Creativity in Education.

How can schools enhance and nurture creativity and why should they?

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Purpose

The purpose of this study was to look at creativity in the contemporary secondary school environment. To see how it was being nurtured, why is was being nurtured and how it could be enhanced. My intention was to look at current practice and place that alongside current theory to enable me to compile a path forward for schools.

I also wanted to ask the question why schools should be interested in creativity.

Methodology

During this sabbatical I read widely texts relating to the concept of creativity, both from an educational perspective and also from a more general perspective.

I also visited schools in New Zealand, Scotland and |Canada to gain a perspective of how creativity was being developed in different contexts.

I have written my report in the form of a journey. Starting with observations drawn from a New Zealand context and comparing these initial findings with current research and then looking at the question from an international perspective. Having triangulated my approach I felt able to draw some conclusions and generalisations about how creativity can be nurtured in any secondary school environment.

My intention was to try and capture a journey of discovery feel about the report.

Steve Saville

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What is Creativity?

A noun;

1. *The capacity to generate ideas; things that have value to the individual.*
2. *Looking at things with a fresh eye; examining problems with an open mind; making connections; learning from mistakes and using the imagination to explore new possibilities.*

Over the many years that I have been involved in secondary education in New Zealand the role that creativity plays in our learning environments has always intrigued and fascinated me.

In particular how do we, as teachers and educators, create learning environments that encourage learners to pursue creativity in its many and varied forms when we exist, for the most part, within systems and structures that, by their very nature, seem designed to stifle and inhibit creative impulses.

I have always been impressed at just how students find ways to give vent to their creativity, from the obvious formation of bands through to dance, drama and art and even extending to their imaginative approach to end of year pranks and in my case, the creation of original comic art. It seems that despite

the fact that schools seem to be organised in such a way as to prioritize compliance and conformity the young, being young will find ways to be the 'rose growing in the concrete.' It is quite possible that the act of creative rebellion is wired into the DNA of young adults and no matter how schools seem to want to drain this urge from them some will inevitably find ways of expressing themselves.

For years this has seemed to be enough. A group of 'creative' learners will find a like-minded teacher and, with the encouragement of the slightly non-conformist teacher they will find a way/space/time and energy to create. The band will practice before school, the artists will spend lunchtimes and weekends in the art room etc. These clubs [for want of a better word] have existed in every school and in various forms and they have existed for generations.

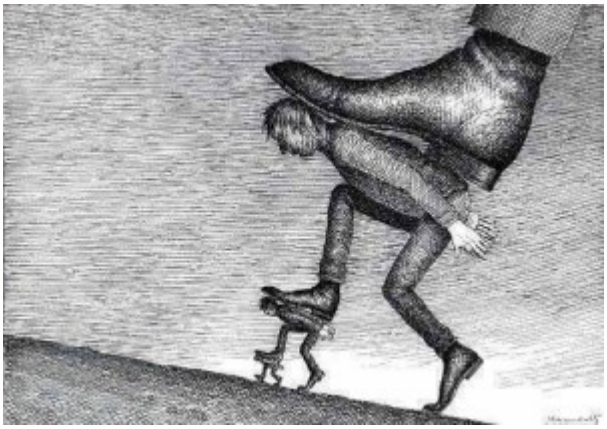
Recently though creativity has become a bit of a buzz word in educational circles. Ken Robinson, Tony Wagner et. al. have heralded the importance of creativity and highlighted how schools seem to be determined to remove creativity from their students. Robinson claims that children are naturally creative and curious but by the time they reach adulthood they have either, had their creativity strangled or been convinced that they are not in fact creative they are just normal, as if creativity was some sort of special gift bestowed only on the eccentric few rather than something that exists in all of us. Creativity, in a broader sense that it has normally been seen in schools, has been heralded as a vital trait for success in the modern world and something that employers look for in job candidates. The ability to come up with new answers to new and existing problems, the skill of being able to 'think outside the box' is currently being seen as a key employability factor, highly sought after and highly valued.

This definition goes far beyond the group of prospective rock stars thumping out their version of Nirvana classics in the music room before school and instead sees the creative spirit as something that needs to be fostered in all learners and in all subjects. So where I have heard some teachers in the past

claim that creativity has no part to play in Maths or Science, for example, the new interpretation sees the potential for creativity in every subject and every aspect of school life. Not only is there the potential for creativity in all aspects of school life but every student within our schools has significant creative potential that they were born with but has gradually been eroded.

This brings up an important dilemma for educators, if we encourage the development of creativity within the institution [in this case the school] will something important in the creative process be lost or compromised. Let me explain. The act of being creative amongst young adults is often linked with the act of rebellion, of being an individual operating on the borders of what is seen as normal and acceptable. The school rock band, the dance group, performance poet etc. Often these groups or activities are an act of non-conformity. If we embrace creativity within the institution will the act of rebellion and the energy it gives be lost? Is part of the thrill the fact that you have to commander a classroom after school for dance practice? If we embrace it do we make it safe and then who owns it? The young are wired to push boundaries and take risks by embracing creativity do we not run the risk of sanitising it.

On the other hand by allowing it to play an important part in everyday teaching and learning do we not open a huge range of possibilities and realise a huge amount of potential? In fact if we do not find a place for the the growth of the creative spirit then surely we are perpetrating its suppression amongst all but a very determined few.



This leads to my first assumption.

Assumption #1

1. *If creativity is to be validated within school programmes and brought out of the shadows then we must realise that as teachers we cannot control or impose it. We can encourage and nurture but we have to be prepared to relinquish control and authority. In other words there is a need to respect the creative spirit if you really want it to blossom.*

This in turn leads to another important consideration for educators, is the process by its very nature organic or can it be legislated for. Can the right ingredients be mixed together for creativity to 'happen' or do you have to see it in its embryonic form and then seize the moment and respond.

From all that I have read and seen there seems to be three important factors that are essential in any situation for creativity to develop and blossom. These three factors can in fact be imposed and are not dependent on the individuals involved.

Important Factors

1. *There must be a strong and meaningful multidisciplinary approach.*
2. *Partnerships within and beyond the school must be forged.*
3. *There must be an end product or performance that all the work is directed towards.*

This is the basis of my exploration into creativity. I want to examine whether or not these are the important factors and what role they play in the nurturing of the creative spirit.

Before I unpack these three elements I want to, by way of an example, describe a visit I made to a school this week as it provides examples of how the three aspects play out in a real environment as well as providing an example of the

organic approach to developing creativity within what is essentially a traditional environment.

Hauraki Plains College.

I spent an hour or so in the company of Stu and Jonathan the music and media teachers at Hauraki Plains College. For those of you who don't know the school, it is [unsurprisingly] located on the Hauraki Plains about an hour out of Auckland [New Zealand]. It is situated in the small community of Ngatea and school as well as town serve a fairly wide rural community. Nothing surprising there. The College has a history of doing well in National assessment results over a number of years and has established a very good reputation for 'delivering,' it would be fair to say it is seen as a highly desirable place to send your children. To all intents and purposes it seems like a well-run, fairly typical and fairly traditional New Zealand school. It also, however, has a reputation for developing the creative arts and in particular music as performance, so I was interested in how creativity has grown [and gone from strength to strength] in a largely traditional environment. This statement is in many ways an unfair generalisation, and I must make it quite clear that in using terms like 'traditional' I intend no value judgement at all.

The particular purpose of my visit was to test the three key factors mentioned above and to see if they were actually important in a real situation.

The story of Hauraki Plains was interesting from the perspective that it provides an excellent example of the organic growth of creativity within a school rather than the legislated approach.

When Stu the music teacher arrived at the school he had a strong desire/passion to encourage the students to write their own songs. Not only write but perform and record their own original material.

From a small prefab and using the store room as a recording studio the first CD of original material was produced. The performance of this material at the

local town hall led to the local chapter of the Lions offering to provide some financial support enabling the purchase of better recording equipment. From here the place of original music and its performance at the school has continued to develop. Stu has acquired new computer based skills as the production requirements have become [through necessity] more sophisticated. Partnerships have been formed with professional musicians who have been able to work as mentors and institutions like Starship Children's Hospital who provided the stories that inspired one of the latest albums.

The multidisciplinary approach has also emerged through need as the Enterprise and Media classes have become part of this creative union overseeing design and promotional aspects of the various ventures.

Most recently Jonathan has been employed as a full time Media teacher and has been able to see how to offer students the chance to get NCEA credits from domains beyond Media Studies as part of the research element when the students are developing and planning their film making.

The development has been organic in the sense that it has responded to the need of the students as their creativity, having been unleashed, wanted more. Performance and production have always been an expectation of the music classes and this tangible end goal has provided the necessary sense of accountability and ownership. This is not surprising as any activity normally has an end performance of some sort. You wouldn't, for example, expect a sports team to train endlessly unless they were preparing for a competition of some form. The multidisciplinary factor developed to respond to the need and demand of the projects and is now being extended to an exploration of now NCEA standards [in the case of Media Studies] can be a part of this and there have been numerous partnerships formed with mentors and local/regional organisations that have provided support in the form of expertise or financial backing. It would seem then that the three factors identified as being of import are all present in the Hauraki Plains context.

What was also apparent was that most of this activity [especially in the case of music] took place outside of 'normal' classroom hours. It was driven by the passion of a teacher and the learners. The 'in class' activities were primarily focussed on the need to get through a national curriculum and the related assessments. There is of course nothing wrong with this. New Zealand schools have a very strong tradition of co-curricular activities, often these areas are what defines a particular school as being unique. What could be of concern though is that if the driving teacher were to leave in any school where creativity was based around the concept of a 'club' would then the activity continue is its survival linked to the passion of the personalities involved. By bringing these creative activities into the fold, so to speak, do we institutionalise and normalise them so that they are not dependent upon individual teachers but become part of normal practice?

My Journey.

This visit encouraged to reflect on my own experiences as an educator and, in particular, my journey in relation to working with students on projects and activities that involved creative ownership. I remember the days of the 'club' approach and the excitement of working with a group of students outside of the normal timetable to produce creative writing magazines, drama performances and form groups to focus on social justice. It was exciting and in many ways more rewarding than the day to day class based curriculum delivery. They did organically involve other like-minded teachers and it did almost naturally find ways of forming partnerships and relationships beyond the school gates.

Over the last eight years though I have increasingly explored ways of merging the world in the classroom with the co-curricular world and this exploration has led me to make one further assumption and identify two more important factors that are important in creating the environments within which creativity can flourish.

