to provide a full account, showing how rigour has been maintained throughout the study process. Details of participants and data collection are provided in support of future research work, including possible replication studies.

3.4.1 Characteristics of participants

In keeping with the aims of the study and as recommended for phenomenographic investigations, the participating group was structured to “capture diversity” (Alsop & Tompsett, 2006). Varying estimates can be found in the literature concerning what can be considered a reasonable number of participants for phenomenographic studies. The participants for this study number fifteen in total. The teachers taught, or had recently taught, in schools in inner city and suburban Brisbane or in more regional school districts around Brisbane. Sourcing and interviewing of participants continued on a “convenience sample” basis until little additional information seemed to be arising in interviews and the group reflected adequate variation in terms of subjects taught, years of teaching experience, age and gender:

- **Teaching areas:** Primary school, English, Languages other than English (LOTE), Performing and visual arts, Music, Manual arts/industrial technology and manufacturing, Home Economics, Hospitality, Social sciences, Maths/Science, Guidance counselling and administration.
- **Gender:** Female (8); Male (7)
- **Age range:** Early 20s to late 50s
- **Years of experience:** 3 years to more than 30 years

Two of the teachers taught in primary school. Two had experience of both primary and secondary school teaching. The remainder taught mainly in high school. All of the high school teachers taught in more than one subject area, some having taught several subjects over the course of their careers. Approximately equal numbers of teachers were involved in the teaching of science/maths as in the teaching of arts/music. Three teachers had experience of teacher training at university level. Four teachers had been involved in school administration roles. Some teachers had taught continuously, others had taken breaks from teaching over the course of their teaching career. One teacher had moved from teaching high school English into school guidance counselling. A complete overview of characteristics of the participating group is shown in Table 3-1 below.

Table 3–1: Characteristics of Participants

P	Gender	Teaching areas (Main teaching area listed first) [HOD = Head of department]	Relevant outside-school teaching, interests or expertise	Years of teaching experience	Year levels taught	Age (approx) in years
1	F	Science (HOD)		25–30	Yrs 8-12	50-60
2	M	General primary	Music and performing arts; University teaching (teacher training)	< 5	Yrs P-3	50-60
3	F	Japanese; English		20–30	Yrs 8-12	50-60
4	F	Mathematics; English	University teaching (teacher training)	10 –15	Yrs 8-12	50-60
5	M	Music; Social science; Citizenship education; English; History; Several years in school administration	Outside-school instrumental music teaching, live performance and composing	25–30	Yrs 8-12	50-60
6	F	Guidance counselling; English		5–10	Yrs 8-12	50-60
7	M	Industrial technology; HOD	Extra-curricular supervision of student-level industrial design competitions	5–10	Yrs 8-12	30-40
8	M	Music (Years P-12); Mathematics; Science; English		5	Yrs P-12	20-30
9	M	Manual arts	Telephone counselling; custom furniture making	15–20	Yrs 8-12	50-60
10	M	Science/Mathematics (HOD)		20–30	Yrs 8-12	50-60
11	F	General primary	Instrumental music and arts interest	15–20	Yrs P-3	40-50
12	F	Visual arts	Arts interest	>5	Yrs 8-12	20-30
13	M	Performing arts; Social science; English	Arts and construction interests	5–10	Yrs 8-12	20-30
14	F	Hospitality; Home economics; Health; Extension science; Numeracy	Teaching outside school in computing and sport	15–20	Yrs 8-12	30-40
15	F	Science/agricultural science (6-7 years); Primary school (2 years)	Hobby art interest	9	Yrs P-12	20-30

3.4.2 Design of interview questions

Cope (2004) observes that “in phenomenographic studies, interview guide questions need to be designed to provide data which will help establish critical variation in a group of participants’ ways of experiencing a phenomenon” (p.12). It seems appropriate to acknowledge at the outset, that as this study was exploratory there was little to draw on in terms of previous studies of creativity conceptions to help clarify what would be useful questions to ask of participants. Also, it was only once analysis had reached quite an advanced stage that it could be ascertained whether the interviews had been effective in illuminating critical variation.

For this study the interview questions were formulated with a view to eliciting information about the participants’ lived experiences of creativity. The “guide questions” were principally framed in such a way that the participant was invited to talk about a time when they had been, or had noticed something, “creative”. Teachers were asked about their experiences of creativity in teaching and outside teaching contexts. The hope was that this might effect a kind of “triangulation”, which would make it more possible to understand what the teachers were seeing *as* creativity. In terms of the “two faces” of variation with which phenomenographers may concern themselves (Pang, 2003), the researcher wanted to focus in on the variation that made the discernment of creativity possible from the participant’s perspective. In order to recognise a process or an artefact as “creative” and, then, recognise the same sort of thing in a different setting, the person must be focusing on something that somehow defines creativity, for them, across different settings.

A precedent was available in the form of the Marton et al., (1993) study of Nobel laureates’ understandings of scientific intuition. That study indicates that there are common phenomenological aspects to the experience of scientific intuition, so that no matter what different metaphors or descriptions the scientists use to describe it, the experience of intuition is identifiable both *within* the experience of individual scientists (recognisable by them each time it occurs) and *across* the experience of different scientists (recognisable, from a second order perspective, as common to different people). In order to capture such “within person” and “between person” variation it seemed important to ask teachers about their experience of creativity in a range of situations.

In some phenomenographic studies, researchers have introduced a stimulus object of some kind into the interview context if it is thought that doing so would be helpful in eliciting data. For example, Adawi, Berglund, Booth and Ingerman (2001) discuss why two

knives and a cup of coffee were included as part of the prepared interview context for a study of lay adults' conceptions of "heat" and "temperature" (Adawi & Linder, 2005). In some studies researchers have used graphical representations (Goldberg & Anderson, 1989), or moving objects. In the present study it was decided that as people often judge "products" as creative, it could be useful to observe participants' responses to an artefact shown in the course of the interviews.

The main criterion considered when selecting the artefact was to stimulate comment and conversation in the interviews. It was thought best to avoid presenting anything that would lead to obvious conclusions or seem pressuring. When selecting a suitable artefact easily recognisable "classical" works were avoided as it was considered that such artefacts might lead participants too quickly to a particular conclusion about the "creativity" of the work and curtail valuable discussion. The stimulus artefact chosen was a music video clip, featuring a popular contemporary band, the "Scissor Sisters" and their song titled *I don't feel like dancin'* (Released on album "Ta-dah", September 2006, on label Interscope-Geffen-A&M; writers Elton John, Scott Hoffman, Jason Sellards; Scissor Sisters producers). The clip was selected, by the researcher, after viewing a morning's music television on a local television channel. The chosen video clip was thought to offer many possibilities for comment as it combined a popular song and lyrics with complex imagery, which offered many levels and possibilities for comment. This artefact was introduced in the latter half of the interviews to allow time for the participants to answer other questions beforehand. Participants watched the clip from beginning to end on a lap-top computer screen. The researcher busied herself during this time so that participants would not feel pressured while watching. The clip performed well as a stimulus in a pilot interview with a non-teacher volunteer and also in the early interviews with the teachers and was retained for use in all of the interviews. Utilising the video seems to have added useful dimensions to the data as it prompted participants to explore the broader social dimension of creativity and issues around the selection of creative objects. Whether participants found the clip "annoying" (Participant 2), of moderate interest (e.g. Participants 9 and 7) or conducive to feeling "happy" (Participant 6), the direction of discussion almost invariably led participants to reflect upon how artefacts, more generally, relate to the social or cultural context.

3.4.2.1 The interview questions

After explaining to each participant that in this study the researcher was interested only in how the participant experienced creativity, participants were invited to tell about the following:

- A time when you were creative outside teaching.
- A time when you were teaching creatively.
- A time when you were enhancing the creativity of students.
- A creative student.
- A time when you have come across the word “creativity”. This question was sometimes rephrased as: “What would come to mind if you saw the word creativity written somewhere?” Participants were sometimes asked if they had come across the word creativity in documents at school.
- It is explained that a video will be shown as an aid to bringing up any additional thoughts about creativity and the participant should feel free to comment afterwards in any way they wish. The participant watches the video and is then invited to talk about anything that they thought about creativity while watching it.
- A time when you *really* experienced creativity.

Questions were usually asked in the same order. Interviews lasted from forty minutes to up to an hour and a half. Where there were time constraints on the interviews, such as where teachers were on a break between activities, interviews tended to run to the shorter time frame of forty minutes and the number of questions asked was sometimes reduced. The questions that were left out were determined on the basis of how teachers had responded to the early questions. Teachers sometimes discussed a range of areas in response to the first two or three questions. All of the questions were effective in eliciting data. Participants did not seem to find the interviews onerous and most indicated that they had found it interesting or enjoyable to think about or talk about creativity.

3.4.3 Strategies to collect unbiased data

In phenomenographic studies interview questions provide some structure to the interview, so that particular areas of interest to the researcher are addressed, but participants are able to choose which aspects to focus on. As advised in the phenomenography literature (Cope,

2004) as much as possible, steps were taken to clarify what participants meant by their statements, whilst taking care not to “lead” the participants during the follow up discussion. Follow up questions were, as much as possible, worded using the same terms as the participant.

3.4.4 Data analysis method

This section addresses the approach to data analysis, the researcher’s background/prior knowledge, how data analysis was undertaken with an open mind, processes used to control and check interpretations and the decision making, which led to the development of the outcome space. First, the general approach to data analysis will be addressed.

The recorded interviews were transcribed and the typed transcripts provided the data for the analysis. Data analysis entailed a lengthy, iterative process during which the transcripts were read repeatedly. Hypotheses were generated about what structures underlay the participant’s utterances. These were then tested against the data to see if they made sense of the participants’ experiences of creativity as expressed in the interviews. This process continued until clear, describable categories began to emerge. The following five sections provide detail of how the analysis was approached with rigour and an open mind and how interpretive awareness was managed.

3.4.4.1 Management of interpretive awareness

Every effort was made during analysis to understand how the participants were seeing creativity. Whilst my familiarity with the creativity literature was sometimes helpful in making hypotheses about what participants were describing, the analysis was undertaken with the intention to discover and describe conceptions of creativity, not to apply frameworks or make the data fit existing frameworks.

I began work on this thesis with little more than a classroom teacher’s working acquaintance with psychological theory about creativity. Interpretive awareness of any kind did little to help with deciding how to proceed in the early stages of analysis. There was no great need to “bracket” any pre-conceived ideas I could possibly have had as the data was overwhelming in the variety of interpretive possibilities it cast up. The only option available was to follow every thread and pathway into “blind alleys”, sometimes negotiating the same blind alley many times in case some clarifying detail had been missed.

In reviewing the literature I attained some familiarity with the creativity literature and relevant theories, such as Self-determination theory (SDT). There is no doubt that SDT and other theoretical approaches in the psychology literature have been major aspects of the interpretive awareness I have brought to the analysis in its later stages. However, the phenomenographic approach specifies that interpretive awareness is withheld so that relationships in the data may be allowed to emerge, whilst the iterative process is also guided by interpretive awareness until finally stable patterns are discerned (Cope, 2004).

Once the key dimension of variation had been identified and tested against the data I recognised that the distinction that SDT researchers make between external control and autonomy (Ryan & Deci, 2000c), aligned closely with the distinction I was seeing between external value and internal value foci, as expressed by the participants in this study. I also determined that the term “autonomy” as defined within SDT would provide a suitable descriptor for one of the identified categories of description – the category described as an experience of creativity as *autonomy and authenticity*.

3.4.4.2 How the dimensions of variation emerged during analysis

The dimensions of variation identified as delimiting the variation between different categories of description in this study are shown diagrammatically in Table 4-2 in Chapter Four. Although this means previewing some elements of the findings, in the interests of making the analysis procedure as transparent as possible an account of how these dimensions emerged during analysis will now be made.

In any of the conceptions of creativity, identified in this study, it is proposed that the participant has in awareness:

- A discerned variation element, which may be in the internal or external worlds. This may be “felt” such as the felt difference between an automatic process and the feeling of acting outside “auto-pilot”. This appears to be the aspect that draws attention and sets the creative object apart as “creative”.
- An object of reflection (e.g. a product and its value; a task process; self)

These elements are in the participant's awareness along with an interrelation between four main evaluative dimensions:

1. An evaluation of where rules/values/rewards are reliably located
2. A perception of what rewards or causes drive/sustain a given creative process
3. An assessment of the functionality/appropriateness of the creative object
4. An assessment of the benefit to the person or to society that derives from the whole object – that is, the social value of the process and what it delivers.

Before describing how the dimensions of variation arose during analysis it may be useful to begin with the observation that the dimensions are descriptive and it is possible that two or more dimensions could be reduced to one dimension if a suitable descriptor was implemented. To illustrate, it may be helpful to consider two key dimensions of variation which, according to Åkerlind (2003, p.385), have been identified in numerous studies of teachers' conceptions of teaching or developing as a teacher. These dimensions are:

- increasing awareness of the role of students in the teaching–learning process; and
- increasing breadth of impact or benefit from the teaching–learning process.

These two dimensions could, perhaps, be seen as two intertwined aspects of a single dimension. But researchers have obviously seen a requirement to treat them separately for the purposes of describing different experiences of a phenomenon. The second of these dimensions bears a similarity to evaluation dimension number four identified in this study. It could be suggested that some of the dimensions identified in the present study are also intertwined and not necessarily separate. Indeed it is possible that dimension number one – the assessment of where rewards, rules and values are most reliably located – may change over time through reflection on the value of the other dimensions. Such evaluations could be considered part of dimension one itself. These issues aside, it was decided that all of these dimensions were needed in order to delimit the different categories and their sub-conceptions. How was this decision made?

The need to describe the creativity conceptions with the help of evaluation dimensions two, three and four (E-DOV2, E-DOV3, E-DOV4) became apparent soon after evaluation dimension one (E-DOV1) was identified. Identifying evaluation dimension one (E-DOV1)

provided the key to the unfolding analysis. After a very long time spent analysing the data eventually two main lines of conjecture resulted in the realisation that some participants were experiencing creativity *as* autonomy.

The first line of thought centred around how to understand why some participants had difficulty distinguishing between deeply engaging creative processes (prototypically intrinsically motivated processes) and processes that were reflectively endorsed but not so engaging (integrated or identified). Participants stated that *both* types of processes felt creative even if *different* in their experiential qualities:

Sometimes what I'm doing, that's a buzz for me because I think, "Yeah, good for you, you've done that with the lesson plans, yeah, that's going to be good", and, so it's that, where things come together. But I guess the other part of it, it's if I, like when I was making and painting that card, or if I'm cooking something for somebody, or I'm just experimenting, and trying it and it works, then it's – it is, it's a different kind of feeling. Or it's a similar sense ... (6)

It's similar, it's similar, but different. It's similar in that it's about expressing something that you've done, and you think is important for other people in their lives, well, for, for me it's a – maybe it's a, it's a different level of feeling or purpose, I guess. (6)

Eventually the solution that seemed to best resolve this dilemma was that the common element identified internally is a sense of autonomy in both types of creative processes. This led to the hypothesis that the participant discerns creativity where a process is experienced as varying with processes that are not experienced as autonomous.

The second line of thought was more of an “Aha!” moment during analysis, when I realised that I had long overlooked an important clue in the data. That clue lies in considering what the teachers are trying to *do* in encouraging their students to take ownership of learning and development. In trying to bring about a shift, in students' approaches to learning, from focusing on external rules and rewards to focusing on sense-making and internal rewards the teachers are showing that they are aware of both kinds of processes. But in encouraging students to take the latter, rather than former approach, they are demonstrating that they see the autonomous process as more valuable than the externally controlled one.

The collision of these two main lines of thought established that the teachers are seeing creativity in its contrast with reliance on external control – that is, reliance on the value of

external rewards, external rules and externally espoused values without reflective reference to the value of internal reward and reflectively endorsed values. It became clearer that creativity is being experienced as a sense of meaning and also mindfulness, by contrast with mindlessness and meaninglessness. Creativity thus, in this view, refers to the habits of mind, the sense of meaning and other mental activity required to oppose, supplant or otherwise combat, taken-for-granted aspects of socialisation and meaninglessness.

Establishing that the teachers not only define creativity where they experience it as an autonomous process, but also endorse it as part of their own approach to life and teaching, suggested that the teachers were choosing to *regulate* themselves in the world, by focusing on the internal rewards of autonomous processes and were building values central to their selves on that basis. This value orientation is one that sees interrelations between internal rewards, rules and values. Rewards, rules and values are obviously not equivalent notions and exactly how they interrelate is not speculated on here. However, all three are implicated in the teachers' utterances: internal "rewards" are explicitly mentioned by all of the teachers expressing a high value for internal reward; "rules" generated on the basis of internal process aspects are implicated because the teachers base much of what they do to promote learning on what they observe of the internal elements of autonomous (including sense-making) processes; "values" relates to the teachers' reflections on the value of these processes for people and society and their integration of these aspects into their lives and teaching.

Once it was established that the internally focused teachers see autonomy (creativity) as an important way of regulating in the world the question arose as to how other teachers navigated in the world. It became much clearer, then, that other teachers were more focused on external rewards and rules. These teachers appear to be much less aware of internal reward as socially valuable.

It was a logical step, then, to attempt to understand how external-value focused teachers experienced creative processes. How are creative processes experienced when creativity is not experienced as autonomy? I began to look at how the teachers saw the causes and rewards of creativity and what were the qualities of the processes described. This variation is shown along evaluation dimension two (E-DOV2). Whereas internally oriented teachers emphasised autonomous creativity, externally oriented teachers tended to talk about instrumental, functional and sometimes personal processes, but not autonomous processes.

The nature of evaluation dimension three (E-DOV3) emerged when it seemed necessary to distinguish between processes that are seen as functional for the person but not socially valuable, those that are seen as both functional and socially valuable and others without functional or social value. Some “non-valuable” creative products are identified, by participants, as coming into being on the basis of a “creative” process that is not at all functional. It therefore appeared that a dimension was required which could describe variation in the perceived functionality of the process. Teachers seem to be assessing their own or another person’s rationale for engaging in the process and deciding whether that is a functional assessment or not.

Although these dimensions interrelate in the internal horizon (focus) of the discrete conceptions of creativity identified in this study, each emerged as necessary to describe what is in focus in the different conceptions of creativity and to delimit the variation between them. They were not imposed on the data but reflect my own reasoning about how to understand the variation between the teachers’ experiences of creativity.

Some of the conundrums and difficulties met in the course of analysis will now be explicated. These further illuminate the process involved in discovering the categories of description and developing the outcome space for this study.

3.4.4.3 Intra-contextual shifts

In their discussion of a phenomenographic study of student’s conceptions of “price” and “trade” Marton and Pong (2005) observe that study participants made intra-contextual shifts, expressing different conceptions of price and trade at different times. So too, in the present study of teacher’s conceptions of creativity, I believe that a reasonable explanation for some of the teachers’ varying ways of constituting creativity with reference to a single act or activity is that intra-contextual shifts occur as different phenomenological aspects come into focus. In focusing on the same “creative” activity, P3 talks about creativity as a reactive functional process – something she *has* to do – which changes to a different, more meaningful experience as she recognises that there were personal and satisfying elements which emerged later in the process. Arguably this represents a shift from seeing the process as, first, a functional, then a personal process:

No, so it wasn’t something that I was doing out of “Oh look I really want to do this and love it.” It was like, “You have to bloody well do it and there’s no point in whinging about it.” ... There were moments in it that was like,

there's something that's flowered, blossomed here and "Boom!" This is what's making it very satisfying ... I suppose I've always toyed with the idea that there is this creative side and it's just been a matter of waiting for the time and place for it to emerge. (3)

First P3 sees the process as creative because she felt under pressure to perform a “creative” act, which she earlier identifies as “creative” on the basis that she had to go through a disorienting problem-solving process. However, the quote above indicates that on reflection the process is identified as “creative” to her because it became satisfying. Psychologists recognise that “reactive” and “proactive” creative processes are different in terms of how they feel and the kinds of mental processes that are activated in each. Interest theorists have noted that “situational” interest can trigger deeper interest (Hidi & Harackiewicz, 2000; Hidi & Renninger, 2006). Therefore it seems feasible that intra-contextual shifts could account, at times, for the participants’ different ways of constituting creativity while discussing a single activity.

3.4.4.4 Meta-definitions

The journey to the present analysis was both thorough and beset by many difficulties and conundrums. Some of the most problematic issues were posed by, what the researcher has come to regard as, “meta-definitions”. The desirability of separating out the meta-definitions from the “lived” definitions was not initially self-evident. It seems likely that much difficulty in communicating about creativity may derive from people’s ability to abstract from their experience and describe their conceptions of creativity in the form of meta-definitions. By way of illustration two of the participants’ meta-definitions will be discussed: Creativity meta-defined as “creation”, and creativity meta-defined as “thinking outside the square”.

The problem with meta-definitions is not that they do not say something about how the participant sees creativity. It is that they do not seem to say enough. Having said that, it is possible that future research could reveal patterns in the ways people use meta-definitions of creativity. So it seems important to talk about them. A meta-definition, as I came to think of them, is like a line or thread drawn through a series of “lived” definitions. This line is abstract and without definite experiential dimension, whereas the operational definitions of creativity have a basis in lived experience and can be felt, recognised in experience, remembered, described and so forth. A meta-definition will fit somewhere into

most of a participant's operational definitions. For example, P7 meta-defined creativity as creation or creating:

Oh, I think it's [creativity is] when we create things. (7)

“Creation” is a central idea in P7's way of linking together all the various aspects of creativity he has in mind. However, P7 also makes all of the following statements, which suggest that he is using the definition to refer to qualitatively different types of creative experience:

I mean if we speak a sentence, we're being creative. So, like I said before, if you write a book you're being creative. (7)

So, to say creativity, I think you need to have constructed something. Doesn't necessarily have to be three-dimensional or two dimensional – it could disappear in a minute's time. It could be a cloud or a bubble. (7)

But that's my true sense of real creativity. It's like: “Oh, it's really different, it's really creative.” (7)

I've seen lots of kids that have turned around and, you know, came in without a whole lot and gone on with it and really started something. (7)

The birth of my first son ... for me it was a defining moment, sort of; that's why I'm here on Earth. That is what life's all about. It's a bit bizarre, but, like, it's – then, then I've got the responsibility of helping to raise them, so, I hope a major part of creating who they are. (7)

I'm a Christian myself, so I have a – believe I'm a creative being, creative, you know – so I've got a, I've got a – I'm just creative. So everything I touch and do is creative, whether it be painting my house, or whether it be going to the beach and making a sandcastle, or, yeah, painting my car, or whatever. (7)

I mean, I believe God's shaped who I am, so, yeah – I think, I'm showing you in that statement – yeah, I do think, because of that, I definitely, definitely, give a lot more of myself to other people. Very, very much so ... Like, no moment's wasted helping someone. (7)

The idea of producing or creating something is implicated in all of these utterances. But what P7's meta-definition does not say or show, is the complexity of his experience of creativity as *creative being* and *creative contribution to the collective*.

P7's meta-definition is obviously a common link, like a thread that runs through very tiny and very large beads. In P7's perspective the idea of creation links the human capacity to produce all of the following: thoughts, sentences, things, children, growth, community, a better world, God's plan for humanity. Even the tiniest of these beads, a sentence or a bubble, is, in P7's view of creativity, tinged with a kind of spiritual awe. His choice of meta-definition undoubtedly relates somehow to his Christian faith and somehow connects to the sense of meaning he feels in creating authentic selves through parenting and teaching. There is a sense conveyed in P7's transcript that because he experiences meaning in these outerings or giving of self, production is a key theme for him, which somehow links together with the Christian doctrine around creation. But it would be misleading to confuse the meta-definition (creation) with the experiences from which it is abstracted – experiences of creativity which include ownership and authenticity.

Another example of meta-definition obfuscation can be seen in the transcript of P12. P12's meta-definition for creativity is “thinking outside the box”:

P12: New things. I think anything can be creative really. Like when you're thinking outside the box you are thinking creatively, so trying to find new ways of doing things, that's creativity in its own right.

I: So thinking outside of the box is creativity as far as you're concerned?

P12: Yep.

Several of the teachers alluded to the idea of creativity as “thinking outside the square” or “box”. But as in the case of P7, P12 also says a lot of other things, which indicate that “thinking outside the box” is a distillation and far from the most important aspect of P12's view of creativity:

The word “creative” to me just alludes to things like freedom. (12)

Higher order thinking is very much to do with art, you know, thinking outside the box, trying to figure out a way to solve a problem. (12)

I think everyone has the ability to think outside the box, but it's whether or not, you know, the key's been unlocked ... (12)

So you have to think creatively and out of the box to get them to realize that there's not just one picture of perfection as such ... (12)

Oh it's a very creative video clip ... there's still bits, moving bits, some of it that related to the music, some of it that didn't really, it might have related to something of themselves or whatever. Yes it was very creative (laughs). Well they've thought outside the box. (12)

The little artist book I made was probably the most creative [experience of creativity to me] because it wasn't really what was expected, or ... it wasn't really for anyone, it was just for me and I wouldn't really show it to anyone either (laughs). (12)

These aspects of P12's experience of creativity can all be linked up like beads on the fine, abstracted thread of "thinking outside the box". But "thinking outside the box" is an abstraction and does not show the complexity, of P12's understanding of ownership or authenticity. It does not show that, for P12, "thinking outside the box" can refer to both the evaluative action which instigates autonomous processes as well as problem-solving of a more reactive kind.

The reason for pointing out this issue, apart from informing future research work, is to show that behind what looks to be two quite *different* ways of understanding creativity are really two quite *similar* ways of understanding creativity. One seems to delimit creativity as a production process, the other more as a problem-solving or thinking process – but both actually experience creativity as an autonomous process. Both P7 and P12 used very similar approaches to the encouragement of creativity in the classroom, based on similar beliefs in the value of ownership for students.

There may be a number of such abstracted meta-definitions masquerading in common discourse as useful definitions of creativity. Common terms such as "problem-solving", "creating", and "originality" may all represent problematic meta-definitions, which blur the boundaries between interpersonal and intra-personal *operational conceptions* of creativity – that is, the ones people actually use to build up their view of creativity. Problem-solving can obviously be performed under many different kinds of conditions and from either a controlled or autonomous viewpoint. The relationship between *originality* and *authenticity* may also need to be examined. Autonomy oriented teachers look for *authenticity* not merely originality in the things their students produce.

3.4.4.5 Teachers' experiences of teaching creatively and enhancing students' creativity

During the analysis process I used various strategies to check my own interpretations of what participants were expressing about their experiences of creativity. For example, two

tables were constructed at a time during analysis when the emerging categories of description appeared to reflect stable variation but dimensions of variation were still being identified and tested. The reason for constructing the tables was to see more deeply into how the teachers' understandings of teaching and learning were implicated in their descriptions of creative teaching and enhancing student creativity. Using the tables as an analytical tool allowed a clearer interpretation of what teachers meant by the term "creativity" in their descriptions of times when they had been teaching creatively or teaching to enhance the creativity of students. These tables were rigorously constructed. They and the accompanying write-ups of the identified categories of description for the teachers' experiences of teaching creatively and enhancing students' creativity have been included as appendices (Appendix 1 and Appendix 2) in this thesis.

The tables provided a visual representation, which showed that when teachers were more focused on teaching as delivery they tended to see *delivery* as the locus for their creativity in teaching. Managing students and encouraging students' learning through guidance and interesting *instruction* seemed to be the main objective for the teachers' problem-solving. Teachers who were more focused on teaching as supporting/enabling either sense-making or autonomy tended to see *supporting* and *enabling autonomy* as the objective for their creativity in teaching.

The tables indicate that there is some kind of correlation or coincidence between seeing teaching as delivery and conceptualising creativity in terms of the "X" versions of categories A through to E as identified in the present study. There appears to be a further correlation between expressing a view of creativity, in terms of categories F and G, and seeing teaching as enabling ownership and/or autonomy and authenticity. It appears that the key dimension of variation identified in this study is implicated in variation in teachers' views of teaching, learning and creativity. It could be useful to undertake a more thorough investigation of these phenomena by conducting further studies. The tables have been retained as appendices in order to further illustrate the measures taken in this analysis to ensure rigour in interpreting what participants meant as they described their experiences of creativity.

3.4.5 Presenting the results in a manner which permits informed scrutiny

To permit informed scrutiny of the categories of description emerging from the study, detailed descriptions have been presented of the categories of description. This has

included ensuring that the categories of description are adequately illustrated with quotes from the transcripts (Cope, 2004). Findings have been presented through written description and also graphically as tables. The identified dimensions of variation have been represented diagrammatically, which contributes to the “communicative credibility” of the findings (Collier-Reed, Ingerman & Berglund, 2009).

3.4.6 Evidence for a hierarchy of conceptions in the present study.

In the present study, it is suggested that the identification of dimensions of variation and a hierarchy of inclusive categories provides grounds for verification of the findings. The identification of dimensions of variation and a hierarchy of inclusive awareness are findings which can be scrutinised by others and tested in further studies. As has been discussed in the phenomenography literature, phenomenographic studies are carried out in a spirit of open investigation, with the aim of *collective learning* (Collier-Reed, Ingerman & Berglund, 2009). Being able to describe the critical variation with reference to dimensions of variation, which can be discerned by informed others, provides one of the firmest indicators of the validity and transferability of the results.

CHAPTER 4: QUEENSLAND TEACHERS' CONCEPTIONS OF CREATIVITY

4.1 INTRODUCTION

This chapter presents the findings of this study of Queensland teachers' qualitatively different conceptions of creativity. Differences between the conceptions have been described in terms of their variation along a number of dimensions of variation, making it possible to identify key aspects of difference between teachers' ways of experiencing and constituting the phenomenon of creativity.

The findings of the study are presented in four sections:

1. Section one explains that within these results conceptions of creativity are seen as falling into two classes depending on whether creativity is being discerned from an *observer* perspective or from the perspective of the *creator*.
2. Section two presents the *categories of description*, wherein the foci of the teachers' conceptions of creativity, which have been categorised on the basis that they reflect similar values along one or more dimensions of variation, are described.
3. Section three describes the *dimensions of variation* across the categories of creativity conceptions as identified in this study.
4. Section four presents the *outcome space* for the teachers' ways of experiencing creativity. The outcome space is a visual representation that shows how the boundaries of awareness identified in the study relate across the ways of experiencing creativity. The relationship is identified as reflecting a hierarchy in which some ways of experiencing and constituting creativity are inclusive of other, less comprehensive, ways of experiencing and constituting creativity.

