

SCHOOL REQUIREMENTS FOR ADOPTING AND SUSTAINING MEANINGFUL
LEARNING FOR THE 21ST CENTURY

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“The positive development of a society in the absence of creative, independent thinking, critical individuals is as inconceivable as the development of an individual—the absence of the stimulus of the community.” Albert Einstein

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ABSTRACT

This thesis examines *meaningful learning* as a means of addressing the needs of students in schools of the 21st century. Situated in the context of a wide range of approaches, three are selected for study: problem based, integrated/thematic and mantle of the expert within process drama. The barriers to meaningful learning being implemented in school are discussed along with implications for school leadership.

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INTRODUCTION

I taught Process and Performance Drama with students' ages 11 to 16 as part of the British National Curriculum requirements. As a result of taking part in the Drama class and caring about the good work outcome of each drama and how it related to their own experiences and environment, students chose to engage in learning practices essential for the 21st century. Students proved to their teachers, parents and themselves that they had become aware of how to think and learn responsibly, using language and their imaginations in order to be able to remake and re-do structures of meaning for themselves. They worked safely and successfully with students not in their clique, became more accomplished and confident in their multiple literacy skills to support their emotional literacy, technological literacy, speaking, listening and print literacy and made internal connections in an integrated way across cross – curricular themes and content, using drama as a learning tool. They also acted and performed in plays both scripted and self devised at the Drama Club after school. From my training in how to teach process and performance drama and through use of the drama curriculum I devised for my students within and beyond the English and Drama National Curriculum guidelines I understood how drama was a powerful way for students to make necessary internal connections about their learning, using their internal audience, which is themselves, during process drama and for confidence building and interaction with an external audience during a dramatic performance or school assembly. They learned to work maturely, use their imaginations productively, think critically and creatively and dealt with problem solving challenges by producing novel creative outcomes for themselves.

The Office for Standards in Education in England (OFSTED) were informed during the last school inspection that the school and parents had fully supported this teaching approach by

allowing one hour a week of curriculum time for each class in each year group. As the drama curriculum instructional supervisor I had put into place a developmental plan over five years with goals and on going research allowing it to be successful in the long term. The classes had, by engaging students at the affective as well as the cognitive level motivated general interest from which students saw a personal reason to want to think and learn and develop study skills. Parents felt the drama lessons' integrated approach enabling communication with other subject teachers as part of a team about the students meaningful learning, plus other drama initiatives with students and teachers at local higher educational establishments, contributed to their children being more successful in school, able to confidently move on to higher education and contribute good work to the community by living skilled and better lives.

Educators who have tried to respond to the needs of students by creating classrooms where meaningful learning occurs have found it a problem and difficult at best. Some of the barriers include different value positions, conflicting mandates, and fear of student failure, lack of dedicated time using new approaches and lack of support for time to learn new approaches.

Consequently, I selected *meaningful learning for the 21st century* as the area of study for this thesis. My previous teaching knowledge and current learning on my master's curriculum instruction supervision course motivated me to want to analyze dealing with change, and understanding and defining meaningful learning for the 21st through process drama and other approaches. I have reviewed the literature to inform the discussion of meaningful learning and the various tools and approaches used to accomplish this type of learning. I have selected the following three approaches to analyze in depth: problem-based, integrated/thematic and Mantle of the Expert within Process Drama. These all offer a range of choice for teachers and schools needing different entry points for the implementation of meaningful learning.

The North Carolina Standard course of study (2006) stated that students in modern society must be prepared to “Compete in a global society, apply high level thinking skills to make decisions and solve problems, become independent, self-reliant, and collaborative as learners, have ambitious and honest senses of their own strengths needs and capabilities, enjoy and have a positive mindset about school and their learning as well as learning by their peers” (Introduction).

Therefore, in the final sections of the paper, I identified what was needed for a nation, schools and teachers to change and adopt meaningful learning in school and discussed the implications for leadership and research. This will enable curriculum instruction specialists to choose and adopt successfully the approaches they need in school to produce 21st century problem solvers, critical and creative thinkers and self regulated learners.

CHAPTER ONE: Meaningful Learning for the 21st Century School.

Chapter One will discuss what meaningful learning is for the 21st century and make a case for its adoption in schools today. Many authors such as Fisher, Novak and Gowin, Bridges, Zemelman, Daniels and Hyde and Jonassen have come to use this concept of schooling or of learning to describe a framework for producing powerful learners who are independent thinkers, cooperative, collaborative, learn how to learn and have problem solving skills. In schools where such approaches to meaningful learning are used, the authors believe, students engage in robust cognitive and social tasks and work collaboratively on projects and problems. Learning is always purposeful, contextualized and actively engages students in constructing their own knowledge. Students become socially and emotionally involved in their learning yet are able to become independent learners as well. Wilhelm and Edmiston (1998) noted that an integrated curriculum focuses on knowing how much more than knowing about. Knowing how they believe leads to further learning and is integral to creating and finding meaning in life.

Fisher (2005) contended that the 21st century's changing view of society, children and schools has meant a greater emphasis on the process of learning, problem solving, reading for meaning, reasoning in writing, study skills and developing autonomous ways of learning. Technology, he believed has both created and destroyed jobs. Therefore jobs grow where technology opens new opportunities. Because society is changing so rapidly it is difficult to assess what factual knowledge will be needed for the future. Whatever the future holds, Fisher argued, the focus should be on teaching meaningful learning and specifically on the gaining, organizing and using of information.

Jonassen (1999) contrasted the concept of meaningful learning in words and as an interconnected diagram (Figure 1) which displays how the process of meaningful learning is both a visual and linguistic experience. He explained it as an active process where we interact with and use the environment. It involves reflective processes which allow us to set our own learning goals, in an appropriate context, within a cooperative community, in which we all help each other learn. He described it as:

- Active (manipulative): We interact with the environment manipulate the objects within it and observe the effects of our manipulations.
- Constructive and reflective: Activity is essential but insufficient for meaningful learning. We must reflect on the activity and our observations, and interpret them in order to have a meaningful learning experience.
- Intentional: Human behavior is naturally goal-directed. When students actively try to achieve a learning goal that they have articulated, they think and learn more. For students to experience meaningful learning, they must be able to articulate their own learning goals and monitor their own progress.
- Authentic (complex and contextual): Thoughts and ideas rely on the contexts in which they occur in order to have meaning. Presenting facts that are stripped from their contextual clues divorces knowledge from reality. Learning is meaningful, better understood and more likely to transfer to new situations when it occurs by engaging with real-life, complex problems.
- Cooperative (collaborative and conversational): We live, work and learn in communities, naturally seeking ideas and assistance from each other, and negotiating about problems and how to solve them. It is in this context that we learn there are numerous ways to view

the world and a variety of solutions to most problems. Meaningful learning, therefore, requires conversations and group experiences.

Jonassen and a wide range of authorities who have studied teaching and learning have come to a consensus about the activities and approaches used to accomplish meaningful learning. Zemelman, Daniels and Hyde (2005) identified overall educational principles that call for schools that are student-centered, experiential, expressive, reflective, authentic, holistic, social, collaborative, democratic, cognitive, developmental, constructivist and challenging. Throughout their text, best practices for meaningful learning are outlined in every discipline. Structures for teaching it are outlined as well as recommendations for change efforts.

Joyce, Weil and Calhoun (2004) reiterated their part in the consensus when they articulated that models of meaningful learning should be inclusive, where everybody can learn. To accomplish this they emphasized using the following concepts: Constructivism, Metacognition and Scaffolding, zone of proximal development (ZPD) and roles of expert performance when developing goals.

Bridges (1995) argued the case for problem stimulated learning as part of meaningful learning. He commented that this approach develops problem solving skills as well as the acquisition of the knowledge base required for practice. PBL activates prior knowledge, contextualizes learning and provides opportunity to apply learning.

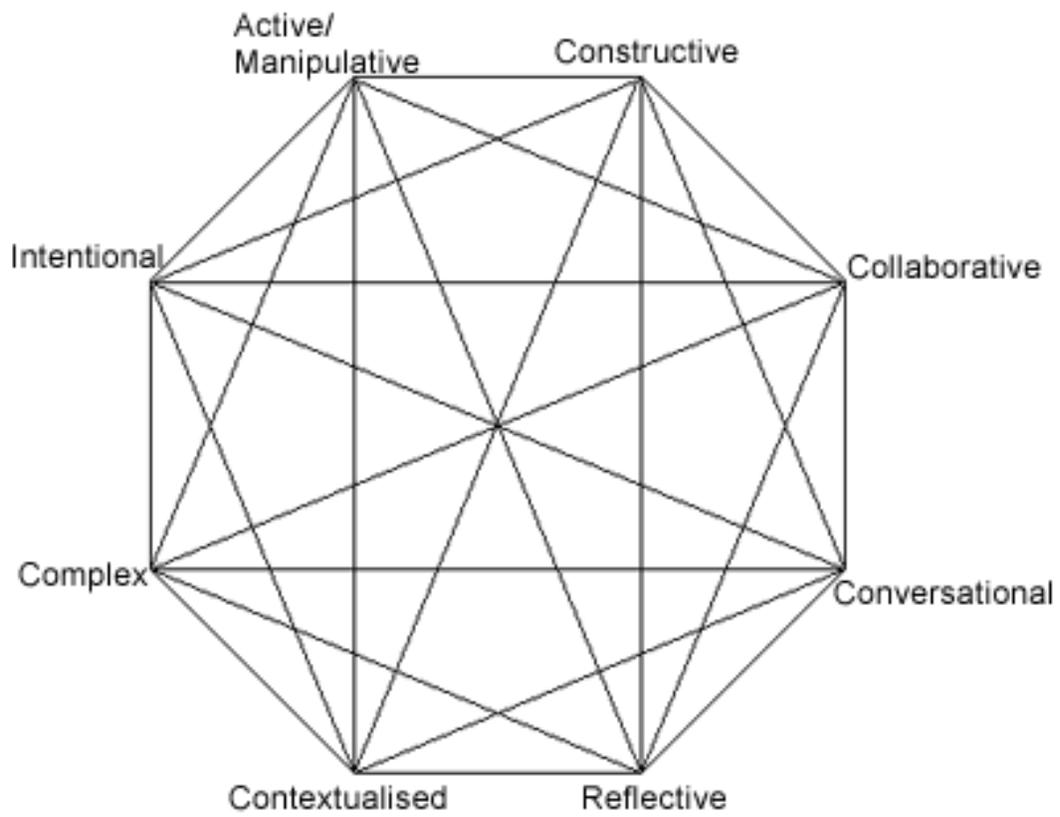


Figure 1: Attributes of Meaningful Learning

(p. 64).

