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Adventurous Lives: Teacher Qualities for 21st Century Learners

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Abstract. What kinds of teachers are needed for 21st century learners? While there is recognition that curriculum content, classroom practices and learning environments must alter, there is less attention focussed on the teachers' dispositions for negotiating uncertainty. In this paper, the authors turn their attention to the importance of teachers' lives and mindsets to meet current, emerging and future challenges. Using a narrative inquiry approach, they elicit and examine three of these essential qualities: adventure, resilience and creative problem-solving. These characteristics emerge from interviewing a small group of beginning and experienced teachers who were questioning normative practices and exploring possibilities with more responsive ways to teach.

Key words: teachers; adventurousness; playfulness; resilience; creativity; problem-solving

Introduction

21st century learning, outside of school, continues to change in dramatic and yet unimagined ways with transnational movements of people across the globe and daily technological advances. At a whim, young people are provided instantaneous means of social inclusion, multimodal information, entertainment, opinions, insights and creations from wide ranging authors and image makers who possess an even wider range of knowledge, biases and expertise. While the literature is prolific with respect to these learners, curriculum designers are trying to keep pace with the knowledge, skills and understandings 21st century learners require. This study turns attention to teachers. The two authors (who are teacher educators) attempt to better understand the qualities required of a 21st century teacher, in a small qualitative study.

There is recognition of the need to alter industrial model educational practices for 21st century learners; practices that currently normalise the content students receive (Hargreaves, 2009; Darling-Hammond, 2009; Skilbeck & Connell, 2004; Zhao, 2012). The focus of reform has been on creating new programs, new educational frameworks with mandated skills that are added to existing curriculum. All of these reforms are imposed *on* teachers rather than developed *with* teachers. Yet, as Fullan (1994, p.10) argues,

Teachers' capacities to deal with change, learn from it and help students learn from it will be critical for the future development of societies. We need a new mindset to go deeper. [The] basis for such a mindset is to enable educators to become agents, rather than victims, of change.

Turning our attention to teachers' mindsets, we began to wonder what dispositions they require in order to meet the current, emerging and future needs of learners. First we had to better understand the needs of today's students. In a review of the literature on 21st century skills, Ledward and Hirata (2011) provide an overview of the changes to the way learners and teachers face challenges. In their review the authors discuss the significant shift from a manufacturing model of learning and teaching to one of a knowledge economy of information and communication. They acknowledge that, as we now live in a knowledge economy rather than an industrial economy, routine skills are no longer the essential skills to learn. In order for learners to achieve success, they require skills in ways to make use of information in order to solve complex problems. They create new knowledge by communicating and collaborating effectively with others in joint decision making.

Current ideas concerning 21st century learners were advanced yet unheeded at the turn of the century. UNESCO generated a report advocating a future-oriented direction. This report (quoted in Singh, 1991) assists in articulating aspects of the division in thinking surrounding educational change from a reactive to a pro-active initiative. 'Future-oriented education is actively promotive of innovation and dynamically evolving social goals.' (Singh, 1991, p.7). In order to foster these future-oriented directions, there is recognition that teachers need to *unlearn* much of what has been valued as central and relevant to 20th century learning.

We understood that teachers required a mindset that best adapted to the significant changes in learning; teachers who develop strategies for engaging with and constructing new knowledge. These teachers teach to the future with the knowledge that it is unknown yet filled with possibilities. This means teachers need to have growth rather than fixed mindsets. Dweck (2008) characterises fixed mindsets as a belief that one's creative talents and abilities are predetermined. In growth mindsets there is an increased learner focus in order to change. Challenges are embraced by those welcoming change, as there is belief in intended growth. Effort therefore is seen as worthwhile while failure and receiving feedback is positive, guiding further improvement. Through a growth mindset an individual embraces risks and sees failure as intrinsic to learning. There is recognition of the plasticity of the brain that allows further learning to occur and ideas to expand. Such capacities, we argue, are integral to teaching for the future and negotiating an increasingly regulated present. In view of the research on future oriented learning, we looked to the design of the study as well as the content of our participants' conversations with us and each other. Framing our own thinking with reference to Dweck's growth mindsets, we noted developing themes. Attention to playfulness, resilience, creativity and problem-solving emerged as shaping the themes to our study, honing our exploration.

The Study

In order to explore the qualities needed in 21st century teachers' lives, we sought the life stories of six practising teachers over a two year period. From the textures of such stories, we asked how their pre- and post-teaching lives shape their current practice. We identified teachers we had previously taught who foster intellectually curious teaching.

In most instances, we met each participant face-to-face for the first interview. We had kept in touch with these teachers post-graduation and wanted to understand more of their teaching lives. During our working relationship on this project, it was also essential to eliminate bias as much as possible and uphold ethical standards.

The first meeting began by catching-up on their lives post-graduation and, on their beliefs about teaching generally and their current position. One researcher met the

participants in her home over coffee or at a nearby cafe. The other interviewed her participants near their schools or, in our overseas teacher's case, online.