4.2 SECTION ONE: INTERNAL WORLD AND EXTERNAL WORLD FOCI

Within the data, two locations for discernment of creativity were identified: evaluation of objects in the external world (things, people, behaviours) and evaluation of objects in the internal world (processes and process elements). Thus creativity is constituted differently and has different meanings when it is defined from an external *observer* perspective as compared with an internal *creator* perspective. When viewed from an internal perspective

the participant has information available about feelings experienced in the process of creating. When constituting creativity from an external perspective the nature of the process can only be inferred.

Participants identified three main kinds of external objects as creative:

- Domains
- Products
- People and their performances or actions

Participants also identified internal processes and process elements as creative and were able to talk about such process elements. They discussed, for example:

- Feelings, such as feelings of external pressure, challenge, enjoyment or meaning
- Sensed (quasi-sensory) objects, such as a sense of direction or finding a solution.

The notion of creativity seemed to draw the attention of the participants to “novelty” or “non-repetitiveness” within the external and internal worlds. Thus the creative “object” was discerned in relation to some contrasting feature in the external or internal worlds. The personal and/or social value of these discerned external world and internal world objects was evaluated by the participants. Commonality in ways of experiencing external and internal objects, translates into commonality in ways of constituting and experiencing creativity. These commonalities have in turn been grouped within categories of description. These categories of description are elucidated in written text and as a table (Table 4-1) in the following section.

4.3 SECTION TWO: THE CATEGORIES OF DESCRIPTION

The study has resulted in the identification of seven categories of description. These categories are summarised below.

Group 1: Externally defined group

Creativity is seen in the qualities of “external objects”, such as domains, products, people or actions. The *value* of the creative object and its (inferred) creative process is decided from the perspective of the observer rather than the creator.

- Category A. Creativity is experienced as domain specific
 - *A property of the arts*
 - *Domain hierarchies*
- Category B. Creativity is experienced as pro-social
 - *Innovation*
 - *Exceptionality*
- Category C. Creativity is experienced as pro-individual
 - *Unconventional products*
 - *Individualism*

Group 2: Internally defined group

Creativity is seen in “internal objects”, such as feelings of disorientation, or feelings of meaningfulness and internal change. The *value* of creativity is decided from the perspective of the creator rather than the observer and includes evaluations of the qualities of the process.

- Category D. Creativity is experienced as an instrumental processes
 - *Responding*
 - *Improvising for a functional purpose*
 - *Functional spontaneity*
 - *Instrumental gain*
- Category E. Creativity is experienced as personal processes
 - *Recreational*
 - *Activities with meaning*
 - *Occasional ownership*
- Category F. Creativity is experienced as ownership
 - *Taking ownership: transformative tasks under personal control*
 - *Meaningfully expanding capacities as a person*
- Category G. Creativity is experienced as authenticity and autonomy
 - *Creative self/being*
 - *Contributing to holistic transformations of the collective*

Now follows a detailed description of the categories. As there are two groups of categories, each group is introduced with a short summary of the characteristics of that group. Each category within the group is described and sub-categories within the category are described below that. Each sub-category is illustrated with quotations from the transcripts. It is important to note that quotations have been considered in the full context of the transcripts from which they are extracted and may provide only indications of the meaning expressed. In order to avoid copious amounts of quotation, where it does not detract from the meaning of an utterance quotes are sometimes condensed. I have used an ellipsis (...) to indicate words are missing, or where there was a long pause in the respondent's answer. No actual names of participants are retained in any of the quotations. The transcript from which the quotation has been extracted is indicated at the end of each quote by the number of the transcript enclosed in brackets. At the end of the description of all seven categories of description, the variation between categories and relationships between the categories are summarised in table form.

4.3.1 Group 1: Externally defined group

In the foreground of conceptions within this group, creativity is seen in qualities of “**external objects**”, such as domains, products, people or actions. The discernment of novelty or difference sets creative objects apart as different from other “normal” or non-creative external objects within an observer’s experience. The value of the creative object and its (inferred) creative process is rationalised in terms of social contribution.

In this group social norms, existing cultural content and standards play a key role in conceptions by providing the backdrop for the discernment of the *novelty* of creativity. The perception of non-mainstream thought or non-mainstream characteristics underlying the creative process may be common across all conceptions of creativity in this group. However, the social *value* of creativity emerges in the relation between two simultaneously discerned aspects: the perceived functionality of the creative object and the perceived functionality of the social norms or rules against which the creative object is seen. Creativity is not always seen as contributing social value. Three major categories of creativity conceptions have been identified for this group. These are described as domain specific, pro-social and pro-individual.

4.3.1.1 Category A. Creativity is experienced as domain specific

Some participants expressed the view that creativity is relevant to practices and products in some domains and not others. Definitions of creativity in this category tend to reflect how the arts domains appear to participants and how they are discussed and valued socially. By describing this conception as domain specific it is not meant to imply that creativity is seen as taking different forms in different domains. In the present category, the participants are not thinking in such an evaluative way, but in a way that is accepting of social discourse around differences between the arts and other disciplines. The category has been divided into two sub-categories. In the first the participant is focusing on an unexamined division between the arts and other domains. This is described as an experience of creativity as *A1. A property of the arts*. In the second, the focus is on specific differences between the arts and other domains, which tend to establish hierarchic relationships between “creative” and “non-creative” domains. This is described as an experience of creativity as *A2. Domain hierarchies*. These sub-categories are described in more detail below and illustrated with quotations from the transcripts.

A1. A property of the arts: Some teachers expressed a view of creativity as connected explicitly to the arts, or arts and design. In this view creativity is experienced as having something to do with any or all of the arts-related domains including visual and performing arts, music, writing and literature, film production and “craft”. When seen as a property of the arts, teachers seem to have in mind other domains, which are seen as not creative, such as science, accounting, *teaching*, or domains involving repetitive work:

Musicians, artists, writers. I suppose that’s where I tend to see a definition of creativity. (3)

Again, all the creative students I immediately think of are all my music and artistic students because that’s immediately where my brain goes when I think “creative.”(15)

I guess when we think about what’s creative, what people talk about, they always sort of talk about it in artistic terms and I think that I’ve made that connection in my head that, sort of, to be creative is to somehow be artistically expressive. (2)

A2. Domain hierarchies: In this view participants compare and contrast “creative” and “non-creative” domains, establishing hierarchic relationships between them. One domain may be seen as more rigorous, more functional, more interesting or of greater social worth

than another. These hierarchies seem to reflect tensions between the perceived value of “the functional” and “the aesthetic”. But this tension was conceptualised by different participants in different ways. Sometimes functionality “won” out in the comparison and at other times aesthetic qualities “won” in preference to functionality:

The following quotation illustrates conceptions of the latter type, where domains involving practices aimed at the production of artefacts with aesthetic appeal are seen as higher, better or more desirable than domains involving functional practices:

Music, painting etc., that was seen as being a creative thing see, sort of, that is a very separate world and one that I thought I would never be able to enter and other professions were much more pragmatic and prosaic and so on ... you have this stereotype of that and the opposite of course is your, is the dramatist, the writer, the composer or whatever, whatever. It's those people who are creating something. (3)

In another way of seeing domain hierarchies, participants seem to be focusing on the arts as domains where people think “aesthetically” or impractically. Artistic thinking is seen as less suited to the functional requirements of the “real” world than the thinking and doing associated with other more practical domains:

I would like to make, I would like to do creative, sort of making type things. Because I'm thinking of creativity as being sort of “making rather than buying”, rather than kind of an artistic sort of thing ... Rather than as an artistic thing, maybe, with being sort of: “Oh, I'm so creative”. (4)

Well, I don't think we were thinking creatively, we were thinking in a more sort of utilitarian sort of way. We were designing something to do a particular job. (10)

In fact [doing craft] is rather silly – not silly, but it's not the sort of thing that one actually does so much at the moment really, is it? (4)

In those days, you did, like, do poetry. Kids did write poetry ... whereas, I don't know if they do now ... But I do know that [an academic] says, well, you know, teaching poetry, it's like, it's a really esoteric sort of thing, but it's really unnecessary. So, you know, I mean it's sort of in opposition, like it's the creative rather than the critical sort of side of things, or whatever. (4)

Because participants demonstrate concern with the relative social value of “the aesthetic” and “the functional” it does not seem that they are simply *applying definitions* of

creativity. The teachers appear to be making evaluations of creative domains based on their experience of artistic objects and arts practices relative to their experience of other kinds of objects and domain practices. These evaluations seem, in some cases, to reflect lack of familiarity with “the aesthetic” versus familiarity with “the functional”. The research aims of the present study, time constraints around interviews and a number of other contingencies curtailed further exploration of this aspect.

4.3.1.2 Category B. Creativity is experienced as pro-social

This view of creativity focuses on *pro-social* expressions of creativity as reflected in products, people and performance. Creativity is seen as in the interests of society when it is perceived, from an external perspective, that a product or performance is both novel/unique and socially valuable. This category differs from the previous category primarily in that the focus is now on establishing the social value of products and people, rather than establishing the social value of domains and practices. Creativity is sometimes seen as establishing the outer limits of acceptable or mainstream culture and standards of performance in a given context, but also has a preservative role *and* produces consumable content for a variety of (receptive) audiences. This category of externally defined creativity conceptions involves making judgments of desired, shareable products, cultural content and human resources. Creative products and people stand out as new or different and may set new standards of performance, but in building on familiar and approved kinds of content and performance, they also conform to criteria of social acceptability and preserve valued norms. Products that do not conform to the criteria of this lens are evaluated as not creative or are evaluated as creative using a pro-individual lens (Category C).

The category has been divided into two sub-categories, which represent respectively the product and human counterparts of this focus. In the first, the participant is focusing on the novelty and social value of products *and* the social value of the process that has brought them into being. This is described as an experience of creativity as *B1.Innovation*. In the second, the focus is on outstanding or competent, socially valuable performance and brings into view the creative person or the creative abilities of a person. This is described as an experience of creativity as *B2.Exceptionality*. These sub-categories are described in more detail below and illustrated with quotations from the transcripts.

B1. Innovation: In this view the participant defines creativity as a process, which has delivered something of value – a product or idea – into the public domain. The value of

creativity is therefore “seen” where it produces something which is externally judged as useful or valuable. Teachers expressed two main variations on the theme of creativity as pro-social innovation, depending on whether creativity is defined with a focus on a) world change or b) personal consumption. These foci correspond with conceptions: *B1a. Cultural innovation* and *B1b. Perceived innovation*.

When constituting creativity as *B1a. Cultural innovation*, the participant defines creativity as a creative process that has resulted in a product that brings something unequivocally new and of value into the public domain where it can be accessed or referenced by the many. The product is seen as being of such quality or usefulness that it qualifies to become a cultural resource or part of the cultural fabric and in some way changes the “world”. A culturally innovative product defines the new “cutting edge” along a particular dimension of socially valuable commodities. Thereafter it can only be copied, improved upon or performed differently:

Well then there's the series of sameness and every now and then there'll be something again very different and um – I'm wondering if that difference, that very different thing that comes up every now and then is the creative bit ... and the others then follow suit ... (1)

Teachers gave varying examples of cultural innovation. It could be something that “raises the bar” on previous standards, a new genre, an invention, discovery or new scientific research. Cultural innovation could be decided on an intellectual basis or an experiential basis, that is, some innovations could be understood as innovative without direct experience of the product:

I know one of them did do a doctorate in koala diseases, or something like that – obviously an area of research that was new to the rest of the world – and she was obviously being creative in putting time and effort into those diseases ... (10)

Another way of assessing cultural innovation was through direct experience by a knowledgeable person:

But also experiences. When you're as old as me then you've seen this style of music and presentation of music in particular, you've seen that develop before your own eyes in the time that I've been alive and it takes a bit to catch one's eye and demonstrate true creativity in my sense of its meaning. (10)

When deciding cultural innovation, on the basis of experience, existing products were sometimes used as a comparison or standard to help decide what is culturally innovative. This suggests that “creativity” is in the background of this conception as the human processes that have brought existing culture and existing standards into being. Cultural innovation seems to constitute a category of creativity conceptions which positions particular products as incremental in a process of continual cultural improvement:

I think that [Cirque du Soleil] is a pinnacle of that particular genre, of which is done in a ... I think that all the components of whatever is creativity have come together to produce this absolutely wonderful thing and it's almost hard to believe that that will somehow evolve and change and get better. It's hard to believe that. But I can remember watching the Moscow Circus, when I was young – that was the pinnacle. And not that I had those sorts of thoughts because there was not much to make comparisons with ... But after watching Moscow Circus on television and then going and seeing our local touring circus, you know, you can maybe be starting to make judgments, starting to make value judgments about things ... (2)

However, when defining creativity as *B1b. Perceived innovation*, the participant appears to disregard the criterion that a creative product needs to improve the world. In this way of defining creativity it seems that the product need only be appreciated and seen as creative by an audience. The main criterion seems to be that the product elicits a positive emotional response, whether of admiration for the skill involved, appreciation of the utility of an object, or an emotional response to aesthetic qualities of the product. Participants may appreciate a product as a whole, or parts of it, or some parts more than others:

I can appreciate, I suppose, the craft, somebody who is able to put all that together, which was the creative sort of thing, I imagine. (4)

The way I feel to the world, the things that stand out to me as being creative are the ones that my eye is led to, that I like ... that I'm attracted to. (10)

Perhaps when you read a novel, you think, somebody writes something that seems to be, you know, a description of something, but it, somehow or another it connects with something that you've seen or heard and you think, “Oh, what a wonderful way of saying that particular thing.” (4)

I just find sometimes that there is a very, there are a couple of pieces of music and sometimes it's only three or four bars in a piece of music ... Brahms' piano concerto number one, the opening three or four bars of that are just so intense that ah, you know ... (2)

One of the features of both of these perspectives on defining creativity through a focus on what is produced is that the creative process itself is not observed. The qualities of the process can only be inferred from the qualities of the product. The interest generated by the product seems to incite interest in the process:

Yes, and then you obviously think beyond that and there's a creative process that's gone into that because you've had your eye drawn to it, because you like it, because it's attractive to you. Then you appreciate the creativity that's gone into it. (10)

B2. Exceptionality: In this pro-social view of creativity the focus is on individuals who appear to stand out positively in contrast with the normal/conventional, but unremarkable, performance of the majority. The creative person, seen through this lens, seems to be in the valued minority of individuals who are seen as “good” at a particular thing and perform in a socially valuable way. The creative person may be seen as innovative or an innovator. But this does not seem to be essential in order to be classed as creative. Exceptionality may also be seen as competence in the form of mastery, high achievement or strong academic performance. Exceptionality was sometimes conflated with being an achiever in the arts.

Exceptionality may be identified through some innovative work or competent performance that sets the person apart from others in a context:

I don't define myself as being creative in terms of artists or, you know, people who have achieved – musicians, artists, writers. (3)

But there's always a handful in any particular year that stand out and they are particularly good at some field that they've mastered ... sport ... dance. (10)

She was a very creative girl, you know, very good at, you know, in the arts and drama and English. (3)

Exceptionality tends to be linked to positive potentials or capacities in the person, such as high IQ, artistic talent, desire to achieve, academic or leadership ability:

They're, they're not as outspoken. They will be a leader but they're not an in-your-face type leader. (1)

Gifted, or should I say, kids who actually have creativity, or who show creativity like this one student that I've seen, they don't big-note themselves. They're a very different type of person. (1)

There would be a handful that I've seen leave, or I've heard of, leaving school and doing particularly creative things. There was one recently spoke to our senior students at the beginning of the year and she's become a playwright and has produced plays for a number of companies in Brisbane. Yeah, I would have thought she was particularly creative. (10)

Exceptionality in one area may be seen as balancing out average or negative performance in another area:

It just blows me away sometimes when a kid that's been in your class for a year suddenly gets up and belts out this song and he's just amazing, you know ... "I didn't know you could do that! Oh my God! That's fantastic!" Suddenly, you know, you see another side of a kid who, aw, they're a great kid in class or sometimes they're an absolute rat-bag in class ... (15)

The positive social value attributed to creativity in this sub-category appears to be linked to an associated conception of creativity as *B2a: A life-goal*. This conception places creativity in the future of individuals, as something that a person can aim for in life, but which may or may not be possible to attain. It also establishes a view of the creative process as a journey that is undertaken for extrinsic reasons, of seeking affirmation, achievement or proving one's self. In other words, when seeing creativity as a life-goal the participant seems more focused on the goal itself and the risks, effort and problems involved in grasping the goal than what is gained in the progression towards the goal. Becoming a creative achiever tends to be seen as requiring talent or exceptional endurance. It is seen as something that many may wish to attain but few ever do:

One of the other creative things that, as I said I've always had in the back of my mind – probably a lot of people do – is I'd like to write a book one day ... It's been a matter of waiting for the life experience and I don't want to do it badly. So that might stop me from doing it. I don't want to fail so I won't start. (3)

It became quite obvious later in my piano playing life that that was limited. It was very limited what I could have achieved even with all the ambition and ah, all the will in the world. (2)

4.3.1.3 Category C. Creativity is experienced as pro-individual

Some participants expressed a view of creativity as performing or thinking outside social norms for individualistic rather than pro-social reasons. In a *pro-individual* view of creativity, rather than serving society at large, or conforming to social norms, creativity is

seen as unconventionality, which serves the interests of the individual or a minority. In this view creativity is seen in products or actions that are outside social norms. These products or actions are judged through a lens, which perceives tensions between the desirability of external regulation by social norms/rules and the freedom individuals have to think outside them. Individualistic creativity could be seen negatively or positively by participants depending on the perceived functionality of the external norms regulating activity in a context. Creativity could be seen as failing to conform to functional norms. But it could also be seen as more of an individual response to austere or controlling norms. Even though the latter conception suggests a more sympathetic view of individualistic creativity, the creative act is nonetheless seen as serving the individual rather than society.

In this category of creativity conceptions there are limits to how regulation by the individual is seen. Individual expressions and tendencies may be seen as unruly and needing to be controlled by a higher authority *or* as something an individual decides on an extrinsic cost-benefit basis. A third possibility of creative transformation through internal regulation appears to be outside awareness. This view of creativity as individualism therefore never goes beyond seeing creativity as being in a kind of tension with a regulatory function of social norms. Creativity is identified as insulated from, rather than contributing to, society or a social context.

A pro-individual view of creativity differs from the pro-social view primarily on the grounds that creativity is seen as operation *outside* norms in a self-interested, rather than socially interested way. The pro-social view, by contrast, sees creativity where it *establishes* norms, preserves norms and operates in the broader public interest.

The category has been divided into two sub-categories, which represent respectively the product and human counterparts of this focus. In the first, the participant is focusing on the unconventional novelty and uncertain social value of creative products. This is described as an experience of creativity as *C1.Unconventional products*. In the second, the creative object is socially deviant performance or actions. The focus shifts to the individualistic intent of the person and the tension between the individual and regulatory norms. This is described as an experience of creativity as *C2.Individualism*. These sub-categories are described in more detail below and illustrated with quotations from the transcripts.

C1. Unconventional products: Some participants expressed a view of creativity as unconventional processes giving rise to unconventional products of uncertain social value.

The novelty aspect of creativity is here seen in products as something that is out of kilter with the expected or normal. Although this can also be the case for pro-social products, here the participant has a sense that the meaning contained in the product is unconventional without contributing anything of social value. Both the product and the process behind it seem to relate to some agenda of the creator, but with little relevance or value from the observer's perspective.

In the following quotations the participant is commenting on the creativity seen in the "Scissor Sisters" music video shown as a stimulus for comment during the interviews. From the participant's perspective, the video presents images that are inexplicable, weird and "different to the norm". This is a clearly different framework for defining creativity from the pro-social view of products, for the participant neither appreciates the product (perceived innovation) nor sees the product as contributing positively to the world (cultural innovation) :

Well ... that shows some sort of creativity or really, really warped sense of humour or something like that. (1)

Yeah. It's different to the norm. But then these days what is the norm? There isn't really a lot of norm these days. (1)

There was one woman in some sort of a glass bowl and she was sort of, whether she was trying to get out or she was dancing on her back in the glass bowl, I didn't know what she was doing there ... just very unusual. (1)

Instead of being seen as having definite social (or personal) value, the participant sees this kind of unconventional creativity as having some value to the individual. This kind of creativity is seen by P1 as requiring the exercise of tolerance.

[Accepting creative individuality] shows that we value people as individuals ... um ... and that what they produce has some value. What they produce has worth, and um, so that video clip that was produced has some value in today's society and we shouldn't actually be slamming it and saying "Well that's rubbish". (1)

I suppose it's a little bit daunting, to me, being very traditional, um, but because I'm interacting with young kids all the time – teenagers anyway – I've, I've grown to accept it. It's not shock value, at all, if you've just got a head floating around singing ... You know, it's not shock value, as what it might have been to the parents of the kids in the 50's and 60s with their, um, their psychedelic dress and into the drugs and all that sort of stuff. (1)

C2. Individualism: In this view creativity is seen as reflected in actions that do not conform to the regulatory norms of a context. Instead of displaying behaviour, which is unique and appropriate or of quality, the creative person displays behaviour which is seen as individual and inappropriate to a given context. Creativity is seen as outside what is expected or desired socially. The context and the nature of the regulatory norms in focus seem to dictate what form creativity may take.

In the following examples, creativity is seen in the context of a science class. Whilst the conception may incorporate a view of creative processes as artistic, fun or imaginative, it is the teacher's perception that they are part of a student's private agenda, which gives rise to the conception of creativity as individualistic. The teachers have the expectation that good socialisation will be demonstrated by following the rules of the science classroom. In the following examples the students demonstrate creativity, by doing something "of their own", which conflicts with the classroom situation. They are therefore failing to be regulated by the rules of the classroom:

I've certainly seen them do creative things in my lessons, which are not what they're supposed to be doing. There's any number of instances where you come across someone who's completely bored with your science lesson and are sketching Anime characters in their book, or drawing model cars, or, you know, writing poetry, or those sorts of things ... Well they're certainly showing an aspect of their own creativity that is almost in total conflict with what's supposed to be happening. (10)

Well, as I said art works, pieces of art, ah ... music, poetry, working on their assignments ... research topics from other subjects, the sorts of things that kids will do if they're bored or they're pressed for time and they think that they can get away with doing it in your class. (10)

What a child sees to be creative in a science lesson may lead to an explosion or toxic chemicals being released in the room. (10)

The following examples are slightly different and suggest a specific meaning of individualistic creativity as *outside learning*. Here the teacher is thinking of learning as acquiring content. The student is expected to follow instructions, acquire knowledge and relay it back to the teacher in a specific format. From the teacher's perspective creativity is demonstrated where the students present their work in a way that is individual rather than appropriate. Creativity is not seen as bad behaviour but it is seen having a value which only the individual experiences. That agenda is not seen as relevant in the context of

demonstrating learning in science. Creativity in this context is more of a failure to be regulated by the norms of teaching and learning in science.

I want them to be able to experience things in their own way in their own comfort zones and if it means that they do all their assignments in one way because that's comfortable for them ... But I then have to go and mark it and I hate marking those sorts of productions ... When I have to mark some assignments, I think this is not the way I would do it. But when you then look at, they've covered this, this, this, and this and this and they've done it in this different format, so what? Y' know, that's fine. But if they've covered those aspects and they've got the science right, then I don't mind any more. (1)

There's a lot of similarity that you teach year to year in the assessment pieces and every year, every now and again a student will produce something that's out of the ordinary, approached something from a different angle and still come up with the goods and would stand out as being, guess you'd call it creative, yeah. (10)

In the following example the teacher is seeing individualism from a more sympathetic perspective. Here creativity is being constituted in the context of expected behaviour in the school. In this example, instead of strongly criticising the student there is a hint of criticism regarding the “system” of school regulations. However, the teacher recognises that the student's creative behaviour will be seen as aberrant from the school's perspective:

Well, you don't really bump into it that much, er, in official documents in schools and things like that. Although sometimes you might get it in terms of a child being aberrant or, you know, doing something that was er, you know, behaviourally challenging to the, to the school ... and so the child has worked out something and how to use the system and, you know, you can say well, “Gee, they were creative in that”. (2)

In each of these examples, the teachers are seeing creativity from an external perspective as individualism. Its value is seen as inward – something of which only the individual is aware, but which becomes evident where it appears that an individual is not regulating themselves according to the norms or rules of the wider social context. In some cases where the teachers are seeing creativity as failure to conform to functional norms, creativity may be seen as detrimental for society and/or the socialisation of the individual.

4.3.2 Group 2: Internally defined group

In the foreground of conceptions within this group, creativity is seen in “**internal objects**”. These are usually feelings experienced in the process, such as being in an unfamiliar situation, quasi-sensory objects and internal change, which identify creative processes as different from other “normal” or non-creative processes. The value of creativity is rationalised across the qualities of the process and the discerned value of what is produced internally and externally. Creativity is being defined from the perspective of the creator rather than the observer.

4.3.2.1 Category D: Creativity is experienced as instrumental processes

This category of internally focused creativity conceptions is delimited principally by the experiential qualities of the process. Creativity is discerned from the participant’s point of view, as acting outside “auto-pilot” for a purpose that typically involves responding to some form of external pressure or may involve internal pressure to gain reward of an extrinsic rather than intrinsic nature. Thus the processes identified as creative in this category are distinguished by the lack of internal reward in the creative process. There are two sub-categories within this category: sub-category D1 *functional* processes and sub-category D2 *instrumental gain*.

Sub-category D1. Creativity is experienced as a functional process. In sub-category D1 creativity is seen and evaluated as a *functional* process. In a view of creativity as a functional process, the perceived pressure to perform a process that is “outside auto-pilot” is more external than internal. In such a process it is determined, on the basis of situational elements and internal qualities of the process, that there is functional value in carrying out the creative process. This involves an evaluation of a situation and the determination that, although the process may be inconvenient, unpleasant, unfamiliar or difficult, a creative process is appropriate. Creative processes of this type have distinct internal qualities such as the sense of operating outside “auto-pilot” or going through a process, which is not planned. They are concerned with producing solutions or objects with functional value, which may or may not involve producing externally defined novelty. The value of creativity of this type may be further rationalised as a functional skill, which is seen as good for the adaptability and social functionality of the person/learner:

It broadens their skills base on how they could tackle problems that they may encounter in the future. (1)

Creativity conceptions in this functional process sub-group differ from those in the next sub-group on the basis that here the process is evaluated as mainly valuable for what it produces or gains in terms of problem-resolution. There is no discerned internal value in the process itself.

The category has been divided into three sub-categories depending on whether the experience of creativity focuses on: a) the need to respond to outside pressure b) the need to improvise for a functional purpose or c) the choice to spontaneously do something differently from usual. These three foci correspond to sub-categories: *D1a. Responding*; *D1b. Improvising for a practical purpose*; and *D1c. Functional spontaneity*. These are explained in more detail below and illustrated with quotations from the transcripts.

D1a. Responding: In this sub-category creativity is seen as problem-solving in response to outside pressure. Creativity is defined as a creative process, which has to be carried out in order to solve a sudden, unexpected or unyielding problem. This means that the impetus for the process is seen as coming from the environment rather than in a volitional way from the self. The descriptions given by participants indicate that when improvising in this way there is a moment where he/she realises that an impasse or obstacle has been reached and there is a *need* to shift to a different, less automatic way of thinking:

So it's when you hit that roadblock, when you suddenly have to go: "Oh my brain has to engage now and go: How am I going to fix this? How am I going to get round this?" You know, it's that questioning suddenly: "Here's my options, which one do I take?" (15)

So it's in those moments that you could be creative, because it wasn't planned, you know. Your lesson plan basically would stop. It would be truncated and to go on you knew would be a disaster. (2)

Sometimes when you're driving the car there's things that happen that make you have to alter any preconceived line of destination ... to your destination ... and so you have to think quite quickly, er, differently about that. (2)

To some extent I was forced into the creativity and perhaps if I hadn't been forced I'd have been sort of complacent and not done anything about it. (3)

When the value of this kind of creative process is rationalised the participant sums up the value of creativity in a parsimonious way: the process has no internal value, but the aim is to do the best that can be done with the available resources:

Yeah, you make the best decision given the resources that you have ... given the situation. (2)

Doing the best with what you've got kind of problem-solving ... I think that is, that's being creative. (15)

D1b. Improvising for a functional purpose: In this view creativity is seen as a problem-solving process, which is constrained by aspects of the environment and by the requirements of the problem situation, but is not experienced as having the same level of urgency as in *D1a.Responding*. Participants may indicate that there is some level of personal involvement in this kind of creative process and there may be concern with producing something of quality or interest for an audience. Nonetheless creativity is still seen as having mainly functional value – as getting a job done or serving a practical purpose:

I don't know if I want to say there's a functional side to it, or what, but, you know, you know that, you know that there's something [a pro-forma or template] there, but it's not exactly what you want, so you have to be creative with what's there to, you know, serve a different purpose, or something. (4)

Well, I guess they [creative solutions] fulfil a particular purpose. They must be educationally sound. As I said they fulfil a purpose, they meet some aspect of the curriculum or literacy or numeracy ... (10).

Although seen as functional, creativity of this type was usually seen by participants as less crucial or important than other priorities or long term goals. Some teachers commented that improvising in the context of a busy life and teaching is often impractical because of time constraints:

You kind of think "There's just not enough time in the day any more", so, you know, it becomes a matter of eventually, you lose, well, you know, I lose the creativity or the urge to be creative because of the pragmatic aspect of the time involved ... (3).