Adding detail to the principles of meaningful learning Etim (2005) believed it is accomplished within the learning context of curriculum integration:

Curriculum integration involves helping students see and make connections between and among subjects. It is a pedagogical approach that is student centered and focuses on a theme organized around real life issues and problems drawn from several subject areas. Subject boundaries are lost and concepts such as democracy, cooperation and cultural diversity are encouraged and practiced (p. 3).

According to Etim, curriculum integration was not a recent finding. In the 1930's the Progressive movement advocated a problem centered curriculum, which is similar to the present day integrated curriculum. John Dewey (1956) in his writings called for the balancing of three curricular sources: needs of the learner, demands of society living in a democratic society and the subject content, all parts of current understanding of curriculum integration. Advocates of this context for learning contend that traditional subjects have been largely fragmented and not responsive to students' needs whereas integration caters for their personal and developmental needs.

Contrasting with Etim's approach, Bolton and Heathcote (1994) stated the case for accomplishing meaningful learning through process drama and use of Dorothy Heathcote's Mantle of the Expert approach, where students and teachers together take on the role of experts within an enterprise. Bolton emphasized:

Theatre can create an impetus for productive learning across the whole curriculum. A Mantle of the Expert approach is like a spiral, a continuous path followed by the students through knowledge into theatre and theatre into knowledge on a more and more sophisticated plane as they develop responsibility for their own learning (p. 5).

Bolton, through questions to Heathcote pinpointed the independent thinking required within this meaningful approach and why it is also known as theatre “If, for the most part the activity looks like meaningful learning engagement far removed from theatre, how useful is it to insist that theatre is what it is?” Heathcote replied:

Mantle of the Expert does not take the place of theater oriented work. Nor does it challenge the theater teaching traditionally found in school. It uses the same laws: people wear their “mantle” (i.e. express their interests, habits, and style) in juxtaposition with others in active expression. They use their expertise and knowledge to move along different highways: the actors’ project personality and bondings with others to others who are watching; the students actively bond as colleagues set on tasks to supply their clients (the “audience in the mind”) (p. 191- 4).

Fisher (2005) contended further for the expert approach when he argued that if not encouraged at an early age, children would stop independent thinking, speculating and playing with ideas. He felt they needed to be able to think critically and creatively as part of meaningful learning to prepare them for a fast thinking world. Creativity, he defined “consists largely of rearranging what we know to find out what we don’t know. To think creatively we need to look afresh at what we usually take for granted.” Critical thinking was “thinking that evaluates reason.” The child learns to apply as a reasoned person some form of judgment and evaluation to beliefs. He concluded “creative thinking supplies the context of discovery, the generation of hypothesis. Critical thinking provides the context of justification, testing the acceptability of reason and proof” (p. 24-27).

In summary there are many approaches to be included in the definition of meaningful learning that are supported and understood by a wide range of authorities and researchers. The

principles and activities that are recommended are similar across the professional literature and should be taken seriously if we want students to have the potential to be life long learners.

Besides the professional community there are others calling for the adoption of a meaningful learning approach in schools today. Educational organizations, businesses, political organizations and think tank groups also supported the inclusion of this approach to produce the kind of students required for a fast thinking 21st century global society. The North Carolina Standard course of study (2006) stated in detail the need for meaningful learning for the 21st century when it articulated that learning should:

- Mirror the world in which we live
- Motivates students by making learning relevant to their personal lives.
- Adds coherence to vast amounts of information by making connections among disciplines.
- Addresses the overcrowded curriculum by viewing content as a “means” not an “end” (Introduction).

Recent debate at a Community for Learning (CfL) event – “Learning to Learn” 9th April, 2003 highlighted that more needed to be done in British schools to prepare young people for working in the 21st century. Speaker David Hopkins illuminated how the current mode of schooling needed to be updated to meet the needs of the individual student rather than a same education for all approach. Bill Lucas argued that Reproductive Learning, which was adequate for maintaining an existing system and way of life in the late 20th century, was no longer enough for the 21st century. Learning needed to be deep, meaningful, interconnected and innovative for the student to be able to both accommodate and shape the future. Skills for learning for life were essential to meet the needs of changes confidently. Rapid development required that there be

more time for teacher dialogue to plan for the continual updating of curriculum changes. Plus professional development for understanding and updating approaches to learning how to learn and think critically and creatively. To achieve all this required radical changes of timetabling and a better understanding of how the brain functions through the developing research. Lucas judged that if these changes occurred it would help with the employment and retention of good teachers who quickly became disaffected with their profession by having to meet the needs of a 21st century meaningful learning and teaching approach with a late 20th century overly prescribed one.

The speakers' notes from the Community for Learning (CfL) event - "Learning to Learn" 9th April, 2003, New Connaught Rooms, London provided by DEMOS demonstrate the current teaching dilemmas contained in dialogues about schools and learning. DEMOS are a strategic advisor to the National College for School Leadership (NCSL), a new organization which offered career learning and development opportunities for teachers. Working with NCSL their goal was to develop 'networked learning communities', which enabled teachers to share their professional best practice. It described itself as a think tank for everyday democracy. With backing from the Department of Education and Skills, this project incorporated a unique approach described as 'real time research'. Demos also have a role in identifying and communicating process and content knowledge that the programme generates to relevant national policy makers. First speaker Bill Lucas, a Strategic Consultant in learning and motivation for organizations in all sectors stated:

1. "Learning to learn" is not a quick fix. We don't need "learnacy" like we have literacy or numeracy strategies or "yet another initiative" of any kind.
2. Learning to learn is:

- a set of deep learning strategies
 - a model of how we learn
 - a language to describe what is really important
 - We need a discourse about learning.
 - It is an approach to learning that is respectful of the learner.
3. In a recent large scale survey, 63% of students reported that they spent very high amounts of their time in school copying from the board and 37% said they spent very high amounts of time listening to a teacher talking.
4. At present in our education system, educators don't learn how the brain works.

Why is learning to learn so important Lucas asked?

- Results go up. Assessment for Learning has produced evidence.
- Preparation for life. Resourceful and resilient.
- Improves teacher retention = motivated, why teachers entered the profession.
- Fun

We want to create a cultural and physical environment that is: high challenge, low threat; fit for purpose, etc. David Bell, Chief Inspector of Schools in the UK, has said schools are over-tested. Public examinations ought to be a celebration of achievement. Pupils should fail and enjoy it. Helping parents to see this is probably as important as helping students learn to learn and educating teachers.

Lucas made the following recommendations:

- There needs to be a shift from informed prescription to informed professionalism.
- Prescription from the centre will not do alone.

- What are needed are powerful learners who can take their place in the knowledge society.
- The government was committed to building programmes and now it needs to be concerned with building capacity.

David Hopkins, Business Development Manager (local Government and Regional Communities) for Siemens Communications, the second speaker continued Lucas's argument "There is a need for a more radical, dramatic next phase in school improvement, where the system becomes able to adapt to students' needs and dissatisfaction with the out-of-date "factory" model of schooling is left behind.

The National Council of teachers of Mathematics article by Perkins and Flores (2002) added to the plea for the changes in teaching approach when they contended it was often students who lead the way in showing teachers how they should be teaching them "How important it is for teachers to be open to alternative procedures and strategies that students may use. A method that is meaningful rather than one learned by rote will help students develop more confidence and understanding" (p. 262).

The National Council for Science and the Environment included an article by Anderson and Okhee (1997). The authors reiterated Perkins and Flores argument and elaborated how it was the students who were able to lead their own learning. This along with the teacher's knowledge of where the student was conceptually and personally and emotionally brought about much more effective understanding in their learning:

No matter how tightly students' classroom behavior is controlled and guided by teachers and curriculum materials, students always retain personal control over their attention and effort. Thus effective science instruction must start with understanding students' personal

agendas and commitments, as well as their conceptions and learning processes in science. Much of the research on science teaching and learning during the 1980s demonstrated one reason for this persistent pattern of under achievement: most science programs simply did not provide students with opportunities to learn with understanding (p. 6).

Weissman (2004) added to the need for the personalization of learning when he contended that teaching through the arts emphasized the student's ability to apply new learning by themselves to new situations. That brought about meaningful learning through a perspective shift that related to the standards of the real world. He described this approach:

The Consortium on Chicago School Research found that when students are engaged in “authentic intellectual work,” they not only are more engaged with their schoolwork, they tend to gain more ground on standardized tests than do students who receive the kind of rote, skill-based instruction that is intended specifically to prepare them for the tests. The consortium defines authentic intellectual work as activity that demands disciplined inquiry into a subject, requires students to digest knowledge thoroughly enough to apply it by themselves to new situations, and sets real-world standards for students' work products (p. 24-25).

He pointed to learning through the arts as having met the need for a meaningful perspective shift:

The Chicago Arts Partnerships in Education director Arnold Aprill argued that this kind of perceptual shift - the way people's thinking changes happen when the arts become a serious pursuit, rather than a momentary diversion – is an important reason that arts belong in the schools. People will often say it is about creativity or it's about critical thinking. The thing that artists do all the time are the things that kids need to be able to do – forming alternative solutions to a problem, working with other people, being persistent,

adjusting something after you've made a choice, taking responsibility for decisions, looking at options (p. 24-25).