As researchers we come from teaching in two separate sectors as did our participants. They were also teaching in diverse disciplines, with differing learner needs such as age, ability, sociocultural and economic backgrounds and learning environments. Therefore it was essential that the questions we devised be inclusive of all. To test the questions posed, we answered them ourselves. In addition, the way each question was framed and its connection to the previous question needed to elicit stories rather than answers. We employed the art of active listening to gently steer a narrative away from its direction or encourage furthering of the story. We asked these people (two beginning and four more experienced teachers in primary and secondary sectors) to respond to our questions in relation to their childhoods, the influences of their career choices, their teaching practices and how they reflected on their own teaching identities. Their stories grew and deepened over a number of face-to-face and online exchanges (some were teaching remotely). The exchange was further extended to an online forum, where the teachers could address any issues in relation to our questions or each other's questions and responses.

From this focused, rich collection of narratives, we explored dimensions of change-producing teaching as we examined, in particular, their small stories. Bamberg and Georgakopoulou (2008) define small stories as often past, future and hypothetical tellings that might well lack narrative structure as they can be mere fleeting thoughts. These stories are often dismissed by researchers as being off track or unfinished yet Bamberg and Georgakopoulou believe that these fragments can hold powerful and insightful meaning.

Narrative Inquiry

Narratives assist in capturing the human experience. They also have the power to trouble the grand narratives about education. For this and the reasons below, we drew upon a narrative inquiry approach. Clandinin and Connelly (2000) observed that 'experience happens narratively' (p. 19), and initially viewed narrative inquiry as both method and phenomenon. They assert:

People shape their daily lives by stories of who they and others are as they interpret their past in terms of these stories. Story, in the current idiom, is a portal through which their experience of the world is interpreted and made meaningful. Viewed this way, narrative is the phenomenon studied in inquiry. Narrative inquiry, the study of experience as story, then, is first and foremost a way of thinking about experience. (Connelly & Clandinin, 2006, p. 477).

Arguing that each experience has 'a past experiential base and leads to an experiential future' Clandinin and Connelly (2000, p. 2), position individual stories in relation to time and emerging personal, social and institutional conditions.

To search more deeply into the values and beliefs of beginning and experienced teachers, we wanted to create a 'dialogic space' for participants to speak freely in relation to the influences which shaped them and then how such influences formed them 'in the face of different discursive pulls' (Bamberg & Georgakopoulou, 2008, p. 67). Parr, Bulfin and Rutherford (2013) argue for the rigour of this practice:

The process of clarifying and reflecting required a combination of critical and analytical skills as well as the capacity to imagine the kind of [...] teacher they hope

to be. In so doing [the teachers] began to construct and articulate a sense of their emerging professional identities ... (p. 5)

Questioning the teachers was a recursive process. As we listened to, read and reread their stories during (rather than at the end) of the research process, we began to see connections that were arising as themes among these teachers' lives, their identities, and also connections to those of their students. In order to better understand the incidents that shaped them, we asked the teachers to return to statements they made or further clarify ideas, thus generating further stories. In this way, many of the questions emerged and were furthered from the data. Moreover, as teacher educators and researchers, we wanted to adopt reflexive stances ourselves. We were conscious of shaping versions of experience through the questions we asked and the ways processes of selection positioned the respondents. Respondents chose what to include, highlight, downplay or omit. This shaping, or interpreting act constitutes a methodological approach through its way of seeing the world.

We were also aware that personal stories could be further represented as deterministic or self-justifying, so we situated the stories alongside theoretical positions and larger stories. The movement of the narrators' stories offered a generative approach for exploration of teacher identities. Bamberg and Georgakoploulou (2008) claim that it is in the navigation process that a 'sense of self' is rehearsed. It is this constant interactive movement between versions of the self, local and political contexts – the smaller to larger and vice versa– that identities are constructed and reconstructed.

Our exploration of the qualities of contemporary teachers in times of 'psychometric mindsets' (McClenaghan & Doecke, 2010) thus arose from the ways teachers' personal stories created a dialogic relationship with broader 'meganarratives' (Olsen & Craig, 2009). The participants' small stories – their language and content choices – engaged with and rubbed up against the themes in the literature: increased outside control and reduced teacher agency, the impact of teachers' childhoods and out-of-school lives on attitudes and beliefs. From this contextual engagement emerged linear narratives, but also inconsistencies and contradictions around which we situated explorations. Positioning and repositioning the ways these teachers told their stories, sometimes juxtaposed through metaphorical lenses, offered us some insights into those teachers who reach for the unknown and beyond.

From our analysis of participants' stories we identified qualities and dispositions of these teachers and will describe in greater detail three of these: leading adventurous lives, being resilient and being able to solve problems creatively. These qualities are interrelated and also identified in the literature as dimensions for 21st century learners (OECD, 2009/2010; Fullan & Langworthy, 2013; Hargreaves & Shirley, 2012).