Assumption #2

If creativity is to flourish in a modern learning environment then technology has to be embraced. This does not mean teaching it or specifying which app is to be used for what task but genuinely leaving the door open for technology to be part of the process. In this way the students will bring in the appropriate technology to achieve the goal. They will master it and understand it far quicker that any teacher will ever manage to.
For creativity to flourish we, as teachers, must accept the rapidly changing world of technology is the tool that will create the environment, it will encourage multidisciplinary approaches, allow for the formation of partnerships beyond the classroom and provide the platform for the productions and performances that are the end result of the process.

Important Factors

4. *There must be flexibility within school structures. The structures must bend to the needs of the learners not the other way around.*
5. *Technology is the tool that will allow the structures to change and become more flexible.*

Allow me to explain these claims by sharing the development of comic creation at my current school, Alfriston College, a multi-cultural and diverse South Auckland secondary school.

Over the last eight years I would have overseen the publication of at least 7 anthologies of comic original art produced by Year 9 through to 13 learners and ranging from the stunning to the rudimentary. Initially the flexibility inherent in the school's timetable assisted me in developing this creativity. Up to once per term the school suspends the timetable for three days and allows learners to focus on one project for three uninterrupted days. This was the perfect environment to create a group totally focussed on producing a publishable comic within a three day time period. From here I tried a number of approaches from meeting once per week, to setting individual projects through to student run three day episodes where I merely gave them the task and left them in a room to complete the task.

This led to the creation of a virtual class that communicated via Google Docs and in one on one discussions with me and, more recently as a timetabled Year 9 option that runs for a whole school term at 200 minutes per week. In other words the creation of original comic art has moved from outside the school structure to being fully integrated into it. I must emphasise at this point that the school does have a flexible timetable and a strong desire to explore innovative approaches and it always has done so. Creating comics was not seen as being unusual in this context it was just another innovation that could work or might not but without trying we would never know. This is very much at the heart of what drives decision making at the school.

On reflection is that even though the approach is less organic than what is happening at Hauraki Plains and it is within the 'system,' so to speak the five important factors outlined above have all played their part.

The school does have a flexible timetable, three day episodes and 100 minute lessons are two examples of this. Partnerships have been formed with outside publishers and educators both nationally and internationally and this has meant that we have been able to get comics published and seen by a far wider audience than we would have managed by ourselves. There has always been an end product that the creators must be accountable to. The multidisciplinary approach has been evident in a similar way as evident at Hauraki Plains but most overtly in my ability to offer NCEA credits from the English domain for work done in comic creation classes. And yes I have followed rather than led learners who introduce tablets and other forms of technology that they are far more adept in than I am.

In other words I have tried to find ways, over time to integrate the creative activity of creating comics into the structures of the school. Hopefully this process makes the act of creativity seem as normal and natural as any other aspect of school life.

Two different contexts, two different schools, two different environments but some striking similarities, in fact it would have to be said that the similarities outnumber the differences.

What I would like to do next is to place these 'local' stories in the context of what is currently being said internationally about the place and importance of creativity in secondary school environments.

International Musings

For many of us Ken Robinson's 2006 TED talk 'Do Schools Kill Creativity" was an epiphany. It became a clarion call and a profoundly effecting nineteen minutes. Personally it felt like something that I had felt for many years had finally been articulated, in fact it felt like a release.

The idea that if you run an education system that was designed to produce standardized results that by its very nature suppresses individuality, imagination and creativity in favour of standardization and conformity was an issue that individual educators had been wrestling with for as long as I had been involved in the education process [both as a receiver and provider].

The problem, of course, with running an education system based on standardization is that we are not all the same to begin with and conforming entire generations is neither natural nor beneficial. As Robinson points out in this talk and in his subsequent books ["Out of our Minds" and "Creative Schools"] this system was developed for, and was effective in creating, a conformist workforce suited to the Civil Service and the typing pool but no longer relevant in the modern world and certainly not relevant for the rapidly changing and unknown world of the future.

Since that talk it seems that an entire industry has emerged extolling the virtues of nurturing creativity and innovation within our education systems. The literature is compelling. The enemy, so to speak, was clearly identified, David Hood in his recent book 'The Rhetoric and the Reality" refers to the

‘paradigm of one’. One teacher, in one room for one hour with one class…. the traditional content driven approach where learning is compartmentalised into subjects that exist as silos, delivering content to be practised before being regurgitated in test situations has been clearly identified as working against creativity and in fact working towards suppressing individuality.

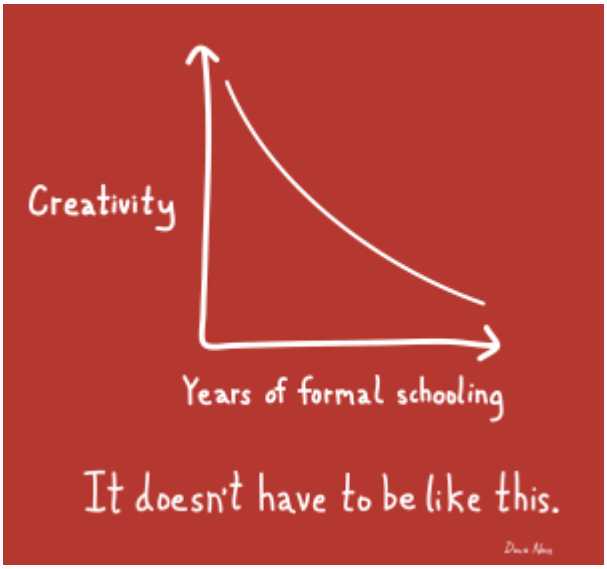
Having identified the issue the next stage for the ‘movement’ was to somehow come up with a solution to two significant questions,

1. How do we develop creativity in our schools?

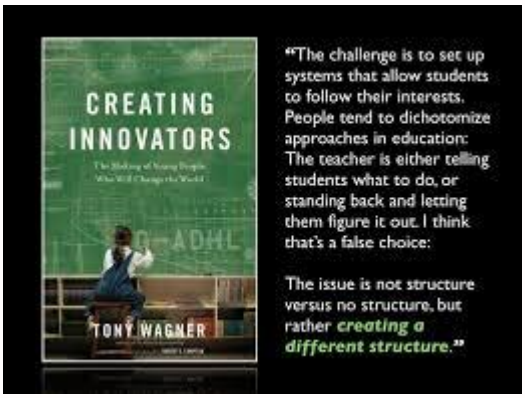
2. Why should we?

Failure to think about how structures need to change would have meant that the role of developing creativity would remain a semi subversive activity practised by a group of rebel teachers with a small clique of followers. Yes there is some exaggeration there but the truth is that it would remain a marginalised activity and the question that needed examining was whether this was acceptable or not. In other words is creativity so important that it has to be part of normal school life or will creative people find a way to be creative with or without assistance from the system.

Part of this process has seen a redefinition of creativity. The concept of creativity has developed in the minds of educators beyond what a student does with paint brush, guitar, or pen. Beyond creative writing and creative dance and something that happens in the drama studio to a broader understanding that creativity is a way of seeing, a way of problem solving, a way to find new ways forward, in fact the essence of human questioning and development and in particular the development of new and the challenging of old ideas.



This in turn has seen a strong association develop between the concept of creativity and the need to develop and encourage innovation and innovators.



This strong correlation between the developing awareness of the importance of creativity and the need to develop innovation and innovators has seen the two firmly linked in much of the writing on what is important in modern learning environments. Perhaps one of the most articulate and powerful voices in this area is Tony Wagner and in particular his recent book, "Creating Innovators: The Making of Young People Who Will Change the World."

One of the most powerful sections of this book is where Wagner interviews a number of young innovators from diverse backgrounds and attempts to find out why they have become successful innovators at a relatively young age. One area in particular that he delves into is who inspired them. In almost every case, where he does in fact find an educator that served as an inspiration for

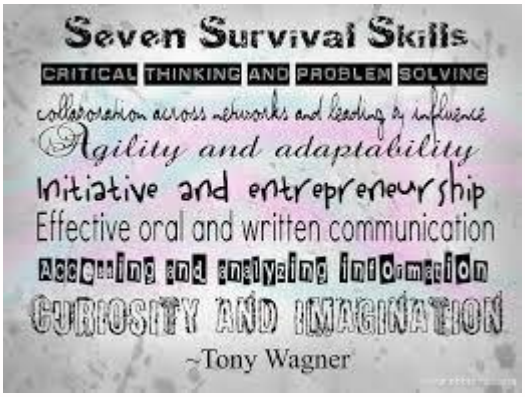
one of these young innovators that educator existed on the outer edges of the institution in which they worked. Either unable to gain tenure or full time permanent contacts or going outside of the normal workload hours to inspire and develop young minds. In every case the educator was something of a rebel, considered with suspicion by the wider institution but revered by the students. This brings me back to my earlier initial thoughts about whether creativity is by its nature an act of near rebellion that belongs on the edges or whether there is a place for it within the core learning of an institution and therefore the institution should bend to accommodate it.

Wagner does make numerous important claims about the need to consider innovation and creativity together, these include the claim that innovation today is driven more by people's creativity than by high- level scientific research. He sees innovation as being defined as creative problem solving. Therefore developing the capacity to develop individual creativity is seen as the way to ensure the development of innovation and innovators.

There is no doubt that innovators are highly regarded in the modern world of employment and that innovators are highly sought after, at least this is what we are constantly being told. Apple talks about employing people who 'Think differently" and the story of Pixar as outlined in "Creativity, Inc.: Overcoming the Unseen Forces That Stand in the Way of True Inspiration", by Amy Wallace and Edwin Catmull is a detailed examination on how effective innovation and creative minds can be at the cutting edge of modern industry.

Wagner and numerous other academics [including the likes of Robinson and Hood who have already been mentioned] are able to identify what attitudes and dispositions are seen as necessary to survive and thrive in the modern world. This list is often heavily loaded with words beginning with 'C'.

Dispositions like communication, connectivity, co-operation, critical thinking, compassion and of course creativity are the words that Hood uses. Wagner's seven skills for survival are detailed in the graphic below.



So what we are being led to believe is that creativity is educated out of us but that it is a skill along with other dispositions and attitudes that is vital for the contemporary work force.

The need to address this can be seen in various nations including South Korea where there is an expectation that 10% of curriculum time is spent on fostering creativity. There does seem to be evidence that an increasing number of countries see fostering creativity and critical thinking as the next educational challenge. Both concepts are to be found in the New Zealand curriculum and feature in educational guidelines from the Scandinavian countries, the U.S.A, the United Kingdom etc.