The North Carolina Standard course of study (2006) reiterated the need for students to be able to apply learning in new situations by themselves. The course of study demanded students in modern society to be able to:

Compete in a global society, apply high level thinking skills to make decisions and solve problems, become independent, self-reliant, and collaborative as learners, have ambitious and honest senses of their own strengths needs and capabilities, enjoy and have a positive mindset about school and their learning as well as learning by their peers. American businesses seek students who can apply what they have learned from years of public schooling (Introduction).

In *Frameworks for Thinking: A Handbook for Teaching and Learning* (2005) the authors also insisted that learning in the 21st century required high self regulated literacy and thinking skills. During the second part of the past century, the objectives of “education for all” have shifted from the acquisition of low-literacy skills such as computation, reading and memorized knowledge to a focus on high-literacy skills such as problem solving and critical thinking, and more recently, the self-regulation of one’s learning and thinking.

Zemelman, Daniels and Hyde (2005) maintained that it is Government and Legislators, the accountability standards movement, that are holding back the development of education and meaningful learning, despite demanding it. Their emphasis on schools testing, often in rote ways will ensure education will remain basic and firmly in the 20th century. Curriculum professionals have the knowledge to move meaningful learning forward to meet the demands of the 21st century but are currently not able to do so. The authors judged that there are now two largely

contradictory school reform movements. The inside group, the curriculum standards movement, who believe the key to school improvement lies in more authentic curriculum and revamped teaching methods. The outside group, holding center stage, usually called the accountability standards movement. This believed that schools will improve through tighter controls, more regulation, and frequent high-stakes standardized tests with tough consequences.

In conclusion schools have not produced students who can function effectively in the 21st century global society. However the business community, national and state curriculums, international think tanks as well as current researchers reported that we know enough to produce meaningful learning. Schools are expected to produce knowledgeable and skillful learners. Local, state and national mandates require this. There are meaningful learning approaches already developed and being implemented with some success in some schools. Chapter Two will overview the meaningful learning tools and analyze three viable approaches. The characteristics that are common across the approaches will be presented in a fourth final table and evaluated.

CHAPTER TWO: Approaches to Address Meaningful Learning

Chapter One discussed the case for meaningful learning in schools. It included the various arguments made by school professionals, local, state and national standard makers, political think tanks, authors and communities in support of the importance of meaningful learning to prepare students to meet the demands of the 21st century. This second chapter begins by giving an overview of some of the current research and tools for making meaningful learning that authors articulate. In the next part the chapter analyzes three specific approaches to making meaningful learning. These were chosen as integrated learning initiatives and were included in the North Carolina Standard Course of study as ways to make meaningful learning. The theories and methodology of application of each approach in school will be summarized in a table as well as analysis of each category of curriculum, organization, instruction, assessment and teacher and student role. Each approach will then be evaluated for its ability to provide meaningful learning using Williams' creative, cognitive – affective Theoretical model and Blooms six highest thinking skills model. The discussion will conclude with a summary of the common characteristics amongst all the approaches that constitute meaningful learning for the 21st century.

Joyce, Weil and Calhoun (2005) claimed there were a number of overall tools that applied to enhance meaningful learning. Constructivism, they articulated is not a political stance arguing between what is taught versus how meaning is created, but an overarching thematic tool to “teach the students to improve their capacity to both generate knowledge and work together with their peers to create productive social and intellectual relationships – constructing knowledge in the academic, social, and personal domains simultaneously” (p. 12). This view

they argue meets the educational needs of a more global 21st century. Their understanding of social interaction enhancing academic learning and preparation for citizenship and a satisfying social life has been well documented and is not a new idea. Aristotle and Plato wrote about social interaction as did Locke, Franklin and Dewey throughout the first half of the 20th century. Joyce, Weil and Calhoun (2005) understood social-family models to be a relevant tool for deeper understanding. They argue “Tasks requiring social interaction can be designed to enhance academic learning. The development of productive social behavior and academic skills and knowledge are combined” (p. 203). This approach reduces unproductive social conflict and allows for more meaningful and socially acceptable learning.

Metacognition the authors made clear was another overarching tool to use so that learners were not passively reacting to the environment but increasingly conscious of how they learned and thought, expanding these abilities with each task, and monitoring their progress. In this way they developed executive control of their learning.

Scaffolding, the authors rationalized, was another excellent tool for improving students’ learning-to-learn skills including comprehension and problem solving skills. For example, when reading with students, they theorized, the teacher developed questions about the texts, summarized with the students what was learned, attempted to clarify word meanings and made predictions about what might be in the next paragraph, leading to better student understanding of the text and eventually to students being able to do this process for themselves.

One of the most challenging concepts, the authors argued but vital for meaningful learning was “to generate goals and processes that are in reach of the students but not beyond their grasp” (p. 18). Known as the zone of proximal development (ZPD), this tool required understanding of where a student was in their learning including knowing when to put a student

to work in a larger group. The authors recognized that optimal environments for students to progress towards complexity and flexibility required “matching those persons present stage of personality development to an environment tailored to the characteristics of that stage, but in such a way as to pull the individual toward the next stage of development” (p. 21).

Following on from this, was the role of expert performance, which challenged the idea that curriculum, especially in early grades be kept within the experience of the child to provide merely ladders of competence. The authors argued “Being expert, introduced students to top level performance early, whilst acknowledging their expert behavior was contingent on their development capability” (p. 22).

Marzano, Pickering and Pollock (2001) described research based strategies for meaningful learning as including: identifying similarities and differences, summarizing and note taking, reinforcing effort and providing recognition, homework and practice, non linguistic representations, cooperative learning, setting objectives and providing feedback, generating and testing hypotheses, and cues, questions and advanced organizers.

Authors Novak and Gowin (1984) added two more tools for meaningful learning the use of concept or thinking maps to see the meanings of learning materials and the Vee heuristic for understanding knowledge. Concept maps are visual representations used to focus both teacher and student on the ideas to be learned and whether, during summary these ideas had been understood. They were intended to “represent meaningful relationships between concepts linked by words to form a proposition” (p. 14). Concept mapping was available in various forms such as circle and line, appropriate for the pattern of the learning material. It enabled increased meaning, both visually as well as linguistically and resulted in a precision of meaning for a particular concept. Thus “grass is green, grass is a plant, grass grows, and grass is a monocot” (p. 14) .The

Vee was first developed by the author Gowin in 1977 as a learning tool to understand the structure and meaning of knowledge and how humans produce knowledge. It “illustrated the conceptual and methodological elements that interacted in the process of knowledge construction” (p. 15). The V shape had the object or event outcome at the base of the V, the list of theoretical/conceptual ideas about achieving the object or event were on the left and the methodology of what happens on the journey of discovery to this event or object were on the right. The question was in the middle of the V and was to be resolved by the interaction of both left and right. Information or knowledge was added to both left and right sides as more was discovered when trying to answer the question to get to the desired outcome.

The advanced organizer was another tool created to enhance meaningful learning by theorist David Ausubel. Authors Joyce, Weil and Calhoun (2005) explained “It was designed to strengthen cognitive structures of student knowledge of a particular subject at any given time by working on how well organized, clear and stable that knowledge was” (p. 189). Although it was a receptive form of learning, it was not passive. Students were given generalized ideas about a topic first, followed by a gradual increase in detail and specificity so that as the student reflected, the concepts became a stable part of the student’s cognitive structure. Ausubel believed that new ideas could only be learned when they related to already available concepts. It was, he concluded, up to the teacher to sequence the material within appropriate concepts. Then the student would incorporate and retain new learning.

Howard Gardener (2000) took a more abstract approach and wrote that meaningful learning should enhance a deep understanding of three principles: truth, beauty and goodness. His Good Work project discussed teachers needing to go beyond teaching academic knowledge to trying to meet the needs of the whole child and enabling the student to understand what

producing excellent work means. He also understood that the use of intelligence for meaningful learning was not a general structure but one of multiple intelligence tools. These he described as, linguistic, logico-mathematical (these are the two most associated with intelligence), scientific, visual/special, musical, bodily – kinesthetic, interpersonal and intrapersonal or as he refers to them ‘frames of mind’. Existential intelligence, Gardner believed was one he was still musing over and he felt there were still many types of intelligences yet to be discovered. He encouraged teachers to develop each one of the intelligences in a student for meaningful learning to occur. This would also further students’ own skill and understanding of these learning approaches. Far from the standardized test and fact based approach to learning, he hoped the education system would provide humane, intrinsically motivating learning approaches, to enable young people to be self motivated and able to rise to the challenges of the future.

Gardner stated (2005) that the framework for his soon to be published book, *Five Minds for the Future* included, five tools for meaningful learning that take into account the intellectual thirst of the individual as well as the role of a person within the framework of society and humanity. The five minds—disciplined, synthesizing, creating, respectful, and ethical—differ from multiple intelligences by working in a more synergistic fashion as opposed to separate categories of intelligences. The disciplined mind Gardner argued, masters bodies of knowledge and skill and is not simply knowing a particular subject but learning to think the way people who are experts in the field think, and students should develop this by the end of secondary school. The disciplined mind was one that worked regularly on a topic or skill, thereby bringing about steady improvement to a level of excellence. It was also one that has mastered major disciplinary ways of thinking; whether a piece of scientific reporting was credible and able to examine a current event and determine the appropriate historical analogy. In general, Gardner believed, it

took years to acquire a disciplined mind, as one that thinks differently about scientific findings or historical events, than does an unschooled mind, or one that does not think about them at all.

Unless one has acquired a certain amount of disciplinary thinking, one cannot Gardner felt, acquire the skill to synthesize or integrate knowledge. The second type of mind, the synthesizing mind, is defined by a mind that can surf the web, deciding what to focus on, what's important and by probing further, what to ignore, and putting that knowledge together in a way that makes sense to the learner and other people and is useful. With a dearth of information about synthesizing knowledge in textbooks, Gardner believed he is now faced with the challenge of uncovering what goes on as people synthesize, what is good versus bad synthesis, and how to enhance the process from always beginning from a particular perspective or goal.