Adventurous Lives

Living adventurous lives is often thought to be about individuals engaged in dangerous pursuits, taking risks in the wild. Yet there is now a proliferation of literature (Bateson & Martin, 2013; Proyer & Jehle, 2013; Proyer & Ruch, 2011; Nettle, 2002; Chang, 2013; Barnett, 2012; Brown & Vaughan, 2010) which links adventurous play to rigorous work that fosters creativity, and can produce innovation essential for all fields of endeavour. We use the term 'adventurous' to describe our teacher participants and others like them who embrace change, seek new challenges, take risks, are resilient and face fears. They continually expand their teaching and learning both for themselves and their learners. Adventurous teachers undertake a lifelong learning quest, a journey into the unknown both physically and intellectually, building and strengthening their professional identities.

The research undertaken by Proyer and Jehle (2013) and Proyer and Ruch (2011) links adult playfulness with a robust strength of character. Moreover, there are links made to imagination, curiosity, humour and a general state of well-being that adventurous play generates. Lewis (2014) identified three characteristics of individuals who can reap rewards from difficult circumstances. One of these characteristics is the ability to retain the curiosity and the innovation that comes from their childlike perspective. Further, at the NASA's Jet Propulsion Lab (JPL), play is deemed so critical for its engineers' performance that it asks applicants about their hobbies as children. We also recognised the importance of adventurous play as we returned to the childhoods and adult lives of our participants. Lewis understands that many voices are now arguing for an adventurous approach to innovation. We take the view that adventurous living, as Brown and Vaughan (2010) describe it, is a 'state of mind rather than a specific action, noting that almost any action can become play depending upon the spirit with which it is performed' (p. 60). We also endorse the perspective of Bateson and Martin (2013), who describe playfulness as a positive mood state from where the act of playful play starts.

In an introduction to Bateson and Martin's book, *Playfulness, Creativity and Innovation*, musician Kayne makes a bold, thought provoking statement: 'Play will be to the 21st century what work was to the Industrial age' (Bateson & Martin, 2013, p. viii). There is a great deal of support for Kayne's claim (see Brown & Vaughan, 2010; Pink, 2005). For instance, Pink (2005) defines the future of work as the Conceptual Age. In this age, play is deemed one of the six senses that people need to develop to be successful.

The implications of Kayne's statement help to heighten the essential nature of playful exploration. When teachers live adventurous lives in and outside of classrooms, as a process with intrinsic motivation, they can imbue this spirit in their students. They can also feel empowered to initiate innovations that better existing practices. Our six participants exhibited many adventurous qualities as young children and adults that may well have led to their playful spirit as teachers.

Josh, Kate and Sammy were childhood explorers who saw all learning as an adventure and grew not to fear things. The role of the father is also salient here.

Josh writes lyrically about his bush childhood:

My pre-schooling years were spent alone, wandering in the hills and bush. I found a jutting stone on the hillside and imagined it a whale. There was a cleft low down like a mouth and I would sometimes go there and just sit or investigate what lived under stones. I was fascinated by bugs and animals. Perhaps because my Dad was a builder, and even more likely because he had built the hut in which we lived and was building the house we would later live in, I liked to build too. Dad and the others allowed me to 'help out'. There's photos of me holding a trowel beside a stone-work wall under construction, or a small spade beside the septic pit that was being dug. My father also built us a tree-house, which – though high up in the tree that supported it – was only a short distance from levelled ground. A plank spanned the distance and it was initially a test of courage to cross it

The solitary nature of Josh's play enabled exploration and imagination, as he shaped his own mental and physical challenges. It is an immersive childhood world where the freedom to create one's own goals allows adventurous children to rehearse adult roles, experiment and discover. Caine and Caine (1997) contend that those teachers seeking adventure mobilise play in any learning event. One's ideas can be playful as can one's physical explorations of the world. As a teacher, Josh's playfulness is evident in the freedom he encourages in his classroom and the rewards he provides for students' ideas. Josh wants

‘an environment where students can safely take risks, safely make guesses, an environment where errors are opportunities and not to be feared’. Josh encourages dissension through individual and collaborative debate, both with peers and himself as teacher. He also wants exploration to be ‘free range’ within clear opening and closing parameters.

Sometimes, a like-minded adult guides or inspires the play. Kate remembers

trudging through grasslands looking for trapdoor spiders or tiger snakes with [my father] as a kid... I think the connection to nature was a source of wonder and curiosity for Dad which definitely influenced me... I had a lot of free playtime unsupervised.’ She notes ‘Dad really valued history, artefacts, stories of adventure and war’. It is here where teachers, through their practices are modelling the excitement of discovery.

Sammy’s bush childhood allowed him to roam freely. Sammy created his own adventures, his own learning driven to discover what was under the next rock and around the next turn. He recounts:

We had a fairly large property when I was growing up (16 acres). On our property there were a lot of native trees, a couple of dams and a creek and this was my playground. Weekends and holidays were spent (usually with my friend from up the road). Most of my time was spent outdoors exploring and discovering. I was a member of the field naturalists club, I was an avid fisher, I made nest boxes for native animals and hunted feral pest animals.