In the same way there is no shortage of those who are quick to identify what is wrong with the traditional systems in education and how they are strangling creativity. The traditional institution offering narrow academic targets and tightly drawn lesson plans has driven out much of the spontaneity and fun for learning claimed an on line Guardian article.

Traditional schools are portrayed as being naturally conservative where individuals who maintain privileged positions within them strive to maintain their current position and therefore discourage educational innovation and interdisciplinary leaps.

It appears that we are moving towards a realisation of what Mihaly Csikszentmihali believed, “that creativity occurs when it is recognised by the organization as valuable and adds to the success of the organization.” A realisation that we are not in fact standardized but that by definition all life and all activity is creative and that schools should reflect and encourage this natural state. In many ways the challenge for educators is to keep alive the mind and sensibilities of the young child as they progress towards adulthood. If we truly value the process of having original thoughts, if we think that society benefits from having individuals who are able to think creatively and critically and then be able to communicate persuasively and if we think that schools have a vitally important role to play in all of this then we have to move towards actively investigating how to enhance creativity and the development of innovators and creative thinkers within our education systems.

The problem is how do we achieve this? How hard can it be? After all eminent educationalist Ken Robinson is quite clear about it. Creativity, according to Robinson, is not a special quality bestowed on special people, "if you're human it comes with the kit."

How do we develop creativity in our schools?

If we accept that schools have willingly or naively strangled creativity and that the compartmentalised, standardized, content driven curriculum delivered in silos and aimed at conformity runs counter to developing the naturally inherent creative instincts and if we accept that creativity in its broad sense is an important attribute, valued in the development of society and in the development of the individual, if we accept all of this then the question of 'how' is one that needs addressing.

David Price describes one of the negative outcomes from one aspect of the traditional approach as follows;

"In my book, OPEN: How We'll Work, Live And Learn In The Future, I argue that a relentless focus upon high-stakes accountability — through student testing and teacher evaluation — has done little to improve outcomes, and has de-professionalized and demoralized teachers."

The importance of 'why' will be further developed but the question of 'how' is what I want to address here.

The simplistic answer is that individual inspired and inspiring teachers will always find ways of bending the system and create 'creative cells, within the traditional and standardized structures. This has been the case in the past and there is no reason to assume that it won't continue into the future. Students will always gravitate towards these teachers if their passions and needs collide. This is not in question, the question is whether this is enough or whether it is

the responsibility of the institution to accommodate the attributes that society is now asking to be developed.

There seems to be a considerable amount of information regarding what schools can do to create the environment necessary to enhance creativity and innovation and they all seem to require two important factors that are linked to the previous five factors already identified.

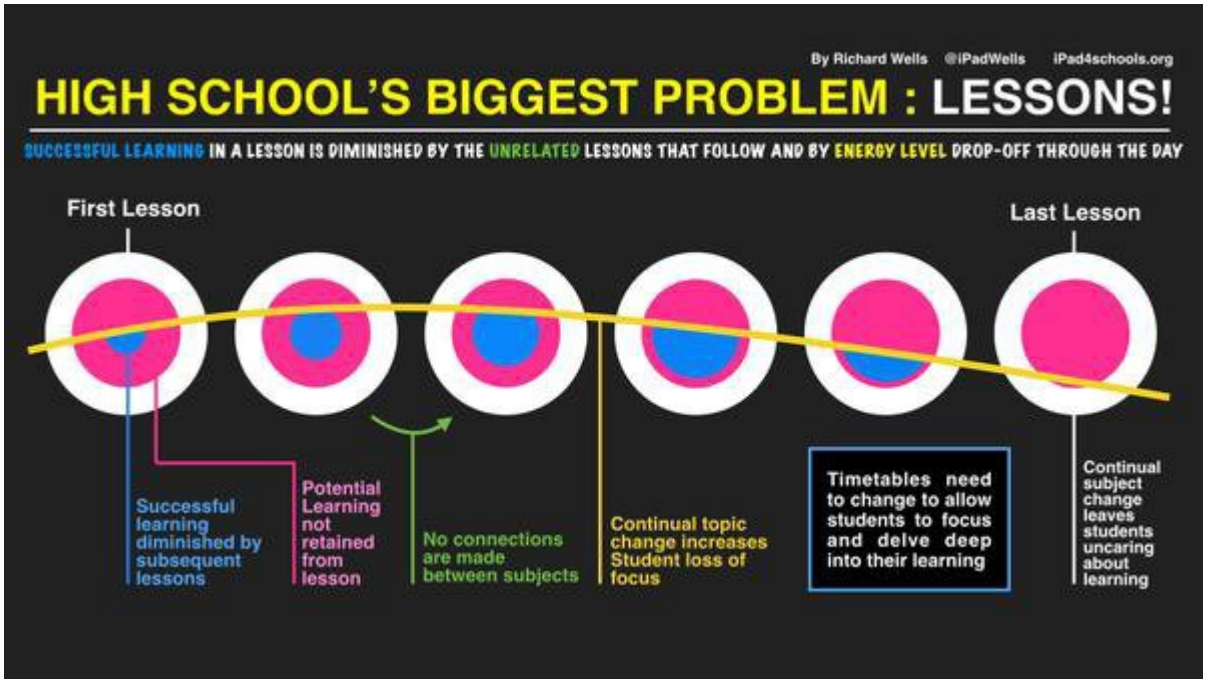
Linked Factors-

-A positioning amongst staff that something needs to change, that learning needs to become learner focussed not content driven.

-A realisation that the structures and processes that a school uses to function must become more flexible and meet the needs of the learner not the other way round.

The concept of flexibility can be approached in a number of ways but one of the most obvious is in redefining the concept of 'lesson'. In particular increasing the length of what is considered a lesson to allow students to delve deeper and pursue interests in greater detail than is possible in a shorter time frame, to say nothing of how disruptive to the learning flow the constant changing of lessons and learner focus is.

The restrictive elements of a traditional one hour lessons are outlined in the following graphic from Richard Wells.

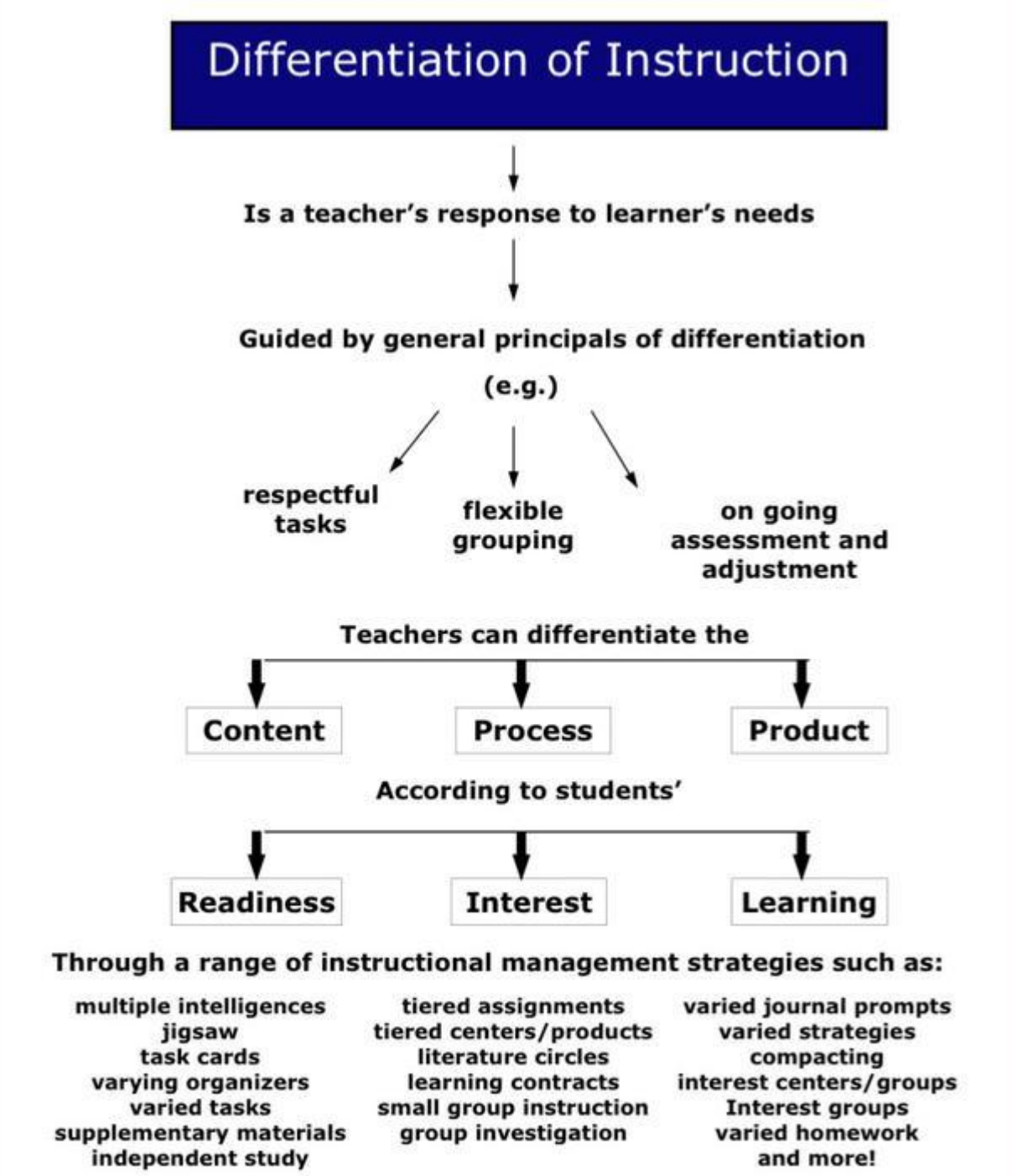


As well as addressing lesson length, schools can also adopt even longer time frames where one day, two days or three days can be given over to a single project, many in fact already do and the suspension of the timetable does not cause the sky to fall in.

The key element here relating to flexibility of timetable is the need to allow time for learners to develop a depth of thinking and analysis, time provided to enable learner to delve beyond the superficial.

There also needs to be a close examination and review of how learning is delivered. The content driven approach needs to be questioned and the concepts of differentiation and personalisation need to be examined, unpacked and understood. All too often these two terms are used as synonyms and all too often they are defined in a superficial and simplistic ways as giving learners a variety of tasks and they have an element of choice about what tasks they do. Or it is seen as classifying learners into remedial or extension groups and teaching them according to the label attached.

The diagram below from Carol Anne Tomlinson provides an overview of differentiation.