Two of the teachers indicated that functional improvising may well occur regularly, but as an unnoticed, background aspect of everyday functioning:

The pragmatic practical everyday [creativity], you kind of, you tend to overlook those particular results because they're just there all the time. (3)

D1c. Functional spontaneity: In this experience of creativity as functional spontaneity there are similarities and differences with *D1a Responding* and *D1b. Improvising for a practical purpose*. In this view creativity involves a more volitional shift from “auto-pilot”: a sudden decision to do something differently. But as in the previous conceptions in this group it does not involve a strong sense of purpose and its perceived value as a process is related to its functionality rather than internal value:

Well, I don't know, if you could just sort of, think, “Oh, we have some tomatoes in the garden and we have some something in the fridge – I'll whip something up with those things.” That would be creative, maybe ... So, maybe, maybe there's something spontaneous about that. Perhaps, that is different from how you might normally approach cooking ... (4).

Sub-category D2. Creativity is experienced as instrumental gain. As in the previous sub-category, this view of creativity as instrumental gain, involves an experience of a creative process that is without intrinsic value. In the previous sub-category external pressure results in an uncomfortable experience of creativity. In the experience of creativity as *instrumental gain*, a more internalised version of external pressure results in a process which is nonetheless without “intrinsic” value. The intention in this instance is to obtain some form of extrinsic reward, such as external approval or to produce something others would see as innovative – or both. Thus the process is instrumental in obtaining something extrinsic to the process and does not involve intrinsic reward:

I really wanted to be different. That was me, that was me personally and things I wanted to do would then also reflect that. So just to do something that everybody else was doing would have just meant that you were run of the mill ... So you had to think harder or more creatively or outside of what was happening. (2)

Well I think that you, if you're doing something that's quite new, people ... ah ... can be drawn to that and of course if they're drawn to that newness they're also drawn to you, I would suspect, and that has a sort of an affirming nature in the sense that, well, like any theatrical event, you know, there's sorta that applause part, it's really the affirming part of the whole process. Um ... and if you do something really different that just seems to elevate that affirmation. (2)

It appears that the two main discerned elements that set such processes apart as “creative” are the sense of acting outside “auto-pilot”, and/or outside what is normal or expected, combined with the intention to be perceived as “creative” as the end result of the

process. The participant may be seeing, as a goal, any of the *external* definitions of creativity – that is, to be appraised as artistic, exceptional or innovative or some combination of these. Whilst this kind of motivation to achieve may have the potential to “kick-start” a meaningful process, the conjunction of an internal compulsion to appear creative with the sense of operating in a non-auto-piloted process, nonetheless represents a surface experience of creativity. There is no intrinsic sense of reward.

4.3.2.2 Category E. Creativity is experienced as personal processes

In this view of creativity, creativity is internally defined as processes with personal relevance. Into the foreground of experiences of creativity in this view comes a sense of internal value in the creative process and separates this category from a view of creativity as either purely functional or purely instrumental in achieving an outcome. Personal processes may be evaluated as having a functional component. But it is now internal value – pleasure or meaning of some kind experienced in the process – which *defines* creativity and sets creative processes apart from other processes. However, in this category creative value tends to be seen as limited to the private world of the individual and also to particular situations or types of activities. In other words personal creativity is not seen as something that can be done all the time. Creativity may be compartmentalised as something that only happens in certain activities, such as art or craft activities, or as a process that is not usually allowed in formal settings, such as work.

Although there appear to be similarities with an experience of creativity as individualism – an experience of creativity as personal is not *defined* with an external focus on behaviour and norms, but internally with attention given to the “felt” qualities of creative and non-creative processes. This focus requires that participants turn attention inwardly to compare how different processes feel. Participants do not see personally meaningful processes as breaking rules or as threatening social norms. Personal processes are evaluated as valuable in some way. They tend to be seen as appropriate in some contexts. However, this category differs from categories higher in the hierarchy in that transformative potentials of creative processes are not clearly seen. Creativity defined as a personal process tends to be seen as an occasional or situated process.

The category is divided into three sub-categories depending on whether the focus is on a) recreational processes b) a sense of relevance to the “self” c) relevance and control as related to occasional learning. These foci correspond to experiences of creativity as *E1*.

Recreational; *E2. Activities with meaning*; and *E3. Occasional ownership*. These sub-categories are described in more detail below and illustrated with quotations from the transcripts.

E1.Recreational: In an experience of creativity as recreational, the participant defines creativity as a process that is enjoyable and contrasts with work or pressure. The focus is on feelings and on personal reasons for engaging in the process, such as relaxation or a mild or general sense of interest. Creativity is evaluated as a process with recreational value:

Doing the mosaic was doing something, sort of, purely as a kind of, you know, "Oh, I have some free time, it would be nice to do something creative because that is different from what I'm doing the rest of the time". (4)

E2.Activities with meaning: Some participants expressed a view of creativity as a process with purpose and meaning that occurs or is chosen in some situations. In this view creativity is seen as more valuable than just a relaxing or enjoyable process. The process seems, to the participant, to be somehow meaningfully connected to who he/she is as a person or related to important values. But the participant is not seeing the creative process as under personal control and has an unclear sense of how such processes might relate to other processes such as learning or teaching. Creativity may be seen as a part of the self or as connected to some important values but overall is an undeveloped part of how the participant sees him/herself as a person:

Which is, sort of, different from saying, "Oh, I'll make a birthday cake for my child and it will be really creative," because that is very, that's actually not very spontaneous, that's very planned ... That would have some special sort of meaning, or something. So you, you'd invest it with something of yourself. (4)

I suppose I've, ah, I suppose I've always toyed with the idea that there is this creative side and it's just been a matter of waiting for the time and place for it to emerge. (3)

Yeah, well I think creativity isn't something you can bash around too much. Well for me creativity is part of who I am as well I think, so ... yeah ... to me. I'm sort of putting the two together. Or maybe that's just my rear view of life in the world. (3)

E3.Occasional ownership: In this view of creativity the participant is seeing the creative process as one that is relevant to the self and also under the control of the individual, with the potential to play a part in important socially valuable processes such as learning or teaching. Although only barely aware of these potentials, the teacher is aware that it is personal control of the process which establishes the value of this kind of creative process. Interest/relevance and control in the creative process may now be related to purposeful learning or to enhancements observed in the learning process itself, such as making possible a more satisfying, easier, better quality process resulting in a higher quality outcome. Despite seeing some of these potentials, the participant is still mainly unaware of how relevance and purpose might relate more generally to learning, teaching or growing as a person. Creativity is seen as something that can happen occasionally when circumstances allow. Transformative learning potentials of creative processes are glimpsed but not clearly seen:

Yeah. And it also had something of myself in it, I think – which was interesting because, you know, this was this team of people who was doing things. But it – and every now and again I would think and do what they would want me to do – but I still basically feel that, in the end, they sort of thought, “Oh, she seems to know what she’s doing” or something like that. So – so there was something kind of personal in it as well. (4)

They [children] lose [their creative urge] a little bit and I’m wondering if what we do at school makes them that way. Because we’re so focused on getting them through to get a result to do the curriculum that we have to do, to follow the syllabuses, that it allows very little room for them to explore other, ah, their interests, explore their creative side. (1)

I decided to go back and study and become a teacher and for me that was a bit like me giving myself the chance to look at that other side or creative side or something that allowed me to develop myself ... (3)

4.3.2.3 Category F. Creativity is experienced as ownership

In this view of creativity, the role of relevance or meaning in learning and growing as a person is now seen with clarity and conviction and creativity is endorsed as a process of central importance in learning and teaching. The critical discerned variation that informs this operational definition of creativity is external control of learning vs. sense-making and active control of the creating and learning process. The teacher is focused on the value that ownership of learning brings in enhancing learning, building knowledge and experience,

promoting self-regulation in learning (over time and across subject areas/projects) and development of creative thinking. In other words, creativity is seen as having both internal and external value for it is now seen as integral to important socially valuable processes, such as learning. The teacher sees a comprehensive set of values and potentials for creativity including the development of the person as a learner and a high functioning member of the social world.

There are two main foci within this category: a focus on a) transformative *tasks* under personal control and b) the meaningful *expansion* of personal capacities and learning. Teachers expressing a view of creativity as ownership see these two aspects as interconnected. Recognising tasks as transformative is linked to seeing their potential for development of the person as a learner.

It is suggested that this latter focus marks the outer boundary of awareness in the present category. Although transformative tasks and meaningful expansion are also integral to an experience of creativity as *Category G: authenticity and autonomy*, there is no evidence in the transcripts that all teachers who define and value creativity as *ownership* necessarily experience creativity as authentic creative *being*. Some teachers seemed to see themselves as still journeying towards fulfilment. They value ownership, but seem to be searching for some unresolved aspect of self. In these transcripts there is a strong emphasis on the value of learning, but not “being”:

I love learning new things, I always have. That's probably reflected in how many things I like to do for pleasure ... but I think it stops for me at a certain point. Like I would not say I've mastered anything I've ever done, you know, I always sort of dip my finger in it and then after a while I get bored and move onto something new or I figure, "I'm as good as I'll ever get at this; move on". (13)

Therefore the external horizon for this category stops short of creative being and it is suggested that the outer limit of discriminated value for creativity in this focus is the development of high level capacities, such as, self-directed learning, interest and high level creative thinking and problem-solving. Nonetheless the combined internal and external values the teachers see as arising from processes of ownership are enough for them to endorse the value of ownership as an integral aspect of life, learning and teaching.

F1.Taking ownership: transformative tasks under personal control: The focus of this sub-category is the transformative potential of task-level processes of ownership. This means

the participant is thinking of creativity as a task process under the control of a person, which is seen as not only enhancing the quality of experience and outcomes in the task process, but as having the potential to lead on to valuable changes in the person's experience and control of learning. Teachers recognise that higher levels of ownership may happen as a result of the first.

When defining creativity as *transformative tasks under personal control* the participant is focused on the immediate value of ownership in improving the quality of thinking, doing and learning and improving the outcome in a given task. But this conception differs from an earlier conception of creativity as *occasional ownership* as the participant is peripherally aware of additional potentials beyond learning in the immediate task and can easily shift focus to talk about them. The following quotation illustrates how the teachers see internal value in tasks under the control of the person. The teachers see improvements in processing, but also see value in the pleasure or meaning of the process:

Kids who are engaged, you see it in their faces: they light up; they are energetic about things. They are happy when they are doing things, they wanna do the hard work. Whereas kids that are disengaged they take the easy, you know, they take that that "cop out" road: the "Aw its good enough, I know my lines, yeah, that's good enough." Whereas kids who are really engaged will learn their lines and think, "Well this line needs to mean this and if I move to this stage the audience will get more out of this" or "If I change the pace here" or something along those lines. (13)

The teachers also demonstrate that they pay attention to the internal world of the process and can describe what they find valuable about the creative process. It is usually seen as a process that is under the control of the creator and is internally rewarding. Teachers may note changes in their awareness of time or surroundings:

So it's really nice to zone out and be able to focus on one sole activity at a time. I find that with music, like you're there and you have to be in the moment and that everything else doesn't matter anymore. (13)

When all control is lost in the rest of your life and you're working on something that you know you can control, something that you can finish and finalise and say "I've done this," it's a very satisfying feeling as well. (12)

Because it's the self-reward, you know, the sense of achievement from [internal] reward. (8)

F2. Meaningfully expanding capacities as a learner: In the foreground of conceptions in this sub-category is a focus on internal control of processes as moving people forward, increasing knowledge and capacities as a learner. Here the teacher acknowledges a role for ownership in setting people on a course of self-improvement and possibly towards finding higher levels of meaning in life. The focus of this sub-category is the change in the person, which relies on the transformative process, but goes beyond it to become owner-led expansion of learning and thinking capacities and interests. Teachers pointed to different ways that they saw this happening in students or in their own approach to learning.

Owner-led learning, doing and creating could be seen in some students as a transferable skill:

So naturally you get students who come through who can actually transfer skills between the subject areas, because when we develop the practical knowledge, for example, we're actually researching, so there's that, that art-literacy thing coming through. (8)

Learners may be seen as developing attitudes such as persistence. They may be seen as purposefully expanding knowledge in areas of interest. They may be seen as developing confidence in being self-directed as a learner. They may be seen as developing a questioning attitude and learning through inquiry and exploration. A related aspect is developing an attitude of taking pleasure in setting challenges and attaining them:

They [creative students] are continuously trying to develop their practical knowledge, so that process that I spoke about earlier they then develop from their own ideas, as a result, because they keep asking questions ... It's just a positive experience if the student is engaged and persists with it. (8)

I guess in everything that I do I always try to challenge and see if I can do something that I haven't done before but sometimes, some things I guess are more personal than others. (13)

Creativity is one of the things that will, will carry you deeper into that thing that you like in the first place. (9)

I had one student, who—he's continuing in graphic design, animation now—he just had this very personal aesthetic and I think at times he'd been told it wasn't art, what he was doing, these little cartoons and animations ... Yes he's actually doing animation now and I think he will do very, very well for himself, because he had a very unique approach. (12)

I think its maybe its related to inquiry learning which I've done in primary schools where you develop your big context, kids frame their own questions and enquiries so they should be asking the questions! You know and then communicating and interpreting would be answering that and then presenting your ideas would be performing, how do you present your ideas. It's enquiring, that's all it is. But it also involves you planning for enquiring. Yeah. (8)

Some teachers also saw ownership as helping to build high-level thinking and problem-solving:

Well creativity thinking is very strongly linked to high level thought and to think creatively you need to take a concept and link in with another concept which is totally unrelated to create something new and that's creative thought and it occurs in any subject area. In fact, Albert Einstein was known as a day dreamer and that's how he, he dreamed of the theory of relativity. I mean every great scientist was a daydreamer, you know, every mathematician has to be a daydreamer because it's all about strategies and strategizing is a process of finding something undefined and defining it. Yeah, so: strategising. (8)

Having to go through a higher order thinking process. Higher order thinking is very much to do with art, you know, thinking outside the box, trying to figure out a way to solve a problem. So for example, if you're in science and you're trying to fix or come up with some sort of experiment, or solve a problem, you have to think creatively to do that. (12)

4.3.2.4 Category G. Creativity is experienced as authenticity and autonomy

In the foreground of an experience of creativity as authenticity and autonomy is a focus on living and going about life as a creative being. This incorporates awareness of the capacity-building aspects and values of ownership, but expands to include a sense of having meaningful direction in life, of valuing what one does in life and autonomously operating from primarily internal values rather than primarily external values. The category is thus delimited by the expansion of the object of reflection – a focus on the operation and actualisation of the self. A sense of contributing positively to the world via one's creative activities and capacities also comes into this focus.

The category has been divided into two sub-categories. In the first the focus is on “self” – what it means to participants to be and live as a creative person. This is described as an experience of creativity as *G1.Creative being*. In the second, the focus is on the contributions of creative self to the human collective. This focus links internal

transformation with external transformation and expresses how participants see creative transformation as bringing value to the world. This experience is described as *G2. Contributing to holistic transformations of the collective*. These sub-categories are explained in more detail below and illustrated with examples from the transcripts.

G1. Creative self/being: Some teachers expressed a meaning of creativity as being a creative person or *being*. In this view, creativity is felt as a way of going meaningfully about life and engaging with the world. A metaphor for the way teachers see creativity in this view is “a tree”: every part of the tree is seen as creative including the seed from which the tree grows (meaning, relevance in ownership). Teachers may see the conditions needed for growing the tree as creative (environment, nurturing), the growth process as creative (transformation, learning), the branches and fruit as creative (products), what else the tree provides to the world as creative (expertise, values, thoughtfulness) and their own role in tending the tree as creative (teaching, mentoring, giving, supporting). Even though teachers transfer attention from one part of the tree to another, essentially these are all aspects of the same view of creativity. The seed of the tree in this view is usually authentic interest, but may, it seems, include other types of experienced meaning. Teachers with this view see authentic interest/meaning as a seed or embryo with the *potential* to develop and transform the person by triggering deep learning, interest and a sense of self. Through his/her creative activities and interactions with others the person may feel connected to the social world.

There are a number of aspects to the experience, which come together to create a sense of being a creative person. Not all of these are necessarily articulated by any one participant. Integral to the experience is a sense of meaning and direction in life, which for some participants, revolved around a particular area of interest or passion:

*If you didn't love what you were doing you wouldn't be creative in that field.
(12)*

In most cases experience in the area of interest had developed over a long period of time and contributed to a sense of competence in that area:

From early on I would just do creative things, whether it be scribbling, or cutting things out, or watching other people do crafty things. Learning. Everything. I don't remember a time when I haven't been creative. (12)

I discovered composition in grade one basically ... I've written hundreds of songs, six musicals, a "Top 40" hit ... ah ... and I'm still writing, still composing right now. (5)

So that comes down then to a wealth of experience over the years ... having, you know, played a lot. Ah, and another thing also is having played a lot of instruments ... (5)

So, Dad gave me all the bits of wood and a hammer and nails and got me to make a pineapple case and it was all, you know, the ends hung out, the square was all raggedy ... and he put it up on the wall, nailed it onto the wall of the packing shed at the pineapple farm. And I remember that, I would have been five – before I went to school. (9)

However, for one participant, a sense of meaning in life seems to have occurred spontaneously in a religious conversion experience, after which he re-evaluated and re-modelled his life with a focus on creative or constructive interrelations with the world and society:

I would have ended up in prison, not – not as a teacher. Just the sort of things I was up to, living on the street, so, so, I guess to change that direction and have an encounter with God, it's real, tangible and it's not religious. It's just lifestyle ... I made a decision to, to follow that, I guess and that's changed my life, turned it around completely ... (7)

This particular participant went on from that experience to develop an area of expertise and become an energetic teacher with a particularly strong interest in “giving” to others and enabling what he sees as creativity.

His account suggests that there may be different pathways to the establishment of an experience of creativity as creative being. The common element between P7's example and the experience of the other teachers expressing this view is nonetheless a sense of meaning and meaningful direction in life through the activities the participant sees as creative.

It gives me probably more than anything, it gives me direction in life because it's – life has meaning. (7)

Common to each experience of creative being is not only a sense of meaning in life but also a sense that this meaning is linked to “who” the participant is as a person:

Well, it's who I am. (7)

It's like living and breathing and all that kind of thing. (5)

Another aspect of creative being, articulated by participants, is a common attitude of seeking meaning. Although participants had one or two main areas of interest and were skilled in those areas, all of these teachers expressed an interest in experiencing meaning or interest in almost everything they did. The teachers appeared to enjoy problem-solving and seemed adept at making dull tasks interesting. They saw this as part of their creative approach to life:

You know, things that I do, I, I like to do in a creative sort of way. You know, even if it's just cooking a meal, or making something. (9)

Whatever I'm doing, there's a way to turn it into creative. (5)

Some teachers indicated that the meaningfulness of creating and problem-solving derives from the process itself, from a sense of pleasure, joy or interest experienced in the process. The teachers described the source of pleasure in terms suggesting that they often experience flow-like depth in creative processes. One teacher described this as being in “the zone”. But teachers also demonstrated sensitivity to an inner world of “quasi-sensory” cues, such as feelings of direction and feelings of knowing when a solution to something is right:

When I woke up I had no idea in my head about any of that. It just evolved as the day ... that, that was amazing ... The quality of the work, that was produced, um, the ideas that came out – ideas I'd never would've even ... If you asked me to sketch out the ideas for a really, really, good percussion suite movement I would never even have touched those things ...

... At the end I was saying “Did I do that? My God!” Yeah, at the end of the day I was just “Ho, ho, ho, ho!” (As if floating on air.) “Touch me, touch me, I'm hot!” You know. (5)

No you can't describe it because, it, I think we said that earlier on – where the brain decides and all the pieces are in the right spot and the Rubik's cube is ... done. (5)

It's, it takes all of your brainpower. Yeah, because you, you are being challenged, you're slightly close to the edge, you know, and then – but there are sort of, sort of, hand holds on the way through it, you know. You, you discover something, you, “Right, okay, got that!” You know, like the counselling experience was very much like this. You don't know what the hell's going on, but you (unclear) then, “Right, got that!” Then you move on to the next bit. (9)

Some teachers indicated that because of the internal rewards experienced in creative processes they were able to place less emphasis on external rewards or external affirmation. The teachers also did not see it as necessary to have their work validated by others in order to see themselves as creative. The sense of value in being a creative person is internal rather than contingent on external evaluation:

There are, there are things that I've written that, ah, no one's probably heard and it doesn't matter because it's the instant, the actual moment that it's made, is where the biggest buzz is ... There's one particular song, which is not the best thing I ever wrote, but it was a "Top 40" hit, right? And I enjoyed the buzz of writing it much more than saying "Oh, I've got a "Top 40" hit!" (5)

I've done other artwork, you know, portraits of people, and skill-wise they've been much better than that little artist book that I made. The little artist book I made was probably the most creative [to me] because it wasn't really what was expected, or ... it wasn't really for anyone, it was just for me and I wouldn't really show it to anyone either (laughs). (12)

A further commonality across this category is a view of creativity as taking a thoughtful approach to life and the norms of society. Therefore the sense of creative being, for the teachers in the study, not only comprises a sense of meaning in life through doing meaningful things, it also encompasses the sense of being evaluative in one's way of seeing the world. Teachers endorse a stance of being open to possibility and questioning things that are sometimes taken for granted. The teachers could feel quite strongly about this and could be wary, or even scornful, of what they saw as closed-mindedness, adherence to social constructs and the following of rules and procedures. It is interesting that much of this expressed concern is related to what the teachers see as impediments to "creativity", particularly for students. Where closed-mindedness was seen as inhibiting creativity, the teachers were often emotional in their comments:

For every research scientist you'll find a pedestrian plodder teaching algebra in grade 11. That's as far as their brain can go. (5)

Well you got people writing textbooks from the point of view of "they know theory". Right? But they don't necessarily know kids. (5)

There was that period in the, you know, the forties, fifties, I don't know how old, I don't know what age bracket that was, but it could be later than that, the sixties, sixties and seventies, but, you know, there was that whole

stigmatism that anything to do with artistic stuff, they just wouldn't ... people were hippies or, you know ... so I think there's a stigmatism there with a certain age bracket. (7)

Schools haven't been around that long, for a couple of hundred years – well not even that, we've had a school system and so they've had to categorise all these different disciplines, and they've just chucked, somehow, all the creativeness has been chucked into this small area. Whereas, you know, if you think of creativity in a more open way, it spans across all the disciplines, really. (12)

In their support of creativity, teachers seem to be drawing on their own history of transformation, seeing the growth of learning, the development of more complex ways of seeing and evaluating social norms and the establishment of meaning in life from a perspective of personal experience. Participants expressing this view valued creativity, whether conceptualised as ownership or creative being and sought to enable it in others. The teachers saw themselves as different from people who do not share this value. In particular, they saw themselves as being in a minority of teachers taking a “creative” approach to teaching, as compared to more method oriented teachers, who were perceived as less flexible or less engaged in teaching:

Because most manual arts blokes are lock-step type guys, you know. They teach kids skills, you know: “This is how you do it, boys”. And, I am a bit of a rarity, because I'm – and that's the creativity. That's the difference between me and most other manual arts teachers. (9)

Not all teachers [value creativity], no, no. Some really get it and they work very hard. When you think about those teachers, these teachers are very engaged themselves in the process and they work on it. Yeah. (6)

4.3.2.5 G2. Contributing to holistic transformations of the collective

In this view the value of authentic development and being a creative person is related to positive contributions, which creative people are seen as making to the collective. These contributions may be rationalised in terms of both internal and external value. That is, the change that takes place in the person on their journey to creative being is seen as part of the external value of creativity. Some of the contributions teachers saw creative people making to the collective included innovation, the capacity to think outside norms, building expertise and being able to share it with others, mentoring, inspiring a new generation of creators and communicating with others.

Teachers saw creative people as valuable in society for their capacity to not be limited by norms and therefore to think independently and innovatively:

So I think there is value in people thinking differently to other people, because without free thinkers and creative thinkers we wouldn't have a lot of things we take for granted now. (12)

*Where would the world be without the creative people to move it forward?
(5)*

But a more holistic view was also expressed in which creative contribution is seen more from a perspective of giving and sharing what one has developed over time and being a contributing, interactive or communicative member of the collective. For P5 this is a “ripple effect” which adds value to a creative person’s sense of meaning and purpose, whilst it adds value to the collective:

It's very rare that a person does all the creating and doesn't share it with someone. So I come back to what I said before, I have certainly influenced the way an awful lot of teachers teach. I have influenced the way an awful lot of students view teachers. I've influenced the way a certain number of students who are now teachers teach, because they say “Oh! I want a classroom like Foley's.” You know and I've had this conversation with past students who are teachers and that was all creative. Ah, I've influenced I don't know how many people to take up a career in music, ah, because I've physically taught them an instrument. I've taught them the mechanics of making music – and on it goes, on it goes, on it goes. So, that's the good thing about being a teacher, isn't it? So, my little contribution to the wave front of humanity moving forward may not be as big as Einstein's, but I've helped a fair number of people who've done something and then those people have then ... it's a ripple effect. (5)

4.3.3 Division of Category B into B “X” and B “N” versions

Within the data two variants on the foregoing description of the *Category B*. *Pro-social* category were discerned. The variation concerns the inference of qualitatively different processes in the background of innovations and exceptionality. Participants sometimes, as illustrated in the quotation from P6 below, infer *autonomous* processes in the background of the perceived innovation and are thus, when evaluating the “creativity” of products, bringing into focus the perceived personal and/or social benefits of authentic and autonomous processes.

*And, and then I got lost at one point in what seemed to be the darkness of the images ... I guess, **this is about this generation, that group of people,** creating like, with **real issues for them.** Some of which are pretty dark, I guess. Yeah? ... So when I think about creativity, there's a lot to think in there. There's content, about the themes – and maybe an expression of **what people are dealing with.** There is the music that made me feel happy, it made me feel happy watching this guy dance. I was in awe at the make-up and the colours and the technology. So it's kind of, you look at it and you think, "Ooh, that's a beautiful thing". (6)*

Some of the teachers seem also to be seeing exceptional *autonomy* as a form of exceptionality in its own right.

There's one student who's incredibly creative. I think she's just constantly seeking new ways to interpret ideas, and I don't think it really matters that my subject is a creative subject; I think she approaches all of her subjects in that way. You know trying to really think of how to do things in a different way to everybody else, or a unique way, or, in my subject – I mean she's very good with materials and techniques and all that sort of thing, skills – but then when it comes to playing around with a concept and ideas she really does think outside the box, she really does think beyond the expected and she really analyses what people have done in the past and how she may do it differently. (12)

Therefore two variants on the conception of creativity as *pro-social* can be distinguished. These are designated as a B “X” version in which the inferred process behind innovation, or exceptionality, does not include awareness of benefit in autonomous processes and does not posit a role for autonomy in personal development. This contrasts with a B “N” version where innovation is seen as including autonomous processes at least some of the time. The descriptors “X” and “N” refer to distinctions between a more *external* rule or value focused view of creativity (view “X”) and a more *internal* rule or value view of creativity (view “N”). These views are further clarified in the discussion of the dimensions of variation that follows. As expressed in the quote of P6 above, the perception that an authentic/autonomous process has occurred may contribute to the overall appreciation of the product from an “N” perspective. The division of *Category B* into these two variants was not explicated earlier because seeing the difference between the two relies on familiarity with the descriptions of categories *F* and *G*.

Table 4-1 Overview of categories of description for Queensland teachers' conceptions of creativity

Category		Referential aspect		Structural aspect
		Creativity is experienced as:	Sub-conceptions:	Internal horizon
Externally focused conceptions	A	Domain specific	A1. Property of the arts A2. Domain hierarchies	Socially defined differences between domains
	B "X" B "N"	Pro-social	B1. Cultural innovation B2. Perceived innovation B3. Exceptionality <i>B3a).A life-goal</i>	Pro-social "X": Products/performance reflecting valuable novel contribution (excludes "autonomy" as a process possibility) Pro-social "N": Products/performance reflecting valuable novel contribution (includes autonomy as a possible valued aspect of the creative process)
	C	Pro-individual	C1. Unconventional products C2. Individualism	Products/performance reflecting novelty that is <i>not</i> socially and/or personally valued
Internally focused conceptions	D	Instrumental process	D1. Functional processes <i>D1a) Responding</i> <i>D1b) Improvising for a practical purpose</i> <i>D1c) Functional spontaneity</i> D2. Instrumental gain of extrinsic reward	Functional: Externally pressured problem <i>situations</i> (no intrinsic reward) Instrumental: Situations involving internal pressure towards extrinsic goals (no intrinsic reward)
	E	Personal process	E1. Recreational E2. Activities with meaning E3. Occasional ownership	Non-pressured activity <i>situations</i> (some intrinsic reward)
	F	Ownership	F1. Taking ownership F2. Expanding capacities	Learning and development (autonomous motivation; broad focus on personal and social value of creativity)
	G	Authenticity and autonomy	G1. Creative Being G2. Contributing to holistic transformation of the collective	Self/being (autonomous motivation; broader focus on personal and social value of creativity)

Table 4-1 provides a summary of the categories of description for the teachers' conceptions of creativity. This table shows key aspects of the variation between the categories of description, as differences in what is present to awareness in the *internal*

horizon of the different ways of experiencing creativity. Categories A to C differ principally on the basis of what type of external object is in focus – domains or novelty in performance or products – and the degree to which these objects are seen as beneficial to society. Categories D to E differ in the qualities of the focused process and the degree to which the processes are seen as personally and socially valuable. Categories F and G reflect greater awareness of internal aspects of creative (autonomous) processes and greater awareness of the personal and social value of those processes. Participants expressing views of creativity as *ownership* or as *autonomy and authenticity*, tended to emphasise and value creativity as autonomy in processes or in self-regulation and were also aware of other meanings of creativity and other more externally oriented ways of regulating.

This table does not depict the boundary of awareness between those conceptions constituted through a more external rule lens and those constituted through a more internal rule lens, nor does it depict the relationship of inclusiveness implicated by the “N” participants’ inclusive awareness of the key dimension of variation – which is described here as an evaluation of which location for rules/values/rewards is most reliable – external or internal. Awareness of this key dimension of variation involves the awareness that rewards can be both internal and external and in selecting internal reward as a preferred basis for the generation of rules and values, the participants demonstrate expanded awareness of the social value of an internal value focus. These relationships are shown diagrammatically in Table 4-3, which depicts the Outcome Space for the study.