As a teacher, Sammy transfers many of his bush adventures and discoveries to his students.

I took the students panning in the creek and we found iron-rich rocks at the bottom of our pan, which responded to magnets. We have made and launched (and on occasions crashed and burnt) hot air balloons (with appropriate fire/student protection measures in place! We have crushed soft drink bottles with the power of atmospheric pressure. We studied insulation with a challenge that asked students to insulate a cup of warm water using only 3 different supplied materials.

Another participant teacher developed a fantasy world in childhood. Ben’s father owned a toy store and Ben was a frequent visitor. Ben’s imaginary world was inspired by literature and toys. ‘I was very self-sufficient, and enjoyed being in my own head with my toys, or outside, or even just leafing through toy catalogues, imagining the worlds that these images of plastic figurines might evoke.’

What is striking among these teachers’ recollections is the unsupervised nature of their explorations and the link between this freedom and their imaginations and creativity. This connection bears out in the teachers’ classroom practices, where our participants live and teach playfully. For instance, Kate speaks of sharing joy and laughter with her students. Jennifer also fosters humour in her classroom,

We laugh about our mistakes and don’t the children love it when they are mine! I actually explicitly teach my children a great deal about humour, the need to laugh as it is a great way to encourage them to regulate their emotions and learning (of course).

As an English teacher, Ben rejects an unimaginative approach to texts and mines the literature for its pleasure and social value:

... teachers keep falling back on 'we're reading Hamlet in M5' and that remains the guiding principle: teaching the text. But to me, the purpose is to teach concepts, ideas, creative and critical thinking, and the text is only ever a vehicle for this. As such, I tend to dip in and out of the books we are supposed to be reading (if the book has every one excited, like Alice in Wonderland did for my sixth graders, then I let it absorb more focus).

The teachers we interviewed were childhood explorers and continue that journey of exploration as adults. They appear to be facing fear as an adventure in learning. Josh says, 'I was interested in even the dangerous things, but learned to respect the ways in which they were dangerous and to respond appropriately.'

As adult travellers, these teachers' adventurous spirits took a broader and seemingly more critical focus. For Ben, travel altered his sense of self and his future direction. Moving on from his earlier fear of Japan, he recognised

the importance of an open heart in every new situation... I met a group of Australians in Croatia who told me that my life decisions scare the hell out of them. The thought of leaving Melbourne to live alone in a place like India, then engage in solo trips to weird and wonderful corners of the globe struck them as terrifying. But to me it is the only thing that makes sense.

Josh, another seasoned traveller, had similar sentiments about travel. Josh married a Mauritian and went to visit her family for their honeymoon. He found his learning experience profoundly de-centring, enabling him to critically reflect on his cultural assumptions:

This taught me about culture, about its depths beyond the trappings and festooned shown to tourists. It taught me how much of our own culture has seeped into us from birth and shaped our perceptions of normality. I was again in a linguistic minority, and I was now a cultural minority - far more than I'd been in Europe. French and Italian cultures were familiar enough to me that they had felt grounded even in their exoticism. Here though my stereotypes and assumptions were challenged. I learnt what it was to see one's own culture as an outsider, and to have to explain to others what they see as strange but you see as normal. I learnt too that there is a common humanity in us all, indeed that the commonalities go deeper and outnumber the differences we so focus upon.

Our participants' travels afforded them a global and critical understanding of place and of the 'other.' One group of skills identified as significant for contemporary learners is the capacity to interpret information critically. This requires a capacity to step outside normative practices and develop what anthropologist Clifford Geertz (1973) famously called an ability to make the familiar strange. Our participants willingly adopt outside positions, challenging compliant or taken for granted perspectives. They bring their experiences and beliefs to their students' learning in terms of the texts selected, the questions raised, the way ideas get tested and deepened and the joy in risk-taking and discovery-making.

Resilience

In possession of unbridled freedom, the teachers under investigation appear to have developed qualities of resilience. At times, left to their own devices, they instigated and imagined playful adventures as they navigated their own paths. They also followed their natural curiosity and negotiated many of their own problems. Resilience is dynamic and essential for self-efficacy, confidence and one's ability to cope. For the past three decades, 'resilience' has been studied and discussed in the literature as a necessary quality for our survival as humans and a necessary quality for both learners and, more recently, for teachers (Beltman, Mansfield & Price 2011; Beltman, Mansfield, Harris, 2015; Mansfield, Beltman, Broadley & Weatherby-Fell, 2016, Johnson, Down, Le Cornu, Peters, Sullivan & Pearce, 2015 among others).