The idea of responding to student needs and states of readiness with a variety of approaches/ strategies and groupings is at the heart of differentiation and at the heart of moving towards a learner centred and responsive approach to learning.

Put simply, I see differentiation as the important first step in moving learners towards a personalised approach. If we move too quickly and if the pendulum

swings too much from the content driven approach to personalised learning then little will be achieved. If the transition is scaffolded through a differentiated approach then, in my mind educational safety is maintained and protected.

What differentiation is and what it is not is detailed further in the two charts below[again from Carol Anne Tomlinson].

WHAT DIFFERENTIATED INSTRUCTION IS AND IS NOT

What Differentiation Is Not	What Differentiation Is	Explanation
Just for students with labels	For every student	Every student has particular interests and learning preferences as well as a readiness level that varies over time and context. Each learner needs appropriate support.
Something extra in the curriculum	At the core of effective planning	Differentiation is not something you do when the real lesson is finished. It's integral to ensuring that each student has access to success with key content goals.
An approach that mollycoddles students—makes them dependent	Teaching up; supporting students in achieving at a level higher than they thought possible	Effective differentiation always enables a student to do more than would be possible without it, not less.
Incompatible with standards	A vehicle for ensuring student success with standards	A goal of differentiation is ensuring that each student succeeds with whatever is important for him or her to know, understand, and do.
Use of certain instructional strategies	Use of flexible approaches to space, time, materials, groupings, and instruction	Flexibility is a hallmark of differentiation, but no single instructional strategy is required to differentiate effectively.
Tracking in the regular classroom	The antithesis of tracking	Effective differentiation requires use of flexible grouping patterns so that students consistently work in a variety of groups based on readiness, interest, learning preference, random assignment, teacher choice, and student choice.
Assigning students to cross-class groups based on assessment data	Within a classroom	When students are removed from their classrooms and placed with students deemed similar in other classrooms, a kind of tracking is taking place. Real flexibility is lost.
All or mostly based on a particular approach to multiple intelligences	Systematic attention to readiness, interest, and learning profile	Learning profile is one-third of the domain of differentiation and consists of learning style, intelligence preference (there are two strong models addressing intelligence preference), gender-related preferences, and culture-related preferences. A single approach to intelligence preferences in the classroom is a narrow segment of the big picture of differentiation.

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From *The Differentiated School: Making Revolutionary Changes in Teaching and Learning* (Figure 1.1, p 4-5), by Carol Ann Tomlinson, Kay Brimijoin and Lane Narvaez.- Alexandria, VA: ASCD. © 2008 by ASCD. Reprinted with permission. Learn more about ASCD at www.ascd.org.

WHAT DIFFERENTIATED INSTRUCTION IS AND IS NOT (continued)

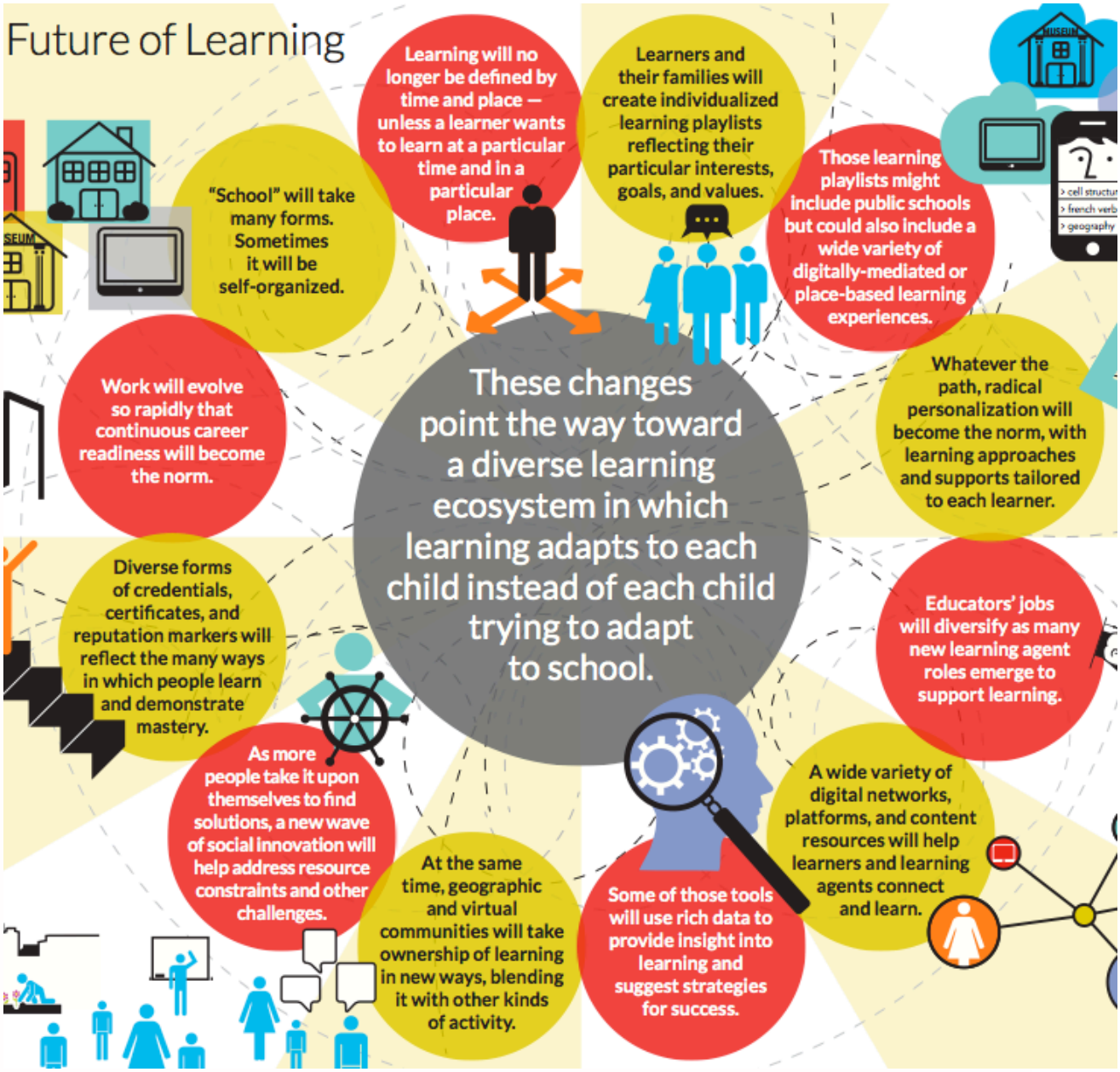
What Differentiation Is Not	What Differentiation Is	Explanation
All or mostly based on learning style preferences	Systematic attention to readiness, interest, and learning profile	See note above. Attention to learning style is helpful for some students some of the time and helps teachers learn to be more flexible, but it leaves other needs unaddressed.
Synonymous with student choice	A balance of teacher choice and student choice	There are times when it's important for teachers to assign particular work to students because it will move them forward in key ways. At other times, it makes good sense for students to call the shots and learn about making wise choices.
Individualization	Focuses on individuals, small groups, and the class as a whole	Although it is an aim of differentiation to focus on individuals, it is not a goal to make individual lesson plans for each student.
More problems, books, or questions for some students and fewer for others	Varied avenues to the same essential understandings	Struggling students don't often benefit by doing less of what they don't understand, and it's not helpful for advanced learners to do more of what they already know. Differentiation asks students to work with essential understandings at varied degrees of complexity and with varied support systems. Information-based tasks and skills-based tasks should be congruent with students' current needs.
Something a teacher does because it's the thing to do	Something a teacher does in response to particular needs of particular human beings	Differentiation should be responsive instruction, not mechanical instruction.
Something that happens all day every day	Something that happens when there is a need for it	At times, whole-class instruction is important and effective. Teachers need to build community as well as attend to individual needs.
Something a teacher does on the spot when it becomes evident that a lesson isn't working for some students (reactive or improvisational)	Something a teacher plans prior to a lesson based on assessment evidence of student needs (proactive)	The most powerful differentiation is based on pre-assessment and ongoing assessment of student progress toward key goals. The teacher uses the assessment information to make proactive plans to address student needs. Some improvisation is still needed, but it is not a dominant means of differentiation.

2

From *The Differentiated School: Making Revolutionary Changes in Teaching and Learning* (Figure 1.1, p 4-5), by Carol Ann Tomlinson, Kay Brimijoin and Lane Narvaez.- Alexandria, VA: ASCD. © 2008 by ASCD. Reprinted with permission. Learn more about ASCD at www.ascd.org.

Differentiation effectively changes the focus from content teacher led delivery to one that is more responsive to learner needs and is therefore an important development to a more inclusive education system. I would question whether differentiation alone is enough to encourage creativity in the classroom. I feel that it is a step towards a more personalised approach.

Advocates for a personalised approach to education make some fairly grand claims regarding its advantages, these mainly centre on the fact that if a learner has some control over what and how they learn and if 'school' works with individual learners to capture their passions and needs then education must, through necessity, become more flexible, diverse and relevant. In doing this it is claimed that learners will develop intrinsic motivation and not depend on extrinsic motivational factors. Personalised learning examines how we learn rather than just what we learn. The graphic below summarises how personalised learning could be the future of learning and thereby allow learners to develop the key attributes that are unceasingly in demand including that of creativity.