4.4 SECTION THREE: THE DIMENSIONS OF VARIATION

This study has revealed that the lived creativity conceptions/definitions expressed by the study participants are complex *evaluations* involving a focal (internal world or external world) object and theories of what causes and is socially valuable in behaviour or things. These *evaluations*, which, from the participants’ points of view constitute definitions of *creativity*, exhibit variation along a number of dimensions. These dimensions allow the identification of key areas of difference between the categories of description and the identification of variants within the categories. In the present section the dimensions of variation are outlined. The relation of the dimensions to the categories of description is shown in Table 4-2. Following on from this is the presentation of a rationale for seeing the principal structural relationship across the categories of description as reflecting a hierarchy of inclusive awareness. Finally the study outcome is presented diagrammatically,

in Section 4.4, as an Outcome Space depicting this structural relationship as one of inclusive awareness.

4.4.1 The dimensions

The dimensions of variation identified as delimiting the variation between different categories of description in this study have been shown diagrammatically in Table 4-2. In addition to the external world-internal world foci, there are six dimensions of variation. Two of these (DOV1 and DOV2) delimit aspects of what the person is observing. The remaining four are more *evaluative* aspects (E-DOV1, E-DOV2, E-DOV3 and E-DOV4) of the participant's experience when experiencing and defining creativity. The six dimensions are described below:

DOV1. *A central object of reflection.* This is about what the person is looking at or drawing into awareness and reflecting upon. It may delimit the parameters or extent of the context within which the creative object/objects is/are perceived to occur.

DOV2. *A discerned variation element.* This is the aspect that draws attention and sets the creative object apart as “creative”. The notion of creativity seemed to draw participants' attention to particular kinds of “non-static vs. static” variation – that is, things/process elements that are novel, different or non-repeating as opposed to things that are familiar, common or repetitive.

These two aspects interrelate with four main evaluative dimensions:

E-DOV1. An evaluation of where reliable rules/values/rewards are located – externally or internally.

E-DOV2. *A perception of what kinds of rewards or causes drive/sustain a given creative process.* This dimension is closely linked in to the position taken regarding dimension of variation one (E-DOV1) as it involves a sense of the feeling elements of the process and a perception of what is conceivable in terms of what drives or sustains behaviour. If internal rewards and values are not perceived as reliable, then behaviour is perceived as driven by some form of external pressure or extrinsic gain.

E-DOV3. *An assessment of the functionality/appropriateness of the “creative” object.* There is a strong element of evaluating the functionality of the “object” within its context, whether the object is a process undertaken by the self or something done or produced by

someone else. Participants seem to reflect on whether the thought processes behind the process were/are functional or not.

E-DOV4. An assessment of the benefit to society that derives from the whole object – that is, the social value of the process and what it delivers. This is a much more global assessment of the object under reflection, which positions and evaluates it in relation to its broader social value.

Table 4-2: Dimensions of variation for Queensland teachers' conceptions of creativity

Creativity conception	Central object of reflection	Discerned variation: (What makes the creative object "creative"?)	Evaluation dimension 1: (Where are rewards/values located in the world?)	Evaluation dimension 2: What causes of behaviour drive the creative process? A-C (object>process) D-G (process>result)	Evaluation dimension 3: Evaluated functionality or appropriateness of creative object: A-C (object>process) D-G (process>result)	Evaluation dimension 4: Rationalisation of the social benefit of the object of reflection	View X	View N
Externally focused conceptions								
A. Domain specific	Domain divisions Domain hierarchies	Practical-production vs. aesthetic-production	X) External (control)	X) Various excluding autonomous	X1) Non-functional X2) Functional	X1) Not socially beneficial X2) Socially beneficial	View X is informed by the "X" versions of definitions A-E	"X" definitions A-E are ideologically rejected or moderated
B1. Pro-social "X" B2. Pro-social "N"	Products/performance	Norms vs. novelty	X) External (control) N) Internal (autonomy)	X) Various <i>excluding</i> autonomous N) Various <i>including</i> autonomous	Functional/appropriate	X, N) Socially beneficial		
C. Pro-individual	Products/performance	Norms vs. novelty	X) External (control)	X) Various excluding autonomous	X1) Non-functional X2) Functional	X1, X2) Not socially beneficial		
Internally focused conceptions								
D1. Instrumental process	Pressured problem situations and goals	Auto-pilot vs. operating outside auto-pilot	X) External (control) N) Internal (autonomy)	X1) External pressure X2) Internal pressure to gain extrinsic reward N) External pressure	Functional	X, N) Socially neutral>beneficial		
E. Personal process	Non-pressured activity situations	Boredom/routine vs. relaxation, interest, change of activity, choice	X) External (control)	X) Intrinsic (situated)	Functional/appropriate	X) Personally but not especially socially beneficial		
F. Ownership process	Learning and development	Surface learning/ext. control vs. sense-making/autonomy	N) Internal (autonomy)	N) Autonomous	Functional	N) Socially beneficial		Ideologically accepted
G. Authenticity and autonomy	Being/self	Meaninglessness/ext. control vs. meaning/autonomy	N) Internal (autonomy)	N) Autonomous	Functional	N) Socially beneficial		

4.4.2 A hierarchy of creativity conceptions

An important aspect of the results of this study is that the conceptions of creativity can be ordered according to a hierarchy of inclusiveness. Åkerlind (2003, p. 378) observes that “the hierarchy of inclusiveness that phenomenographic analysis searches for is one of increasing breadth of *awareness* of different aspects of the phenomenon being investigated.” Åkerlind argues also that, in phenomenographic studies, empirical confirmation of hierarchic relationships comes from being able to show that at least some transcripts, from a given study, show evidence of awareness of relationships expressed in categories lower in the hierarchy, but not vice versa:

From a phenomenographic perspective, conceptions of teaching may be categorised according to the awareness shown of key aspects or dimensions of teaching, where awareness of an aspect is indicated by the perception of the *potential for variation* in that aspect (Marton & Booth, 1997). From this perspective, awareness of the quantitative–qualitative dimension in learning, for example, would be indicated by an awareness that learning may be *both* quantitative and qualitative in nature, even if the value of one type of learning (such as the quantitative accumulation of information) is negated by the teacher. Lack of awareness of this dimension of teaching and learning would be indicated by a taken-for-granted assumption that learning is all of the same nature. From this more limited view of learning, another type of learning cannot be rejected at an ideological level, because the understanding of learning does not include awareness of that as a possibility (Åkerlind, 2003, p.377).

In the present study some of the teachers demonstrate that they perceive the *potential for variation* in human regulation – that is, awareness of the potential for behaviour to be oriented towards external rules/rewards/values and/or towards internal rules/rewards/values, whereas some teachers do not demonstrate that they perceive this potential for variation. Ryan and Deci (2000a) have observed similarly that the meaning of “autonomy” is often misinterpreted by scholars and researchers who are seeing autonomy as “individualism,” “independence” or “free will”. They argue that to grasp the meaning of autonomy, as posited and researched within SDT, it is necessary to think outside “the box” of “ideas that fit well within a controlled, contingent reward-based social context” (Ryan & Deci, 2000a, p.323). They argue that despite the wealth of research demonstrating the existence and value of autonomous functioning, many researchers continue to wrestle with

the meaning of autonomy. This kind of discussion within the motivation research literature suggests that autonomy is a challenging concept, even for psychologists.

The analysis has resulted in the finding that the Queensland teachers who participated in the study expressed conceptions of creativity, which can be ordered as a hierarchy on the basis that transcripts in which a focus on the value of internal rules and rewards is demonstrated also reflect awareness that behaviour can be regulated with a focus on external rules and rewards. Creativity conceptions evidencing awareness of greater breadth of personal and social benefit, deriving from autonomous experience, have been identified as reflecting inclusive awareness of externally controlled regulation in behaviour. A person must be able to focus simultaneously on the perceived benefits of both forms of regulation in order to evaluate one as more beneficial than the other. However, in order to grasp the meaning of autonomy as something other than individualism (i.e. failure to be regulated by the external rules of a context – a distinctly control oriented conception of creativity) a person would need to see greater value in intrinsic motivation, ownership and sense-making, than in following norms and rules. The logical consequence of seeing that, however, is that in order to see this value, the person would have to be regulating autonomously.

I have chosen the term “autonomy” as a suitable referent for the most comprehensive of the categories of description. Autonomy has been a central construct defined and researched within Self-determination theory (SDT) (Ryan & Deci, 2000a, 2000c). As noted in the literature review the word autonomy can be used to reflect different meanings. The meaning I wish to convey approximates to the one expressed within the SDT paradigm. Autonomy, as it is used in the present research findings to convey the referential component of a category of description, should be understood as self-directedness in learning, development or being, which is perceived by participants to have personal and social value.

Language fails, in some ways, to provide adequate linguistic delimiters for autonomous processes, because the meaning of autonomy to which SDT researchers and the present study findings refer will tend to fall outside some people’s intuitive experience of what is conceivable in human behaviour. Research within SDT and the present study, suggests that, for some people, external control in regulation represents the full extent of human regulation possibilities. However, from the point of view of teachers expressing views of creativity as either *ownership* or *autonomy*, control by external contingencies represents

only part of the spectrum of regulation possibilities, because, in their lives they utilise an additional source of values, which is internal reward from authentic, autonomous experience.

To some extent, autonomous individuals cannot avoid expressing some sort of rejection of the values of the social world when viewed from a purely controlled perspective, because that world assumes that all worthwhile forms of regulation arise from internalisation of rules and procedures outside the person and that autonomy does not exist. If a computer was programmed to model human interactions in a world governed only by controlled processes, that world would reflect some values which could not be endorsed from the perspective of an autonomy orientation. A case in point, as reflected in the data for the present study, is the refusal, by some of the more autonomy oriented teachers, to accept that learning is best achieved through “lock-step” methods. To them such methods achieve, at best, impoverished learning experiences, and at worst, prevent or even discourage learning:

I just, I can't do it [teach in a lock-step way]. You know, when I say I can't do it, it's because I won't do it. I refuse to do it. I just, don't know what it is. Thought about this a lot, but I'm just, it's, I'm just not prepared to be like that ... (10).

I didn't like the way that, er, music was introduced to kids in high school. It was: “Well you got crotchets and quavers and then you learn this and then you learn that and then you study binary performance A-B and let's listen to a piece of music that's A-B and it's only written 400 years ago. Tell me, put your hand up when it gets to the B sections. Let's do an analysis of Beethoven's ninth symphony” ... and they were so tedious! I thought there's gotta be a better way of doing things ... I started experimenting with ideas and this idea came to me: “Well why can't the kids learn music through composition and they can actually walk into the classroom and compose?” (5)

But as Åkerlind (2003) implies the question is not so much whether one type of teaching is inherently better than another type of teaching, but are there grounds for understanding one way of seeing teaching/learning as inclusive of another way of seeing teaching/learning? If this can be established, Åkerlind argues, it opens up the understanding that for those teachers there exists the *option* of being able to ideologically reject or negate views lower in the hierarchy. The empirical demonstration of inclusiveness is established when some

transcripts, in a given study, show evidence of inclusiveness of structures for conceptions lower in the hierarchy (Åkerlind, 2003).

In the present study, establishing this would require that at least some transcripts, identified as illustrative of conceptions of creativity as autonomy and authenticity, evidence awareness of the potential for variation in a key dimension across the conceptions of creativity. It has already been suggested that implicit in the conception of creativity as either *ownership* or *autonomy* is the identification of two ways of orienting to the world. In order to “shift” students from a controlled orientation to learning to an autonomous approach to learning, the teacher needs to recognise the relative value of both approaches. But in addition to this, a number of the more autonomy oriented teachers do refer explicitly to the structure of more externally controlled views, treating them, much as Ryan and Deci (2000a) do above, as views which they reject on the basis that these imply a restricted view of human regulation – and by implication beyond that, a limited view of the dynamics of social cohesion.

For example, P5 and P9 show that they are aware that, in the world, some people operate in a “lock-step” way, which they view as “not-creative”, and others have a more autonomous regulatory approach, which they *endorse*, and identify as “creative”:

A lot of people have that, or some people, manual arts teachers, have that sort of lock-step approach to life, in general, you know. They're very prescriptive, and they do things, you know, in a cut-and-dried, step-by-step sort of way. But, and then, other people like me, who are much looser ... well, it's a bit, it's creative, I suppose. That's what it is. (9)

I sort of worked this out years ago: the creative people in schools, you'll find, by and large as a rule of thumb – you'll find, you got the music, the performing arts, you've got the arts lot on one side and then you've got the maths/science on the other. Arts is where you find the creativity. Maths, science, it's where you find the, ah, liking structure, formulas, rules, all that kind of thing ... And as a rule of thumb that works pretty well. I've been in schools long enough to see that. (5)

Note that P5 is not comparing domains, but regulatory styles. It could be objected that since some of the more control-oriented participants describe themselves as “not-creative”, they might be *aware* of differences between control and autonomy and simply choose *not* to be autonomous, because they do not *endorse* autonomy:

Creative? I'm huh, by nature, I'm not a creative person. I like ... I like predictability ... I'd like to stay within a lot of norms society sets I think. (1)

It appears, when read in the context of the whole transcripts, that expressions of this type do not reflect comparisons with autonomy, but are indications that the participant is aware of no socially acceptable regulatory options beyond external control. There are several indicators of this: View “X” (external rule oriented) transcripts reflected more procedure-oriented and transmission-focused approaches to teaching; a view of interest and relevance as only peripherally related to learning; reflected infrequent engagement in intrinsically motivated activities; and associated creativity with the arts and professions *outside* teaching. All of these suggest that expressing view “X” is indicative of not seeing the intrinsic value of authentic/autonomous processes or not seeing intrinsic value very clearly.

Having proposed that view “N” transcripts reflect awareness of controlled regulation, but that view “X” transcripts do not evidence awareness of autonomous regulation, more convincing empirical confirmation of a hierarchic relationship of inclusivity, occurs where “N” transcripts show evidence of awareness of differences in the structural aspects of control and autonomy, such as awareness that actions may be performed for *either* external or internal reward. In the following quotation P5 shows that he is aware that people commonly perform acts to achieve external rewards, but that the more satisfying alternative is where the act is performed for the internal reward:

There are things that I've written that, ah, no one's probably heard and it doesn't matter because it's the instant, the actual moment that it's made is where the biggest buzz is ... There's one particular song, which is not the best thing I ever wrote, but it was a top 40 hit, right? And I enjoyed the buzz of writing it much more than saying “Oh, I've got a top 40 hit!” Now that wasn't as big a thrill as the actual writing. (5)

This contrasts with an “X” view, where the reward is seen to lie in external “affirmation” and there is seemingly no awareness of internal reward in the creative process:

If you're doing something that's quite new, people ... ah ... can be drawn to that and of course if they're drawn to that newness they're also drawn to you, I would suspect, and that has a sort of an affirming nature in the sense that, well, like any theatrical event, you know, there's sorta that applause part, it's really the affirming part of the whole process. Um ... and if you do something really different that just seems to elevate that affirmation. (2)

SDT places autonomy and authenticity at the pinnacle of the human developmental trajectory. It is considered that when people feel fully autonomous, it is because they have successfully learned to regulate in such a way that *all three* psychological needs for competence, relatedness and autonomy are satisfied. Various phenomenological and externally observable indicators of wellness result (Deci & Ryan, 2000; Ryan & Deci, 2000a). So too have phenomenographic researchers tended to identify deep approaches to learning and student-focused views of teaching as more comprehensive than surface approaches to learning and teacher-focused views of teaching (Åkerlind, 2003; Van Rossum & Hamer, 2010). Åkerlind (2003) points out that, nonetheless, there has been some debate about whether views of teaching and learning should be seen as inclusive or bi-polar. In the present study it has been determined that the appropriate framing of the relationship between internal rule and external rule ways of experiencing creativity is a hierarchy of inclusiveness. The conceptions of creativity as *ownership* (Category F): and as *autonomy and authenticity* (Category: G) are perceived through an internal value lens which sees greater value and benefit deriving from a focus on internal rewards than external rewards.

4.5 SECTION FOUR: THE OUTCOME SPACE

On the basis of the deliberations outlined in the foregoing discussions of the dimensions of variation and the grounds for interpreting the data as reflecting an inclusive hierarchy of categories of description, an outcome space has been constructed, which depicts the categories of description as constituting an inclusive hierarchy. This outcome space constitutes the outcome of the research.

Table 4-3: Outcome Space for the Phenomenon of Queensland Teachers’ Conceptions of Creativity

		Internally focused conceptions	Externally focused conceptions
External horizon	External rules, values, rewards	<p>X1. Instrumental</p> <ul style="list-style-type: none"> • Functional responding to pressure • Instrumental attainment of an extrinsic reward <p>X2. Personal</p> <ul style="list-style-type: none"> • Recreational activities • Activities with meaning • Occasional ownership 	<p>X3. Domain specific (arts)</p> <p>X4. Pro-individual</p> <p>X5. Pro-social “X” (<i>excludes</i> autonomy as a process possibility)</p>
	Internal rules, values, rewards (Includes awareness of regulating with a focus on external rules, values rewards)	<p>N1. Ownership of learning</p> <ul style="list-style-type: none"> • Taking ownership • Expanding capacities <p>N2. Authenticity and autonomy</p> <ul style="list-style-type: none"> • Creative being • Contributing to the collective 	<p>N3. Pro-social “N” (<i>includes</i> autonomy as a process possibility in innovation and in the development of exceptional talent or unique qualities)</p>

The more expansive external horizon for view “N” is depicted as encompassing awareness of value in *internal* rewards. This forms a lens on the world in which *external* rules/values/rewards are evaluated with simultaneous reflection on the experienced value of *internal* reward. When constituted through this lens, conceptions of creativity incorporate increased breadth of awareness of the personal and social benefits of authentic processes of learning, development and being. A logical implication of experiencing creativity as *ownership* (Category F) or *authenticity and autonomy* (Category G) is that from this perspective the experienced pro-social value of “innovation” and/or “exceptional” performance would, at least some of the time, involve sensitivity to the presence of authentic/autonomous processes in the emergence of the product or performance.

The outcome space therefore reflects these aspects of variation between “X” and “N” versions of the *externally focused* experiences of creativity:

The “X” experience of creativity as a pro-social *external world* object (Sub-category B “X”) focuses on “extrinsic” values and process qualities, such as knowledge, skill and persistence, but *excludes* awareness of autonomy.

The “N” experience of creativity as a pro-social *external world* object (Sub-category B “N”) *includes* awareness of “extrinsic” values, but also includes awareness of autonomy as a process possibility in innovation and in the development of exceptional talent or unique qualities.

The outcome space depicts that expressing an “N” (internal rule) view, includes awareness of view “X” (external rule) ways of regulating in the world and would therefore include awareness of most “X” *operational* understandings of creativity, even if those understandings are compared and contrasted negatively with the value of view “N” operational understandings. Expressing view “N” operational definitions of creativity implicates awareness of view “X” operational definitions, because doing so involves reflection on – and rejection of the value of – other comparable kinds of experience. As discussed earlier, if it is an accurate interpretation that autonomy (regulation with reference to internal rewards) *is* a complex evaluation that regulating with a focus on internal rewards/rules is *more valuable* than regulating with a primary focus on external rewards/rules, then, it is logically impossible for the reverse situation to occur. That is, from a view “X” perspective, view “X” and view “N” cannot be compared, given that to do so would mean that regulating with a focus on internal rewards/rules had been assessed as *more valuable* than regulating with a focus on external rewards/rules. The person would thus have to be expressing view “N” rather than view “X”.

CHAPTER 5: DISCUSSION

I think everybody's creative. (Participant 7 in the present study)

By nature I'm not a creative person. (Participant 1 in the present study)

5.1 INTRODUCTION

The study has found that the teachers' ways of defining and valuing creativity were tied structurally to a central dimension described, in the research outcomes, as an evaluation of which location for rules/values/rewards is the most reliable – external or internal. Greater expansiveness in views of creativity involved greater focus on the benefits, for individuals and society, of attending to internal rules/values/rewards rather than external rules/values/rewards. From an internal rule perspective unreflective control by external rules/values/rewards was seen as *not* creative and was ideologically rejected as less beneficial than reflective regulation by internal rules/values/rewards. Seven categories of creativity conceptions were identified which describe the various ways that the teachers defined creativity operationally, that is, as an aspect of their lived experience.

The variation between the identified categories is reflected as different combinations of values on several dimensions. These dimensions include observer vs. creator perspective (internal world-external world foci), a definitive “discerned variation” criterion (a novelty aspect), perceptions of the causes and rewards of “creative” processes, perceptions of the functionality/appropriateness of the “object” within its context, and assessments of the benefit conferred to the person or society from the perceived creative object (process and product/outcome). The outcome space for the study has been constructed to reflect a hierarchy of categories wherein the more expansive ways of conceptualising creativity can be seen to include awareness of categories lower in the hierarchy. Teachers who expressed more expansive views of creative value conceptualised and endorsed “creativity” as *ownership* of learning/development or *autonomous and authentic* being.

Two supporting analyses suggest that greater reliance on external rewards, rules and values is consistent with both an extrinsically focused view of creativity and a teacher/transmission-focused view of teaching, whilst greater reliance on internal rewards, rules and values is consistent with both an intrinsically-focused view of creativity and a student/enabling-focused view of teaching. These analyses suggest that conceptions of creative teaching and the enhancement of student creativity differ significantly when seen

from extrinsically focused (external rewards/rules/values) vs. intrinsically focused (focus on internal rewards/rules/values) perspectives.

This section of the thesis discusses some of the features and implications of the findings. Also discussed are similarities between the internal rule-external rule dimension of variation identified in this study, and the autonomy-control dimension as defined in Self-determination Theory (SDT). The SDT research literature indicates that people exhibit tendencies towards taking either an intrinsic value focus or a more extrinsic value focus. Within SDT these tendencies are described in terms of an autonomy orientation vs. control orientation. It appears that, within SDT, autonomy and control are conceptualised similarly to the internal-external rule orientations as they emerged in the present study. The term “autonomy” has been utilised in the present research as a suitable referent to delimit the meaning of creativity as seen from an internal value perspective. It is therefore suggested that SDT theory and research provides an additional means of apprehending and scrutinising the key internal rule-external rule dimension of variation as identified in the present study.

5.2 VALUE ORIENTATIONS: TERMINOLOGY AND PARADIGMS

The central dimension of variation in teachers’ conceptions of creativity, as identified in this study, is described as an evaluation of which location for rewards, rules and values is more reliable – internal or external. When constituting creativity some of the teachers see rules and values as primarily located externally, in society, in norms and procedures. Rewards are seen as being in the gaining of things, such as qualifications or approval of others. Although some norms, procedures and rewards are clearly evaluated, by the teachers, so that some may be rejected as inappropriate, dysfunctional or wrong, while others are retained or adhered to, the teachers do not include the internal and social value of *autonomous* processes in that evaluation. Therefore they have a different way of thinking about what is important, personally and socially, than do teachers for whom external values are rejected if it is felt that they do not offer as much personal/individual or social benefit as those derived through autonomous processes. It is through these lenses that the teachers constitute “creativity”. Therefore, in the background of all of the teachers’ operational creativity conceptions, is an assessment of the relative value of internal and external rewards/rules/values.

These ways of experiencing and orienting to what is important in life and society appear to approximate to the construct of *causality orientations*, which is described by Deci and Ryan (2000, p.241) as “the degree to which people are (1) *autonomy oriented*, which involves regulating their behavior [sic] on the basis of interests and self-endorsed values” and “(2) *control oriented*, which involves orienting toward controls and directives concerning how they should behave.” They identify a third orientation, *impersonal orientation*, which involves a lack of intentionality in behaviour. This orientation does not appear to be relevant for the present study.

Deci and Ryan (1985b) differentiate between the notion of perceived locus of causality (PLOC) and the similar construct “locus of control” (Rotter, 1966). Locus of *control*, they explain, refers to the sense of control over outcomes and can apply to either autonomous or controlled processes. It is therefore not the same as perceived locus of causality. They also explain their choice to use the terms autonomy orientation and control orientation rather than internal-external orientation. Deci (1980) originally designated the causality orientations as internal, external and impersonal, “since the perceived locus of causality for the first is internal, for the second, external, and for the third, impersonal” (Deci & Ryan, 1985a, p.111). However, they note that the terms internal/external have been used so extensively in the psychology literature to describe various constructs that using these terms has become confusing. For the purposes of the present research I have elected to follow this reasoning, even though the term “control oriented” has unwanted connotations. It is meant to refer, however, to the fact that the person experiences a sense of needing or having to act in certain ways, with a sense of pressure from either external or internal controls, as opposed to a sense of acting *freely* from self-endorsed values or interest (Deci & Ryan, 1985a, 2000).

In psychology research controlled and autonomous orientations are measured using a scale such as the General Causality Orientations Scale (Deci & Ryan, 1985a). In 2012 researchers consolidated many years of research into causality orientations with the formulation of the Index of Autonomous Functioning [IAF] (Weinstein, Przybylski, & Ryan, 2012). Weinstein, et al., (2012) found that the more that individuals demonstrated dispositional autonomy and scored high on the IAF, “the more they were likely to experience positive well-being indicators such as positive affect, self-esteem, life-satisfaction, a sense of clear meaning in life, and a value for personal growth ... ” (p.406). Self-determination theory takes a “*dimensional* view, in which people are described in

terms of their placement on two or more dimensions” (Deci & Ryan, 1985b, p.154). Although research has found that people tend, at any time, to be high in one or the other orientation, within SDT they are not classified as being one “type” or the other (Deci & Ryan, 1985b).

That a psychological, quantitatively researched model of motivational orientations should align with the central dimension of variation emerging in a study, which has used a qualitative research approach aimed at elucidating structural relations in teachers’ experiences of a phenomenon, is not as contradictory as it might seem. Marton (1981) has argued to the effect that psychological and phenomenographic inquiry are not necessarily distinct except to the extent that, within a given psychology paradigm, aspects of people’s *perception* are taken as “psychologically real entities”. Marton illustrates with the examples of Piaget’s early and later work, which he sees as exemplifying a shift of interest in describing aspects of the world from a second-order to a first-order perspective. The interest of phenomenography is with describing aspects of experience from the former perspective rather than the latter. Similarly Ryan and Deci (2006) have argued that for the purposes of educational and other social interventions, it is often the case that the “regnant level”, as they term it, of investigation and explanation, is with how events are *experienced* rather than with biological explanations:

Consider the issue of improving a school system. The neuro_circuitry of the brains of administrators, teachers, and students would be actively involved in any such change, but an intervention plan would likely be more useful if it were formulated in terms of structural and interpersonal changes that affect the experience, values, and motives of the actors involved than if it were formulated in terms of cells in the brain that should be activated and cortical activation that will lead to desired motor outputs. The fact that an explanation is at a lower level of analysis does not necessarily make it more scientific or causally accurate, and it certainly does not make it more practically useful as an explanation or point of intervention. (Ryan & Deci, 2006, p.1572)

Therefore it appears that, as in phenomenography, SDT researchers have often taken “experience” as their realm of inquiry.

5.3 DIFFERENCES BETWEEN “X” AND “N” VIEWS

Teachers expressing views of creativity as *ownership* (Category G) and/or *authenticity and autonomy* (Category F) tended to emphasise these meanings of creativity even though they

were also aware of other meanings of creativity, such as, of creativity as a *functional response* to pressure (Sub-category *D1a*). I have designated this experience of creativity as an “N” view of creativity, because of its focus on the *in*-ternal or intrinsic value of creativity. These teachers define “creativity” primarily in terms of the discerned *variation* between regulating with a focus on internal reward/rules/values (autonomy) and regulating with a focus on external reward/rules/values (external control). In other words, one of the key definitional aspects in these views of creativity is sensed variation in the phenomenological quality of experience between a controlled experience of learning or being and an autonomous experience of learning or being. Teachers expressing view “N” were also aware that some people do not regulate with a focus on internal reward. They regarded the regulatory focus on external reward/rules/values as *not* creative.

Experiences of creativity as *ownership* (Category G) are similar to experiences of creativity as *autonomy and authenticity* (Category F) in that both reflect awareness of value in autonomous processes. Category G is differentiated from Category F by its more expansive object of reflection. Whereas the object of reflection for the *ownership* conception is delimited, in the findings, as a focus on learning and development, the object of reflection for the *authenticity and autonomy* conception is self or being. Expressing a view of creativity as *ownership* may not always mean that the person also experiences creativity as *creative being*. However, it would be informative to find out to what extent teachers who experience creativity as *ownership* might regard ownership of learning as a *precursor* to finding fulfilment in life even if the person does not yet feel that this point has been reached.

Participants expressing either Category F or Category G evaluate creativity as socially beneficial on the basis that the process is transformative of the person in a positive way. As indicated in the literature review, SDT research suggests that these “intuitive” assessments of the value of autonomy in learning/life are accurate – that is, autonomy can be sensed and these assessments of value appear to be based on a feeling of *eudaimonic well-being*, which is phenomenologically distinct from *hedonic well-being* (Deci & Ryan, 2008). Eudaimonia is the sense that needs for competence, relatedness and autonomy have been satisfied and is sustained through attention to *informational cues* (Deci & Ryan, 2008).

A range of operational definitions of creativity was expressed by participants in this study (Categories A-G) and there are a number of subtle and more critical differences in the “X” participants and “N” participants” experiences of these different conceptions of

creativity. Thus, there are some definitional aspects that appear to be held in common, but there is significant variation overall between “N” and “X” ways of experiencing “creativity”.