When discussing the creative mind, Gardner pointed out that disciplined knowledge is necessary for synthesizing and synthesizing is necessary for creativity. In creating knowledge, the mind goes beyond what is given or what is known, into the unknown. It ventures regularly into new unexplored territory developing new ideas, concepts, stories, theories, skills and seeks to demonstrate that they are desirable, needed even indispensable and today, creating is a premium and not an option. While one needs a certain amount of discipline and synthesizing to create, too much of either will stifle creativity. To foster creativity in the classroom, Gardner recommended that teachers model novel approaches and answers to questions and indicate to students that those responses are legitimate. To exhibit a creating mind, the student must be comfortable in taking risks, willing to make mistakes, pick themselves up, and try again. Students should be encouraged to come up with innovative approaches, discussing ideas that did not work and alternative models. There should also be study of examples of creative ideas, actions, behaviors, figuring out how success was attained, and what obstacles had to be

overcome. To nurture a creative mind, Gardner added it is less important to impart huge amounts of knowledge, and more important to cultivate a questioning; even a challenging frame of mind.

While the first three minds are more cognitively oriented, the last two, respect and ethics, have more to do with personality and emotion and the treatment of the human sphere. The respectful mind prizes diversity and tries to work effectively with individuals of all backgrounds. Gardner indicated it has to do with how we think and relate to other people, most importantly to other people around us. While this mind develops at a relatively young age, a kind of intuitive altruistic sense of reaching out to those around us, attempting to understand differences and work with them, the ethical mind proceeds from principles. It seeks to act in ways that serve the wider society. It is more abstract, and generally develops during adolescence. It has to do with fulfilling one's responsibility in the world in terms of job role and as citizen, thinking in terms such as I'm a teacher...journalist...physicist, and carrying out that role in the most professional way possible.

Gardner described the dilemmas teachers often face, struggling between respect and ethics. He does not see them as isolated categories, but as a general taxonomy followed by respect before ethics, discipline before synthesis and ultimately creating. Within the classroom, a teacher is faced with the challenge of deciding whether to have students work synergistically, or focus and build on strengths.

In today's educational system Gardner noted, teachers often must deal with personal challenges of respect versus ethics. The battle, for example, of teaching to the test versus presenting a broader, richer more meaningful curriculum, leaves a teacher with the choices of: maintenance—the job is simply a necessity in order to pay one's rent; guerilla warfare, saying

yes, and then asking for forgiveness after acting in the opposite manner; or domain expansion, changing the current institution, or finding a new one.

Gardener (2000) also explained how the tool of brain science has contributed to our better understanding of enabling meaningful learning. He believes we now understand how the memory works in different ways, short term vs. long term, semantic vs. episodic and motor and linguistic. In addition, he argues that brain science has shown linguistic symbols, whether presented through speech, writing or sign are processed in the same way and differently from numerical symbols. Finally, brain science has established that the brain's hemispheres show different numerical capacities and there are unusual ties between certain abilities such as color, naming and reading. He stressed, as Fisher (2005) did, that in terms of meaningful learning, brain science indicates that early life experience has particular importance for later life. So meaningful learning, in a general sense, should begin in the first months of life. Gardener stressed that having brain tissue and potential connections at birth were not enough: the tissue has to be stimulated by appropriate sensory perception and then used actively. The early nervous system needed to become flexible through appropriate meaningful exercise to help us later on in life.

Research, Gardener contended, showed the brain learns best when it was actively involved in exploring the physical and the material and asking questions to which it craves answers. The brain, he indicated, can also specify abilities and talents. Gardner confirmed that playing a musical instrument early in life might help other cognitive domains, such as spatial processing. This indicated that certain activities may be privileged in the organization of subsequent experiences in school. He remarked on research findings about the crucial formative

role of emotions in learning. Positive experiences that have emotional consequences, he stated, are likely to be retained and utilized as long as the brain is not impaired.

In contrast to Gardener, Wolff (2003), argued that although early intervention is vital, more recent research indicates that plasticity confirmed that the brain continue to develop, learn and change until advanced senility or death intervenes. Periodicity, he elaborated, refers to sensitive periods or windows of opportunity when the developing brain is particularly sensitive to certain stimuli and very ready to learn. Rather than just providing one experience to help another, Wolff specified arranging educational experiences in accordance with these sensitive periods. He felt it is particularly appropriate for language learning, where it has been shown that the brain has been hardwired for language acquisition up to the age of thirteen. This finding is at odds with the educational policies of numerous countries in which second language learning starts at thirteen.

When thinking about technology as a meaningful learning tool, Haddad (2003) wrote that research and experience have shown that information and communication technologies (ICT's) when well utilized in classrooms, enhance the meaningful learning process. They are tools that allow materials to be presented in multiple media for multi-channel learning. Different students learn differently and different concepts are acquired through different paths of learning. ICT's motivate and engage students with the learning process by bringing abstract concepts to life through images, sounds, movements, animation and simulation; they foster enquiry and exploration and provide opportunities for students to practice basic skills. They allow students to utilize the information acquired to solve problems, formulate new problems and explain the world around them, keep up with technological developments, provide access to worldwide

information resources, bring the world in a cost effective way into the classroom and offer via the Internet a platform for communication as if there were no geographical boundaries.

Fisher (2005) noted that teaching students the tools of creative and critical thought allows for increasing flexibility of choice and quality of decision making. While creative thinking however was exploratory, teaching students the tool of critical thinking required them to become skilled in logical, analytical reasoning. He believed both are used in an interconnected way and students need to learn how to use them together to enable future meaningful learning. Creativity, Fisher remarked, is not just a case of creating new solutions to problems but better solutions, and this requires critical judgment. To make meaningful learning, he concluded, students also need to feel safe and have psychological freedom within acceptable limits for symbolic expression, as the teaching molds them to the needs of society. They will, he added, tend to create, like all of us, for those they love.

This discussion concludes the first part of chapter two and the summary of ideas of meaningful learning through some of the tools required for implementation. The next part of the chapter will discuss and evaluate the three chosen approaches to meaningful learning.

Each of the three approaches is set in a table which has two analyzing categories, the educational theories behind the approach and the methodology of application of the approach. The theories and methodology of each approach's category of curriculum, organization, instruction, assessment, teacher role and student role is evaluated. Conclusions about the meaningful learning ability of each approach are evaluated through the use of two theoretical models on frameworks for thinking. The first one as described in *Frameworks for Thinking* (2005) represents the ideas of Williams' cognitive-affective interaction model for developing thinking and feeling processes. Williams believed both cognitive and affective domains worked

together to produce motivation, learning and innovative creative outcomes. This view supports the views of other authors presented about what motivates meaningful learning. Williams' theory advocates developing different teaching strategies and adopting different teaching roles across a range of subjects to bring about changes in students' cognitive and affective domains, thereby moving them towards a higher level of creative thinking. The second framework is Benjamin Blooms' six critical thinking skills: knowledge, comprehension, application, analysis, synthesis and evaluation. This framework is described by Fisher (2005) as being one of the most influential in curriculum development and planning of teaching programs.

The definitions for the six categories included in each of the tables are based on Jensen and Kiley's (2000). Curriculum, they describe as communicating the core beliefs and values that characterize the learning approach. Organization describes how to integrate resources in the most effective way for the purpose of achieving the chosen curriculum. Instruction refers to the general objectives for student growth and change, supported by the organization to meet the approach's curriculum. Assessment means evaluating the unique way the student interacts with the chosen learning environment which reflects the instruction objectives, supported by the organization to meet the approach's curriculum. The teacher's role describes the teaching method to meet the assessment, instruction, and organization of the approach's curriculum. The student role explains the students' learning method that complements the teachers, to meet the assessment, instruction, and organization of the approach's curriculum.

The three tables are Table 1, Problem Based Learning Approach, Table 2 Integrated/Thematic Learning Approach and Table 3 Mantle of The Expert within Process Drama Learning Approach. Table 4 Meaningful Learning for the 21st Century is a summary of all the findings about meaningful learning.

Table 1.
Problem Based Learning Approach

	Theories of this approach	Methodology of application of this approach
Curriculum	<ul style="list-style-type: none"> • Develop the skills to solve a broad range of open ended problems, real, realistic, tangible, contextual or abstract that one might encounter in a position or daily life. • Use academic / personal, social subject matter as needed to address any problem being studied. • Learn general skills in problem solving and decision making. • Understand the problem solving process, including failure. 	<ul style="list-style-type: none"> • A problem is created and framed by the teacher as the means of student learning new curriculum content and problem solving process and skills. • Problems are open search problems with best fit solutions rather than right or wrong.
Organization	<ul style="list-style-type: none"> • Teachers need time to design units of work that reflect problems to be addressed by students. • Teachers need designated times for planning and finding resources needed for the problem based events. • Teachers need access to resources and resources people to identify needed materials. • Schedules need to be flexible enough to provide blocks of time for individual and group learning and extension of learning. 	<ul style="list-style-type: none"> • Access to computers and websites is needed. • Easy access to media specialists and other resource people needed for problem events. • Blocks of time for learning and extension. • Scheduled time for teachers to design units of work.
Instruction	<ul style="list-style-type: none"> • Students learn new academic content /social skill, problem solving skills through a framed open ended problem. • Students' learn that failure to solve a problem is part of the learning process. 	<ul style="list-style-type: none"> • Students practice the problem solving skills with teacher support.
Assessment	<ul style="list-style-type: none"> • Assess the student's ability to apply thinking • Assess the student's ability to use problem 	<ul style="list-style-type: none"> • Assessment would include rubrics for product assessment.