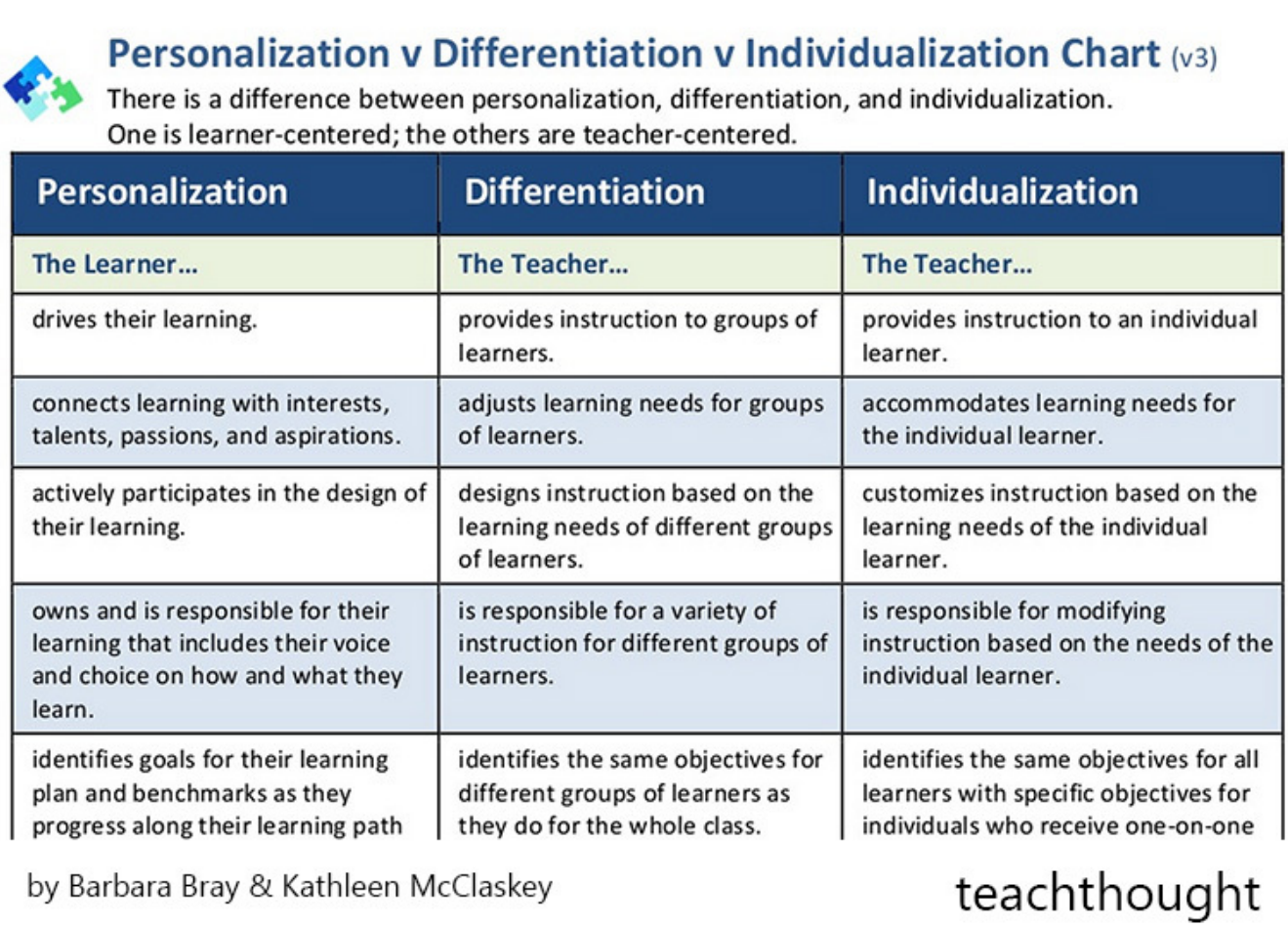


Personalised learning firmly puts the learner in the driving seat and the institution by wrapping support around individual educational drivers develops the partnership for individual learning development and growth.

The difference between differentiated learning and personalised has been defined on the *teachthought* website as follows. The chart that follows the definition is from the same website and provides further explanation of the differences between these two approaches,

“The difference between differentiation, personalized learning, and the individualization of learning sometimes seems like a matter of semantics, but that could be that terms are used interchangeably when they’re actually not the same.

The biggest difference really is the starting point. Personalized learning starts with the learner first, where differentiation and individualization take something designed for masses and attempt to adapt it for individuals–a monumental task to consistently do well.”



Personalization v Differentiation v Individualization Chart (v3)

There is a difference between personalization, differentiation, and individualization.
One is learner-centered; the others are teacher-centered.

Personalization	Differentiation	Individualization
The Learner…	The Teacher…	The Teacher…
drives their learning.	provides instruction to groups of learners.	provides instruction to an individual learner.
connects learning with interests, talents, passions, and aspirations.	adjusts learning needs for groups of learners.	accommodates learning needs for the individual learner.
actively participates in the design of their learning.	designs instruction based on the learning needs of different groups of learners.	customizes instruction based on the learning needs of the individual learner.
owns and is responsible for their learning that includes their voice and choice on how and what they learn.	is responsible for a variety of instruction for different groups of learners.	is responsible for modifying instruction based on the needs of the individual learner.
identifies goals for their learning plan and benchmarks as they progress along their learning path	identifies the same objectives for different groups of learners as they do for the whole class.	identifies the same objectives for all learners with specific objectives for individuals who receive one-on-one

by Barbara Bray & Kathleen McClaskey

teachthought

One of the biggest concerns often voiced about personalised learning is that it is somehow totally unstructured and that without a teacher organizing the events of learning then there is a risk that students will sit there and do nothing or be happy to work on superficial tasks but without a teacher driving them they will not delve into learning. There is a belief that without teachers

specifically guiding the learning students won't know how to navigate the path, that they do not have the skills to know how to dig deeply into learning.

A useful overview of what personalised learning can look like is provided below.

Even a simple diagram such as this makes it quite clear that personalised learning still has a very deliberate structure and a very robust process. The teacher's role is less on delivering knowledge but emphasises guiding students towards accessing the knowledge that they need at that particular time. An awareness of readiness is of paramount importance in a personalised learning approach.

In many ways there is a close association with differentiation but to put it simply the balance of control tips even more in favour of the learner and away from the direction of the teacher.

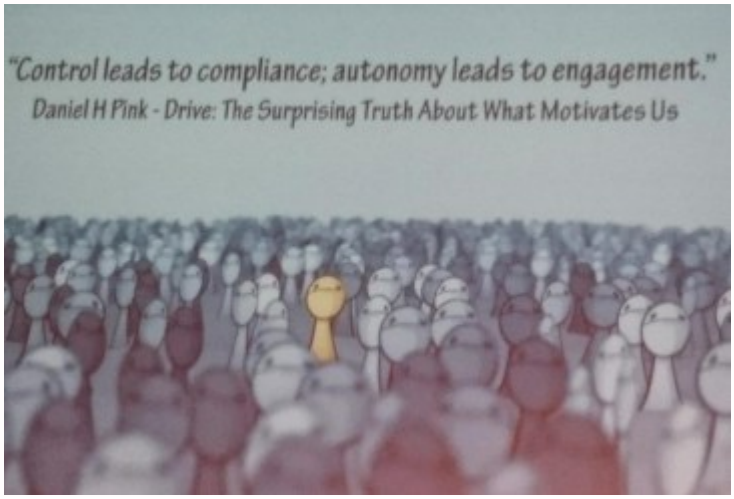
There is a fairly close relationship between the concept of personalised learning and project based learning so the two graphics below relating to how planning looks in a project based design model are helpful to aid teachers in seeing that personalised learning does not mean the complete loss of control and an inevitable descent into chaos. Both diagrams show clearly that for

personalised learning to be effective a very demanding process has to be followed.

The first diagram [from Alex Corbitt] emphasises that whatever the work is has to be relevant to the learner. The assumption is that the learner would have had to have significant input into deciding what the work is for this to be the case. The work also has to be of import or value not just something that has to be learnt because it appears in a curriculum but that it matters in the real world. The process is quite specific going from the posing of a problem, to exploration, to creation and then publication. It is easy to see that the concept of responsibility is strong here, far stronger than ion the traditional classroom where accountability is often more important than responsibility.

The second diagram from New Tech Network actually compare the personalised learning process with the traditional unit of work. The traditional unit is based primarily on delivery followed by practice followed by a process of testing. Project base learning that is often the method used to personalise learning is far broader. The possibility for lectures is still there but as one of a variety of approaches. The key element here is the use of benchmarks to provide checkpoint opportunities to gauge development. The need to hypothesise then test then present is evident in both graphics.

The rationale for considering a movement towards personalised learning is simply captured below. If we want to continue to use the education system to churn out masses of compliant adults then we should just carry on but if we, and hopefully we do, want to turn out engaged individuals who are intrinsically motivated and who are creative and innovative then we have to explore the concept of personalised learning.



Houston we have a Problem.

Before I move on to the 'why' question I need to address one of the more significant barriers blocking systemic change towards a more relevant and authentic model for learning. This issue has been bothering me for some time and has been recently brought into sharp relief when I was reading Alison Cleary's blog [aljcleary.blogspot.com] and in particular her postings relating to the 2015 English teacher's conference in Wellington.

A read through her posts reminded me once again that a large number of New Zealand educators are tireless in their pursuit of finding more effective ways of delivering learning to their students. Whether it be through exploring multi-disciplinary approaches, flexibility within course programmes, the use of technologies or by connecting with colleagues nationally and internationally teachers will always search for ways to get better at what it is we are charged to do.

There is no doubt that any movement towards a personalised approach to learning requires an embracing of a multidisciplinary approach at the same time. This archaic compartmentalisation of learning into artificial subjects has, quite possibly, had its day, It is questionable whether anyone actually learns in this way and so it is high time that we seriously considered changing direction and tearing down the silos.

No surprises there, and no surprises in that they are often working within their department or within their school, operating very much on a local scale. This has always happened and always will but it raises two problems.

1. *Is this enough, should we doing more to look at systemic change if we want to really meet the needs of modern learner and develop their creativity and ability to innovate?*
2. *Innovation eventually seems to crash into the road block that is the way we administer NCEA [the high stakes national qualification that operates in New Zealand].*

It is this second problem that I increasingly see as an obstacle to innovation within the New Zealand education system. Not because it contains any inherent faults but more due to the way we administer and manage it. Over two decades ago I oversaw an internally assessed School Certificate English programme at Pukekohe High School. When I look back at what and how we assessed English then I fail to see how much we have actually progressed regarding assessment of skills since NCEA has been introduced. We still [I believe] use a fairly narrow and traditional range of assessment processes and tools. We still largely over assess and use assessment in away that makes it manageable and straightforward. So most of our assessments are written, operate under strict time frames and impose what the eventual product must look like in order to gain the required credits.

The pressure on teachers to deliver programmes, mark and moderate the assessments and fulfil the wide range of accountability tasks related to delivering NCEA is the primary reason for this but it is not necessarily the way that NCEA was intended to be delivered. It was, at heart, intended to be a system that rewarded students with credits towards a qualification when they displayed evidence of skill mastery in a specific area. It-only three internal standards require that evidence to be provided in written form.