Participants expressing view “N” did not express the view that creativity is specific to particular domains (Category A). They saw creativity mainly as autonomous processes applicable across domains. “N” participants sometimes stated that creativity is commonly associated with the arts. But they tended to qualify the view as a misconception, a social construct or one of a range of ways of looking at creativity:

I think they [the arts] are traditionally what people associate with creativity, so if you say you're a creative person people automatically think: "O.K. well you either draw, paint or you're in one of the arts." But I don't think people always associate creative thinking with coming up with new ideas and new ways of approaching things. (12)

In contrast with the “N” view, participants expressing view “X” tended to *emphasise* that creativity is a property of the arts. Exactly why this emphasis is so strong in the “X” view is still unclear. But it may have to do with lack of familiarity with the processes of creating art or an unclear sense of autonomous processes or a combination of these. It could be that the participants are aware of no creative *process*, which could be common to the production of aesthetic, scientific and practical objects, nor common to “high” and “low” arts domains. The participants seem to understand the processes occurring in arts domains as a mix of processes that are “mysterious but valuable” and “familiar but not valuable”. The “X” participants have experienced creativity as *functional* problem-solving processes and as *personal* processes, which, from an “X” perspective appear to relate to “low” artistic domains, such as hobby or school art, but not to “high” culturally relevant production. None of the “X” participants seemed to relate *functional* problem-solving to cultural production in “the arts”. Perhaps experience of these particular “creative” processes does not help to intuitively account for culturally significant artwork or achievement. For example, science teachers P15 and P1, see “creative” (artistic) processes as unfathomable:

Where do you start writing songs? Where do you start? And I just go, I just go, I have no idea. That's just like a talent, a skill that I can't even fathom because I can't even imagine where to start. (15)

I mean I see a lot of people who seem to have lots of creativity ... they can think of something and then they can make their own paintings that they'll hang on their own walls and ... I've never done that. (1)

It seems possible that the aspect missing from the “X” experience of regulation – autonomy – is the aspect, which would unseat the view of creativity as specific to the arts if it were present to awareness. It may be useful to investigate conceptions of “the arts” as a research focus in its own right.

A definition of creativity as *prosocial* products and performance, was expressed by both “X” and “N” participants (Category B). All of the teachers seemed capable of seeing a product as creative if it contributed something new and appropriate to the collective (*B1. Cultural innovation*) or if they “liked” it (*B2. Perceived innovation*). Both strongly “X” and strongly “N” participants made statements to the effect that if they did not like a product they would not see it as creative. Similarly, both “X” and “N” participants could see outstanding performance as creative. So, at this point, it seems that Category B. must be seen as containing a view of innovation, which is common to both “X” and “N” views.

However, because the perception of *process* comes into the overall appreciation of an innovative product/performance, it seems that “N” participants also have a view of innovation, which differs from an “X” view of innovation. The teachers looked at a number of different aspects when assessing the “creativity” of a product. Perceptions of the process *behind* the product were clearly a key aspect in their appreciation of a given product. Research suggests that, for products with aesthetic qualities, at least, very little seems to be known about what exactly people are attending to when they enjoy a product, such as a piece of music or artwork and evaluations can be “diverse and complex” (Newton & Donkin, 2011). Undoubtedly evaluations are as complex for “X” participants as for “N” participants. However, it is apparent in the transcripts and a logical conclusion that “N” teachers sometimes look for evidence that the process behind a product is *authentic* (that is, a process of the “self” or of the creator) .This difference between “X” and “N” views of innovation/exceptionality has therefore been made explicit in the study findings as “X” and “N” versions of creativity as pro-social (versions B “X” and B “N”). This distinction may be especially important in the education context, where teachers would be looking for signs of students’ learning. B “X” and B”N” views would be implicated in what teachers look for in student and product “creativity”. “X” and “N”

views of pro-social creativity may also be evident in teachers' global rationalisations of the social benefits of innovation.

There may be differences in "X" and "N" experiences of creativity as a *functional* process, especially as a response to pressure (Sub-category *D1a*). It is not clear if "X" participants and "N" participants experience pressured problem-solving in exactly the same way. "N" participants made very few statements indicating that they see pressured problem-solving as creative. Some autonomously oriented participants indicated that where possible they would change their mode of engagement in a task or orient themselves within the parameters of a situation in order to *make it* "creative" (autonomous):

Whatever I'm doing, there's a way to turn it into creative. (5)

When I'm home I have to wash the dishes: How can I make that process as enjoyable for everyone as possible? And that's where my creativity comes ... (13)

However, even if people experience themselves as *authentic and autonomous* beings all of the time there may be some kind of threshold beyond which the autonomous process becomes so "squeezed" by time and other pressures that it does cease to feel autonomous. The participants may feel gradients of autonomy from more internally to more externally controlled because of external pressure. But it may be difficult for highly autonomous individuals to experience even extremely pressured processes as "not creative" if they are assessed or felt to be authentic. When purely *functional* creative processes are discussed by autonomously oriented participants they tend to be compared negatively with the value of autonomous processes. Certainly autonomy oriented participants indicated a preference for engaging in authentic and autonomous processes:

It just goes hand in glove. See now I gotta try and isolate an [a creative] incident from what really is what is normal, for me. (5)

It drives me nuts being constantly reactive in my role. I need to have some, to do some proactive stuff. (6)

In contrast "N" teachers tended to experience creativity primarily as doing something outside their usual procedural approach:

It's [creativity is] sort of stepping outside your usual areas of training and everyday life. (10)

It is possible that participants, for whom it is “normal” to reference external rules and values may feel more uncomfortable in pressured problem situations than participants for whom problem-solving is normal and enjoyable. The question of how *functional* or pressured problem-solving appears from “X” and “N” perspectives may need to be explored in further research.

There are differences between “X” and “N” experiences of creativity as *personal processes* (Category E). This category is distinguishable from an experience of creativity as *ownership* or *autonomy and authenticity*, in that the participant is not aware of any great social value or benefit arising from the intrinsically motivated process. It may be that there is not yet enough internal value experienced in such processes for the participant to evaluate the experience as beneficial, except in a recreational or occasional context. From the perspective of an interest researcher it might be said that the participant experiences no “stored value” for particular content (Krapp, 2002, 2003) or that the participant experiences only situational or *triggered* interest (Hidi & Renninger, 2006). However, from an “N” perspective *interest* is likely to be seen as valuable for its *potential* to promote learning or development.

There are also questions to answer regarding how view “X” relates to the experiences of creativity as *pro-individual* (Category C) and as *instrumental gain*. (Sub-category D2). It appears, at this point, that experiencing and defining creativity operationally as *pro-individual* or *instrumental gain* may be restricted to a view of the world which sees behaviour as linked to external and “introjected” controls and contingencies – that is, external controls and internalised external controls (Deci & Ryan, 1985a). It could be difficult, from an autonomy perspective, to experience creativity as individualistic pursuit of extrinsic gain, because from an autonomy view, *autonomy is* creativity. It seems unlikely that a person would identify *both* externally controlled *and* autonomous processes as creative. If autonomy oriented people do alternate between these ways of defining creativity operationally it seems unlikely that they would value such “creativity” in the same way that they value autonomy.

Full provision has not been made, as yet, for describing all of the structural elements of one participant’s (P7) religious version of autonomy and authenticity. Those participants whose autonomous and authentic experience was based mainly on *sense-making* and personal development through interest in a particular field of expertise, tended to find the *process* of creativity highly satisfying. This does not seem to have been as strongly the

case for P7. However, the dimensions of variation for this experience of creativity are currently considered to be quite consistent with those of participants more strongly focused on sense-making. P7 felt authentic and autonomous as a Christian and evaluated “creativity” as personally and socially valuable. However he saw “creativity” as originating with “God” rather than with the activities of the person and tended to locate process satisfaction in the “completion” or the sense of having “constructed something” rather than, as he put it, “the process through”. Whether this constitutes a significant difference from other teachers’ views of creativity as authenticity and autonomy could be investigated in further studies. It may be the case that variants on the experience of creativity as *authenticity and autonomy* will be found.

In summary, teachers who saw it as more reliable and valuable to regulate with a focus on internal rewards, rules and values emphasised meanings of creativity as *ownership* of learning and development, or as *authentic and autonomous* being. As these are operational (lived) definitions of creativity, the teachers derive and develop these definitions through their experiences of autonomous processes. In this “N” experience of creativity, the teachers also recognise a number of other meanings/definitions of creativity, some of which they *may* share in common (experientially) with an “X” experience of creativity. The “N” experience of creativity includes awareness of the *potential* for variation in how people regulate in the world, that is, that regulation can involve a focus on external or internal rewards/rules/values. The “N” experience therefore includes awareness of externally ruled ways of constituting creativity. An “X” view of creativity, by contrast does not see the internal world as a reliable source of rewards/rules/values. In an “X” view of creativity the potential for learning and development through autonomy is not recognised. Therefore, views of creativity as Category F. *Ownership* and Category G. *Authenticity and autonomy* are not integrated into the “X” view of creativity.

5.4 COMPARISONS WITH OTHER STUDIES

Findings from some phenomenographic studies of learning exhibit commonalities with the findings from the present study. Examples from some studies conducted by Van Rossum and Hamer (2010) serve to illustrate. In the present study it has been found that teachers conceptualise creativity as Category F: *Ownership*, where the object of reflection is learning and development. Teachers in this study also conceptualised creativity as Category G: *Authenticity and autonomy*, where the main object of reflection is self/being. Van Rossum and Hamer (2010, p.15) identify a student conception of learning, described

as *Widening horizons*, where the object of reflection is “personal development” and a more complex learning conception again as *Growing self awareness*, where the main object of reflection is “self”” The general alignment between the two sets of study outcomes is apparent and, as Van Rossum and Hamer also argue, alignment across phenomenographic studies of learning-related phenomena constitutes a certain kind of validity for the phenomenographic results that fall into this category. They term this type of validity “convergence of outcomes validity” (Van Rossum & Hamer, 2010, p.48).

It seems relevant to acknowledge Van Rossum and Hamer’s use of the “living tree” metaphor in describing the particular (student) conception of learning, which they identify as *Growing awareness*. I decided to use this metaphor despite discovering that these researchers had used it previously, as it seemed to provide an appropriate way of explaining that some teachers’ various uses of the term “creative” are really different aspects of a single conception.

Van Rossum and Hamer (2010, p.8) describe a slightly different usage of the “tree” metaphor. It may be worth pointing out this difference as it could point to areas of difference between conceptions of “learning” and conceptions of “creativity”. They state:

The appropriate metaphor for learning here is growing, the self a “living tree” firmly rooted in a garden (environment), providing shade and protection to and cared for by a number of gardeners (significant others), each with their own speciality. This conception of learning we re-label growing self-awareness.

In this use of the “tree” metaphor no reference to “seed” or “fruit” is indicated. However, in their description of the conception of learning as *Growing self awareness* the authors point to a number of studies, all of which find that a sense of control, a sense of becoming an agent or “being in charge” is central to the meaning of learning in this conception. Therefore Van Rossum and Hamer do identify the “seed” of ownership as a key element in a mature conception of learning even if they do not address this aspect in discussing the relevance of the tree metaphor for the conception. However, if “fruit” is not mentioned by them either, it may be because creativity is often more overtly connected to the idea of producing something than is the notion of “learning”. The concept of learning may focus attention on taking in information, on assimilation or transformation of knowledge and on sense-making, more so than on how learning is put to use in the production of things. Student participants in studies might rarely talk about “learning” in terms of what it is used

for. Another difference in the present researcher's use of the "tree" metaphor is that when expressing their conceptions of creativity as ownership and as authenticity, the teachers in the present study clearly saw themselves as constantly growing but also *as* gardeners with relation to the learning/creativity of students.

Van Rossum and Hamer (2010, p.9) suggest that because there is now considerable agreement across phenomenographic studies of conceptions of learning and related phenomena (e.g. good teaching, intelligence, understanding), the models that are emerging, "may prove to be more generally applicable than many researchers feel comfortable to consider". They seem here to be reflecting some concerns that have been expressed about the validity or reliability of phenomenographic research findings (Cope, 2004; Sandberg, 1997). But they argue that the many replications, across studies of learning conceptions, constitute a form of validation.

The "phases of interest" model of interest development (Hidi & Harackiewicz, 2000; Hidi & Renninger, 2006) also exhibits some parallels to the hierarchic view of creativity observed in the presented study. In this psychology-based work it has been shown that interest develops from triggered or situated interest, which may or may not evolve to a higher level of interest. However, at each successive stage in the model, interest content is increasingly *valued* by the person and particular content more frequently engaged until at the highest level of interest a person may see him/herself as *a person who* pursues particular content (Renninger, 2009). This model suggests that people who experience only mild levels of interest and people who experience interest as co-extensive with the "self" are likely to experience "interest" in qualitatively different ways. This phase model of interest development seems to reflect boundaries of awareness between the triggered interest and more pervasive interest phases, similar to the ones identified in the present study between the *personal* category and the *ownership/autonomy* categories.

However, the present research diverges in its finding and approach from Kleiman's (2008) phenomenographic study of university teachers' conceptions of creativity, which, to the best of my knowledge is the only other cross-disciplinary study of teachers' conceptions of creativity. Kleiman's study was conducted with fifteen university academics. Amongst the categories he identified is a category of description, which describes a view of creativity as *constraint focused*. He identifies three kinds of constraint focused creativity, described as: "constrained in order to enable student creativity; constrained by the institutional environment; and constrained in order to meet the

expectations of the students' (Kleiman, 2008, p.212). Kleiman states that he initially thought of putting these utterances aside, but on reflection decided to group them into a category in case such views reflect something fundamental about creativity – in his words: “perhaps there is a binary aspect to the phenomenon of creativity i.e. its existence relies – to a lesser or greater extent – rather like matter and anti-matter, on the presence of its opposite” (Kleiman, 2008, p.213).

From my point of view this was a thought provoking hypothesis and as the present study findings show, there is a figure-ground or discerned variation aspect involved in the participating teachers' identification of creativity, which appears in the results as a dimension of variation. However, there were many times during the analysis process where I became frustrated to the point of thinking *with* Kleiman that “creativity” seems to appear to people as the obverse or reverse of whatever else they see as non-creative. After long periods engaged in analysis I often ended up feeling as though the object of investigation had evaporated like a mirage under the intensity of scrutiny. Identifying creativity conceptions sometimes felt like a “wild goose chase”.

What stopped me from adopting a similar approach to Kleiman on this matter of “constraint” has possibly to do with differences in our data. Some of the teacher participants, in the present study, quite clearly indicated that constraint in an educational context could hamper, but not stop, *them* from taking a creative approach in their teaching and facilitating creativity, even if other teachers showed no interest in doing the same. It eventually became apparent that these teachers see creativity from an autonomy perspective as a quality learning process. They could no more remove creativity from the school context than argue that learning has no place in the classroom.

In the course of analysis for the present study, utterances that demonstrate teachers' positions on the issue of constraint have been approached as information about different conceptions of creativity. The present research does not follow Kleiman's approach on the issue of constraint.

5.5 SIGNIFICANCE OF THE STUDY

The study provides a number of important insights based on aspects of the findings which have immediate and broad relevance in terms of implications and application. In particular, these aspects of the findings are:

- The role of figure-ground contrasts drawn from lived experience in the teachers' operational definitions of creativity
- Interconnections between meta-definitions and operational definitions
- Identification of a number of dimensions of variation as a means of distinguishing between meanings of creativity
- Individually and as a group the teachers expressed more than one meaning of creativity
- The identified conceptions of creativity reflect a hierarchy of inclusive awareness

The study shows that internal-external value orientations (or, in SDT terms, causality orientations) are implicated in how teachers constitute and value creativity. Although some quantitative studies of teachers' conceptions of creativity observe similar patterns (Diakidoy & Kanari, 1999; Fryer & Collings, 1991), the researcher knows of no other studies which have illuminated a link between *causality orientations* and conceptions of creativity. Further, this qualitative study illustrates how teachers conceptualise creativity and demonstrates that, although creativity conceptions exhibit variability, they also exhibit structural relations and may be reliably mapped.

With so few phenomenographic studies having investigated conceptions of creativity, any phenomenographic studies of creativity conducted with demonstrable adherence to the prescriptions of the phenomenographic approach, may at this time be regarded as contributing timely and useful perspectives to the field of creativity conceptions research. Whereas there have been many phenomenographic studies of learning, studies explicitly dealing with conceptions of creativity within education still number only a few. Even taking into consideration phenomenographic studies of related areas such as problem-solving and intuition the area is hugely understudied. The researcher believes that the present study is the first to attempt to illuminate the broad spectrum of school teachers' conceptions of creativity, with close attention to the principles of phenomenography. From this perspective the study can be seen as significant for contributing much needed insights into teachers' ways of seeing and understanding creativity within a very limited pool of available studies.

The outcome space may have practical implication as a tool for deciphering how the term is being used and understood, not only across the group of teacher participants in the study, but in the broader education context and in writing about creativity. The study provides important insight into why and how teachers, and educators more generally, *value* creativity differently and envision the facilitation of creativity differently as well.

Furthermore the study indicates that the scientific definition of creativity, which has focused on creativity as an outcome, has not accounted for qualitative differences in people's experience and awareness of creativity. In overlooking this aspect the scientific approach to the study and discussion of creativity has not been effective in reducing contention around the meaning of creativity. This study provides insights, which should make clearer how the support of creativity can be undertaken in education and organisations.

5.6 EDUCATIONAL IMPLICATIONS AND APPLICATIONS

The study indicates that the support of student creativity in Australian education would be well served by giving attention to teacher training in autonomy support. The findings suggest that teachers will have varying requirements in terms of professional development, not only for meeting national curriculum requirements to support student creativity, but in terms of the support needed for coping with the demands of teaching in the current transitional climate in education (Burnard & White, 2008). The findings align with observations made by Jeffrey and Woods (2009), who contend that within the teaching community is a group of teachers for whom teaching creatively to enable ownership in learning forms the core of their pedagogy. Teachers who teach with a focus on ownership of learning and teachers who teach with a greater focus on content, rules and extrinsic kinds of reward, will require different kinds of support in respect of teaching for creativity and may have different needs in terms of professional development more generally.

The findings should also be useful as an aid to communication about creativity in education. Educators who argue for or against the support of creativity may have different views of the value of creativity. Some teachers might be interested in innovation, but with little or no awareness of the value of autonomy. Some teachers may see creativity as both pro-social and individualistic kinds of innovation or production, again with little or no awareness of the value of autonomy. Some teachers may value and support autonomous

forms of creativity, whilst being aware that creative processes can differ and that people have other ways of seeing creativity.

5.6.1 Why is creativity so contentious?

In the sport of boxing, the boxers enter the “ring” to fight from the “blue corner” and the “red corner”. Although it is now said that educational discourse around creativity is marked by several rhetorics (Banaji, 2008), and that educational interest in creativity tends to be justified for utilitarian and individual reasons (Gibson, 2005), it is also observed that while some teachers demonstrate commitment to creativity, others are more focused on acquisition of knowledge and behaviour management (Craft, 2008a; Jeffrey & Woods, 2003, 2009). This study makes explicit that the apparently contentious nature of creativity is, in large part, due to qualitative differences in understandings of creativity. Through the findings of this study it can be understood why teachers would tend to come out fighting more from one corner than the other. The study allows an early insight into what really are the precise parameters of the conceptions of creativity, as conceptualised and advocated by teachers.

In the “red corner” educators are fighting, to varying degrees, from the perspective of autonomy. They are interested primarily in *the process*, but not just any process. This is a specific type of process. For these teachers and academics, the most valuable form of innovation is likely to be autonomous innovation and the most valuable form of learning is likely to be active, engaged, sense-making and personally relevant discovery. They see the objectives of creative teaching clearly and know what they want to see happening “creatively” for students in the classroom. From this perspective both the knowledge and the problem-solving abilities for innovation grow primarily from curiosity, sense-making and investigation.

In the “blue corner” are those teachers and academics who understand the educational focus on creativity as more of a supporting agenda for innovation. They are fighting, to varying degrees, from the perspective of external control. These educators are likely to see content and skills as important, with some attention given to the teaching of creative thinking skills for functional purposes. Some may find creativity highly confusing as a topic and see creativity enhancement as a pressured objective for the classroom teacher. Others may emphasise the importance of delivering the content required for creative work at the finish of schooling. From this perspective greater emphasis may be placed on testing

that the content has been acquired, than on quality in learning and the facilitation of interest.

Both groups of teachers may show varying degrees of interest in the more *functional* forms of creativity. However, teachers who conceptualise creativity as ownership or autonomy are more likely to see autonomy support as a strategy for promoting the development of functional problem-solving capacities.

In terms of the waxing and waning of creativity initiatives seen in education over the years (Craft, 2008a, 2008b), one could hypothesise that these initiatives have dissipated in the “boxing ring” of the educational context as a result of these divergent understandings of creativity. Values that seem intuitively obvious from a red corner perspective would be met, understandably, with varying degrees of incredulity from the blue corner – and perhaps vice-versa. Communication difficulties arising from these variations in perspective would be exacerbated, I believe, by the difficulties that arise from speaking about creative processes, in abstract or metaphoric terms. In this study it was observed that teachers often use “meta-definitions” when talking about creativity. These appear to be generalisations abstracted from experience of creative processes, which do not convey the breadth of teachers’ understanding of value in creative processes. The abstract language of creativity discourse may often serve to obscure and trivialise the more complex, intuitive understandings, which subserve and inform teachers’ views of the value of ownership and autonomy. Meta-definitions could also obscure whether internal or external definitions underpin teachers’ or policy makers’ emphases on creativity at any given time.

In the movie, *The Matrix* (Wachowski & Wachowski, 1999), Neo is offered the choice to take the “red pill” or the “blue pill”. It is explained to him that if he takes the red pill his perception of the world will be transformed. If he takes the blue pill he will remain in “The Matrix”. Neo decides to swallow the red pill and he exits life in “The Matrix” forever. When he is reborn, as the film’s graphic imagery suggests, into the bare reality of *Zion*, it is confirmed for him that there is indeed a world beyond “The Matrix”. He discovers too that he can revisit “The Matrix” but he can never fully return. Now he sees that life in “The Matrix” was really – although he was not aware of it at the time – life under external control (the external control, it might be added, of machines that had evolved from what were once the mechanical technologies that had been developed to serve humanity). Much popular and scholarly discussion has focused on the possible meanings of the movie’s metaphors (Cook-Sather, 2003; Merrin, 2003; Miller, 2000). But the Matrix-Zion contrast

provides an apt metaphor to represent the variation between “X” and “N” views and I have often speculated that it also has something to say about the minds that made this metaphor central to a commercially successful movie on the eve of the world’s transition to electronic communication. That is, perhaps the film’s creators also experience creativity as autonomy and wanted to say something about how they see the place and role of this aspect of human functioning in the new electronic media environment.

In the present climate of global interest in creativity and with a growing body of research now demonstrating the value of autonomy for the enhancement of learning, creativity and well-being, educators have the opportunity to put aside trite definitions and superficial interests in creativity and look more seriously at autonomy support in education. The present research provides insight into why creativity has been so contentious: creativity is conceptualised from perspectives of autonomy vs. control orientations.

On the basis of the wealth of current research, including this study, which demonstrates the benefits of autonomy, there can be little doubt about which direction is advised for the support of creativity in education. Clearly, a proportion of teachers teaching now in Australian schools are already teaching with a view to autonomy support. It is likely that these teachers would resist conditions within education that threatened to stifle student trajectories towards deep learning, authenticity and autonomy. But if these teachers are placed under policy pressure to diminish their focus on autonomy-support they would likely regard such pressures as conducing towards ineffective approaches in education. So that autonomy support can flourish in schools it is pertinent to ask: What can be done, within education, to make the topic of creativity less contentious and what can be done to encourage autonomy support generally, as an aspect of pedagogy?

5.6.2 Can you see “Zion” from “The Matrix”?

The study reported on in this thesis indicates that teachers understand creativity in qualitatively different ways. Thus it appears that, intuitively, teachers’ day to day views of creativity are often, in figurative terms, as far apart as “The Matrix” and “Zion”. The question was posed, in the Foreword, as to whether it is possible for teachers to understand other teachers’ ways of conceptualising creativity, so that creativity issues may be more effectively addressed in education. This is a question that needs to be explored more fully within the education community as there are a number of ways of thinking about this

question and each way probably presents different levels of educational challenge. Since the study has found that the “N” view is inclusive of “X” views (the evidence for which lies, as shown earlier, where “N” teachers’ demonstrate their inclusive awareness of qualitative differences between “X” and “N” regulation), it is reasonable to ask what this means for the framing of best pedagogical practice in Australia. Should autonomy-support be requisite knowledge for all policy makers, teacher trainers and teachers? How could teachers currently expressing an “X” view be encouraged to go beyond transmission focused teaching in order to facilitate students’ autonomy/creativity, if experience of autonomy is outside their awareness? What should the policy/training response be if some teachers insist on transmission focused pedagogy as the most appropriate means of building Australia’s “creative capital” whilst they remain simultaneously unaware of more comprehensive teaching approaches, conceptions of learning and/or views of creativity?

Rather than explore all of the possible questions that could arise in lieu of the findings, it seems most relevant to ask if the findings from the study could help to reduce the degree of uncertainty currently experienced around discussion of creativity questions in education. I believe that they can. The findings indicate that it is important to be aware of the role that teachers’ lived experience of creativity plays in how they conceptualise and value it. Much of the “noise” in creativity discourse is instantly more understandable if creativity conceptions are seen as a hierarchy of qualitatively different ways of experiencing and defining it.

How to share these understandings across the teaching community may be challenging but at least the challenges have shape. Useful research directions around understanding the conceptualisation and enhancement of creativity and innovation can be formulated. Supportive bodies of literature are available to inform the facilitation of creativity where it is internally defined as ownership/autonomy and where it is externally defined as innovation. As stated earlier the vast majority of creativity research has focused on external definitions (Lidstone & Stoltman, 2007; Mumford & Gustafson, 1988; Runco, 2004b). Given that, prior to this investigation, it has not been formally recognised that the phenomenology of autonomy can inform some teachers’ ways of defining and facilitating creativity, it is likely that the body of research detailing the nature and support of autonomy has often been overlooked as a resource in supporting student creativity. Researchers, Ng and Smith (2004), for example, appear to have in mind a meaning of “creativity” as ownership/autonomy, and they point to the autonomous motivation

literature as being informative about the facilitation of creativity. They cite SDT research as evidence that it is possible to learn in a way that is “independent”, socially responsible and supports creativity, as a counter-argument to Asian teachers’ views that “creative” students, exhibit “independent” and socially undesirable behaviour. The present study findings not only show that teachers, as a group and individually, are likely to express several distinct meanings of creativity, they show that teachers value different meanings of creativity differently and thus tend to emphasise or reject particular meanings. Therefore the findings should assist educators when considering what would be the most relevant research literatures to assist them with facilitating valued meanings of creativity.

Next in relevance is the question of whether teachers who presently do not *see* autonomy can learn to be supportive of autonomy. Reeve (1998) argued that they can. In his research with trainee teachers, he found that “interventions at the preservice teacher level can communicate the benefits of autonomy-supportive instructional strategies sufficiently well to change motivating style toward a more autonomy-supportive orientation” (Reeve, 1998, p.327). Although he qualifies some of his hopes as being ambitious, he conjectures that teachers’ ideas about how to motivate students, may be “malleable”. School environment would also be an important consideration in maintaining positive teacher attitudes towards autonomy support.

In the present study it was found that an “X” view of creativity includes a conception of creativity as *occasional ownership* (Category E, sub-category E3). Inherent in this conception is the understanding that relevance and interest are sometimes or ideally important in promoting learning and quality outcomes. This conception of creativity could be useful in bridging between an “X” view of creativity and an “N” view of creativity. Trainers might hope to use this conception to demonstrate similarities and differences between the “X” and “N” experiences of creativity. In particular, the presence of this conception within “X” transcripts suggests that “X” teachers should be able to apprehend the “N” position on the value of ownership for promoting deep learning and development. Furthermore, *occasional ownership* and *ownership* reflect similar ways of constituting creativity, as a personally relevant process. From a training perspective this could be an important area of common ground between “X” and “N” operational definitions of creativity.

Finally, it seems important not to forget the professional development needs of teachers who are currently autonomy-supportive. A number of teachers in the study group indicated

that when at school they tended not to talk about their interest in creativity. One of the teachers indicated that she would not raise the issue at school for fear of being vilified for loving her job after fifteen years of teaching. Others indicated that they felt like, acted like, or were treated like, what could be described as “lone mavericks” in their subject areas. Although teachers who expressed views of creativity as ownership and autonomy described the creative process in similar ways, they appeared to have little opportunity to discuss their views, even with like-minded colleagues, to consolidate understandings or expand skills and insights at their level of understanding. It could be a useful experiment to observe what happens when autonomy-supportive teachers are provided with opportunities to collaborate and further develop their understanding of autonomous processes. It would also be useful to gather information about how autonomy-supportive teachers envision such issues as whether or how it is feasible to approach the evaluation of autonomous processes and development.

5.6.3 The Australian Curriculum 2014

In order to further demonstrate the potential usefulness of the findings, I will suggest some ways that the conceptions and structures of awareness identified in the study, could relate to the Australian Curriculum focus on developing students’ “critical and creative thinking” capability (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014b). The phenomenographic approach to identifying structures of awareness could be used in a predictive sense to anticipate issues that teachers might have, as they interpret the Australian Curriculum priorities, through the lenses of their experience. Further, the structures of awareness for the creativity conceptions identified in the present study could be utilised retrospectively to understand the approaches and expressed concerns of particular groups of teachers. Presently I will comment mainly on how the “X” and “N” perspectives on creativity might relate to the particular shape of the focus on “critical and creative thinking” as it is currently presented in the Australian Curriculum.