	<p>solving strategies and skills of formulating, defining, implementing and reviewing possible solutions.</p> <ul style="list-style-type: none"> • Assess the student success in problem solving requirements of positive attitudes, dealing with failure, cognitive skills and knowledge and ability to remember. 	<ul style="list-style-type: none"> • Use of focus groups as a tool for assessing teacher and student role in dealing with, solving and ability to extend the problem.
Teacher Role	<ul style="list-style-type: none"> • The teacher should frame the open ended problem to be solved and facilitate the student learning always extending that learning with critical tasks important to understanding the problem. • The teacher should act as a guide to student learning. • The teacher should extend the experience by developing the problem, exploring problems that arise and posing new questions and problems. 	<ul style="list-style-type: none"> • Teacher frames the open ended problem to be solved and provides extension for learning. • Teacher organizes resources. • Teacher selects and sequences learning events. • Teacher assesses student progress. • Teacher guides and supports students' progress in problem solving events. • Teacher acts as a guide, raises questions, answers questions, and engages students in reflecting on their process. • Teacher provides feedback to students about their use or understanding of the problem relevant knowledge.
Student Role	<ul style="list-style-type: none"> • The student uses active thinking to resolve a problem. • The student uses reflection to resolve the problem. 	<ul style="list-style-type: none"> • Students frame the problem. • Students decide how to use their newly acquired knowledge to solve the problem. • Students reflect on the problem to enable success.

The authors referenced in the development of Table 1, “Problem Based Learning Approach”, were Bridges and Hallinger (1994) and Fisher (2005). Bridges and Hallinger commented that the overall curriculum approach of problem based learning was that in grappling with a real world problem students acquired the knowledge and skills needed to deal with a similar problem in real life. They learned to deal with a problem through facilitating with their peers and teachers help, by effective research and building consensus. Fisher elaborated further that problem solving was about applied thinking. Not only did students have to be creative and critical, but these essential forms of investigative enquiry had to be applied for a purpose in problem solving. Instruction of the approach meant the problems proposed to students had to be open search problems in which there was no one method that would guarantee the right answer, only a variety of possible approaches from which to chose a best fit. The curriculum, Fisher (2005) reiterated, was not be about students learning to resolve a closed problem with one right answer but had open ended problems, meaningful to reality, connected to students experience and related to aspects of life that students valued most. Teaching and assessment was not just be about checking what is known, testing the memory or understanding of a single process but also extending the inquiry.

As long as problem based learning approach was an open, expanding activity then it would as the authors articulated make use of Bloom’s six cognitive categories of higher order thinking which also required teachers to instill qualities such as intellectual honesty, creativity, independence of mind and personal integrity whilst interpreting, analyzing and evaluating a problem.

A problem solving approach to meaningful learning also included as demonstrated in Table 1 the aspects of Williams’ understanding of creative thinking that students should

demonstrate, qualities of willingness and courage to take risks and teachers should provide the range of opportunities to do so. The second approach analyzed for meaningful learning is found in Table 2.

Table 2.
Integrated / Thematic Learning Approach

	Theories of this approach	Methodology of application of this approach
Curriculum	<ul style="list-style-type: none"> • The subject matter content is addressed through a theme or topic. • The themes or topics ensure that knowledge learning is put in a meaningful context. • The themes or topics can be across subjects or disciplines or within a subject or discipline. 	<ul style="list-style-type: none"> • The teacher designs a curriculum unit that includes knowledge, skills, and understandings from a variety of subject areas or disciplines. The unit includes a wide range of types of activities and events that expect the student to make connections across areas of study.
Organization	<ul style="list-style-type: none"> • Teachers need to be able to use time in flexible ways to meet the learning needs identified in the unit. Extended amounts of time will be needed at varying points in the implementation of the unit. • Teachers need to use the expertise of other classroom and resource teachers in the building. • Teachers need access to a wide range of print and non-print materials on a variety of reading levels. • Teachers need to plan as a group. 	<ul style="list-style-type: none"> • Access to computers and websites is needed. • Easy access to media specialists and other resource people needed for problem events. • Blocks of time for meaningful learning. • Scheduled time for teachers to plan and work together.
Instruction	<ul style="list-style-type: none"> • Students are encouraged to form groups that include students with different learning strengths and performance capabilities. • Students make connections across subject areas. 	<ul style="list-style-type: none"> • Teachers identify possible learning events, tasks, or projects that are open ended and allow students to make connections across subject areas. • Teachers allow students to choose from a wide range of activities. The activities represent different means of expression; i.e., writing, drawing, singing, drama, dance, play making, speaking.
Assessment	<ul style="list-style-type: none"> • A variety of means of expressing is possible through which students are expected to develop 	<ul style="list-style-type: none"> • Rubrics are used to assess note skills student use, curriculum covered and

	<p>new insights and understandings about the topic being studied.</p> <ul style="list-style-type: none"> • Process as well as products will be assessed. • Growth and development in group work is as important as newly formed academic understandings. 	<p>students' personal contribution.</p>
Teacher Role	<ul style="list-style-type: none"> • The teacher is the designer of the thematic unit of work and he/she sets the framework for the unit tasks. • The teacher is a supporting helper who provides resources. • The teacher notes the skills the students are using 	<ul style="list-style-type: none"> • The teacher guides student selection of groups and tasks. • The teacher monitors group progress and gives feedback on student performance and learning. • The teacher evaluates group success using student input. • The teacher provides resources or guides student selection of resources.
Student Role	<ul style="list-style-type: none"> • Student is actively engaged in the work. 	<ul style="list-style-type: none"> • Students take part in group discussion. • Students use teacher researched resources about the topic. • Students make personal contribution to the class about the topic. • Students evaluate their own and group's work.

The authors referenced when forming Table 2, the Integrated/Thematic Learning Approach table were Jensen and Kiley (2000). They articulated that the overall integrated curriculum approach should be a collection of lessons, activities and resources connected by a unifying concept or topic that is contextualized in a real-life framework, and promotes active learning as learners acquire knowledge, performance skills and dispositions. This approach, they believed promoted both cognitive and affective learning as it connected the learner's social, emotional, physical and cognitive development. The organization and instruction of integrated instruction they stated reflected best practice by teaching students to be independent problem solvers, involved students in direct and meaningful learning, showed students how what they learned in different subject areas interrelated, followed individual interests, personalized learning of what students wanted to know about a topic, students took responsibility for their own learning, it encouraged students to work in cooperative learning situations and emphasized that learning is a whole not separate subjects.

Therefore, when thinking and planning for meaningful learning through integrated ways teachers should have worked through Bloom's six levels of higher thinking and Williams's cognitive and affective categories of learning to be effective by providing opportunities for fluency of ideas, flexibility in being able to change categories of learning, space for originality at being able to come up with unique thought and elaboration on being able to take one idea and embellish it. A curiosity and willingness to explore and question, risk taking and the courage to take a chance, complexity of facing the challenge of building order out of chaos and the imagination to visualize and fantasize ideas. Table 3 illuminates the third approach to meaningful learning.

Table 3.
Mantle of the Expert within Process Drama Learning Approach

	Theories of this approach	Methodology of application of this approach
Curriculum	<ul style="list-style-type: none"> • Drama serves the curriculum at relevant levels. • Pupil motivation improves when tasks are relevant and seem real. • Learning is most likely to be enhanced when the links are clear and recognizable to the student. • Any subject or learning area is interconnected with a broad spectrum of knowledge and understood by the learner to be connected. • Process drama should be used to develop skills to reflect and solve a broad range of problems found in humankind. • The purpose of drama is the exploration of the affairs of humankind. • Learners develop understanding over time through improvised drama. Creating in action. • Role in process drama and Mantle of the Expert is used to frame the problem in real time. • Social experience and culture play a major role in development. • The purpose of process drama is to explore not dramatize meaning, how we interact socially and how we understand respect and ethics to improve our wider community. • The subject areas, such as language arts, math, science, social studies, arts, cross curricular themes such as the environment can be used within process drama planning and episodic implementation. 	<ul style="list-style-type: none"> • Teacher facilitates the meaningful learning through functional tasks and roles which are appropriate for themselves as the developer of learning and for students to be experts in their creative and critical thinking and ability to apply thinking in a respectful and ethical way. • Everyone participates with a deep commitment for the process drama to be effective and produce good work. • The problem solving process is used to resolve ethical and practical issues. • Understanding develops over time taking into consideration students' affective needs. • The episodic nature of drama liberates the learning from chronological thinking sequence. • Process drama and The Mantle of the Expert enable internal coherence of learning for students. • There is a third space created by the teacher and students when they create the process drama. Where students are deeply absorbed and able to take risks demanded in the creative process.

	<ul style="list-style-type: none"> • The purpose that is selected for process drama determines the use of resources and drama/teaching strategies. • You cannot not “behave” or engage truthfully in process drama. • Process drama is a problem solving process. Content and knowledge is used to conceive answers or solutions to real problems. • Tasks are selected to determine what the students will be doing. • Teachers select the entry point with the posing of a dilemma. • The teacher offers information but does not transmit knowledge in a lecture type manner. • The way the teachers talk is as important as the content of the message. • Use social events framed in real time for learning. • You do the enterprise but never make the pie in process drama and Mantle of the Expert. • Reflection and responsibility is created. • Commitment to the drama and the learning is a critical feature of process drama and Mantle of the Expert. • Students create the problems they are working on. • The point of view is a powerful component of drama. 	
Organization	<ul style="list-style-type: none"> • The success of process drama will require teaching artists and researchers who can and will work collaboratively with classroom teachers and technology specialists in the planning, execution and assessment of drama. • How time is used in schools will need to be 	<ul style="list-style-type: none"> • With and beyond National Curriculum requirements, classroom teachers and drama specialist devise appropriate beginning content and developmental learning outcomes to meet students’ cognitive and affective needs.