Much of this literature on teachers' resilience defines it as an adaptive response to stress and adversity; the ability to 'bounce back'. Resilience assists teachers to overcome challenging situations or recurring setbacks. Beltman, Mansfield and Price (2011) undertook a review to discover how the resilience of teachers is conceptualised in the literature. Not surprisingly, an emphasis in the literature is on early career teachers' stress and issues of their retention. Johnson, Down, Le Cornu, Peters, Sullivan and Pearce (2015) examined early career teachers' barriers to resilience. From this research, Johnson et al. developed a framework of conditions to support resilience in Early Career Teachers and Mansfield, Beltman, Broadley and Weatherby-Fell (2016) developed an evidence based framework of conditions supporting early career teachers' resilience.

Our participants appear to be individuals with a strong sense of independence, self-esteem and self-efficacy. Their stories suggest that this disposition had its beginnings in childhood. Jennifer speaks of her early years (between 3-6 years of age) in the Western Suburbs as being 'a very tumultuous time' filled with adults in a small yet overly crowded house with large adult problems. Living with a mother who suffered from depression forced Jennifer to become resilient. As a teacher, Jennifer assumed the role of a Student Welfare Coordinator. She was anxious to foster resilience in her students through her use of reciprocal journals, making their identities more visible and giving each student a strong voice.

Sammy was also resourceful in the solo explorations of his 16 acre surrounds. This allowed his parents time to deal with the special care required for his younger sibling. While out and about, Sammy played in the dams and a creek on his property and searched for the mysterious creatures that were hidden within.

As a teacher, Sammy shares his adventures and discoveries with his students. He wants to instil a love of science. He discusses a child he worked with who had behavioural issues and often missed a lot of school due to his father's business in America. Sammy states, 'I've tried to engage him with animals and Science. I run a Science environmental Club. It's optional. You don't have to attend. It's such a small school that at lunch I make an announcement while the children are eating their lunch about what I'm doing.'

Josh also explored alone and taught himself to swim. He remembers that he 'climbed relentlessly'. He says

I remember a time when the exterior staircase which would lead to my parents' balcony was unfinished, but I climbed up there regardless and, in trying to leverage myself around the lip of the post and onto the balcony, I fell. It was perhaps three meters. I wasn't supervised at the time; I suspect it was shortly after my sister was born – when I was three. I got up, dusted off and went inside to tell Mum what had happened...

As a teacher Josh tries to encourage risk-taking and problem-solving with his students. He says, 'I think [it's] building the relationships with students that allows them to feel they are safe when taking risks, such as answering a question they're unsure of and encouraging curiosity and questioning is important'. Josh wants students to 'safely make guesses', and he fosters an environment where errors are opportunities not to be feared.

He feels resilience is necessary as it was constantly modelled by his parents as they raised their young family with few comforts. He describes the more rugged aspects of his childhood:

We lived in a log cabin. It had one room, with an alcove of privacy with rustic minimalist plumbing. My parents slept on a mezzanine ledge accessed by a fallen tree trunk on a 45 degree angle, into which clefts had been hacked by an axe to provide steps. I had a small basket which served as a bed and as a car seat. When my sister was born I moved to a larger cot while she got the basket. There was no floor space then so her basket was suspended from the roof by chains (of the sort used as choke-collars for dogs). The shower was pipes bracketed to the raw logs of the wall. The toilet was a drop-box outdoors. There was only hot water if we had gas delivered by the bottle, and only power if we started up the generator.

Adventure and risk-taking in childhood engender confidence in participants' personal strengths and abilities, as well as developing ability to negotiate complications.

Creativity and Problem-Solving

In order to teach to the future, Eisner (2002), Robinson (2011) and Wyn (2009), among others, recognise that children must be prepared, empowered and skilled to find creative solutions to unexpected problems, as they arise. No longer relegated solely to the arts, creativity is fundamental to all learning. Wyn argues that the need for creativity and flexibility, coupled with the ability to solve problems, are 'must-haves' for those who wish to make sense of 21st century living. Kereluik, Mishra, Fahnoe, and Terry (2013) support Wyn's claim as they provide an analysis of the categories of knowledge needed for today's learners and teachers. Their analysis and review identified three broad categories: Foundational Knowledge, Meta Knowledge, and Humanistic Knowledge. Within Meta knowledge they categorise:

1. inventive thinking,
2. creativity,
3. creativity and innovation,
4. creativity and critical thinking,
5. creating mind, and
6. play, design. (p.7)

Psychologist J.P. Guilford (1967) first coined the terms convergent and divergent thinking. Divergent thinking is also loosely called 'lateral thinking'. Edward de Bono (2002) argues that this kind of work encourages the mind to identify past patterns, then move forward along 'side tracks', or in asymmetrical ways to develop innovative solutions. Using their right brain, divergent thinkers can see many solutions to any problem that arises.