Within the Australian Curriculum the “critical and creative thinking” capability is defined as involving two distinct types of thinking: “critical” and “creative”. Critical thinking is delimited as relating to analytical and evaluative reasoning, whereas creative thinking is seen as generative, imaginative and intuitive processes. Although the capability is divided into these two types of thinking it is also stated that they constitute “complementary dimensions” of thinking and learning. An aim of the curriculum focus on developing this capability is to encourage deep approaches to learning:

Critical and creative thinking are integral to activities that require students to think broadly and deeply using skills, behaviours and dispositions such as reason, logic, resourcefulness, imagination and innovation in all learning areas at school and in their lives beyond school. (ACARA, 2014, F-10: General capabilities: Critical and creative thinking: Introduction: para.1)

Beyond this its aim is to establish sophisticated, reflective and evaluative thinking as an intellectual disposition:

The capability is concerned with the encouragement of skills and learning dispositions or tendencies towards particular patterns of intellectual behaviour. These include being broad, flexible and adventurous thinkers, making plans and being strategic, demonstrating metacognition, and displaying intellectual perseverance and integrity. Students learn to skilfully and mindfully use thinking dispositions or ‘habits of mind’ such as risk taking and managing impulsivity (Costa and Kallick, 2000) when confronted with problems to which solutions are not immediately apparent. (ACARA, 2014, F-10: General capabilities: Critical and creative thinking: Background: para.3)

It is in the presentation of the background and evidence base for this curriculum priority that references are made to the view that critical and creative capability is most effectively developed during engagement in meaningful/authentic challenge:

Theorists believe that learning is enhanced when rich environments contain multiple stimuli, stressing the importance of engaging the mind’s natural curiosity through complex and meaningful challenges. (ACARA, 2014, F-10: General capabilities: Critical and creative thinking: Background: para.4)

Perusal of the curriculum content and the subject rationales, as presented on the ACARA website, reveals that the development of critical and creative thinking capability is embedded throughout the structure of subject specific inquiry with the aim of supporting and strengthening deep learning and sophisticated, evidence-based reasoning and reflective habits of mind. Students are encouraged in their studies of Modern History, for example, to evaluate sources of information or evidence, perform syntheses of evidence and develop the analytical and critical thinking that will allow them to participate effectively in contemporary debates (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014d). The acquisition of literacy and numeracy skills is to occur alongside a pervasive emphasis on deep inquiry and cultural critique. The support of evaluative habits of mind as an outcome is infused into the structure of the curriculum and appears to

assume systemic commitment to the value of building critical and creative capabilities. However, I would argue that the success of the curriculum in this regard relies on teachers (and other key stakeholders) understanding and committing to the value of the rationale. On the basis of the present study finding of the role of “X” and “N” perspectives in the formulation of teachers’ definitions of creativity, there are reasons to expect different levels of teacher commitment to the student-inquiry focus of the curriculum, or perhaps different reasons for valuing it.

On the ACARA website the supporting evidence provided, for the importance of the critical and creative capability and the means of its facilitation, does not include reference to the SDT research into autonomous motivation. However, SDT research has established that the experience of autonomy improves learning and creativity, (Ryan & Deci, 2000c), promotes well-being across a range of organisational and cultural contexts (Chirkov, 2009; Ryan & Deci, 2000c; Van den Broeck, Lens, De Witte, & Van Coille, 2013), and is an essential condition for human flourishing (Chirkov, 2009). In other words, on the strength of the theoretical framework and substantial current evidence, autonomous functioning provides the benchmark for human well-being, optimal development, social adaptation and various aspects of performance. If the implications of these findings are taken far enough, then, it is an unavoidable conclusion that understanding of autonomy support is an essential ingredient for moral and ethical reasoning. It seems to me that no evaluative discussion of civil rights, politics, historical movements, government, cross-cultural analyses or organisational practices, including those of education, could be considered thorough without the opportunity to measure conditions, practices and outcomes against the empirical evidence for the conditions that support human flourishing. On the basis of this reasoning an important aim of education systems would be the support of the student capacities necessary to evaluate cultural conditions and environments in terms of whether or not they support/thwart autonomy. A further implication, is that in order to fully and accountably represent best practice, an education system would aim to support student autonomy, so that students can experience it, at the same time that students are supported to develop as autonomous people with the capacity for sensitivity to the presence/absence of autonomy support in the world around them.

An implication of the present study finding that “N” views include awareness of both autonomous (internal rule) and controlled (external rule) regulation, whereas “X” views do not include awareness of autonomous regulation, is that “X” teachers could struggle to

appreciate the personal and social benefits of experienced autonomy (Categories F-G: E-DOV4). Furthermore, from an “X” perspective, curriculum directives aimed at autonomy support could often be misconstrued as failing to serve students’ best interests if they appear, to the observer, to prioritise student comfort over “rigour”. It could be expected that directives to support authentic approaches to learning would be half-heartedly implemented if teachers do not see their value:

And it was just lucky that I went to this seminar, because you can actually apply it to any student really and how you should be structuring your worksheets so that you give opportunities for every person to delve into all different aspects of the topic that you’re talking about ... Yeah, you go to all of these workshops and you feel really, “Wow! I must try this, this and this!” You know, I feel really excited about it and then, of course, you get back to the routine of um, classroom teaching and, ah, you sort of forget half the time. (1)

Teacher participants who valued autonomy did not need to be convinced of the need to support autonomy. Autonomy support was integral to their teaching.

Although the Australian Curriculum does not expressly discuss its aims in terms of supporting autonomy and authenticity it does, as noted above, cite a number of theoretical positions claiming the value of authentic inquiry as a means of building high level intellectual capacities. In structuring the curriculum to support these capacities the Australian Curriculum appears to offer license and opportunities which could be leveraged from an “N” perspective to promote student ownership of learning and development and, ideally beyond that, the capacity for authenticity and autonomy as a person. The current shape of the Australian Curriculum seems to provide opportunity to promote intellectual activity of students that is consistent with the “N” view’s negation of the value of external rule. On this basis I would predict that “N” teachers would see value in promoting critical and creative thinking capabilities, particularly where they see them as being supportive of authenticity, deep learning, openness to experience and the capacity to critique taken-for-granted structures that support extrinsic/external rule.

From an “N” teacher’s perspective, concerns about the quality of the curriculum are likely to relate to any aspects that are perceived to inhibit students’ authentic engagement, such as time constraints, overemphasis on content in some areas at the expense of engagement, lack of flexibility to attend to the needs of specific students and perhaps lack of resources to set up suitable environments. It is even possible that from some “N”

teachers' perspectives the curriculum guidelines around critical and creative thinking could be seen as not going far enough in that they fall short of discussing qualitative aspects of authentic inquiry and development, such as well-being, and tend to emphasise the development of intellectual capacities. However, where the critical and creative thinking capability interconnects with the other capability strands of the curriculum, it can be understood as involving the kinds of evaluations/problem-solving necessary to develop these capabilities. With regard to "Social and personal capability," for example, critical and creative thinking would be involved in the discernment necessary for managing "spiritual and physical wellbeing" (Australian Curriculum Assessment and Reporting Authority, 2014c, para.2).

A further, though possibly less crucial observation, is that the Australian Curriculum separation of the capability into "critical" and "creative" thinking could sit awkwardly with teachers' "lived," operational definitions of creativity. In an "N" view of creativity, for example, both analytic and creative thinking could be identified as creative if the process felt meaningful:

Creating timetables! I actually love doing high school timetables, ah, and working out subjects and stuff like that. Cos that to me ... Oh it can be a really, really "left brain" type – that's in inverted commas – ah, kind of thing, very structured and analytic. But it can also be a really, almost a living work of art. Ah, a really good timetable where you've got things working so well, there's all innovative ideas in there, um the kids get access to what they want, the teachers enjoy what's happening. Ah, yeah, timetabling, it's just so creative!(5)

Presumably P5's "creative" timetabling involves analysis, evaluation, logical reasoning and so forth. These, according to the ACARA website description of the capability, are elements of "critical" thinking. Hence, from an "N" perspective it may seem counterintuitive to regard "critical" thinking as separate from "creative" thinking. By implication it is also conceivable that someone defining creativity from an "N" viewpoint could intuitively consider that no thinking, whether "critical" or "creative", is really creative unless it occurs in a meaningful process. There is yet another potential point of conflict with the "N" experience of *creative self/being*, given that the very essence of this experience is the critical discrimination of the greater value of internal rule relative to the value of external rule. From this perspective "critical" thinking is at the heart of creative self/being.

I have found it difficult to fully understand how the division between critical and creative thinking is constructed or intended, within the Australian Curriculum. The ACARA website cites some theoretical perspectives in support of its position, such as the philosophical inquiry model articulated by Lipman, Sharp and Oscanyan (Lipman, Sharp, & Oscanyan, 1980). I am not suggesting that the distinction between creative and critical thinking is not without use or purpose. It is just that on the strength of the findings of the present study I am suggesting that teachers' intuitive definitions of creativity, which are derived from lived experience, could come into conflict with the more abstract way the term is used in the description of the critical and creative capability within the Australian Curriculum. It is conceivable that this difference in the use of the term could become problematic around the issue of assessment, for example, in cases where "N" and "X" views could inform divergent understandings of the nature and value of "original" thought or the processes that produce originality.

There are a number of aspects of the curriculum that could be seen in a positive light when viewed from an "X" perspective. The curriculum possibly appears well rounded if looked at in terms of subject area content coverage. It has also been developed to reflect sequential building of knowledge and thinking skills and emphasises rigour and reasoned thought. There is nothing here to conflict with the "X" view. However, I suggest that it would be difficult to approach this curriculum while maintaining a focus on content delivery or basic skills acquisition and therefore teachers approaching the curriculum from view "X" could struggle with the pedagogical requirement to facilitate deep learning. To me, in its current form, the Australian Curriculum is clear in its rejection of shallow instruction and shallow learning in favour of the facilitation of sense-making and depth of understanding. There is such an overriding requirement to ensure that students develop the sophistication to work competently with information and social constructs that, it would not be in students' interests if teachers were to focus mainly on delivering content, no matter how engagingly. Research has shown that students in the classrooms of transmission focused teachers tend to take shallow learning approaches in those classrooms (Trigwell, et al., 1997). Moreover, given that autonomous being is not an aspect of the "X" structure of awareness, on what basis could it be expected that "N" and "X" teachers would demonstrate homogeneous approaches to developing any or all of the cross-curriculum priorities designated as "General Capabilities"? When autonomy is not part of awareness what standards inform development of ethical understanding, intercultural

understanding and personal and social capability? It seems to me that “N” and “X” structures of awareness would lead to divergent “intuitive” understandings of these capabilities and some degree of conflict is to be expected across the body of Australian teachers when interpreting the curriculum guidelines.

In the weeks just prior to this thesis going to press, ACARA announced that the presiding Liberal-National Party coalition government minister for education, Minister Pyne, has initiated a review of the Australian Curriculum (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014, January 10). Appointees to the review panel, Dr. Kevin Donnelly and Professor Ken Wiltshire, have both been active contributors to curriculum debate and development in Australia (Australian Government: Department of Education, 2014) . Dr. Donnelly, previously a school teacher, has openly, in his publications and media interviews, articulated his opposition to student-centred learning (e.g. Donnelly, 2004; Shaughnessy, 2007). Such a position is indicative of an “X” perspective for it sweeps aside what is, from an “N” perspective, an essential condition for socially valuable authenticity, autonomy and depth in learning. The Australian Curriculum board of developers might reasonably expect that any viable recommendations for major changes to the curriculum would need to reflect even-handed and informed evaluations of the relative personal and social benefits of transmission focused versus student focused teaching/learning approaches, for various educational purposes and contexts. The Chair of the Board of the Australian Curriculum, Assessment and Reporting Authority (ACARA), Professor Barry McGaw, has officially welcomed the review, stating that the review could potentially provide a useful, “additional perspective” on a curriculum that has already involved an enormous consultative effort throughout its development (Australian Curriculum Assessment and Reporting Authority [ACARA], 2014, January 10). Australian educators now await the outcome of the review.

5.7 IMPLICATIONS FOR SOCIAL THEORY: BRIEF REFLECTIONS

Not only am I informing creative people everywhere that they are now members of a new class, I am telling them to develop a corresponding class-awareness and begin to act on it. Yet I feel this presumption is justified. Creative workers already constitute a de facto class by virtue of their dominant economic role and function.

(Richard Florida, 2002, p.317)

As mentioned earlier in the literature review chapter, Richard Florida has made clear that he understands the creative process as one that is often intrinsically motivated. He has also stated that he values the opportunity to perform creative work. With these sentiments and the findings from this study in mind, especially the commonality expressed across the views in which creativity is experienced and defined as *autonomy and authenticity*, I believe one can reasonably identify in Florida's statement, above, his endorsement of the social value of autonomy and his sense of solidarity with other autonomous people. Florida seems to believe that, just as he does, people who value autonomy often regard themselves as creative. He therefore hopes to rally autonomous people with his appeal to the creative class. Throughout his work Florida demonstrates his belief that via their ethos of tolerance and authentic values autonomous people have more than "products" to offer the world. To the extent that socially influential individuals, such as Florida himself, truly do value autonomy, both the present study and the existing research literature that explores the value of autonomy, would support Florida's project of encouraging autonomy and autonomous people. There seems to be little wrong with encouraging autonomy and a great deal right with it.

The point I wish to make is that, probably, if one extrapolates from the findings of this study, the literature of social theory will be found to reflect similar "biases" to those seen in this small group of teacher participants. Some social theorists will embrace creativity as autonomy and may even believe that supporting autonomy broadly is a clear and valuable goal for humanity. They are likely to point out conditions in the social world that they see as conducive to the support of autonomy, such as freedom to create and contribute. Others will believe that humans need external regulation. From this perspective such freedoms in the social environment could appear unsettling, unnecessary or dangerous. Other external control perspectives on the relation of creativity to society are also possible. But in the interests of keeping comment reasonably brief I will not discuss these here. Readers and listeners need to be aware of the different meanings of creativity expressed in such arguments.

As discussed in the literature review, Marshall McLuhan (McLuhan, 1964a, 1964b; Norden, 1969) and Walter Ong (1982) were also interested in creativity. They argued that the electronic media would tend to promote a global environment conducive to "creativity" of different kinds, but certainly an environment conducive to the support of intellectual autonomy and cultural participation. The writing of these visionaries has sometimes come

under scrutiny for the extent to which they might express a Christian vision of human progression (Sterne, 2011). From my perspective, their religious views have not detracted from the import of the message they conveyed. Both McLuhan and Ong envisaged that greater freedom and diversity in the global media environment is likely to promote greater creativity and they put time and effort into telling people about it. It seems reasonable to expect that people who value authenticity and autonomy for themselves would tend also to value it for others. This comes across in the transcripts for the present study and it is, perhaps, not surprising to find that many authors, such as Florida, Ong and McLuhan, who are themselves engaged in deeply authentic investigations, are also interested in the creativity of others. Importantly, the observations of contemporary media watchers suggest that the new electronic media environment has, as Ong and McLuhan predicted, conducted towards diversity and dissension and many different sites and forms of “creativity”. McLuhan argued that it was important, amidst this “maelstrom”, for educators to find and promote what the media environment offers for the benefit of humanity (Norden, 1969).

The literature supports the view that autonomy is personally and socially valuable. Expressions of interest in the value of autonomous functioning are emerging in cultural environments around the world, including China (Liu, et al., 2011; Ng & Smith, 2005). Governments around the world are seeking to promote “creativity” through their education systems (Lidstone & Stoltman, 2007; Shaheen, 2010). The global environment is rapidly transforming into one where information is everywhere and the pressure on education systems to teach students to remember and reproduce information has arguably shifted to imperatives in support of creativity/autonomy (Bruns, 2008; Craft, 2008a; Ong, 1982). Education systems world-wide sit amidst these fertile conditions for encouraging autonomy. The option exists to take hold of opportunity and promote well-being and autonomous pro-sociality. Some of the main impediments to decisive action from educators are likely to be confusion about meanings and support of creativity and lack of commitment.

An important resource for educators in making sense of the messages about creativity that arise in social discourse and social theory would be information about the meanings of creativity that can be found there. This study makes a contribution to the building of that resource in showing that qualitative difference is to be expected in people’s ways of defining and valuing creativity. The findings of this study have implications that ripple across the reading of social theory around creativity.

5.8 LIMITATIONS

As an exploratory study it is to be expected that there are limitations of this research that arise from not having a prior sense of the research territory. Fryer (2012, p.24) raises two points in respect of qualitative studies that seem relevant to the present study:

The sheer quantity of data generated [in a qualitative study] means that such methods are really only suitable for small-scale studies and so it is difficult to extrapolate from the results to a larger population. At the same time, qualitative studies are invaluable at the exploratory stage of an investigation, to highlight key areas that merit further investigation or methodological problems that may occur in the main investigation.

The present study is a small exploratory study and the researcher is in agreement with Fryer that caution is advisable in extrapolating from the results to a larger population.

On the second point, although the study has been useful as described above, the fact of being an exploratory study means that in retrospect, some methodological shortcomings have come to the fore, particularly concerning the participant group and interviewing. These are issues that could not have been known in advance and are insights which could be incorporated into the design of other studies. Therefore some of the same elements that make the study useful in indicating directions/recommendations for further research are also limitations in terms of the study itself.

A possible limitation of the study findings is linked to the small number of participants. The number of participants has been adequate for revealing the key dimension of variation. However, some conceptions were only expressed by one or two participants and so data for some categories/sub-categories is sparse. Phenomenographic analysis is an arduous and difficult process and the end result cannot be predicted at the outset (Bruce, 2003). It is only once analysis is completed, especially in a study without precedent, that the researcher can assess whether it might have been useful to ask certain kinds of questions or prompt interviewees for further clarity, or to interview more of a certain class of participant. In hindsight, because there are indications that some teachers' ways of experiencing creativity involve greater valuing of "extrinsic" than "intrinsic" rewards, it could have been useful if the group had been larger overall and if it had included teaching staff from the subject areas around business, IT and economics. It could have been informative also to have interviewed additional teachers expressing religious ideologies. Therefore future studies may reveal different or additional categories of description. It is

not reasonable to expect that categories of description will emerge as identical in future studies (Cope, 2004). This can be seen as limiting how the categories and sub-categories may be used. It may be appropriate to regard the categories as general indications of the range of conceptions of creativity which are likely to be expressed across a group of teachers. It is not expected, however, that larger group size would impact the key dimension of variation as identified in the study.

The categories of description may be limited in terms of their cross-cultural application. There has been, for example, some research which indicates that in Saudi Arabia inhibiting intrinsic motivation through administering external reward may not reduce “creative” product outcomes as it does in Western samples (Hennessey, 2004). This kind of cross-cultural difference in experience could mean that the internal “experiential” definition of creativity could vary between cultures.

Some questions still remain to be investigated and some structural aspects are still emerging. The issue of how to describe conceptions that are both religious and authentic/autonomous remains to be resolved. Further research might point to the dimensions that could allow a fuller description of this view of creativity. Therefore, caution is also required in deciding which aspects of the results should guide future policy at this stage.

5.9 FUTURE RESEARCH DIRECTIONS

Further to the findings of this study four main research directions are recommended:

1. Further research projects focused on eliciting teachers’ conceptions of creativity with diverse participant groups in cross-disciplinary studies similar to the present one;
2. Research focused on investigating specific conceptions of creativity as illuminated in the present study;
3. Research to identify creativity conceptions within particular teaching areas or within specific groups and disciplines;
4. Research to investigate conceptions of creative teaching and enhancing students’ creativity.

First, future work will be needed to confirm and/or expand upon the present findings. Further cross-disciplinary studies with larger groups of participants are recommended. There are two elements of this recommendation that require clarification: What would such

studies aim to confirm and what would be the purpose of gathering a larger participant group?

There is considerable consensus within the phenomenography literature that replication studies are not a viable aim of phenomenographic studies. Cope (2004) explains the reasoning for this and is worth quoting in full:

Reliability as a scientific concept refers to the replicability of results, that is “if another researcher repeated the research project ... what is the probability that he or she would arrive at the same results” (Booth, 1992, p. 64). In phenomenographic studies, this interpretation would refer to replicability of the outcome space(s). That is, given a particular set of data, would different researchers report the same outcome space? The general consensus in the phenomenographic literature is that this is not a reasonable question to ask. As Booth, and Johansson, Marton and Svensson (1985), among others, point out, although broad methodological principles are adhered to, the open, explorative nature of data collection and the interpretative nature of data analysis mean that the intricacies of the method applied by different researchers will not be the same. Data analysis, in particular, involves a researcher constituting some relationship with the data. A researcher’s unique background is an essential part of this relationship. Consequently, replication of outcome spaces by different researchers is unlikely and not necessary. As noted by Burns (1994), if individuals experience phenomena in the world in different ways why shouldn’t different researchers investigating the phenomenon of variation in a group of individuals’ experiences, experience the variation in different ways! (Cope, 2004, p.9)

But as some phenomenographers have noted (Åkerlind, 2003; Van Rossum and Hamer, 2010) commonalities across phenomenographic studies are sometimes seen as so reliable that they can help in arriving at the outcomes of a subsequent study. Åkerlind describes an instance of this:

Given the substantial number of existing studies of conceptions of teaching, this analysis started with a search for dimensions of variation which had already been found in existing studies of academics’ understandings of teaching. This was equivalent to entering the analysis at an advanced stage, when preliminary hypotheses about key dimensions of variation and structural relationships between categories are already being formed and tested against the data. (Åkerlind, 2003, p.384)

Åkerlind (2003, p 375) observes that although “studies differ in the specific detail of each conception or approach described, significant commonalities have emerged in themes

running across the conceptions” which show as “key dimensions of variation in the meaning that teaching holds for university teachers.” She notes further that “this consensus is striking given the independent nature of the studies and the diverse range of countries, institutions and academics sampled across the studies” (Åkerlind, 2003, p, 376).

I would anticipate that, given a similar spread of data in future studies, similar elements of the present findings, such as thematic figures/grounds and dimensions of variation would emerge. This is because autonomy is both one of the values on the key dimension of variation, as identified in this study, and also an operational (lived) definition of creativity as expressed across several transcripts. It seems likely that with a broad participant sample this dimension of variation, in particular, would emerge again as critical in the ways of defining creativity, even if some researchers, using different interpretive knowledge, posit grounds for constituting the categories of description differently. Thus future studies could seek to establish whether the *internal* rule – *external* rule dimension is critical in delimiting the variance between the qualitatively different experiences of creativity identified in those studies.

The recommendation to gather a larger participant group for future work is based on the reasoning that a larger, even more diverse, group increases the likelihood that participants will make the kinds of statements which would alert the researcher to the presence of relevant dimensions of variation. Cope (2004, p. 14) discusses, for example, how he was alerted to views of “people” and “process” as dimensions in students’ ways of experiencing an information system, when a student interviewee started to talk about “people” and “processes”:

A number of dimensions of variation have been revealed to the interviewer, who would then be interested in investigating the interviewee’s understanding of each dimension of variation (the range of values discerned) and awareness of relationships between the dimensions of variation. (Cope, 2004, p.14)

Although the number of participants, and the range of views expressed within the present study group, have been sufficient to reveal the key dimension of variation and demonstrate its importance in delimiting the structures of awareness for the qualitatively different definitions and experiences of creativity, with more participants comes the possibility that additional dimensions could emerge. It may be possible to identify additional categories or further sub-categories within the identified categories.

The clear emergence of some key dimensions of variation in the findings of this study, should mean that future work would be less hampered, than during the present study, by the degrees of uncertainty surrounding the analysis. The findings from this study should therefore assist researchers in their analyses with larger groups in future studies. This is not a suggestion that future research should expect to find the same or similar categories. As Van Rossum and Hamer (2010) report, expecting to see similarities with past findings could prompt researchers to overlook important new or different elements in the data. Nonetheless the study has begun to open up the research territory by indicating useful lines of inquiry.

Next it is recommended that a line of research should focus on investigating specific conceptions of creativity as illuminated in the present study.

- An area in need of investigation is teachers' conceptions of art or "the arts". Some teachers seemed to see art as non-utilitarian while others see art as useful, both in terms of what it produces and its potential to facilitate student learning, higher order thinking capacities and other personal and social benefits. Furthermore, given that teachers in the science and mathematics subject areas often seem to see creativity and art as closely linked while creativity and science are not associated (Newton & Newton, 2009), it should be useful to understand variation in teachers' conceptions of art/the arts.
- It would be useful to have a greater understanding of how teachers *judge* creativity in products/performance. Therefore some investigation of what teachers attend to when judging creativity in outcomes, for example, in students' work, would be informative.
- Teachers' conceptions of individualism require further clarification. The disciplinary area of business could be a fertile ground for studying views of creativity as individualism, as it has been shown that the values endorsed in business faculties tend to be more extrinsic than intrinsic (Vansteenkiste, et al., 2006). In addition Sternberg (1985) has found that business professors are less likely than professors in other faculties to associate creativity with wisdom, which suggests that they may often tend to see behaviour in cost-benefit terms and be less concerned with the social benefit of "creativity".

A third area of inquiry would be studies of conceptions of creativity within particular populations. It would be informative to understand more about the creativity conceptions of teachers in particular disciplines, such as science or IT. There are indications from the present study that it would be informative to investigate creativity conceptions of teachers in religious schools.

Finally, as indicated in the two supporting analyses, which have been included in this thesis as Appendix 1 and Appendix 2, there are strong grounds on which to anticipate that teachers have qualitatively different ways of understanding creative teaching and enhancing the creativity of students. On the basis of these analyses it appears that variation in teachers' views of teaching and learning may be structurally tied to whether rewards and values are reliably located in the external or internal worlds as are their views of creativity. It is strongly recommended that, teachers' conceptions of creative teaching and of enhancing student creativity should be investigated in additional studies.

5.10 CONCLUSION

Research within psychology has shown that autonomy is associated with greater creativity. However, no research to date has indicated that autonomy is actually *experienced* by autonomously regulating individuals *as* creativity. Prevailing scientific definitions of creativity have failed to account for or acknowledge the experiential aspect of creativity conceptions. It appears on the basis of this study that critical variation in teachers' conceptions of creativity is tied to the extent to which rewards, rules and values are seen to be located reliably within the external or internal worlds. It is suggested that reliance on external rules, values or rewards closely resembles a control orientation as identified in Self-determination theory, whilst greater reliance on internal rules, values or rewards resembles the orientation identified within SDT as an autonomy orientation.

The finding from this study that teachers' conceptions of creativity may be ordered hierarchically with respect to whether conceptions are constituted from the perspective of reliance on internal values (autonomy) or external values (control) represents a new way of looking at teachers', and others', experiences and definitions of creativity. The findings have implications which reach beyond Australian education to understanding of how creativity is conceptualised, experienced or defined within organisations, with reverberations across the reading of social theory. These findings provide insight into why creativity has been such a contentious topic in education and in social discourse.

APPENDIX 1: TEACHERS' CONCEPTIONS OF CREATIVE TEACHING

Teachers' conceptions of creative teaching		Referential component		
		Delivery	Enabling	
Structural (Internal and external horizons)	The external curriculum (content, skills)	Creativity as external definitions (art, innovation, exceptionality) + teaching as routine	1. Unexamined: Creative teaching is an unexamined or alien dimension of routine teaching	
		Creativity as a functional process + teaching as routine	2. Implicit: Creative teaching is an implicit, background aspect of routine teaching	
		Creativity as responding to external pressure to cater to students as individuals + teaching as delivering the content	3. Compromise: Creative teaching involves compromising on teaching beliefs	
		Creativity as responding and improvising + teaching as a usually programmed activity	4. Limited: Creative teaching is a limited subset of normal teaching, often involving risk and pressure	
		Creativity as functional problem-solving + teaching as managing	5. Management: Creative teaching is continual planning and solving to manage the contingencies of the classroom, teaching and learning	
		Creativity as personal + teaching as constrained by the curriculum	6. Teaching opportunities: Creative teaching is seizing opportunities for personal input into the design of the teaching-learning experience	
	An internal curriculum	Creativity as ownership + teaching as participation in student ownership of learning and creating		7. Co-ownership: Creative teaching is participating with students to enable and support ownership of learning and creating
		Creativity as authenticity + teaching as enabling optimal learning, life and socialisation potentials		8. Authenticity: Creative teaching is enabling and supporting authentic student selves and quality experiences of life

Overview of categories of description of teachers' conceptions of teaching creatively

Eight qualitatively different ways that the teachers understood creative teaching were identified. The focus of conceptions in each category is delimited by three main focal aspects: a particular conception or combination of conceptions of creativity, a conception of teaching and a particular view of the objective of creative teaching. In the following overview, the three focal aspects are denoted by the capital letters A, B and C.

Key: A. Conception of creativity

B. Conception of teaching

C. Objective of creative teaching

The eight qualitatively different experiences of creative teaching are described as:

1. **Unexamined:** Creative teaching is an unexamined or alien dimension of teaching
 - A. External definitions (innovation, arts, exceptionalty);
 - B. Delivery;
 - C. Innovating/standing out as a teacher; being an exemplar of teaching methodology
2. **Implicit:** Creative teaching is an implicit, background aspect of routine teaching
 - A. Functional problem-solving/making;
 - B. Delivery;
 - C. The normal goals and aims of routine delivery of content
3. **Compromise:** Creative teaching is compromising on teaching beliefs
 - A. Functional problem-solving; B. Delivery; C. Responding to external change; catering to student individuality
4. **Limited:** Creative teaching is a limited subset of normal teaching, often involving risk and pressure
 - A. Functional problem-solving;
 - B. Delivery;
 - C. Embedding content;
 - i. Episodes of teaching performance;
 - ii. Meeting additional syllabus requirements
5. **Management:** Creative teaching is continual planning and solving to manage the contingencies of teaching
 - A. Functional problem-solving;
 - B. Delivery;
 - C. Management of a range of ongoing contingencies relevant to teaching, including behavioural/emotional engagement
6. **Teaching opportunities:** Creative teaching is seizing opportunities for personal input into the design of the teaching-learning experience
 - A. Personal/occasional ownership;
 - B. Delivery/participation;
 - C. Tailoring the learning experience to better suit teacher and student interests; students gaining more than content from the experience subject to the constraints of curriculum

7. **Co-ownership:** Creative teaching is participating with students to enable and support ownership of learning and creating
 - A. Ownership;
 - B. Enabling/participation;
 - C. Bringing about/supporting a process that is transformative of students' learning, self-direction, thinking and producing
8. **Authenticity:** Creative teaching is enabling and supporting valuable, authentic experiences of life
 - A. Authenticity;
 - B. Enabling;
 - C. Enabling a process that is transformative of the person and/or the life quality of the person.

The eight ways of experiencing creative teaching are described in greater detail below and illustrated with quotations from the transcripts:

1. UNEXAMINED: Creative teaching is an unexamined, alien dimension of teaching

- A. External definitions (innovation, exceptionality);
- B. Delivery;
- C. Innovating as a teacher; being an exemplar of teaching methodology.