	<p>changed to allow for more flexible use.</p> <ul style="list-style-type: none"> • The use of space will need to accommodate the drama. • Research, i.e., the finding of materials, real documents, and people needs to be completed in a timely way. • Time to plan teaching strategies based on the day's events in the drama is critical to the next episode to be enacted. • The context for learning is broader than any particular subject; therefore the use of time, space, and personnel will vary depending on the learning focus. • A culture of trust and respect, of staff working together in pursuit of effective learning strategies, is of high priority for CPD. Everybody being a learner, experiencing professional development within the learning community. The staff must model what they expect in the class, within the school community. 	<ul style="list-style-type: none"> • Research is appropriate and delivered at the time it is needed. • Students and staff maintain a culture of trust and integrity. • Minimum class interruption allows for maximum learning in role. • Access to computers and websites is needed. • Easy access to media specialists and other resource people needed for episodes.
Instruction	<ul style="list-style-type: none"> • Effective learning takes place in a community of enquiry where pupils take increasing control over their learning as they develop skills for life. Learning is social, based in dialogue and is a matter of co-constructing knowledge. Learning activities stem from prior knowledge and interests of pupils. • Drama explores the human condition in direct immediate time. • Drama for learning, which involves student groups of varying sizes and ages works by creating micro-worlds which allow human events and motivations and outcomes to be explored 	<ul style="list-style-type: none"> • Identify the meaning to be discovered • Select the point of view to be taken. Students will need to ask, "What will I need to understand, from my point of view?" "What evidence will I need?" "How will I talk, think?" • Identify the information that will be needed in order for the drama to occur and move forward. • Select the material/s or resources to be used. This might include, but would not be limited to literature or original documents.

	<p>thus widening our experience of the capabilities of human beings to learn, endure, overcome, accommodate and empathize with others.</p> <ul style="list-style-type: none"> • The scaffolding of learning is critical to the success of learning. • Teachers must be secure in their knowledge of how children learn and appropriate drama strategies. • Teachers must be flexible. • Teachers must be able to think effectively on their feet. • Teachers must be critically reflective of their own teaching. • Teachers must maintain accurate assessment for learning. 	<ul style="list-style-type: none"> • Identify the tasks in “real time.” • Tasks used in drama include the use of film and technology, effigies, portraits, drawing, modeling, pieces of clothing, objects, accounts of a person, a person’s writing, letters, conversations, cryptic codes, messages, signatures, or the use of story. • Identify the roles needed or the Mantle/s to be adopted. • Determine the sequence of the episodes which do not need to be chronological. • Select an entry point, something to be in touch with that stands for the whole of the experience. • Negotiate with students the “way in.” Ask questions like: “Would you be prepared to…” • The teacher uses “Briefings” as a tool of providing students the information they need to engage in the drama.
Assessment	<ul style="list-style-type: none"> • Teachers maintain accurate assessment procedures for learning positive • Attitudes. • Behaviors: engagement, social skills. • Understanding. • Respect. • Support. • Not all learning outcomes are predictable. 	<ul style="list-style-type: none"> • Descriptive evaluation of student growth including the unpredicted. • Observation and anecdotal records. • Debriefing and Discussions between peers and with teachers. • Writing and drawing in and out of role. • Reading comprehension. • Pupil-kept drama log. • Conference notes. • Performance rubrics.
Teacher Role	<ul style="list-style-type: none"> • Teachers and students learn together. 	<ul style="list-style-type: none"> • Facilitates in a functional role the learning

	<ul style="list-style-type: none"> • The teacher is not the authority, but the manager, the director, the planner or designer. • The teacher acts as a facilitator of the drama, but this is done in role. • Co-creator of knowledge. • Co-participator in learning. • Responsible for the work of student's curriculum choices, standards of behavior, information and expert skill development. 	<p>of content, critical and creative thinking.</p> <ul style="list-style-type: none"> • Use of theme / learning area, context, point of view of roles, teacher in role, communicating and distancing frame, sign and strategies of context, time and space to enable understanding of how an expert in a particular field thinks respectfully and ethically. • Provides appropriate external structuring of episodes to enable student's internal coherence of learning.
Student Role	<ul style="list-style-type: none"> • Out of studentship to responsibility, mature and contextual in their learning. • Teachers and students, learn together. • The student is actively engaged in the drama through the role selected. • Students work in social groups that make sense to the drama focus. • Students' motivation improves when tasks are relevant and seem real. • Learning is most likely to be enhanced when the links are clear and recognizable to the student. • Any subject or learning area is interconnected with a broad spectrum of knowledge, understood by the learner to be so. 	<ul style="list-style-type: none"> • Students participate in the drama focus in a functional role. • Students select a role for themselves based on their interest and knowledge. • Students engage with their peers and their teacher to actively consider answers to problems using creative and critical thinking, reflection and application. • Students reflect on their personal, social, and emotional growth and development. • Students accept responsibility for learning. • Students learn to use the skills of drama for learning. • Students understand learning is linked.

The authors that were referenced when forming Table 3, “Mantle of the Expert within Process Drama Learning Approach”, were *Bowell and Heap (2001)*, *Bolton and Heathcote (1994)* and *Stevenson (2005)*. The overall curriculum approach of process drama, *Bowell and Heap* articulated was that it was all about creating in action. There was no formal written text or script at the start of the work, this occurs as the drama unfolds. Use of theme / learning area, context, point of view of roles, teacher in role, communicating and distancing frame, sign and strategies of context, time and space were used at appropriate points, to enhance meaningful learning. The more experienced the process drama teacher was, they added, the more they were able to pull from an ever growing list of strategies to make meaningful connections in learning and enable students to apply their learning.

A process drama curriculum *Bowell and Heap (2001)* explained should nurture three broad areas of learning, personal and social, cross-curricular and the drama art form. *Bolton and Heathcote (1994)* described the three as a change in conceptual understanding, an improvement in life skills, including whole language and developing skill in using dramatic art form. They articulated an ongoing focus on respect and ethics as part of the process to internalize meaningful learning by, doing the enterprise but never making the pie. Learning should be a deep immersion over a long time that allows the work to develop by constantly evolving its future and then folding back on itself. The success of the process drama curriculum, the authors explained depended on five levels of engagement, doing a task and performing an action, because of a motive, bred from models which come from personal values. Thus they concluded that the doing of tasks carried even deeper meanings as individuals became ready to engage with the levels of commitment. This necessity for commitment to enable meaningful learning was *Bolton and Heathcote (1994)* believed a requirement for both student and teacher alike. They reiterated that

Mantle of the Expert took meaningful learning through process drama to another level of engagement by requiring an agreement between teacher and students to take on a functional role, an expert in running short-term tasks during the learning, once removed from actually making the product. As a consequence caring, commitment and responsibility for the learning developed in the student naturally as time past. Bolton and Heathcote (1994) illuminated that this approach combined belief in what they were doing with a sense of inner logic as they moved through the drama from one episode to another which helped develop the skills and concepts related to the context. They concluded that all these strands combined to give internal coherence. The external episodes may have made no progressive fictional story telling sense but the episodes were enabling internal connections for the students' meaningful learning.

Stevenson (2005) discussed how a third space was opened in the process of creating through process drama and all the arts. Students and teacher enter this space together in to create their work. They take on new identities as they explore relationships and meanings with others in space. Third space, the author believed is a metaphor for the changes that students, teachers, parents and principals will experience when process drama and all the arts are made a central feature of a schools philosophy and programs. The term captures the rich environment that the arts create for learning not just about the arts but other disciplines such as math, social studies, language arts, history and science and linking that learning to the concerns and daily lives of students.

Assessment through process drama was as Howell and Heap (2001) described accommodating of different types of learning to assess for the internal connections the student was trying to obtain. They reiterated that meaningful assessment occurred when students' changing and varied needs were met through the process drama. Assessment was very flexible

and offered many meaningful options from rubrics to drawing and writing in and out of role for individuals to assess whether learning had been absorbed successfully internally. But the authors' also recognized that not all learning outcomes in drama were predictable.

Being an expert and thinking as an expert within a particular field in process drama involved what Williams described as self engagement, productive thinking, building understanding and the information gathering of creative production. Even though the product is never made process drama required Bloom's six categories of higher thinking in order to build understanding about what they were doing, synthesizing and evaluating information as experts in a respectful and ethical manner. Process drama had an episodic approach which was also compatible with Bloom's combination of including history for meaningful learning, of knowing what has gone before, having the current content and knowing how individuals creatively constructed new knowledge. It also aligned itself with his belief in personal integrity, independence of thought and decision making which support a democratic way of life. The final table, Table 4 surmises what meaningful learning for the 21st century means.

Table 4.
Meaningful Learning for the 21st Century

	Theories of this approach	Methodology of application of this approach
Curriculum	<ul style="list-style-type: none"> • Social, based around individual learner’s needs within an integrated learning experience and democratic community of learners. • Students spend as much time on thinking and reflecting as finding solutions and applying them. • Learning is linked to previous knowledge and real world problems and takes time to acquire new understanding. • Links in learning are articulated and understood by the student before going on to next learning. • Students are self motivated rather than teacher motivated. • School is open minded, flexible and supportive of the change process understanding that frequent updating of educational research and changes of information are part of the lifelong learning process. • Failing to solve problems is part of how to learn. • Giftedness comes in many meaningful learning forms. • Student’s unique, humane, creative, and critical ability to apply skills and intrinsic motivation are highly valued aspects of education. • Meaningful learning tools are used appropriately within an integrated and sometimes distancing frame approach for most meaningful learning. • Each task is seen by the teacher as a carefully selected step in a long series of graded tasks. 	<ul style="list-style-type: none"> • Teachers and students prepare meaningful learning through functional rather than passive roles. • Teachers are reflective and use educational research to improve their practice. • Teachers and students create an arts rich third space where they learn subject knowledge and create anew. • Students make meaning imaginatively and apply into action/doing, resolving. • School and community are trustworthy learners sharing knowledge together. • Students learn content through meaningful learning tools and approaches. • Intrinsic motivation is valued in learning. Praise is used for positive learning outcomes. • Everyone has an understanding that students play with ideas from birth onwards. Learning continues till death. • Students understand and use responsibly scaffolds for learning and assessment to check for internal cohesion. • Teacher uses appropriate strategies in an experienced way to enhance students’ meaningful learning. • Tasks are devised by the teacher through

	<ul style="list-style-type: none"> • Learning is fun, serious and hard work. • Students have an internally coherent experience and assessment of that internal cohesion. • Curriculum emphasizes trustworthiness. 	<p>assessing the degree of skill, kind of knowledge and learning area involved and the social health of the class.</p> <ul style="list-style-type: none"> • Caring about what teachers and students are doing and the values they stand for are never simulated but accrue naturally. • The external episodes of learning make logical sense for the inner meaningful learning development of the students. • Leadership provides emotional stability to help deal with frequent changes of practice.
Organization	<ul style="list-style-type: none"> • Teachers have designated non teaching time to talk cooperatively about meaningful learning. • School is flexible in its timetabling. • School has facilities for utilizing new research. • Local business and community help with meeting schools non teaching needs. • Students take a leadership role in the meaningful learning of the school. • Technology is used to enhance learning. • Leadership provides emotional intelligence. 	<ul style="list-style-type: none"> • Teachers use frequent, reflective discussion, research and journaling about daily teaching issues such as formative assessment of themselves and students and how to synthesize and be creative in the classroom. • Teachers have time built into the schedule to plan and reflect on the learning curriculum and changes together and have good resource support. • Teachers, students, parents and business meet frequently to support school progress and changes in society's knowledge demands. • Technology is incorporated in all learning.
Instruction	<ul style="list-style-type: none"> • The objective of meaningful learning is an effective individual and group learning experience for the 21st century which should inform respectfully and ethically the community, business and back to school and should include 	<ul style="list-style-type: none"> • Informed up to date communication about learning between students, teachers and the 'learning' community. • Accommodates different types of learning.