While there is widespread recognition that creative problem-solving is a necessity for learners, Robinson (2011) believes schools continue to negate creativity in the way they only

select to educate the mind rather than educate the whole person. Several studies on creativity (Csikszentmihalyi, 1997; Gardner, 1993; Goertzel & Hansen, 2004) examined the childhoods of hundreds of famous individuals. Gardner wanted to enter the worlds of seven modern masters in order to illuminate their contexts, struggles and achievements. He also hoped to better understand the creative enterprise and examine the decades of what he terms the 'modern era.' While schooling was not the main focus of any of the three aforementioned studies, what is salient here is that the notables studied had overwhelmingly negative attitudes to formal schooling. The Wright brothers were encouraged to stay home for months at a time in order to tinker with machinery in their backyards. Ghandi found schooling unappealing, Stravinsky was not interested in school and Picasso claimed to hate school.

It is of interest to note that our participants found their schooling unremarkable. In their narratives filled with childhood memories exploration and discovery, they often brushed aside much of their formal schooling with comments such as: 'I was an outsider,' (Josh); 'I was lonely (Kate); 'I hated secondary school! It was very traditional, with everyone sitting at desks in the classroom.' (Ben). The teachers did, however, mention memorable school moments when learning expanded beyond the classroom walls. Juliet recalled: 'We visited the Brontes' house/museum, the UN headquarters in Brussels, I stage managed A Midsummer Night's Dream.'

Early life interviews suggested that family members had a role in this resourceful process. The development of an appetite for creativity and problem-solving can be seen as capacity-building. Josh credits the value of his problem-solving approach to his father, who was

an amazing problem solver and incredibly creative with his designs of and execution of his work. He would come up with an idea and pursue it immediately. He would find a way around or over or through any complication that presented itself, often thinking outside the box to achieve something. Working with him gave me a sense of the wonder of creating things.

Ben continues to use creative problem-solving approaches as a teacher. He works to reconstruct a learning directive he disagrees with, suggesting both a creative and resilient response. He is told that he must teach *Lord of Flies* (Golding, 1954) as a set text to his Year 7 class, a curriculum decision he finds poorly guided. He argues that he is 'not one to sit behind the defensive claim that students need to learn to endure things they find difficult or boring or inaccessible'. That said, he reconfigures his mandate as something at once more creative and educative:

... we used bits and pieces of it while talking about civilisation, social groups, bullying, survival, etc. It opened a can of worms for dialogue on the tribal nature of the school yard. And part of the experience was drawing connections between Golding's novel, the time and place it was written in, and what it serves to remind us of in our current social context. The students used drama and visual art to interpret the themes of the text, and we kept the focus on the concepts.

With a view towards future oriented education, teachers will need to actively promote creative problem-solving. Real world problems will become opportunities to be wrestled with in collaborative teams employing a range of divergent thinkers.

Recommendations and Conclusion

Through our analysis of the teachers' personal stories we discovered many connections between the teachers' mindsets and the ways they live their lives. The qualities we found essential for 21st century teachers to communicate are also the qualities their students require. These qualities include an adventurous approach to living, resilience and creative problem-solving.

At the start of our study we asked: What kinds of teachers are needed for 21st century learners? We are moving closer to understanding some of the qualities teachers require. Robinson and Aronica (2009) argue that curiosity must become the engine of achievement. Curious teachers who lead adventurous lives have developed resilience and are creative problem-solvers. These are the teachers who can propel those engines. They are able to model and develop the skills that help students build capacity and pleasure in both finding and solving problems.

If current educational practices are to change (and they must), the ways in which pre-service and in-service teachers are selected must change. Broader selection criteria than academic ranking for entry into teaching are recommended. We understand that those students who perform best (receive the highest grades) have learned how to 'do school' well and will therefore be more inclined to accept traditional notions of success.

Through selection, we encourage schools to grow their own prospective teachers with adventurous dispositions. Using interviews (while time intensive) allows candidates to tell their large and small stories. High Tech High is an example of a school that is transforming rather than reforming its practices. The leaders recognise the importance of having teachers with similar growth mindsets. The government has granted High Tech High Schools permission to 'grow their own' teachers. Their website (<http://www.hightechhigh.org/employment.php>) advertises for new recruits who also want to transform learning.

High Tech High (HTH) is a group of public charter schools in San Diego County. HTH's instructional design emphasizes hands-on, project-based learning with adult-world connections. We are committed to building a school culture where there is respect and cooperation among every student, adult, and family. Candidates should be open to a dynamic, collaborative, teacher-driven school where teachers have the freedom to design their curriculum and innovate. We are looking for dynamic hands-on educators who may or may not be credentialed teachers. As part of our innovative team, we have the capability of taking an individual with extensive experience in a field outside education and giving the necessary training to qualify for a CA teaching credential.

As teacher educators, the challenge for us is to encourage Dweck's (2008) growth mindsets through supporting pre-service teachers to move beyond reductive concepts about 'what works' and ask how a sense of play and adventure might offer more generative conditions for learning. Teachers' adventures dare them to go beyond their comfort zones. As adventurers, they playfully explore life in childhood and beyond. They have lives filled with wonder, curiosity and discovery. They are also adventurous travelers, literally or metaphorically, border crossing at the side of characters in literature and through life itself in order to experience other cultures, other landscapes, other selves, their teacher identities and home. As new discoveries are made, these teachers often generate new pedagogical questions of promise and possibility.