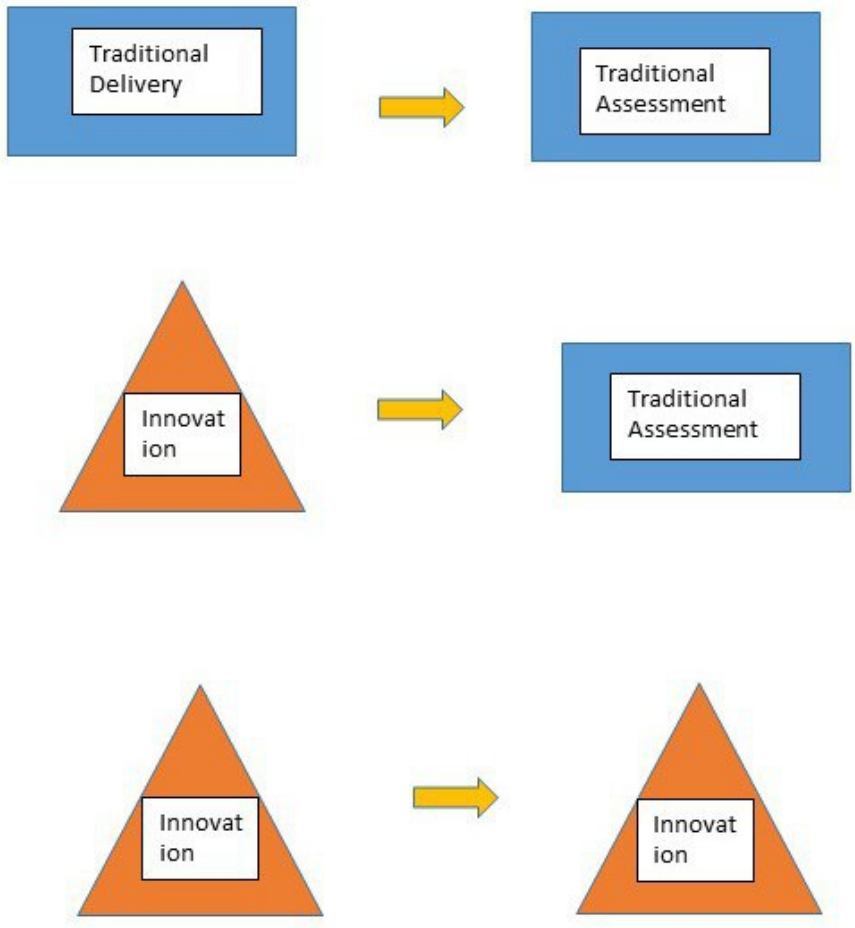
This becomes a problem when looking at innovative programmes of learning. If you deliver learning in a traditional way [a square box] and in the senior school assess learning using largely traditional methods [a square box] then it is highly likely that your students have been drilled on what to do in order to succeed and how to do it. There is an obvious match.

If you deliver an innovative programme either as an individual teacher or as an institution [a triangle] and then assess in the senior school using largely traditional methods [a square box] then you run the risk of not having drilled your students and creating a mismatch. I believe this is in fact what is happening in many New Zealand schools that are implementing innovative programme designs, there is a mismatch with how they are managing NCEA.

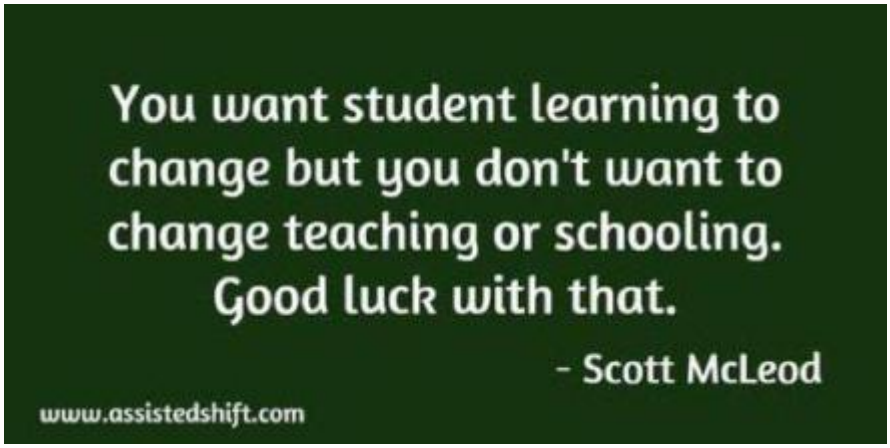
What is needed is a triangle approach to assessment to meet the triangle approaches to learning that are being advocated as desirable to develop the required skills and attributes in our students.

This is not a radical concept as it is clearly detailed in the front of the New Zealand Curriculum and in particular the five key competencies and it is also inherent in the spirit of NCEA.

What is required is the courage to assess in a more creative and innovative way and to somehow find the time and energy to do so. The first question to be asked in addressing this problem is,'who are we assessing for, the system or the student?'



Why should we develop Creativity in our Schools?



Having established that traditional schooling methods do a considerable amount to discourage creativity and having established that despite the conforming nature of standardized education individual teachers or small revolutionary cells of teachers will always find a way to encourage the creative spirit amongst their students and having also established that there is a considerable amount of advice as to how to change the classroom and the school so as to personalize learning and hopefully thereby encourage creativity and innovation the question remains , why should we bother?

The answer lies largely in the belief that for individuals to grow and reach their full potential they have to realise who they are and what they are good at. To develop resilience and confidence a person has to be able to think critically, to analyse and to understand the reasons why certain things have happened and will happen, to do this a individual has to have the confidence to think creatively to seek answers, to think outside the box. In other words to quote 'Creativity Inc' creativity "is not about learning to draw it is about learning to see."

From a nationwide perspective it is becoming obvious that a nation that encourages creativity is more likely to produce citizens who are able to deal with the global problems we are facing, simply because they are more able to see alternatives and more able to problem solve from an imaginative

perspective. It is increasingly understood that the world needs future generations of people who are creative, curious and collaborative, people who are in love with ideas. Ultimately creativity is the ability to see the world through fresh eyes and in doing so shape the future. To get to this stage we need to encourage questioning, curiosity and exploration within our schools.

A second justification is that we should start to teach the way people learn, we should start forming education around the way we know children learn. Tony Wagner explains in detail the stages of 'play-passion- purpose' as the natural and most effective way for children to learn. By giving children the time to experiment, trial, fail and do things they in the inquisitive way that the very young naturally operate will develop passions. These passions or interests that a child wants to delve into become the key to developing intrinsic motivation. By harnessing and working with these passions educators can assist children to move to purposeful activity aimed at deeper thinking or the production of artefacts and knowledge of relevance beyond the individual. Most importantly time has to be built to allow for growth through failure, to allow for trial and error and experimentation in order to develop resilience and self-belief. In short the environment must be created where students are active participants in their learning and not just mere consumers. A third justification linked to the one described above is the belief that this is a differently motivated generation, Simply knowing stuff is not enough it is not a sufficient driver. Rather it is the sense of worth that is a powerful motivating factor. The desire to do a job that means something that has an end product that is meaningful rather than the promise of a job for life or financial security.

In my previous position the office next door was occupied by an academically very capable ex-student, he has been employed to manage and analyse the data generated by the school. Watching the way he operates in a work situation is fascinating. He does not come to work to fulfil X number of hours and to slowly make his way up a career ladder, instead he comes to complete a task as efficiently as possible and then move onto the next task. He is not interested in working on easy tasks or meaningless ones and I know full well that when the tasks run out he will move onto to a new challenge. The fact that

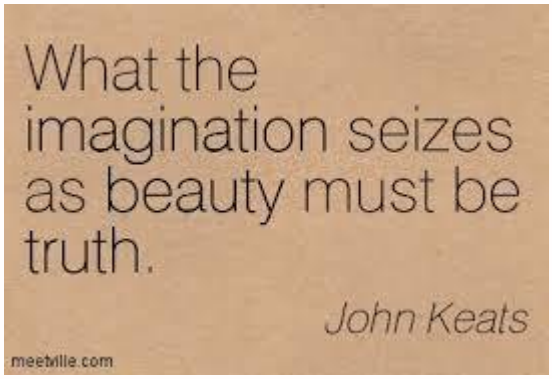
my own son operates under a similar mind set is proof enough for me that this justification is a valid one.

The fourth justification is that knowledge now belongs to everyone, the days of a teacher being the holder of knowledge that they distribute to the empty vessels in front of them are long gone. All or nearly all, knowledge is available on – line in forms far more interesting than any teacher based lecture. The job of the educator is to help students gain a sense of discernment over the knowledge they are accessing, to develop an analytical ability to sift the knowledge. This requires a positional change on the part of the teacher and the development of a new relationship, one of working alongside rather than pontificating from in front. In this world the power of an individual to help shape their own learning path becomes infinitely more possible.

This can be a painful lesson for some, late last year I sat down to plan a unit of work on a well-known novel for my Year 10 class. When I was a full time classroom teacher this was a task I loved, planning a unit of work based on a text that I revered. I toiled away planning lessons and resources for some time before I decided to trawl the internet to see what was available to me there. In short everything I had planned was already on the net in a format immeasurably more interesting than what I had prepared. Film clips, interactive activities, links to related texts etc. A huge amount of material, all of a sudden I felt irrelevant, I could just present the students with the links, give them minimal guidance and they with the computer could do the rest. My role was redundant, or so I thought. Thinking it through I realised that rather than suddenly being transformed into a relic my role had changed. The knowledge was there and accessible but helping students to choose, select and decide what was relevant and what was not and then working with them to make sense of what they were working with, to question and to debate the material presented before arriving at conclusions this was my role in this unit. This then is where the ‘flipped classroom’ concept is authenticated. The idea that students can access the learning from outside the classroom and bring it with them to be worked on within inside the classroom is an exciting aspect of this new relationship. The final reason is linked to the belief that meaningful

education must be built on respectful relationships where all are learners and all are teachers.

The relationship of trust, where there are questions to be answered or considered and that the path through these questions is one where teachers and students walk and work together is a powerful new approach. The Maori concept of *Ako* [reciprocal learning] provides a guiding principal for many New Zealand educators who wrestle with the way to develop relevant relationships in the modern learning environment. Ultimately we need to allow creativity into the classroom only if we care about the learning processes and outcomes for our students. Only if we care about how their minds grow, only if we care about their potentials and only if we believe in them.



Creativity does not mean Anarchy.

A lingering fear persists amongst many educators, namely that formally introducing creativity and the desire to promote innovation in the classroom

will result in a loss of structure and control over the process of learning. That students will have complete freedom to chart their academic development and that this will mean that there will be a lack of appropriate goals set, a lack of academic rigour and a sense that the meaningful tracking regarding progress will become a thing of the past. Students will cruise through a superficial approach to learning where they spend most of their time sitting on bean bags and producing work of little depth or import. The main justification for this point of view is that many young people simply do not have the basic skills required to build independent learning and independent motivation on, they don't have the basics and therefore will be unable to access the deeper and more meaningful knowledge that is implied in the development of creativity and innovation.