	<p>researched based strategies for increasing student achievement.</p>	<ul style="list-style-type: none"> • Applies learning to real world situations in a respectful and ethical way. • Teaches learning how to learn and research for life skills.
Assessment	<ul style="list-style-type: none"> • Assess how students are doing on a day to day basis. Criterion rather than normative referenced assessment is emphasized. • Recognize that not all learning outcomes are predictable. • Assessment informs future planning for internal coherence and should be varied to gain information about each individual's needs. • Information is recorded in varied ways to help with future teaching strategies. 	<ul style="list-style-type: none"> • Students monitor their own and support others learning using creative thinking skills, formative and summative evaluation and assessment. • Students apply what they and the teacher have assessed to improve meaningful learning. • Teachers frequently monitor students learning and feedback criterion referenced evaluation to students.
Teacher Role	<ul style="list-style-type: none"> • Work with the students as experts together on open ended tasks. • Act as a guide and support students self learning. • Monitor students' (and own) zone of proximal and affective development. • Continue own professional development for internal coherence of knowledge and better professional practice when dealing with change. • Provide the third space 	<ul style="list-style-type: none"> • Provide third space opportunities within learning for students thinking and application skills. • Provide appropriate levels of psychological safety for self and students to learn and apply critical and creative thinking to produce positive outcomes and deal with change. • Use open questions and appropriate teaching strategies that require higher levels of thinking. • Delegate to appropriate help classroom paperwork.
Student Role	<ul style="list-style-type: none"> • Be self motivated. • Be an expert and work in role. • Anticipate new knowledge. • Provide appropriate levels of psychological safety for teacher, self and fellow learners to learn. 	<ul style="list-style-type: none"> • Be aware of own internal cohesion of learning. • Work to improve study and communication skills by using themselves as their internal audience to reflect and

	<ul style="list-style-type: none">• Understand learning how to learn techniques and being part of a third space.	<p>make meaning and connections.</p> <ul style="list-style-type: none">• Develop ongoing ability to use current technology and work in a diverse group representative of the 21st century.
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An evaluation of meaningful learning for the 21st century is found in Table 4. All the authors referenced in the thesis that helped inform the other three tables were used to help form the final table along with Fullan (2001). All were used because as Zemelman, Daniels and Hyde (2004) pinpointed, best practice was not made up of one educational strategy, but the use of many reliable data to help make positive connections in learning for students. The data are they comment “Tools in the hands of thinking people who must always figure out how to make it work with these children and these children in this particular culture and setting” (p. 274). Marzano, Pickering and Pollock (2001) reiterated that findings from no single study or even a small set of studies should be taken as the final word on whether a strategy or approach works well. Instead, they believed the composite results of those findings should be considered the best estimate of what is known about that topic.

Table 3 reiterated that meaningful learning was about teachers and students using reflection, language, role and imagination together to find ways to make internally meaningful connections in their learning. It was also about creating a third space where new knowledge and ideas could be created. Table 1 added how learning how to learn to resolve problems and apply these skills to new situations was important for meaningful learning to take place. Table 2 emphasized communication skills and making meaningful links between subjects in context. All three approaches, required use of technology and working cooperatively as part of a leadership group for a particular task as surmised in Table 4. They all needed students and teachers to have time away from the classroom to talk, think and use viable research to apply to new learning. To be aware that quickening technological advancement frequently changed the global contours of how to obtain and disseminate the information about what meaningful knowledge was and

required emotional intelligence leadership to support the frequent changes Fullan (2001)

elaborated:

The culture of educational change is by definition rife with anxiety, stress and ambiguity (and correspondingly with the exhilaration of creative breakthroughs). It should come as no surprise then that the most effective educational leaders are not the smartest in an IQ sense but are those who combine intellectual brilliance with emotional intelligence (p. 71).

Meaningful learning for the 21st century required careful research and monitoring by the whole teaching community of the respectful and ethical synthesizing of information to produce a healthy society. Literacy needed to be about the ability to learn, undo learning and relearn anew as an ongoing experience. That meaningful learning included use of the arts, a curiosity to anticipate and understand change and a need for constant reflection to enhance adaptability as well as how to make connections in learning. Teachers needed to include recent technological development as part of the learning experience. That everyone needed to understand that all meaningful learning was connected and interrelated and teaching approaches and assessment of meaningful learning needed rubrics and appropriate time for reflection to assess for internal cohesion of knowledge and social accountability.

The four tables illuminated that meaningful learning included tools such as identifying similarities and differences, cues, questions and advanced organizers and concept maps to integrate a particular concept by a single teacher in a lesson. It also involved cross curricular integrated learning that required communication between teachers in an interrelated way about the concepts students should be learning in context with appropriate types of questioning and teaching strategies. It embraced problem based learning that required communication about what

application of higher thinking was being used to solve and develop a problem and process drama which functioned through the learning community understanding and making higher thinking connections through the internal cohesion of knowledge whilst in role.

An overall theme or message about what meaningful learning means from Table 4's analysis is that it is about making meaningful connections. For learning to be meaningful knowledge has to be linked. Students' learning in the classroom, for example linked with teachers learning with colleagues and a teacher's own learning linked with that of colleagues. Lambert (2003) elaborates:

When teachers learn to facilitate faculty dialogue, they become better at facilitating classroom dialogue; when they listen well to colleagues, they pay the same degree of attention to their students; when they reflect aloud with colleagues, they enable students to reflect aloud; and when they expect to discover evidence to inform their own thinking, they begin to expect students to do the same on the path to problem solving and understanding (p. 21).

Finally, Table 4 reiterated that meaningful learning needed to include creativity and the production of novel solutions in a trustworthy way, illuminating Williams' inclusion of cognitive, affective and motivation domains. From the tools and approaches discussed, meaningful learning also included Bloom's six categories of thinking from interpreting to evaluation, but as Gardner stated, how and what we synthesized for evaluation needed further debate and research.

CHAPTER THREE: Foundations for Change

Chapter Two considered the tools and three approaches for meaningful learning and an overall summary of what meaningful learning meant for the 21st century School. Chapter Three will discuss the foundations for change for schools who wanted to adopt these approaches.

A successful long term change process Jensen and Kiley (2000) declared happened when, “in effective schools, collaboration, culture and change were inseparable” (p. 468-450). They argued that change in teaching and learning through national policy was as undeniably a part of the school process as it was part of life and it was therefore essential to understand how individuals responded to change for it to take place with any degree of success.

The Concerns-Based Adoption Model (C-BAM) was the model these authors included for understanding the process of change. This model meant understanding that change was a developmental process and every individual responded differently. The model included the belief that change was a process, not a one-time event. It was accomplished by individuals first and then institutions second and was a highly personal experience. Consequently, they advocated that by using this model, change efforts should focus on people first and the innovations second as change entailed developmental growth in feelings and skills. To bring about change required Jensen and Kiley (2000) emphasized, “the study of the organizational culture to help educators decide how best to introduce and implement change” (p. 469).

Seel (2000) elaborated further about how change involved the organisational culture. Change, he believed, was the emergent result of continuing negotiations about values, meanings and proprieties between the members of that organisation and with its environment. In other words, culture was the result of all the daily conversations and negotiations between the

members of an organisation. Seel reiterated that one had to change all these conversations—or at least the majority of them to change a culture. And changing conversations, he believed was not the focus of most change programmes, which tended to concentrate on organisational structures or reward systems or other large-scale interventions. Most change programmes Seel argued try to effect change by looking at structures, systems and processes and these initiatives usually had limited success. Unless the paradigm at the heart of the culture was changed, he believed there would be no lasting change.

Gardner (2000) argued in his model for changing minds that there are specific ways to influence change in an individual. The moment when minds are changed, he believed, was when one mental representation is converted or transformed into another. He believed this can happen through four instances; through a concept, for example substituting one definition of intelligence for another; it can happen with a persuasive story, with a theory and with a change of skill.

There are seven levers of mind changing Gardner (2000) describes that need to be considered when trying to introduce a new way of working in a school.

- Reason; minds can be changed through logical argument
- Research; minds can be changed through data, observations, case studies.
- Resonance; minds can be changed when the mind to be changed resonates with the new content and with the presenter.
- Redescription; minds can be changed when the new content is presented in a number of different media and symbol systems.
- Reward and resources; minds can be changed when sufficient rewards (or punishments) are invoked.

- Real world events; minds can be changed when there is a dramatic change in the conditions of the world.
- Resistances overcome; minds can be changed when the chief resistances to the desired mind change are neutralized (p. 31)

Gardner concludes that getting people to change is a ubiquitous human activity which should happen carefully for the good of society and the environment rather than self interest.

Fullan (1993) noted you cannot make someone change and learn new skills. He believed the goal for someone to be able to change was for them to see interrelationships rather than linear cause and see processes of change rather than snapshots. The person needed to form the habit of experiencing and thinking about educational change processes as an overlapping series of dynamically complex phenomena. When such a non-linear system language developed, he believed new thinking about change would emerge and the subconscious would be subtly retrained to structure data in circles instead of lines and the person would become, as he described looped in learning and change for life.