It is our belief, along with Palmer (1997), that we teach who we are, far more than we teach what we know. Palmer believes we need to open up a new frontier in our exploration of good teaching. We need to open the inner landscape of a teacher's life. It is in this inner landscape where we are discovering some hidden heroes who help today's students know who they are and help these students start to imagine who they can become. Adventurism in teaching lives requires sustained work we argue, comprising individual and collective effort, forging spaces for curiosity, discovery and play. Imagination and resilience are described in this study as learned as much as innate characteristics. Exploring the backgrounds of our six teachers enabled us to glimpse circumstances and qualities that could be further understood and nurtured in this light.

References

- Bamberg, M., and Georgakopoulou, A. (2008). Small stories as a new perspective in narrative and identity analysis. *Text & Talk*, 28(3), 377-396.
<http://dx.doi.org/10.1515/TEXT.2008.018>
- Barnett, L.A. (2012). Playful people: Fun is in the mind of the beholder, *Cognition and Personality*, 31, 169-197. <http://dx.doi.org/10.2190/IC.31.3.c>
- Bateson, P., and Martin, P. (2013). Play, playfulness, creativity and innovation. Cambridge, UK: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9781139057691>
- Beltman, S. and Price, C. (2011). Thriving not just surviving: A review of research on teacher resilience. *Educational Research Review*, 6:3, 185-207.
<http://dx.doi.org/10.1016/j.edurev.2011.09.001>
- Beltman, S. (2015). Teacher professional resilience: Thriving not just surviving. In N. Weatherby-Fell (Ed.), *Learning to teach in the secondary school*, (pp.20-38). Melbourne, Aust.: Cambridge University Press.
- Beltman, S., Mansfield, C., Harris, A., (2015). Quietly sharing the load? The role of school psychologists in enabling teacher resilience, *School Psychology International*,
- Brown, J.S. and Vaughan, C. (2010). *Play: How it shapes the brain and invigorates the soul*. New York: Avery.
- Caine, G. and Caine, R.N. (1997). *Education on the edge of possibility*. Alexandria: VA: ASCD Association for Supervision and Curriculum Development.
- Castro, A. J., Kelly, J., & Shih, M. (2010). Resilience strategies for new teachers in high-needs areas. *Teaching and Teacher Education*, 26(3), 622-629.
<http://dx.doi.org/10.1016/j.tate.2009.09.010>
- Chang, C. (2013). Relationships between Playfulness and Creativity among Students Gifted in Mathematics and Science. *Creative Education*, 4, 101-109.
<http://dx.doi.org/10.4236/ce.2013.42015>
- Clandinin, D. J., and Connelly, F.M. (2000). *Narrative Inquiry: Experience and story in qualitative research*. San Francisco, CA: Jossey-Bass.
- Connell, R. (2009). Good teachers on dangerous ground: towards a new view of teacher quality and professionalism *Critical Studies in Education* 50(3), 213-229.
<http://dx.doi.org/10.1080/17508480902998421>
- Connelly, F. M. and Clandinin, D. J. (2006). Narrative Inquiry. J. L. Green, G. Camili and P. Elmore (eds.), *Handbook of complementary methods in education research* (3rd edition). (pp. 477-487). Mahwah, NJ: Lawrence Erlbaum.