In this experience, creative teaching is viewed as an unexamined or alien dimension of teaching. The view of creativity in focus is limited to its externally defined/external value aspect as innovation, arts and/or exceptionality. These definitions are simultaneously seen in relation to a conception of teaching as routine and as delivering content. The teacher is seeing teaching and creativity from a perspective of immersion in routine, hard work, applying teaching methods and following “tried-and-true” procedures. The teachers seem to be seeing the objective of creative teaching with a focus on the teacher. Creative teaching would involve doing things that are outside the purview of the teacher's present teaching approach, capabilities or practices within his/her subject area. Such teaching seems to involve being recognised as an innovative, imaginative or outstanding teacher, but is not something the teacher has really thought about:

To me, in the sense of using the word creativity and creative, is a step beyond the usual and the mundane, it's something that's different, that's original and that's eye-catching. Getting back to what I was saying about my teaching, that's probably why I don't consider it creative in the sense I've been using it, because I don't consider it any of those things. I consider it working to a formula ... that's probably why I had to think long and hard about being creative because I don't normally put myself into that category.
(10)

Oh. That's a tough question that one ... I wouldn't say that I was a, an exemplary teacher in methodology terms or whatever ... (3)

Alternatively, as illustrated in the following quotations, creativity may be seen as an aspect of artistic vocations and therefore outside teaching altogether:

I suppose I don't define myself as being creative in terms of artists or, you know, people who have achieved – musicians, artists, writers. I suppose that's where I tend to see a definition of creativity ... (3)

Yeah, artists, writers, music, musicians, writers, film producers. You know, so I probably see creativity as being in that, you know, arts-literature sort of field ... And other professions are much more pragmatic and prosaic and so on ... (3)

Teachers expressing this view indicated that whether out of choice, habit, inability or disciplinary convention, their own teaching was not creative and that teaching creatively had not been a goal of their teaching. One of the teachers stressed that if he had been creative while teaching it was more accidental than intentional. In response to the interviewer's questions about the participants' experiences of teaching creatively, the participants searched their memories for times when they might have taught in a way that could be considered artistic, interesting, exemplary or innovative from an external perspective:

So to put it in a nutshell: Creativity me? No! Which is why I said to you, you know, I'm a very boring teacher. (3)

I don't know that anything jumps out at me. Based on what I said before, my teaching is ... well I feel my teaching is ... some people might look at my teaching and think, "That's terribly creative Rob". I don't know. But to me it's applying rules and laws and patterns and procedures that I have learnt or picked up in my training and in subsequent years, that I apply to my teaching. I don't consider it particularly creative in the sense that I mentioned before, you know, going that step further to put something new in place that's not necessarily been done before. (10)

This category is placed lowest in the present hierarchy as the focus on external definitions of creativity combined with a view of teaching as routine, means that creative teaching is constituted as without relevance for teaching.

2. IMPLICIT: Creative teaching is an implicit, background aspect of routine teaching

- A. Functional problem-solving/making;
- B. Delivery;
- C. The normal goals and aims of teaching.

In this view teaching creatively is seen as a background aspect of whatever the teacher routinely does while teaching. It is seen as a process which is unremarkable and usually goes unnoticed. Whereas in the previous category, teachers saw themselves as followers of procedure and therefore not performing in a way that would be seen as creative (innovative, artistic), seen through this lens creativity is inherent in much of what the teacher does on a usual basis. The teacher is now thinking of creativity as a process, but one which fades into the background of whatever a teacher is doing at a functional or everyday level. The definition of creativity has shifted from an external definition to an internal definition. The view of teaching is of teaching as routine delivery of content. The objective of creative teaching in this view is no different from the goals and aims of normal, routine teaching.

In thinking about the relation of this kind of creativity to teaching, the teacher acknowledges that creativity must be, to some extent, an implicit or background process in teaching. It is “there” when teachers create or modify teaching resources or when they put thought into how they deliver the content as part of the normal goals and aims of teaching. Teachers are able to focus, in hindsight, on possible episodes of problem-solving, which may have passed unnoticed in the stream of everyday teaching activity. But as with Category 1, this kind of creativity in teaching is not something that the teachers think about or even notice:

There would have been moments perhaps in my teaching career where there would have been something that I personally created and would have had the same kind of effect and feeling [as personal creativity]. But um because you're so busy doing the practical or pragmatic everyday things that, you know, you just have to get through a busy week or year or whatever ... the pragmatic, practical everyday, you kind of, you tend to overlook those particular results because they're just there all the time. (3)

Well, I guess in everything I do there are some things that I would feel are creative because they are putting something together that is outside my normal range of experience. Putting thought into something, to produce something that I've not necessarily done before. Whether that might mean I

borrow other people's ideas or thoughts. It could happen. But yes, it's sort of stepping outside your usual areas of training and everyday life. (10)

Teachers expressing this view, tended to move to this position after having first considered creative teaching from a Category 1 perspective. Having first thought about creativity as an externally defined phenomenon, something others would notice about them as teachers, the participants then shift to thinking about creativity as an aspect of their own thinking and doing. The following quotations show the participant reflecting on the earlier position:

I suppose there are lots of little things ... [I've] sort of had a very narrow view and definition of what creativity is – who is creative. (3)

See I'm kind of thinking of that [problem-solving] as part of my teaching and not necessarily creative, but it was probably happening quite a bit more than I think. (3)

This suggests that seeing creativity from a more internal perspective involves wider awareness of the possible meanings of creativity and wider awareness of the possible relations between creativity and teaching. What does not vary between Categories 1 and 2 is the view of teaching as delivering content. Furthermore in both categories the teachers see no clear student-focused or learning-focused objective for creativity in teaching.

3. COMPROMISE: Creative teaching is compromising on teaching beliefs

- A. Functional problem-solving;
- B. Delivery;
- C. Responding to external change; catering to student individuality.

In this experience creative teaching is seen as teaching that is outside the teacher's comfort zone, not simply because it places additional pressure on the teacher, but because it is incongruent with the teacher's beliefs about teaching. In the foreground of this experience is a view of creativity as problem solving/adapting in response to external pressure, which includes an affective element of discomfort, disorientation or difficulty. Also in the foreground is an understanding of teaching as delivering content. In conjunction with this view of teaching it is seen as the responsibility of learners to take in the content as delivered and reflect this learning appropriately in assessment. However, the objective of *creative* teaching is seen as enhancing student comfort *rather than* student learning. When experienced this way, creative teaching appears to the teacher as stepping outside the

teaching comfort zone to deliver the content in a way that requires the teacher to improvise and adapt for uncertain gains in student learning. Creative teaching therefore appears incongruent with what the teacher sees as good teaching. In the following quotes can be seen how P1, a long-serving science teacher, sees good or normal teaching:

[It was creative teaching] because the way I normally teach on most days, because it's easier for me, is where I do most of that work for the students rather than them actually doing it their way. (1)

It's the science they've ... if they've covered the science I don't mind how they actually portray it. (1)

P1 reveals that she prefers to think for the students rather than them thinking for themselves and that what she really requires from students is that they demonstrate that they have acquired, or at least “covered”, the science knowledge. This is demonstrated in assessment pieces as presentation close to what the teacher expects. However, in the following extract P1 indicates that she is trying to change her approach and teach *creatively*, not because it is a better way of teaching, but because students and the teaching environment have changed, necessitating an adaptive response:

P1: I know I'm a very traditional science teacher and I've taught in a very traditional way but I've realised over the past couple of years that it's ... the kids don't respond to that way of teaching anymore and with only 5 years left to retirement I want to make my teaching enjoyable. I really love it and I love interacting with kids so I've got to let go of my traditional ways of teaching and one way I do this is by going to various different workshops around the place – and I play the devil's advocate in a lot of cases in those things – so that I can actually gain some different information of different ways in which I can handle kids in different situations, so that I can find those last 4 or 5 years of my teaching are going to be enjoyable ... because kids have changed and we have to change our ways of teaching as well.

I: Yes, I think it's fascinating that you said that you feel the traditional ways aren't working and that teachers will have to do something different, but that you're actually enjoying that.

P1: I am (ambivalent tone) ... and in some ways I'm getting out of my own comfort zone ... and um that makes it really hard ... and I'm starting to take a few risks of what's happening in the classroom – the way I deliver it.

The participant's discomfort with the perceived objective of creative teaching is evident in the asides made whilst stating the central rationale of "having to change" to a different way of teaching: P1 attends workshops to assist her in this change, but "plays the devil's advocate"; she would like to change her teaching style but finds it "really hard" and as involving "risks". At the end of the extract the issue is revealed – P1 is seeing teaching as "delivery" and has therefore not made any significant change in her thinking about learning. Creative teaching seems to involve delivering the content in a different, riskier way from what is easy or normal.

This view is seen as more complex than earlier conceptions, because the teacher is consciously thinking about the relation of creative problem-solving to teaching and now has in mind a teaching objective that focuses the problem-solving capacities of the teacher on the student. The conception is seen as less comprehensive than subsequent categories because the value of the objective is unclear to the teacher and is therefore not embraced. The "learning" conception seen as the objective of creative teaching is acquisition. The teacher has difficulty seeing how acquisition is enhanced via student "comfort" and is therefore not yet convinced that the creativity involved in delivering the content is worth the risk. Thus creative teaching is not yet endorsed by the teacher as having benefits over and above what is presently practiced.

4. LIMITED: Creative teaching is a limited subset of normal teaching, often involving risk and pressure

- A. Functional problem-solving;
- B. Delivery;
- C. Embedding content;
 - a. Episodes of teaching performance;
 - b. Meeting additional syllabus requirements

In this view of creative teaching, the participant's attention is drawn to *episodes*, within the context of normal teaching, which require some form of improvisation and often involve risk or pressure. These are not implicit in the background of teaching, but are distinct, isolated episodes of problem-solving seen as a sub-set of teaching activities. These stand out to the participant on account of not being part of the *majority* of teaching, which is conceptualised as routine, planned or programmed delivery of content. The teaching objective of creative teaching episodes is dealing with things that "come up" in the course of teaching in the classroom or planning for teaching. The teachers tended to experience

these episodes as performing under pressure, but could also see them as worthwhile if a satisfying outcome is achieved. They are seen as having functional value, but have a limited place within the context of teaching.

In response to the interviewer's questions about creative teaching the teachers focus on instances of teaching work, that involve "thinking outside auto-pilot" and higher than normal levels of concentrated effort or disorientation to produce something for the classroom. The most common objective reported for teaching creatively was helping students with their learning. This could mean trying to embed content by making lessons memorable, bringing wandering attention back to the teacher or problem-solving to help individual students. A related objective is trying to include into one's teaching, additional or updated syllabus requirements. Creative teaching tended to be seen as time-pressured and sometimes risky, in the sense that one's strategies might fail. Creative teaching is not experienced as inherently enjoyable. Therefore the main satisfaction that teachers derive from this experience of creative teaching seems to be a feeling of relief or happiness when strategies work out.

Teaching creatively in this limited sense could occur in the form of time-pressured responding and problem-solving to deal with conditions arising in the classroom or more pro-actively in the context of planning for teaching. The following quotations illustrate creative teaching of the first type:

The teaching creatively came out of some very specific moments in time, of which you tend to be thinking on your feet. It tended to be something that was needed to assist the student or the students in their learning. So you had to be very quick thinking, think on your feet ... You're reading your audience, you're reading the ambience of the audience and then you're going, "Ah! I gotta change this, I gotta change this really quickly, I'm losing this audience." So it's in those moments that you could be creative, because it wasn't planned, you know. Your lesson plan basically would stop. It would be truncated and to go on you knew would be a disaster. (2)

You looked at them, they're all looking at you, they're all looking at what you're doing, um and I remember that that particular little lesson was, uh, I thought was one of those really great teaching moments. (2)

The following quotations reflect a view of creative teaching as time-pressured planning:

So for me in my teaching, those elements of real creativity where I've come up with the idea and I've tried to work out, you know, the concept of the

process and the pragmatic aspects of making the creative idea work, in a real and practical situation, once again it's hours and hours and hours of slogging hard work to produce a moment. (3)

I have found that, um, an incredibly difficult and long process and there were certainly times in my teaching when I would think, you know "I've just spent 17 hours creating two hours worth of classroom work" and, you know, certainly a lot of the time you would look at 17 hours for two hours, "I'm bloody mad. I'm not going to do this again." (3)

Some teachers suggested that because of the time-pressure, risk and effort involved, creativity in teaching is largely impractical. For one of the teachers creative teaching was associated with "burn out":

I must say over the last few years when I became burnt out I became very prosaic and very boring. (3)

But equally it's not something you could probably do all the time. And this is going to sound odd but I could imagine that if you were able to generate that excitement all the time it'd actually just ... raises the threshold to become boring if you sort of understand my meaning. You'd always be sort of "upping the ante" in some ways, trying to get more and more and more exciting. (2)

Creative teaching is now seen as congruent with the aims of teaching. However, the instances of creative teaching are seen as a limited sub-set of teaching. The majority of teaching is seen as routine or planned, rather than involving creativity.

5. MANAGEMENT: Creative teaching is continual planning and using strategies to manage the contingencies of teaching

- A. Functional problem-solving;
- B. Delivery.
- C. Management of a broad range of contingencies relevant to teaching: balancing pressures, classroom organisation, student engagement.

In this view teaching creatively is seen as problem-solving to manage the various responsibilities and contingencies of teaching, including planning to limit risks and balance pressures associated with teaching in the classroom, organising the classroom and planning to ensure some level of student engagement. The main difference between this and the previous category is that creativity in teaching is no longer confined to isolated pressured moments in the teaching day, week or year, but is seen as integral to pedagogy – it is part

of being strategic as a teacher and therefore acknowledges that creativity is more continuous and relevant to teaching than in any of the previous categories. In the previous categories teachers seem to see creativity as something which could almost be taken out of teaching altogether. However, when pinpointing the objective of creative teaching in the present view the teacher is thinking more broadly than in previous categories about the various aspects of teaching, which require problem-solving or inventiveness. In this view it is still the teacher who controls and delivers the content, while students act as consumers. The affective element of creativity is similar also, as management strategies tend to be seen as functional (rather than meaningful to the teacher).

Most of the time, most of the good feeling comes when you've pulled it off. When it's worked the way you thought it would. (15)

In this view the teacher's creativity is aimed at ensuring that lessons will go smoothly and students will be engaged and either on task or learning. As in previous categories content delivery is seen as one of the main avenues for teacher creativity. Part of management involves how the teacher plans and uses content delivery to keep students engaged and organised. One of the teachers also mentioned thinking strategically about the use of incentives. Therefore the teachers' problem-solving efforts are mainly being directed at behavioural and emotional types of student engagement (rather than ownership):

Figuring out a way of: a) the practical side of things, like I need good consistency blood, da da da ... going and creating in that way. But then also thinking about, I've got kids whose behaviour is incredibly poor. How am I going to manage kids with "squirty" bottles of blood and not have an insane mess? Being creative about my student behaviour management in the classroom, to be able to keep control of, what could turn into sheer chaos. (15)

It's that extra little "How do I make it interesting so the kids will get it? Where do I find the gory small pox pictures?" You know "What's going to get the kids to go 'Brrrr'?" and you know, and gory photos often work best and adding that extra in there and "What language am I going to use on the power point so that the kids will get it ... ?"(15)

I did a fairly simple set of extrinsic rewards, of which one of them was that if we were able to get through our work, the set work, that was being set by the school, if we were able to get through that, we would then work on a concert as a class. (2)

Another aspect of management as a teacher involves balancing various kinds of teaching pressure:

You can feel pressured when you get lessons lumped on you or people didn't do what they said they were going to do and then suddenly it's an hour before a class and I've got to make a quick power point presentation on the history of vaccines ... You do get the situation where if you have put time into creating new materials or coming up with an idea for a particular lesson and then it all goes horribly wrong and you just go "Ugh. Why, why do I bother? It was rubbish! All that time that I put into it" and you can feel pressured. (15)

You're always balancing these pressures in a lot of ways. (2)

From this perspective it is accepted that teaching is often creative because it involves problem-solving on a daily basis with the objective of ensuring that things in the classroom go smoothly, curriculum requirements are met and students engage with the content of the curriculum.

6. TEACHING OPPORTUNITIES: Creative teaching is seizing opportunities for personal input into the design of the teaching-learning experience.

- A. Personal process;
- B. Delivery;
- C. Tailoring the learning experience to better suit teacher and student interests; students gaining more than content from the experience subject to constraints of curriculum.

In this experience of creative teaching, the meaning of creativity in view changes from purely functional problem-solving to a view of creativity as personal or as occasional ownership. Creative teaching is seen as teaching in a way that is personally relevant and allows greater possibilities for tailoring the learning experience to suit teacher and student interests. Both the affective experience of creativity and the objective of creative teaching change somewhat in this view. Rather than seeing the objective of creative teaching as allowing students to do something outside learning or as management, the objective of creative teaching is now seen as making learning relevant to the learner. It is perceived that where the curriculum opens up to allow the teacher greater scope for making decisions, the teaching experience can become more personal and experimental and therefore more enjoyable for the teacher and more congruent with the teacher's competencies and beliefs

about learning. So, for the first time, meaningfulness comes into the teacher's experience of creative teaching:

So, I designed the task and I had lots of fun doing that ... it also had something of myself in it, I think – which was interesting because, you know, this was this team of people who was doing things. But it – and every now and again I would think and do what they would want me to do – but I still basically feel that, in the end, they sort of, thought, “Oh, she seems to know what she's doing” or something like that. So – so there was something kind of personal in it as well. (4)

Simultaneously the objective of creative teaching is less towards implementation of the curriculum, managing pressures and working within narrow constraints and more towards creating learning experiences that are responsive to student requirements. However, there continues to be a strong focus, in this conception, on teaching as delivering content, even if in some circumstances it can be performed in a more collaborative way. The learning conception, although considerate of student requirements, continues to focus on acquiring content and skills:

I mean, in some ways, you sort of, like if you do have that opportunity to make a course, you've got to make decisions about what to put in and what to leave out ... So, you know, you just sort of, I don't know, just try and plan something that has, that you think has got the gist of something in it, but that each of them can take away a bit of whatever they, whatever is, is relevant to them. (4)

Teaching is seen as working within curriculum constraints and is seen as, often or usually, not creative, given that there are many perceived restrictions on this kind of creative teaching, such as teacher accountability and curriculum emphases. If the curriculum dictates that programs are to be followed, teaching becomes teaching to the program. Creative teaching as seizing teaching opportunities is therefore not seen as “teaching” *per se*, but as the teaching that can be performed when opportunities arise and teacher input is less restricted:

I'm just saying it's creative because in a sense, like, if you're teaching maths, you're basically, you've got, you've got your work program there to follow anyway, whereas this was, you know, five objectives, or something, and you really had to decide what it was that you could do. And, I think, it was reasonably creative there. (4)

Well, I'd have to say that the last, this year, I don't think I was terribly creative, and I felt great pressure to just, sort of, do what everybody else did.
(4)

7. CO-OWNERSHIP: Creative teaching is participating with students to enable and support ownership of learning and creating.

- A. Ownership;
- B. Enabling/participation;
- C. Enabling/supporting a process that is transformative of students' learning, self-direction and creative thinking

In this view creative teaching is experienced as participating with students to enable student ownership of learning and creating. The view of creativity in focus is no longer occasional ownership, but ownership. The teacher is fully aware of an underlying “principle” of ownership as control over learning and creating and is also aware of socially valuable learning potentials arising from processes of ownership. The view of teaching is now one of participation with the learner, to enable and support quality learning processes and quality outcomes.

The objective of creative teaching in this view is enabling student ownership of learning. But this may involve aiming to facilitate any or all of a spectrum of quality learning-related objectives such as enabling engagement in an immediate task process or enabling self-directedness as a learning approach applicable across subject areas. Teachers may hope to enable ownership of meaningful self-development beyond school (life-long learning and creating). In connection with these objectives the teacher may aim to support the development of creative/higher order problem-solving and thinking. The teacher endorses the learning benefits of ownership. Therefore in this view of teaching creatively, the teachers are not seeing creative teaching as responding to outside pressures to teach creatively, but as creative doing and thinking as a teacher, which proceeds from personal values and understandings about quality in learning. Creative teaching and teaching are now one and the same, because teaching is seen as constantly creating to enable learning. So too are student ownership of learning and student creativity similar in this view:

I've gotta think creative with my students too, but that's the foundation of being a constructivist. Or as I like to call myself, more co-constructive, because we learn together and I've gotta be creative and appeal to different

learning styles and abilities to ensure achievement and part of that is removing barriers to encourage what I see as creativity ... (8)

The teachers see creative teaching as valuable because it supports valuable processes. Ownership of learning, the main objective of creative teaching, is seen as internally valuable in that it promotes more complex approaches to learning, interest in learning, higher order thinking and higher quality outcomes. Ownership is seen as externally valuable in that these processes and outcomes translate into positive socialisation potentials for students and therefore represent positive outcomes for society also. It is not, however, apparent that the participants are seeing beyond the developmental learning and product potentials of ownership. In other words, socialisation potentials may be limited to the link between self-direction and “capacities” – the capacity to learn, to self-improve, to be gainfully engaged, the capacity to perform well and produce high quality products – rather than, as in the following category, the potential for self-direction, well-being and wholeness as a person. In the present category the language used suggests a focus on performance, becoming more skilled and sophisticated as thinkers and growing more confident as learners. Teachers are focused on getting the “most” out of students or students being able to put in optimal performances:

If I'm trying to guide students it's me saying, alright, what can you do to get the most out of this?(13)

I think probably, as I really just said, just making them feel comfortable and making them forget about rules – I think they're the most important – and increasing their confidence. That's the best I can think of in order to bring out the most in them. (12)

The teachers saw a large part of (creative) teaching as creating a supportive and non-threatening environment for ownership and learning. Teaching strategies could include the use of delivery to generate interest, but tended to focus more holistically on supporting the learner's confidence and interest by attending to aspects of the learner's environment, such as creating a supportive, interesting or relaxed classroom environment, building trust in the relationships between teacher and student:

So when I teach creatively, I look at a number of aspects. Number one for me when I teach creatively is I try and engage my students ... So if I have a high level of engagement I normally will have a high level of learning going on and a high level of students wanting to have a go and doing it, so risking themselves in a new situation. So with that in mind I try and create an atmosphere where everyone will not feel threatened and will have a go ... (14)

So you really need to approach in a pretty careful way, because it's very easy to crush their confidence as well ... (12)

So some people need a bit of a build-up, some people need help with their build up, and others don't need any, they just need your trust that you know that they will achieve in the end. (8)

If you give a kid a chance to sort of move in the classroom and express themselves and produce something that's new and in a non-judgemental way, um, they just love being there. (5)

Finding out about the needs and interests of individual students and showing genuine interest in students was also seen as key to teaching creatively for ownership:

I try to get to know my students. I think that's the key element, so I really do try to get to know the way they tick and think. (7)

Before I even start teaching them I try to get to know each of them a little bit ... So you have to think creatively and out of the box to get them to realize that there's not just one picture of perfection as such, so you try to show them lots of different ways how they can appreciate their own, you know, unique skills, how they can use their own unique skills, how they can improve on those skills. (12)

The underlying principle behind the teacher's strategies, whether articulated or not, is recognition that transformative processes cannot take place unless learners feel in control of what they are learning or creating. The teachers are acutely aware of this central issue and all of their statements about the facilitation, support and value of creative processes can be understood with reference to this single aspect of awareness. Thus if teachers speak about the importance of freedom from rules, to give one example, they are not endorsing poor standards of classroom discipline. They are referring specifically to the importance of learner control in learning and creating. All of the transformative elements that they see occurring "downstream" from the learner controlled process are flow on effects from this initial "trigger". In these transcripts, almost all statements about creative teaching can be linked in some way to the teacher's central concern with student control of learning and with bringing about a rupture in the learner's understanding of learning as externally controlled.

For the teachers who saw ownership as the objective of creative teaching, "management" is in many ways, a very different exercise from management as conceptualised at Category 5. Not only are the teachers focused on an "internal"

curriculum, rather than an exclusively “external” curriculum (content, skills), the teachers observed the *intrinsic* value of ownership to be the foundation of high levels of student interest, improved attendance, better attitudes towards school in general and improvements in student confidence and learning:

All you gotta do is look at the results: the kids’ faces. When you got kids running to get to the classroom you know you got something right. (5)

It’s almost like a train, they get so much momentum up, they really do produce some amazing things. And I think it does transcend into other subjects as well, if they’ve got a couple of subjects that are very, very supportive and they’re comfortable in, I think that confidence goes across the board as well. (12)

Gradually her confidence has improved and she’s gone from achieving – in “syllabus talk” – very minimal requirements and she has improved to achieving a very high outcome. Not only in terms of what the syllabus coins as a high achievement but also her confidence has grown, her ability to understand and to forget about everything else that’s going on and just focus. (12)

The teachers see ownership as a clear teaching objective and experience creativity in teaching as meaningful. Meaningfulness may not always be experienced as “fun” or “easy”. Meaningfulness in this sense is reflected in the statements teachers make, which show that the aims of creative teaching are seen as important and are endorsed even if the experience is sometimes difficult or uncomfortable.

Most manual arts blokes are lock-step type guys, you know. They teach kids “skills”, you know. This is how you do it, boys. And, I am a bit of a rarity, because I’m – and that’s the creativity. That’s the difference between me and most other manual arts teachers. Now that creates a lot of problems for me, because it’s difficult to manage that kind of stuff. (9)

Some of the teachers made distinctions between the meaningfulness of doing something personal and the meaningfulness of creative teaching:

Yeah, it [creativity in teaching] is different, I guess, because it’s not personal creativity for me, it’s job creativity. It’s being creative to get a result that isn’t for me, it’s for someone else, it’s to get the most out of people rather than to get the most out of myself – if that makes sense. (13)

8. AUTHENTICITY: Creative teaching is enabling and supporting authenticity

A. Authenticity;

B. Participation;

Enabling a process that is transformative of the person

Some teachers articulated a view of creative teaching, which includes ownership in its objective, but has a broader focus on the value and potentials of ownership for establishing well-being and wholeness. In this view creative teaching is experienced as enabling authenticity. Teachers express an ethical concern with creating conditions which can potentially lead to establishment of authentic student “selves” and optimal life quality. Teachers are looking beyond the more obvious learning potentials and social values of ownership and seeing importance in things the world might not see, but which are seen by the teachers as being of profound value to the person – feeling like one is accepted and has a worthwhile place in society, feeling that life is meaningful, having a sense of inner direction, having a sense of well-being and self.

This view reflects sensitivity to the development of meaningfulness and well-being. As the teachers relate their understandings and personal journeys it becomes apparent that the journey towards wholeness as a person has involved finely tuned adjustments to thinking and values based on attention to the internal sense of meaningfulness. Meaningfulness can appear internally as fun in an activity, but at the higher end of the meaningfulness spectrum it appears internally as a feeling of being a whole and fulfilled person. Life has meaning and direction. For these teachers the process of becoming a whole person revolves around the experience of meaningfulness. This is a process of forward movement – possibly related to the sense that the cessation of meaning would entail a retreat into meaninglessness:

Trying to think what – trying to think what that [life without creativity] would be like, what would it look like? You know, I think very boring. You know, what would you do? No, no. It's very un-human to be like that. You'd have to be brain-damaged or something like that, where, where you needed someone to tell you what to do all the time. (9)

“I would go crazy if I could not create every day” (5)

Those teachers who express views of creativity, which reflect that they experience life from a position of meaningfulness and wholeness, appear to have gained understanding about how to reach and maintain a state of wholeness. The experienced value of wholeness

therefore delimits the outer horizon of awareness of creative value for these teachers. From these teachers comes an objective of creative teaching, which is here described as *enabling authenticity* or *enabling the person*. *Enabling authenticity* is inclusive of the teaching objective of *enabling ownership*. Conceptions of creative teaching in this category are distinguished by language conveying an ethical concern with students' sense of well-being, wholeness, fulfilment, acceptance within their social (and school) environment, future quality of life and the importance of being themselves and feeling good about themselves. The strategies that the teachers use are implemented in the certainty that where the "person" (or self) is enabled in a climate of care and acceptance, students have their greatest chance of, not only optimal performance, but self-realisation, fulfilment, belongingness and well-being. The main teaching strategy in this respect, apart from the strategies involved in enabling ownership, seems to be acceptance, approval and support of the person, but in a way that recognises the importance of acceptance in transformation of the person:

It doesn't matter what sort of person or way you operate, I tend to encourage that to come out more anyway. I like them. I like the natural person that's beneath. So, yeah, so I try to encourage them to be who they are. (7)

Yeah, so I'm thinking strongly about the, the, my counselling days and that's when it worked most beautifully. When you just allowed people ... you know, that's what they wanted, that's why they came to me in the first place. Because, for some reason or another, they weren't allowed to be themselves, because there was some kind of pressure on them, somewhere, so that they could come to me and for an hour they could, oh, just let go and just be themselves. So, you know, the kids do it with me when they come to their lessons, you know, they ... I try not, you know – you have to, because of safety and because of this general, keeping a reasonably sane sort of workshop – but, yeah, try and let them just be themselves. (9)

I think the only thing, the only other thing I think about creativity is about, kind of allowing people's different ways of seeing, and being, kind of – just allowing people to be, and to see and do in their own kind of way, which is, can be different to the same person in different spaces and times (6).

The teachers expressing this view saw themselves as teaching creatively all the time. Some saw teaching as part of their own fulfilment in life.

I: I'd like you to tell me about a time when you were being creative while teaching ... when you were teaching creatively.

P5: Hey! Pick any day!

I: Well, tell me about one.

P5: It doesn't matter. It just goes hand in glove. See now I gotta try and isolate an incident from what really is, what is normal, for me.

I: It's still kind of interesting for me to see if you can pick a time when you were teaching the way that you can definitely say is ... what you would pick out as creative.

P: Well I wrote a whole book about it ...