Stevenson (2005) believed for a change to happen a school needed a vision for what it wanted to be. The power of a vision to transform a school lied in whether it really engaged those in the school and in the community in ways they found meaningful and rewarding. Ultimately, he believed, the vision must grow out and perpetuate a sense of shared purpose and community and should inspire and support teaching and learning that matters to students and teachers. Otherwise change would not happen. Mastery of procedures would be valued more highly than creativity and innovation; success measured by test results more than by multiple demonstrations of deep understanding and personal development; and organizational conformity fostered more than community.

The author argued that change which brought about a richer form of achievement could be found within the arts. When teaching through the arts, success Stevenson contended, was related to the seriousness with which students, teachers, and administrators embraced the arts as profound explorations and expressions of self, others and the world that were deeply meaningful, creating new sets of relationships and third spaces among all those in the school and the community.

Fullan (2003) pointed out that for a change of approach or educational transformation to be successful there needed to be three interrelated sets of educational policies in place, aimed at two things, individual development and improving work conditions. Each policy needed to be aligned at the state level and implemented in a way that teachers experienced the alignment as they worked through new practices and beliefs. The first policy, the author explained was about the particular curriculum that constituted what students should learn, how it should be assessed and what teacher learning was required for the first two to happen. The second policy was related to the individual development of teachers and administrators to strengthen the teaching profession and the third was improving the conditions of work, vital Fullan believed for bringing the teaching profession into the 21st century. The author pointed out that it is impossible to go deeply in the first policy about the curriculum without major support from the other two. He concluded that for any meaningful learning approach to be implemented the current conditions in school required the following changes. These would allow the third policy to be successful and impact the other two in a positive way:

- Reduce the workload of teachers and principals, especially in relation to paperwork and tasks that take teachers away from teaching or that could be done by others.

- Increased, guaranteed non-contact time for teachers in the school day so that they can work together.
- Add more teaching assistants and make use of all support staff in schools.
- Improve the way governments introduce and support change, communicate with and monitor schools (p. 75).

Finally, Palestini (2003) argued that educational institutions needed to deal with the process of change on a more personal level to achieve success. He believed that people's personal security needs clashed with the institutions achievement needs and security needs frequently prevailed. But for change to happen security needs had to be overcome to implement effective school reform. He believed in ten distinct steps to achieving this:

- Establishing a climate for change
- Assessing the need for change
- Creating a sense of urgency
- Assessing favorable and opposing forces
- Selecting among alternatives
- Promoting ownership
- Providing professional development
- Operationalizing the change
- Evaluating the change
- Institutionalizing the change (p. 97).

The key to successful implementation the author believed was that many of the steps were implemented simultaneously rather than sequentially.

CHAPTER FOUR: Requirements for Leadership to Adopt and Sustain Meaningful Learning in School

Chapter Three discussed the dynamics involved for change to happen to enable the implementation of meaningful learning. This chapter will discuss what is required for leadership to adopt, change and sustain meaningful learning. Seel (2000) argued that for school leadership to adopt and sustain meaningful learning the focus of organizational change intervention needed to a move away from ‘planning change’ and onto ‘facilitating emergence’. To help the new paradigm of meaningful learning for the 21st century to emerge would need he believed a new way to think about the role of the school leadership or change agent. Generally change agents, he surmised, had a mechanical view of themselves. The prevailing metaphor for change was of ‘organization as machine’ implying the change agent stands outside the system, diagnoses and understands its working parts and then intervenes to redesign it to operate in a more effective way. School Leadership Seel emphasized needed to see the school organization as a complex self-organizing entity to be worked with rather than worked on to bring about the adoption of meaningful learning within the school context.

Gardner (2000) described a number of guidelines for leadership to sustain successful change:

- Understand the importance of leadership, for in the absence of serious and sustained leadership, efforts to bring about change will not take hold.
- The need for a long term perspective of the long term goal of an education system that focuses on uncovering rather than covering facts.

- The need for flexibility and small victories rather than being excessively rigid trying to achieve everything at once.
- Anticipating setbacks and be prepared to deal with them framing setbacks as a learning opportunity rather than an occasion for despair.
- Allowing time for reflection which should be built into the schedule to bring about genuine change.
- Building on strengths and not fret about areas of weakness. The search for compensatory strengths can extend beyond the school building into other schools, parents, the larger community and the Internet.
- Pay attention to Implicit Messages in the Institutional Culture. Nothing can boost the cause of understanding more than the sight of the teachers themselves striving to understand new material and nothing undermines this process more than teachers who prove unwilling to deepen their own understanding.
- Create a community that cares, that the most important message in a school community is that the adults in a child's life care fully about the child.
- Visit other schools that are perhaps further along with the change process and learn from them and invite them to visit your school and give critical friend feedback.
- Cultivate new energies from inside or outside agencies, old institutions carry lots of baggage and it is more difficult for them to renew themselves.
- Commit yourself to the process of change and build change into the institutional culture and become a learning organization. New ways of doing things is a

continuing process of learning, reflecting on learning, and then learning some more (p. 231).

Fullan (2003) argued that for meaningful learning to be adopted and sustained required leadership that created a fundamental transformation in the learning cultures of schools and the teaching profession itself by being able to work within the policies, practices and associated interaction that evolved. The more sophisticated the system, he commented, the more sophisticated the leader needed to be. He argued that leaders in effective organizations had the personal factors of hope, enthusiasm and energy. Five action / mind sets which combined a strong sense of moral purpose, an understanding of the dynamics of change, great emotional intelligence as they built relationships, a commitment to new knowledge development and sharing, and a capacity for coherence making. Because leadership for ongoing meaningful learning was complex, Fullan believed good emotional intelligence allowed for the development of in sync relationships with and among those in the organization. This emotional bond helped everyone stay focused amid profound change and uncertainty. So, he concluded leadership required personal competence in self awareness and self management and social competence in social awareness and relationship management.

Scapp (2006) contended that leaders must offer, build, and construct communities engaged in critical dialogue about what they do and how they do it for meaningful learning to be sustained. The leadership and learning community should dare to be different and enable risk taking and a willingness to try and at times fail in order to develop beyond the present culture of fear to a community of hope. Scapp believed that this kind of leadership was best developed in teacher education programs. Programs that rather than merely training, successfully integrated

scientific methodology, discipline specific content, and critical dialogue about the nature and dynamics of learning.

Hargreaves and Fink (2006) maintained that adopting meaningful learning successfully and for the long term required understanding sustainability. If the challenge for leadership was to ensure change was desirable and doable then the biggest challenge was to make it durable and sustainable even if the actual school leadership changed. They suggested this sustainability could happen if educational organizations and society understood the value of rich diversity over standardization, the necessity of taking the long view, the wisdom of being prudent about conserving and renewing human and financial resources, the moral obligation to consider the effects of improvement efforts on others in the environment around us, the importance of acting urgently for change while waiting patiently for results and the proof that all of us can be an activist and that all of us can make a difference.

Finally, Langley and Jacobs (2006) highlight how leadership can demonstrate meaningful learning by creating a positive atmosphere, using strong interpersonal skills, for staff members to be enthusiastic about bettering themselves. Reading something every day about new trends and requirements in education, attending workshops, establishing contact with informative organizations and when coming across something that will make them a better leader understand the best way it can be disseminated to others.

CHAPTER FIVE: Implications for Further Research

The previous chapter described the requirements for leadership in schools to adopt, change and sustain meaningful learning. This chapter will surmise the implications of all of this for further research.

Amongst the many, Gardner (2005) has contended strongly that for schools and teachers to adopt meaningful curriculum instructional approaches successfully for the long term in the schools of the 21st century requires more research and educational legislative change of teaching and learning approaches. He argues for the implementation of his recent research about the five interweaving minds; respectful, disciplined, synthesizing, ethical and creative, to be used in schools for meaningful learning to successfully develop in the long term.

He also contributes that there needs to be more research into the problem of how and what to synthesis in the classroom, to bring about healthy meaningful learning for a 21st century global society.

Research about creativity in teaching was also needed he believed to establish the ways the teacher may produce novel examples and open out the process of being creative to the students themselves.

Fullan (2003) argues that more research needs to be done into policy about teachers working conditions for any long term change to be successful. He also explains the need to understand what leadership in schools for the 21st century means when dealing with constant change. Including understanding the factors involved in change, such as the value or attitude changes needed in the individual, the capabilities of the individual, the organizational structures

and ways of working, behaviour of individuals, culture and culture traits and the organizational policies, goals or purposes.

Finally, DEMOS (2003) emphasises that further educational research by the learning profession about understanding what meaningful learning is would lead to clearer policy guidelines and help with sustainability. This would enable schools, and society, to lead and function more effectively in a respectful, ethical and creative way.

CONCLUSIONS

If we are to believe in adopting at national and local level meaningful learning approaches for 21st century then educational leadership and government have to enable change to accommodate more connected learning approaches. The National Curriculum and accountability system currently recommend personalized learning for understanding and developing the ability to create. However it demands the opposite by requiring learning accountability for a prescribed test. Teachers are described as coping with this dilemma through maintenance teaching or guerrilla warfare teaching but both need to be eradicated through successful educational legislation to enable meaningful learning to thrive in schools in the 21st century and beyond.

The change process is a difficult but inevitable part of education and needs to be acknowledged as part of educational training. Intellectual and emotional intelligence should be part of teacher and leadership training. This would enable the inevitable changes to happen more confidently.

If appropriate institutions and society were able to establish guidelines for what meaningful learning for the 21st century is then this would enable educationalists to maintain, lead and participate fully in a connected meaningful learning process that would be successful in the long term.

Educators therefore need to continue to research what constitutes meaningful learning and what would count as evidence of success. In this way they will also be able to lead and monitor their own profession within society rather than through outside agents who might not always have meaningful learning as their primary goal.

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