The perception is that introducing and pushing creativity and innovation in a more formalized way in our classrooms is going to create a chaotic learning environment. This positioning sees creativity as another word for complete and total student freedom and free choice. It will result in unstructured programmes of learning, no goals, no obvious pathways of progression and therefore no depth of learning. In truth there is a danger that this could actually occur.

To prevent it two important factors have to be discussed and fully understood. The first point should, by now, be obvious and the second is a belief that I have held for quite some time now. Firstly, it is important to establish a definition for creativity in the modern learning environment. The fact is that this new definition is significantly different from the traditional definition. Coming to terms with this difference should assist schools in moving towards a more creative approach to learning. Guy Claxton defines creativity as follows;" *creativity isn't about music and art, it is an attitude to life, one that everybody needs."* At the risk of repeating myself I believe [and hope] that creativity will always flourish within the arts, in the art room, dance studio, theatre and music studio but in a contemporary context it does not stop there, rather it is a mind-set that enables individuals to think outside of the box, to problem solve and therefore hopefully to innovate. It is not just about drawing

and dancing [even though these are still important]. The first step in encouraging the institutional change and systemic development in schools necessary to enable creativity to flourish is an acceptance of this wider definition of creativity, as a skill that allows individuals to navigate this increasingly complex world. Again to quote Claxton creativity is concerned with, "*habits of mind which include curiosity, scepticism, imagination, determination, craftsmanship, collaboration and self-evaluation.*"

The second important point to be made if we to allay the fears outlined above is the fact that creativity can be taught. This may seem like a slight contradiction but it is in actual fact far from it. Rather than being a 'free for all' teachers and schools have a vital role to play in developing creativity. Creativity is part of a learning system and therefore it does have a structure, a coherence and a rigour that will ensure depth of investigation and detail in the end product produced by students. I refer here to the work done by Dr. Ron A Berghetto and Dr. Helen Abadzi who explain how creativity can be nurtured within a school context. One of the key points they make is one that I have felt as being important for some time that is that memorization is a necessity. Again this may seem like a contradiction as surely we have move beyond requiring rote learning and regurgitation as indicators of intelligence, surely memorization is the antithesis of creativity, but in order to be truly creative one has to have a fully functioning brain. To have a fully functioning brain it has to be exercised and trained. Memorization is an important part of this training. Memorizing a poem or the times tables is not in itself a grand or noble skill, the product of the memorization is not always important but the exercising of the brain in committing something to memory is important. Being able to do basic maths with speed and accuracy, almost without thinking, to be able to remember material that is of a basic nature quickly and instinctively are important skills as they mean that rather than spend time struggling with basic numeracy the student can access information quickly and accurately and use it to move on to more meaningful and innovative work. If students are getting mentally tired and struggling with the basic recall type knowledge then of course their work will be superficial but if they find recall

and memory easy then the brain is free to accept more challenging tasks. The brain needs training and exercising so that it can recall information correctly and quickly, this is a skill.

I am the very last person to advocate a return to the pointless reciting of facts or answers if that is all it achieves. Being able to recite the capitals of Europe is, in itself, a pointless activity but the skill being developed is not meaningless. The challenge for educators is to ensure the relevance of what they are asking to be remembered. It needs to be relevant to the learning context, it needs to be linked to and of relevance to the deeper learning intended and not just an unrelated process and practice. The counter argument claims that students don't need to remember facts any more, they have Google for that. This is true but I mention again the need to exercise all aspects of the brain, and therefore memorization is not to be ignored, it still has a place. If students are to become the open minded problem solvers that we want them to be then we have to give them the basic skills that will allow them to dig deeply into rich and challenging questions. So far from inviting anarchy into the classroom schools need to focus on developing the brain and to do this structure, guidance, scaffolding and planning all play an important part in providing the student with the skills to be truly creative. The difference is training for a purpose and not meaningless rote learning.

Automatized skills still have a part to play in education but they are no longer an end in themselves. After all no musician ever mastered their instrument without countless hours of practice, much of it of a repetitive nature. The same can be said for any painter of note, any poet, any innovator, and any sports person. All committed to endless hours of practice until they mastered basic skills and then they took these skills to climb to the next level. Persistence is still an important component of creativity, it is a key habit of mind and, used carefully, is still an important part of any learning programme. Again the key is context. This requires educators to rethink why we are asking a certain task to be completed and it requires us to ensure that the tasks are connected and linked to more challenging tasks that will lead to deeper learning.

My wife was recently shocked at the inability of one of her students to do basic maths [find half of 32] The student was hard working and engaged and appeared to be doing well but she struggled with basis maths recall. I decided to test the extent of this concern by conducting an experiment at my own school and over a period of one week I stalked the playground and fired basic maths recall questions at random students. What I found [and I would have harassed around 50 students] was that some students found the questions very easy and were confused as to why I was asking them such basic questions. There was, however, no predictability about who found the tasks easy, either by age, gender, ethnicity or perceived engagement in their own learning. Some just found recall easy. Others found it very difficult and again there was no predictability here. Overall once I got past two questions many students started to struggle. For example they could answer the first question [double 16 for example], they could get the second question right [now add 57 to that, for example] but once I got to the third quick fire question that required them to do another cumulative action they started to fall apart. They just seemed to get tired and struggled to keep the numbers in their head, so they gave up. I repeat that some found the task easy but many struggled, especially to perform the task with me barking at them and especially once we went past two questions. There was no predictability about what students fell in which group. What I did conclude however is that they did find the task if instant recall quite challenging, it was not natural, it even appeared to be quite tiring. Whilst this was by no means a scientific study it does seem to lend anecdotal evidence to the theory that unless the brain is exercised and fully exercised then it won't be able to do the easy things quickly and accurately. It will therefore not develop the ability to short cut through the mundane and get quickly to the complex and it will struggle to develop analytical awareness.

The Schools #1

The next section deals with visits made to three schools during August 2015. The purpose of these visits was to see how various institutions and systems encouraged creativity within their own context. My intention was to visit schools in a suburban setting that catered for their immediate

communities. It was not my intention to visit schools that had necessarily been identified as world leaders in innovation but rather to visit three schools that for various and quite different reasons had the opportunity to investigative the role creativity plays in a modern school.

During my visits many topics were discussed but for the purpose of this report I intend to feature only those aspects that relate to the fostering of creativity and innovation within a school context.

Lasswade High School

Lasswade is a non-denominational secondary state school in Bonnyrigg, Midlothian, Scotland. Although a school has existed on this site for many years it was announced in 2009, that a new Lasswade High School Community Campus was to be built, with construction beginning October 2011. It contains state of the art facilities, it cost 32.5 million pounds to complete, contains 90 classrooms to accommodate around 1500 pupils.

It is a modern school that prides itself on delivering a modern education within the new Scottish Curriculum. Curriculum for Excellence aims to achieve a transformation in education in Scotland by providing a coherent, more flexible and enriched curriculum.

In Scotland councils and schools both have some responsibility for what taught in schools and they must also take national guidelines and advice into account.

It was apparent to me that one of the messages that the new curriculum was sending to schools was that this was a time for change and that for change to be meaningful there had to be a desire to experiment. Within the guidelines outlined in the curriculum there seemed to be encouragement for schools to find relevant educational pathways for their own learners.

This implied that there was a degree of trust in the profession. An example of this trust would be the fact that the school inspection visits were often on a seven yearly cycle as it was acknowledged that it takes time for meaningful change and development to become embedded and it takes time for the results of change to become apparent in any meaningful way.

This concept of trust was very apparent at Lasswade, to the extent that I would feel comfortable in saying that if you want creativity to flourish then there has to be a high degree of student ownership of the leaning process and to get meaningful student ownership then you have to trust the learner and make this trust apparent,

There we no bells to indicate the beginning and end of class, senior learners were able to go the local shopping precinct during their lunch breaks. These may seem like small things but they do combine to create an environment where students feel that they are being trusted to behave appropriately. There was a free and easy movement between the school and the shared community facilities. Classes and community groups used the pool, the dance studio and other facilities at the same time and there was therefore a strong sense of the school being a community focus. The normalisation of this school /community interaction was another example of trust where it is a given that the students and the members of the community will interact in a way that is mutually beneficial.

This leads directly to the second strong impression that I formed at Lasswade, that is, the importance of community in a modern school. A modern school cannot exist in isolation, it must provide authentic contexts if the learning is to be seen as relevant. The fact that Lasswade is a community school means that

there are numerous opportunities to provide authentic learning opportunities. I observed subjects such as hairdressing and so evidence of school trips to China and various locations in England, examples of the desire to provide authentic contexts.

There was a strong movement towards identifying appropriate vocational pathways for learners. This links to the expectation that all schools subscribe meaningfully to GIRFEC [Get it Right for Every Child].

It would seem that for creativity and innovation to flourish then a climate of safe experimentation must be developed. This is the base that creativity can be built on. This base requires overt displays of trust in the institution and within the institution and it requires an appropriate and authentic real life/community context.

There was also the realisation that for students to flourish they had to feel cared for. It was apparent that pastoral care was being seen an increasingly important precursor to academic success. It was also apparent that a climate of praise and acknowledgement of success was important in creating an environment that encourages engagement. As a result the school had a comfortable busy feel about. Learners seemed to be well aware of what they were supposed to be doing and were going about their learning in a responsible manner. In other words Lasswade was well aware of the need to create an environment where the learner felt safe and secure and from this the confidence to experiment and create could develop.

The use of data assisted this process in that whilst there was significant amount of it generated much of it was designed to inform schools rather than compare them with other schools. For example one of the important indicators reported on on was what destinations leaving students went to. A measure of success for a school was how many learners went to what are referred to as ‘positive destinations’ rather than just collating assessment related data. Scottish schools had introduced a decile rating system but rather than categorise an entire school to a single decile the students were reported on

within whatever decile band they fell in within the school. So schools would receive data on how their decile 9 learners performed and how their decile 2 learners succeeded.

In summary then and based on my brief snapshot for a school to be able to meaningfully develop opportunities or creativity there has to be;

1 Rich and relevant data

2 An awareness of the need to develop relationships based on trust

3 A natural interaction with the community that is encouraged and fostered

The Schools #2

Castlebrae Community High School

Castlebrae Community High School is a secondary school in the Greendykes area of Edinburgh. It serves a lower socio economic area and has had to deal with a significantly falling roll and threats of closure over recent years. This has resulted in the appointment of a new leadership team tasked with steering the school's future path.