My whole job is creating. Teaching is creative. But then my, what I teach, every aspect is creative ... Learning is creative. It's, I think that's, yeah. My students know I love my job but they think I'm also a freak because I love my job and I'm a high school teacher. (14)

However, the nature of the conception suggests that “passion” for teaching need not be the case for all teachers who understand creativity as autonomy/authenticity. Some teachers seem to see teaching as meaningful in a purposeful way, rather than as their ultimate source of creative fulfilment.

Teachers expressing this view of creative teaching, sometimes framed the value of creativity in terms of product outcomes, academic performance and learning, but they also talked about its value in terms of self, meaning in life and socialisation. The difference in breadth of focus, between Category 7 and Category 8 seems to come from having experienced transformation of the self and having an established sense of self as a creative being. Therefore in their endorsement of creative teaching, the teachers are simultaneously focused on what they see as the value of their own internal transformations and the potential value to students of going through a similar process. This is reflected in the following quotation from primary school teacher, P11, as she explains how she draws on this sense of internal value even when participating with very young students, in order to enable the transformative potentials of ownership:

I don't think I would have survived in the early years [of teaching] or as long as I have if I wasn't a creative person. Like, I enjoy creating things with the kids ... So I think if I wasn't a naturally creative person it would be hard

to put that on and sit with little kids if you didn't think that what they were doing was of value. (11)

An important effect of having experienced this internal value is that the teachers are not prepared to teach in a way that stifles these potentials. Teachers expressing this view sometimes talked about their refusal to accept curriculum constraints that get in the way of the trajectory to authenticity. Sometimes creative teaching involved fighting against conditions in the education system, including problems around evaluation, ineffective curriculum and resistance from colleagues:

I just, I can't do it [teach in a lock-step way]. You know, when I say I can't do it, it's because I won't do it. I refuse to do it. (9)

People write textbooks to make money. Right? I wrote those textbooks to generate a change. Which I did. (5)

It [the incidence of creative teaching] is sporadic, because obviously in education you are faced with a whole heap of different dilemmas and we have got educators who aren't very creative ... So, I work with colleagues who don't do any of that at all and have no idea how to facilitate it or do it ... (7)

APPENDIX 2: TEACHERS' CONCEPTIONS OF ENHANCING STUDENT CREATIVITY

Teachers' conceptions of enhancing student creativity		Referential component		
		Teaching content	Student transformation	
Structural component	External Curriculum (Content and skills)	Specific to the arts	1. An arts issue	
		Innovation	2. Teaching the content	
		Exceptionality	3. Providing a limited curriculum for exceptional students	
		Individualistic or personal expression	4. Permitting individual expression	
		Functional problem-solving	5. Teaching thinking skills	
		Occasional ownership	6. Allowing room for ownership	
	Internal curriculum (Learning and person)	Ownership		7. Supporting ownership (Supporting learning, thinking and creating capacities through ownership)
		Authenticity and autonomy		8. Enabling authenticity and autonomy

Overview of categories of description for teachers' conceptions of enhancing student creativity:

Eight qualitatively different ways that the teachers understood the enhancement of student creativity have been identified. The focus of conceptions in each category is delimited by four main focal aspects: a particular conception or combination of conceptions of creativity, a conception of teaching, a conception of “enhancing” and, in some cases, a particular view of the value, to students/society, of being creative. In the following

overview of categories, the four focal aspects are denoted by the capital letters A, B, C, and D.

- Key: A. Conception of creativity
B. Conception of teaching
C. Conception of enhancing
D. Value of student creativity

The eight qualitatively different experiences of enhancing student creativity are described as:

1. **An arts issue:** Teachers experience enhancing student creativity as an artistic concern
 - A. Domain specific (arts);
 - B. Delivering content;
 - C. Students do art, arts course, express themselves artistically
2. **Teaching the content:** Teachers experience enhancing student creativity as teaching the disciplinary content so that it can be applied in a creative activity or pursuit
 - A. Innovation; exceptionality; arts; recreational; occasional ownership;
 - B. Delivering content;
 - C. Providing the knowledge content;
 - D. Creativity has value outside school
3. **Providing a limited curriculum for exceptional students:** Teachers experience enhancing student creativity as taking care of emerging talent and the needs of exceptional students
 - A. Innovation; exceptionality;
 - B. Delivering content;
 - C. Nurturing talent;
 - D. Creativity has academic and social value as exceptionality
4. **Permitting individual expression:** Teachers experience enhancing student creativity as permitting individual expression as a means of increasing student comfort with the main curriculum
 - A. Individualism; personal;
 - B. Delivering content;
 - C. Allowing;
 - D. Student comfort
5. **Teaching thinking skills:** Teachers experience enhancing student creativity as encouraging problem-solving and lateral thinking strategies as a sub-layer of the curriculum
 - A. Functional solving/making;
 - B. Delivering content;
 - C. Encouraging
 - D. Functional

6. **Allowing room for ownership:** Teachers experience enhancing student creativity as making space in the curriculum for students to experience episodes of ownership
 - A. Occasional ownership;
 - B. Delivering content;
 - C. Allowing;
 - D. Students develop interests and have meaningful learning episodes within curriculum constraints
7. **Supporting ownership:** Teachers experience enhancing student creativity as supporting learning, thinking and creative capacities through ownership
 - A. Ownership;
 - B. Enabling and supporting;
 - C. Enabling transformation of learning and creating capacities;
 - D. Internal and external world value
8. **Enabling authenticity:** Teachers experience enhancing student creativity as enabling authenticity
 - A. Authenticity;
 - B. Enabling and supporting;
 - C. Enabling creative being;
 - D. Internal and external world value

The eight ways of experiencing the enhancement of students' creativity are described in greater detail below and illustrated with quotations from the transcripts.

Teachers experience enhancing student creativity as:

1. AN ARTS ISSUE

- A. Domain specific (arts);
- B. Delivering content;
- C. Students do art, arts course, express themselves artistically

In this view the enhancement of student creativity is seen as an artistic concern. The teacher may see enhancing creativity as an aspect of student experience that is taken care of by the arts departments of the school, or, alternatively, may see enhancing creativity as teaching in a way that allows students to express their artistic inclinations. While focused on creativity as an artistic concern, the teachers are not thinking beyond the disciplinary content, familiar teaching practices or specified student outcomes in their own teaching area. The teachers who expressed this view did not see art as a concern of teaching/learning in their subject area, hence student creativity is no more than a peripheral concern of teaching/learning for them. This view was sometimes expressed as an initial response to the interviewer's questions about enhancing creativity. The view that the enhancement of student creativity (as artistic creativity) is confined to the arts areas of

school is sometimes implied rather than stated directly. The teachers take-for-granted that creativity is a property of the arts domains and imply that being a teacher in a non-arts subject area, such as science/mathematics automatically precludes teacher concern with creativity. Another view expressed is that development of problem-solving is appropriate to learning in the sciences, while creative thinking and making is appropriate to learning in the arts:

As a science and maths teacher I never thought of myself as a promoter of creativity. (10)

I really only ... the only time I'm en ... it's more enhancing problem-solving, rather than enhancing creativity per se ... (15)

That's the immediate link. Immediately it's the arts, whether it be the visual arts, the music, the dance or whatever, but there's that, er, I guess, the creative "something from nothing", like nothing at all kind of situation, that you feel sometimes with art as opposed to adapting, manipulating and things like that – my problem-solving side of things. (15)

[A creative approach] is definitely not what you do in maths. I mean, it's possible to do it in maths but we don't do it in maths, as a sort of cultural kind of thing in maths. (4)

Some teachers seemed to suggest that student creativity is enhanced when students with a proclivity for artistic thinking are given an opportunity to express their artistic inclinations:

Some students are very logical and in their presentations they write things down step by step, whereas others when you looked at their end product on the butchers' paper was full of um ... of various ... uh diagrams and colour, use of colour ... (1)

Some of the teachers made statements suggesting that enhancing student creativity had been far from the forefront of their thinking about what their students need to learn. Some felt unprepared to answer the interviewer's questions about enhancing student creativity. The strong association between art and creativity seems, at least partially, responsible for setting up this disparity, in teachers' minds, between creativity and learning:

I should have got these questions in advance shouldn't I?(10)

I'm not sure if I could answer the part about enhancing their creativity. (3)

Because the priorities in Education Queensland aren't "creativity", it's on numeracy and literacy, it [creativity] sort of just fades in the background a lot. (1)

Do you mean [have I seen the word creativity] in a curriculum document or ... ? Can't say I have. It's probably in a group of a number of words that would ... I would have read and just not taken any particular notice of. (10)

2. TEACHING THE CONTENT

- A. Innovation; exceptionality; arts; recreational; occasional ownership;
- B. Delivering content;
- C. Providing the knowledge content;
- D. Creativity has a range of possible values to students which relate to outside or beyond school

Another view expressed was that enhancing student creativity involves teaching the disciplinary content so that it can be subsequently applied in a creative activity or pursuit. The predominant meaning of creativity in the foreground of this experience seems to be of creativity as cultural innovation or some form of vocational competence or achievement. But the teacher may also have in mind any kind of hobby or personal interest a student might have outside the classroom. The teacher is seeing the teacher's primary responsibility to students as one of teaching the disciplinary content and is not concerned with any possible value that might derive internally from engagement in creative processes at school. The creative process itself is seen as *applying* technical knowledge. The teacher may have in mind a range of possible values for creativity such as the social value of innovation or exceptional performance or the satisfaction to the individual of personal creativity in a recreational context. These values are seen as relating to the world outside or beyond the school, or in some cases, to a process that comes at the end of learning:

I see myself as someone that's, you know, "this is the knowledge you need to go out and be creative." OK? So this is the paint set if you like of scientific knowledge you require if you want to leave here and be creative, or if you just want to live your life and apply those things to your future creativity. (10)

So if I hear that one of my students has gone on to be, and I know one of them did, do a doctorate in koala diseases, or something like that, obviously an area of research that was new to the rest of the world, and she was obviously being creative in putting time and effort into those diseases, and I would like to have thought as a science teacher I had provided some of the

tools to allow her to move into that area and be creative. And that doesn't necessarily just apply to the sciences. I'm sure that some aspects of science that I've taught, people may take them and lead them into artistic endeavours or financial endeavours or whatever and they would be able to apply some of those tools I've taught them in those areas and be creative in that area as well. (10)

It may be that in this perspective creativity is predominantly associated with production or making, rather than with finding or discovery. Therefore creativity is seen only as the *result* of learning rather than an aspect of learning itself. P3, quoted below, sees creativity as thinking for one's self, a conception close to ownership. But here it occurs only at the end of the learning, not as an aspect of the learning process:

Well you could see that their imagination has been caught, um and they start thinking for themselves instead of sitting there being sponges. And I suppose that's what makes them creative, I think, when they start, you know, they've taken in what you've got, or what you've been giving them and then they start to use it for themselves. (3)

Implicit in this view is the idea, that it is not necessary to do anything other than teach the content in order to enhance creativity. Student creativity looks after itself as part of the way things work inside the curriculum. Creative students tend to be seen as those students who are naturally capable or have the necessary attitudes/aptitudes to forge ahead of other students. Thus creativity is often seen as something that some students do naturally, because they are good at subjects or motivated to succeed. This seems to require no input from the teacher:

There's always a handful in any particular year that stand out and they are particularly good at some field that they've mastered ... sport ... dance. (10)

You hear of [creative] students, occasionally when they are still at school, but often when they leave school and you hear about them afterwards. (10)

3. PROVIDING A LIMITED CURRICULUM FOR EXCEPTIONAL STUDENTS:

- A. Innovation; exceptionalism;
- B. Delivering content;
- C. Recognising/nurturing talent
- D. Creativity has academic and social value as exceptionalism

In this view teachers experience enhancing student creativity as nurturing emerging talent or addressing the needs of exceptional students, either as an addition to the main curriculum or as a limited sub-section of the curriculum. The conception of creativity in focus is exceptionalism and/or innovation. Whereas, in the previous category enhancing student creativity requires no attention at all from the teacher, in this view the teacher is thinking of the needs of exceptional students who might require support, encouragement or special arrangements for learning in order to realise their potential. As in the previous conception there is a strong focus on delivering skills and content. But the teacher now suggests that exceptional students would require a different type of curriculum or different type of instruction/delivery as compared with the majority of students:

P2: Ok, they're what, eight years old? I'm not really that certain whether they know what their creativity is ... I think that at that stage, my feeling is that you try to make as broad a base as possible and just see what comes out of it. So you make sure that there are conditions there that if there is any kind of, ah, inspiration that's gonna come out of the child, then, for some reason, it should be allowed to emerge – um, and you have to recognise that and that's quite tricky when you have so many pressures on you as a teacher to do, you know, to conform with the on-site curriculum, which may be taking you in a direction you may not necessarily wish to go with these children, and these children may need a different type of curriculum ...

I: So it's the teacher who judges when something is creative or not in the student's behaviour?

P2: I think ultimately. I mean the student may do something and then you would have to be able to ... I think it would be quite good to recognise that as being quite different, and ah some sort of expression or something that the child is, um, wanting to show, that there was something, something out of the ... something different in their life. Something that's emerged.

I suppose one girl stands out and this'd be ages ago, but um, at one stage, she sort of said to me ... I suppose she gave me some feedback on ... and she was a very creative girl, you know very good at, you know, in the arts and

drama and English. But she also did Japanese and I suppose at one stage she sort of said, "I really like the way you use sound and pictures" ... because, oh well, she said "using sound a lot", cause she said "I'm really learning well with that". (3)

Creativity is viewed as something that is relevant for only a small number of students. The teacher's only role is to recognise and encourage exceptional talent and performance.

4. PERMITTING INDIVIDUAL EXPRESSION:

- A. Individualism; personal;
- B. Delivering content;
- C. Allowing;
- D. Student comfort

In this view, teachers experience enhancing student creativity as catering to students' individuality and interests, not as a way of learning the requisite content, but as a way to increase students' comfort with the less interesting, more arduous or hostile aspects of the main curriculum. It seems that the teacher is not associating individual expression with learning, but is seeing it as related to student comfort, the support of which falls largely outside the central aims of education. Whilst it is seen as fair on the students if they have room to express themselves, the teacher sees no direct link between student creativity and the mandatory learning in the curriculum. Some teachers seem to see student creativity as individualism, where students are seen as doing something for themselves, outside regulation by the norms of teaching and learning in the subject area. In this category the teacher is not really thinking beyond the importance of delivering the curriculum content. Learning is seen as acquiring content/skills and creativity is seen as a personal process with no direct relation to learning.

Teachers demonstrated some variation in the extent to which they saw individual expression as having a useful place in the curriculum. Individual expression, whilst not linked to key learning, could be seen as providing needed balance in the curriculum. The following quotations convey the teacher's sense that individual expression provides needed respite from harsh or unyielding aspects of school life. This view of enhancing creativity by permitting individual expression might be described as giving students space in which to feel safe. Here teachers are seeing internal value in creativity, but are not seeing that value as related to learning:

It was all little structured poems of some kind, and ... all the class would be able to do them ... you know, do lovely little sort of things that they felt good about and you felt good about. (4)

So I did notice that there were times, I think, students who picked Japanese because I think they felt safe in my classroom, to some extent, you know, that who they were wasn't going to be ridiculed or harangued or whatever. (3)

I was giving them opportunities to, uh, looking at multiple intelligences as well, um, so they can operate in an area where they feel comfortable rather than not always being too prescriptive in what they should be doing. (1)

But some teachers implied or stated that they would rather that students applied themselves to acquiring the content than to being individually expressive. The reasoning behind this can be seen in the quotations below: creativity and learning are seen, not just as separate processes, but as opposed to each other. For these teachers, learning is demonstrated when students reflect back that they have taken in the content that has been delivered. Deviations from teacher expectation reflect, not learning, but something of the student's own thinking that is antithetical to learning or is, at best, tolerated when it does not distract from learning the content. Allowing or enhancing student creativity seems to facilitate the comfort of the student, but does not facilitate the teaching objective of delivering content and checking to see that the content has been delivered. The teacher recognises learning as acquisition of facts and skills, which is demonstrated in assessment rather than during the process:

When I have to mark some assignments, I think this is not the way I would do it. But when you then look at, they've covered this, this, this, and this and this and they've done it in this different format, so what? You know – that's fine. But if they've covered those aspects and they've got the science right, then I don't mind any more. (1)

The underlying discomfort, which the teachers experience in giving students freedom to release their individuality at the expense of rigor and wasting teacher time, which is tactfully expressed in the quotation above, is expressed more forcefully, by P10, in the following quotation:

Well, they're certainly showing an aspect of their own creativity that is almost in total conflict with what's supposed to be happening. Again, in my lessons, I will give students a chance to demonstrate that they have understood and picked up the skills and the knowledge that I've taught them,

but I don't know that I've necessarily given them the chance to be creative. What a child sees to be creative in a science lesson may lead to an explosion or toxic chemicals being released in the room. (10)

Whether the teachers see individual expression as a useful or impractical adjunct to learning, when seeing creativity as individual expression it seems that the teachers have inherent reservations about the value of enhancing student creativity, on the basis that individual expression is seen as unrelated to the act of acquiring the content and is therefore, at best, something that has a limited place in the curriculum.

5. TEACHING THINKING SKILLS:

- A. Functional problem-solving/making;
- B. Delivering content;
- C. Encouraging and coaching;
- D. Functional value

Some teachers expressed a view of enhancing student creativity as teaching the thinking skills necessary for functional problem-solving and creating. In the foreground of this view of enhancing student creativity are meanings of creativity as problem-solving and improvising for functional purposes. Teachers may experience enhancing student creativity as encouraging the thinking necessary for problem-solving, encouraging lateral thinking strategies and encouraging a degree of risk taking and exploration. These skills are taught or encouraged as a sub-layer of the accepted curriculum. Creativity is not now seen as part of a limited curriculum for artistic or talented students, or as student comfort outside learning. It is here seen as learnable thinking skills with practical value for all students. There continues to be a strong emphasis on teaching content in this view, but the teachers seem to accept creative problem-solving skills as a viable form of learnable cross-disciplinary content or a skill that allows students to make use of content.

Sometimes the kids, you know, want to find out transpiration rate of plants or this, that and the other and then trying to figure out how they're going to design their experiment so it does this and helping them, you know, giving them those leading questions to go "What if, what if, what if ? ... And then get them to, you know, problem-solve that way and then get to the end result that way so they're not spending three weeks testing the wrong thing and not getting any results. (15)

Yep ... just not necessarily following the steps and if we don't have the appropriate equipment at our school what ... ? Here's the equipment we do have, how can you use this differently and are you still going to get the same result if we did it this way rather than this way, you know, are you still controlling all of the variables that you need to control? If not what are we going to do about that? Are we getting enough data? You know, is it accurate?(15)

I know the grade 8s at the moment are doing three lessons a week on what they call a challenge task, which is trying to get the kids to be a little bit more creative. We're looking at weeds and ants at our school because that's a problem at the moment, but we're trying to challenge the kids into being creative about designing a poster that might be "How do we get rid of ants in our garden?" or a poster on weed eradication, something like that. They know what a general poster is, the format that it should take, but then what they put into that poster we're trying to get them to think laterally ... that poisons are not necessarily always the only answer. (1)

I sometimes actually stop the class and just get, uh, get the class's attention to that particular person for a moment and just say, "This is not just one way that you can do this. Here are some other ways." And sometimes I actually get that student to explain that "I'm doing it this way." (1)

You know, if they take those sort of risks while they're in a, in a sheltered environment like a school, then, they can learn that it's OK to make mistakes – at times ... I think it makes them a better person at the end, when they finish school at grade 12. They are much more confident to tackle situations. If they are stuck with a problem that they then have to solve, they've worked out a few avenues, different ways in which that might be able to be solved ... Yeah – their skill, their skills base, it broadens their skills base on how they could tackle problems that they may encounter in the future. (1)

6. ALLOWING ROOM FOR OWNERSHIP

- A. Occasional ownership;
- B. Delivering content;
- C. Allowing;
- D. Students develop interests and have meaningful learning episodes within the constraints of a crowded curriculum

In the foreground of this view of enhancing student creativity is a view of creativity as occasional ownership. In this view enhancing student creativity involves making some

room for students to perform tasks in which they are truly interested and over which they have control. The teacher is now seeing a more direct relationship between student interest and student learning than is expressed in previous conceptions. The teacher sees that there may be benefits in terms of improving mental processing, improving the quality of the process and producing a quality outcome. But in this conceptualisation the potentials and longer term possibilities for student development beyond the task at hand are not seen. Constraints on teachers and teaching and the predominance of the external (content and skills) curriculum remain a strong aspect of the focus. Thus enhancing student creativity is seen as ideal in some ways, but is also considered largely impractical, as there is very little room for ownership within the existing curriculum. One of the teachers also expressed reservations about the usefulness of ownership as an approach in learning on the basis that some students do not like to take risks and prefer structure.

This [poem] is now assessment and for marking and counting for her results and grades, but it still allowed her to do something that she was passion ... well maybe passionate isn't the word that a 15 year old would have with politics, but she has an interest in it and has taken an interest in politics recently ... and so, um, writing a poem about that just came easy to her ... They lose [their creativity] a little bit and I'm wondering if what we do at school makes them that way. Because we're so focused on getting them through to get a result to do the curriculum that we have to do, to follow the syllabuses, that it allows very little room for them to explore other ah, their interests, explore their creative side ... If they had free reign or free run to be as creative as possible, I think the end product would be different, than having to work within these guidelines and doing it for assessment ... But there are some students that I encounter who will not be game no matter how much freedom that you give them because they're not risk takers. (1)

7. SUPPORTING OWNERSHIP:

- A. Ownership;
- B. Enabling and supporting;
- C. Enabling transformation of learning and creating capacities;
- D. Internal and external world value

In the foreground of this view is a meaning of creativity as ownership of one's learning and creating. Teachers experience enhancing student creativity as supporting deep learning

and self-direction of learning and creating. Ownership of learning and creating is seen as a key aspect of student development, which can be supported through the curriculum. Enhancing student creativity is no longer seen as part of a limited curriculum or as a sub-layer of the curriculum, but as integral to the curriculum, to teaching and learning. Ownership is seen as leading to, not only deeper learning and self-direction in learning, but also to “higher order thinking”. Supporting creativity as student ownership is the teacher’s primary teaching focus.

Yeah I like to be more of a, well, play the supportive role, you know, second fiddle is always better; cos it’s the kids’ turn in this classroom to be, you know, first fiddle ... I like to, you know, if we’re being in drama, working on plays, I like the kids to tell me. I don’t like to stand up and say, you know, “This is this character and this is who this character is.” But I like to get them to explore it themselves and then me to help them see that to a reality. (13)

It’s related to inquiry learning, which I’ve done in primary schools, where you develop your big context, kids frame their own questions and enquiries. So they should be asking the questions It’s enquiring that’s all it is. But it also involves you planning for enquiring. Yeah. (8)

Yeah, because they take it on then. They take it on. I mean, I’m still there to give them some boundaries, or whatever. I mean, they take it on, they’re making it. They come and ask you “What do you think about this? Do you think it’ll work?” (6)

Ownership is seen as having the added benefit that as interest and control over learning/creation processes increases, there is also an improvement in the quality of what is produced. Therefore the process and what it produces – higher quality, more “creative” outcomes, including thinking outcomes – tend to fuse together as aspects of the same phenomenon:

I: Why do you think ownership works with creativity?

P13: Um, cause I think they [students] have an interest in it. Once they own it, they can’t blame the result on anyone other than themselves, they, you know, what they put in is exactly what they’re going to get out and that end product that they have is either going to live up to their expectations of what’s in their heads or it’s not going to live up to it ... and I think if they take ownership, well then it’s like: “Well why isn’t it the way that you want it? What can you do to make it better?” And the kids that don’t [have ownership] will just leave it as it is and the kids that really get into it

wanna make the piece their own and go that extra step ... Kids who are engaged, you see it in their faces – they light up, they are energetic about things. They are happy when they are doing things, they wanna do the hard work.

Teachers expressing this view see enhancing student creativity as what they do consistently as a teacher. Because this approach to teaching requires an open attitude, ongoing learning as a teacher and consistently thinking about how to create the conditions for ownership, teachers tend also to see teaching creatively and enhancing student creativity as two aspects of the same teaching focus:

P8: Yeah that [teaching-learning experience] was so awesome! Even though we weren't creating something totally new we were being so creative in the sense of manipulating the sounds to make it sound like the original and the rewards in that were just so great because we learnt so much.

I: So this was you and the class?

P8: Yeah

I: So it really was a creative ... a creative experience for you as well as for them by the sounds of it.

P8: Yeah, because I'm a co-constructivist. I learn with my kids.

Teachers expressing this view described the internal aspects of processes of ownership, with considerable clarity and appeared to use these insights when participating with students and creating an environment for teaching and learning. The teachers talk about what the students “sense” and “feel” and how those feelings contribute to learning and creative processes:

I: So creativity is enjoyable?

P8: Oh yeah definitely, hugely. Because it's the self-reward, you know, the sense of achievement from reward. The um, you know, yeah. It's just a positive experience if the student is engaged and persists with it.

[The students] feel that they can participate in their own way in their arts and creative space. Yeah, they've got ownership of their environment because of that, because I trust that they can be responsible and creative in that environment. (8)

8. ENABLING AUTONOMY AND AUTHENTICITY:

- A. Authenticity;
- B. Enabling and supporting;
- C. Enabling creative being;
- D. Internal and external world value

In this view enhancing student creativity is experienced as enabling students' capacities to function as autonomous, authentic beings. This view may be seen as inclusive of the previous category as processes of ownership are seen as essential to, or part of, being authentic. But now, the conceptualisation of creative value expands beyond self-directedness in learning, thinking and creating to include awareness of potentials for optimal socialisation – especially finding meaningful direction in life, sense of self, well-being and a sense of meaningful belonging. In terms of the tree metaphor, if the previous category is concerned primarily with the seed, the growth of the tree and the fruit, in the present view the potentials that are inherent in the seed of ownership now broaden to encapsulate aspects such as the health of the tree and its interconnections with the surrounding garden. The teachers are interested in providing conditions and support that make it possible for students to realise their potential for more than future work or achievement: for finding meaning in life, a way of relating meaningfully to the wider social world and building values and a sense of self. The teachers are *aware* of most or all of these possibilities even if they recognise that not all students will attain all aspects of authentic being. Teachers who see enhancing creativity as enabling authenticity talk about the value of being or of becoming one's self through meaningful processes of ownership. They see the value of creativity from the perspective of the development of the whole person, experiencing well-being and wholeness as a person and finding a meaningful place in the social world. Again teachers are concerned with the feel and sense of creating and what it feels like to experience meaning as a creative person:

You feel good inside, like you feel like you're good at something and even if no one else likes it, it doesn't matter, you like it. So it fulfils you. It's like being at the top of Maslow's hierarchy, you don't need anyone to say it's good, you just feel, it doesn't matter, it just feels good inside, it feels like you've achieved what you wanted to achieve. You may not be achieving

everything you want in life but for that little creative pursuit you've achieved that sense of wellbeing. (14)

I suppose they [people] want to do the thing that, that I do, as well, you know, which is to, I guess, discovery – a chance to be yourself, you know? ... So, you know, the kids do it with me when they come to their lessons, you know. They ... I try not – you know, you have to because of safety and because of this general, keeping a reasonably sane sort of workshop – but, yeah, try and let them just be themselves. (9)

APPENDIX 3: LETTER OF INVITATION TO PARTICIPANTS



PARTICIPANT INFORMATION for QUT RESEARCH PROJECT

Queensland teachers' conceptions of creativity

Research Team Contacts

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Description

This project is being undertaken as part of a PhD project for Sandra Bryant.

The purpose of this project is to discover how teachers and administrators in Queensland schools conceptualise “creativity”. Recently, in Queensland, there has been a great deal of educational interest in creativity and it will be useful for both educators and policy makers to understand how teachers think about this increasingly popular concept.

The researcher requests your assistance by sharing your experiences of creativity.

Participation

Your participation in this project is voluntary. If you do agree to participate, you can withdraw from participation at any time during the project without comment or penalty. Your decision to participate will in no way impact upon your current or future relationship with QUT (for example your grades).

Your participation will involve a relaxed, conversational interview with the researcher. The interview may be expected to last for approximately one (1) hour. Ideally the interview will be conducted in a comfortable space, which will be convenient for you to attend, such as a quiet classroom or office at your school. If you agree to participate, a time will be arranged, which is suitable for you.

Expected benefits

It is expected that this project will benefit the teaching community and student population by contributing to the research that informs educational practice and policy. Your help with this research is greatly appreciated.

Risks

There are no risks beyond normal day-to-day living associated with your participation in this project.

Confidentiality

All comments and responses are anonymous and will be treated confidentially. The names of individual persons are not required in any of the responses. The interview will be audio taped so that your comments can later be transcribed. However, these tapes and transcripts will be accessed by the researcher and authorised members of the research team only. They will not be used in any way other than as data in this research project. After transcription and analysis of the information you have provided, the session tapes will be destroyed. Neither participants nor their schools will be identified or identifiable in published material arising from the study.

Consent to Participate

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to participate.

Questions / further information about the project

Please contact the researcher team members named above to have any questions answered or if you require further information about the project.

Concerns / complaints regarding the conduct of the project

QUT is committed to researcher integrity and the ethical conduct of research projects. However, if you do have any concerns or complaints about the ethical conduct of the project you may contact the QUT Research Ethics Officer on 3138 2340 or ethicscontact@qut.edu.au. The Research Ethics Officer is not connected with the research project and can facilitate a resolution to your concern in an impartial manner.

APPENDIX 4: PARTICIPANT CONSENT FORM



CONSENT FORM for QUT RESEARCH PROJECT

Queensland teachers' conceptions of creativity

Statement of consent

By signing below, you are indicating that you:

- have read and understood the information document regarding this project
- have had any questions answered to your satisfaction
- understand that if you have any additional questions you can contact the research team
- understand that you are free to withdraw at any time, without comment or penalty
- understand that you can contact the Research Ethics Officer on 3138 2340 or ethicscontact@qut.edu.au if you have concerns about the ethical conduct of the project
- agree to participate in the project
- understand that the project will include audio and/or video recording

Name

Signature

Date

/ /

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