- Csikszentmihalyi, M. (1998). *Creativity and genius: A systems perspective*. In A. Steptoe (Ed.), *Genius and the mind*. London: Oxford University Press.
<http://dx.doi.org/10.1093/acprof:oso/9780198523734.003.0003>
- Darling-Hammond, L. (2009). Teaching and the change wars. A. Hargreaves & M. Fullan (Eds.), *Changes wars* (pp. 45-68). Bloomington, IN: Solution Tree.
- Dweck, C. (2008). *Mindset: The difference between good teachers and great teachers*. New York: Ballantine Books.
- de Bono, E. (2002). New thinking. *Think*, 1(1), 39-48.
<http://dx.doi.org/10.1017/S1477175600000075>
- Eisner, E.W., (2002). What can education learn from the arts about the practice of education? *Journal of Curriculum and Supervision*, 18(1), 4-16.
- Fullan, M. (1994). *Change Forces: Probing the Depths of Educational Reform. School Development and the Management of Change Series: 10*. Bristol, PA: Falmer Press.
- Fullan, M. and Langworthy, M. (June, 2013). Towards the new end: New pedagogies for deep learning. *White Paper for Global Partnership*. Seattle, WA: Collaborative Impact.
- Gardner, H. (1993). *Creating Minds*. USA: Basic Books.
- Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.
- Giroux, H.A. (2012). Higher education, critical pedagogy, and the challenge of neoliberalism: rethinking the role of academics as public intellectuals. *Aula de Encuentro*, 15, 15-27.
- Goertzel, V. M. and Hansen, A. (2004). *Cradles of Eminence: Childhoods of more than 700 famous men and women*. Reno: NV: Great Potential Press Inc.
- Golding, W. (1954) *Lord of the Flies*. London: Faber and Faber.
- Hargreaves, A. (2009). The fourth way of change. A. Hargreaves & M. Fullan (Eds.), *Change wars* (pp. 11-43). Bloomington, IN: Solution Tree.
- Hargreaves, A., and Shirley, D. L. (2012). *Global fourth way: The quest for educational excellence*. Thousand Oaks, CA: Corwin Press.
- Johnson, B., Down, B., Le Cornu, R., Peters, J., Sullivan, A. M., Pearce, J., and Hunter, J. (2015) *Early Career Teachers: Stories of Resilience*. Singapore: Springer.
<http://dx.doi.org/10.1007/978-981-287-173-2>
- Johnson, B., Down, B., Le Cornu, R., Peters, J., Sullivan, A. M., Pearce, J., and Hunter, J. (2016). *Promoting early career teacher resilience: A socio-cultural and critical guide to action*. Routledge. <https://www.routledge.com/products/9781138817388>.
- Kereluik, K., Mishra, P., Fahnoe, C., and Terry, L. (2013). What knowledge is of most worth: Teacher knowledge for 21st century learning. *Journal of Digital Learning in Teacher Education*, 29(4), 127–140. <http://dx.doi.org/10.1080/21532974.2013.10784716>
- Ledward, B. C., and Hirata, D. (2011). An overview of 21st century skills. *Summary of 21st century skills for students and teachers*, Pacific Policy Research Center. Honolulu: Kamehameha Schools–Research & Evaluation.
- Lewis, S. (2014). *The Rise: Creativity, the Gift of Failure and the Search for Mastery*. New York: Simon & Schuster.
- McClenaghan, D. and Doecke, B. (2010). Multiliteracies: resources for meaning-making in the secondary English classroom, in D. Cole and d. Pullen (Eds) *Multiliteracies in motion: Current theory and practice*, (pp. 224-238) London: Routledge.
- Mansfield, C, Beltman, S., Broadley, T. and Weatherby-Fell, N. (2016). Building resilience in Teacher Evaluation: An evidence informed framework. *Teaching and Teacher Education*, 54: 77-87. <http://dx.doi.org/10.1016/j.tate.2015.11.016>
- Nettle, D. (2002). *Strong imagination: Madness, creativity, and human nature*. Oxford, UK: Oxford University Press.
- OECD. (2009). *The Professional Development of Teachers*. p.64.
<http://dx.doi.org/10.1787/9789264068780-5-en>

- OECD. (2010). *The OECD Innovation Strategy: Getting a head start on tomorrow*. Paris: OECD.
- Olsen, M. and Craig, C. (2009). 'Small' stories and meganarratives: Accountability in balance. *Teachers College Record* 111(2) 547-572.
- Palmer, P. (2007). *The courage to teach*. (10th edition). San Francisco: Jossey-Bass.
- Parr, G., Bulfin, S. and Rutherford, S. (2013). Narratives of/in English teaching and learning *Idiom* 49(3), 2-8.
- Pink, D.H. (2005). *A whole new mind: Why right brainers will rule the future*. New York: Riverhead Books.
- Proyer, R.T., and Ruch, W. (2011). *The virtuousness of adult playfulness: the relation of playfulness with strengths of character*. Department of Psychology, Division on Personality and Assessment, 5, 522-2211. <http://dx.doi.org/10.1186/2211-1522-1-4>
- Proyer, R.T. and Jehle, N. (2013). The basic components of adult playfulness. Its hierarchical factor structure of seventeen instruments, *Personality & Individual Differences*, 55(7), 811-816. <http://dx.doi.org/10.1016/j.paid.2013.07.010>
- Robinson, K. and Aronica, L. (2009). *The element: How finding your passion changes everything*. New York, NY: The Penguin Group.
- Robinson, K. (2011). *Out of our minds: Learning to be creative*. Sussex, UK: A.Wiley.
- Singh, R. R. (1991). *Education for the twenty-first century: Asia-Pacific perspectives*. (91). Bangkok, Thailand: UNESCO Principal Regional Office for Asia and the Pacific.
- Skilbeck, M. and Connell, H. (2004). Teachers for the future: The changing nature of society and related issues for the teaching workforce. *A report to the Teacher Quality of Educational Leadership Taskforce of The Ministerial Council for Education, Employment, Training and Youth Affairs*. (Sept, 2004).
- Wyn, J. (2009). Touching the future: Building skills for life and work. *Australian Education Review*, (55), Melbourne: Australian Council for Educational Research Press.
- Zhao, Y. (2012). *World class learners: Educating creative and entrepreneurial students*. New York: Sage Publication.