Like Lasswade the school adheres to the principals of GIRFEC and delivers the National Curriculum for Excellence. If the concepts of relationships and community involvement featured large in my visit to Lasswade then the two features that stood out to me at Castlebrae were, evidence of a multi-

disciplinary approach and meaningful partnerships with external supportive groups.

In fact these four elements seem to be of significance in creating an environment where staff and learners are encouraged to develop innovation. Put simply the relationships have to be right and there has to be a meaningful context provided. If these are in place it seems more likely that creativity will have the opportunity to develop.

I observed the positive effects of a multidisciplinary approach in a class where a group of identified male learners were working on creating a coffee table for the school foyer. The 'hands on' element of this project was nearing completion an ge learners were obviously proud of their practical skills. The teacher had then structured the curriculum around this project with elements of the maths, design and English curricula all obvious during my brief visit. Previously this group had built wooden vegetable beds that they were planting with vegetables that they would eventually feed themselves with. The emphasis was on providing a meaningful authentic project that the learners were accountable too and then making the learning fit that task.

In another class I observed an enthusiastic group of learners in a hairdressing option. What was of note here was the teacher had originally been employed as a teacher assistant and was a trained hairdresser. She has been able to complete her training as a teacher whilst employed at Castlebrae and now is bringing her skills as a trained hairdresser into the school.

The most impressive and creative approach I observed was in in the creative industries class. This open plan space featured a pottery kiln and art spaces. Student work dominated the walls and display areas and the large space certainly felt alive even though there were only a handful of students currently working there. Again the teacher was anchoring the learning in meaningful contexts. This particular part of Edinburgh has a significant East European and migrant population for whom English is not their first language. One of the more impressive projects saw the teacher pairing one of her art students

with an ESOL adult from the community to create mosaic tiles for display at the school. This partnership had a community benefit as it broke down barriers and allowed the school to become a focal point for the community. The adults benefited by developing their language skills, the students developed their interpersonal skills, their understanding of different cultures and their artistic abilities and the school benefited from the artefacts produced.

A feature of Castlebrae's community based approach was the partnerships it was developing with various groups within the city. St Andrews University and Edinburgh College provide academic partnerships. The partnership with the Edinburgh festival allowed for creative opportunities through visiting artists and through visits to cultural events. The partnership with Lamborghini allowed for authentic skill based opportunities.

It seemed to me that the school was determined to find a way forward and investigate every possible opportunity to develop their learners. The use of partnerships seemed to be providing opportunities for creativity and innovation within meaningful contexts.

Like Lasswade it seemed that the new curriculum was flexible enough to enable schools to meet the needs of their specific communities. It also seemed that there was an awareness of a need for teacher professional development if they were to be able to make full use of these opportunities for new approaches to teaching and learning.

The Schools #3

Thomas Haney Secondary School.

Thomas Haney Secondary School is a public high school in Maple Ridge, British Columbia, Canada. It was built 25 years ago and designed to ensure that it would be impossible for the school to deliver traditional teaching and learning. The large learning spaces by their very nature discourage an isolationist approach to learning.

Self-determination and individual accountability were significant features in how Thomas Haney structured its learning programmes. There was a significant amount of self-directed learning time built in to all learners programmes. This time increased as learners moved through the year levels.

In junior years the learning programme looked quite traditional but as learners matured the amount of self-directed time increased. This time was used for completion of work, including the study guides, work inexpedience, community projects, volunteer work, self-directed projects, in fact the learner was encouraged to develop and plan their own pathways under the guidance and supervision of a teacher who monitored their development and progress. If a learner waned to pursue a passion they were able to but if they wanted to follow a more traditional approach to learning then they were able to do so. The system as also flexible about where education took place for more senior students, the self-directed time could well be off site and in many cases this was the most appropriate place for it. In other words the system was designed to be flexible enough to allow individuals to plot their own paths but structured enough to ensure that learning progressions were made by all students. There was a strong emphasis on individual accountability to plan and use their time in a manner appropriate to their learning needs and desired

outcomes. External standardized testing was also not as intrusive as in many schooling systems around the world. The learner was definitely at the centre of the system. The large open learning spaces meant that students could work and learn in a variety of ways from individual to large group environments. In the same way teachers time was divided between delivering lessons and providing seminars and monitoring for students on a needs or request basis. Every student had a learning advisor who stayed with them throughput their schooling and therefore developed a close relationship enabling effective and appropriate advice to be delivered and monitoring to take place.

The importance of flexibility is another prerequisite for learner engagement and ownership that is in itself a prerequisite to developing an environment that nurtures and encourages creativity. Like the two Scottish schools this was a community facility and the easy relationship between the school and the community was seen as enabling authentic learning contexts to develop naturally.

This flexible and personalised approach was dependent largely upon teacher understanding of the difference between self-directed learning and self-directed behaviour and the fact that the two do not necessarily go hand in hand. It was seen as the responsibility of the school to design programmes that ensured that learners gained more independence in accordance with their ability to manage it. The transition from one year to the next was marked by increased flexibility placed alongside the security of learning guides and an ongoing advisor. For creativity to flourish it would seem that a young person needs a secure environment that enables appropriate flexibility according to need.

The common factors that exist between all of these schools are;

–flexibility in approach and an awareness that we live in a world of constant change and the education system is likely to also be in a constant state of flux.

-a high degree of trust, that often means that goals, objectives and methodology are negotiable and varied.

-the importance of partnerships and authentic situations developed through community connections.

The overall impression formed was that creativity and innovation will not just happen without the prior development of an appropriate environment that values the individual and their place in the community.

This is the Story of Johnny Rotten

"All kids love to create, and feel they've come up with something on their own, and achieved it through their own means." [John Lydon aka Johnny Rotten]

"Rewrite educational curricula to meet the needs of the community and environmental needs rather than the needs of industry." [Russell Brand]

It may initially seem quite strange to start off what is essentially the conclusion of this report by referencing three notable anti-establishment

figures but to me it makes perfect sense and actually validates the importance of nurturing creativity within our schools.

You may want to classify Banksy as a vandal who voices his anti-authority views by defacing the property of others, you may want to classify Lydon as a foul mouthed punk yob who has zero musical talent and you may want to classify Brand as opinionated and drug addled. You may want to marginalise them and their ilk as talentless and overrated but you can never dismiss the fact that they have had a huge impact on their society and that they have all found creative means to express themselves whether it be a wall, punk rock or stand-up comedy all three have had a significant impact and influence on their contemporaries.

Contained within the two quotes and image above I see encapsulated the key reasons justifying fostering the creative spirit;

- *It is the way we can move forward as a society and find new solutions and approaches to the problems we face.*
- *It validates and encourages the individual as an active participant in their own education and development rather than merely being a receiver, creativity enables and empowers.*
- *It allows individuals to find ways to participate and be of use in the wider [even global] community.*

Some may feel that using these three figures could well undermine my argument but far from that I feel that they justify it.

All three are driven by wanting to express themselves, all three are driven by what they see as injustice and inequality in the world and all three are unable to keep quiet in the face of what disturbs them. All three have found a creative way to express themselves, rather than accept that they are powerless all three have found a creative way to reach out and all three have acted as spokespeople for a generation of those who struggle to find a voice.

As a result they are examples of the power of creativity, I would argue that all three have changed the world in one way or another and all three have forced society to evaluate and contemplate issues of the day. Whether you agree with their point of view and/or their lifestyle or not is not relevant, what is important is that they are examples of the creative spirit that has the power to transform and question.

From a personal perspective I love the music of Bob Marley. His use of drugs is well documented. I hate any and all use of drugs and abhor the effect they have on people but find the message of his music uplifting and inspiring. If we are serious about fostering creativity we must be open and intelligent enough to differentiate the person from the message. So the message of Marley's music, his creative voice need not be dismissed because we disagree with aspects of his lifestyle.

If we are serious about fostering creativity we cannot assume that we will have the power to dictate how it will manifest itself. That is the whole point, creativity will find its own path but if we want it to be maximised as a force of change than we must find way to foster and benefit from its transformational power. We have to encourage it into positive channels that we can all benefit from. It has the ability to legitimise an individual and I would argue that the world would be a poorer place without the music, comedy and art of those mentioned above.

Yes I accept that the rebels will always want to rail against the world and feel more comfortable on the margins but this should not be the only place that creativity can flourish it is far bigger than that. We need the ideas, energy and originality that comes with creativity and we need to use it to enhance the power of the individual to find solutions to the challenges we face.

I started this report by suggesting that there seem to be five factors that are necessary prerequisites to creating an environment that nurtures creativity in a school, there were;

1. *There must be a strong and meaningful multidisciplinary approach.*
2. *Partnerships within and beyond the school must be forged.*
3. *There must be an end product or performance that all the work is directed towards.*
4. *There must be flexibility within school structures. The structures must bend to the needs of the learners not the other way around.*
5. *Technology is the tool that will allow the structures to change and become more flexible.*

When I now reflect on them I believe that there are three key concepts that are required for a school to develop the creative potential of its learners;

1. *Flexibility*
2. *Trust*
3. *Context*

They are in fact just one word descriptors for my initial five factors.

Flexibility refers to the need for school structures to meet the needs of the learners. timetables, subjects, when and where learning takes place all have to move to a more fluid and flexible mode if the needs of learners are to be met and encouraged.

Trust relates to the relationships established. Concepts such as negotiation and self direction have to be adhered to. The idea of personalised learning pathways and learner centred education all require schools to trust learners.

Context refers to the need for accountability through the provision of authentic learning contexts. Real world partnerships, authentic situation all give purpose to learning activities. Being involved in genuine problem solving situations seems to fuel creativity and spark the imagination and innovative spirit of learners.

Creativity shapes what we will do next and our knowledge is advanced through its development.

A Reading List

The following list details the material that I referred to and was influenced by during this study [and before] most are educational texts. Two though [Brand and Lydon] are not and contain fairly raw material expressed in a direct manner. I am not recommending either of these texts as having a benefit to educators and they have the potential to offend but they are texts that contained what I consider to be valid point of view.

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Pahamov L. "Authentic Learning in the Digital Age." [2014] ASCD

Robinson K. Aronica L "Creative Schools, Revolutionizing Education from the Ground up." [2015] Penguin

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Wagner T and Dintersmith T. “Most Likely to Succeed: Preparing our Kids for the Innovation Era.” [2015] Scribner Book Company

Wagner T “Creating Innovators: The Making of Young People who will Change the World” [2011] Scribner/Simon & Schuster

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