

Collegium

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Collegium: A group whose members pursue shared goals while working within a framework of mutual trust and respect

Cover: *Thassian Refuge*, 2003.

Oil crayon and acrylic on cartridge paper, mounted on canvas.

300 cm x 300 cm. Lindsay Broughton

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Editorial



I have just enjoyed a cup of coffee provided by the School to mark World Teachers' Day. World Teachers' Day, established by UNESCO in 1994 to recognise the role of teachers in society, is not just an occasion to celebrate teachers, but also to take a closer look at education and the work of teachers. The word teach is unhelpfully ambiguous. It might refer to our all-encompassing job as educators in the broadest sense, and it can imply a range of purposes. What is it that we do when we teach and can we unpack some of the core elements that constitute the act of teaching? This journal considers the act of teaching by dividing it into seven core acts: planning, launching, consolidating, assessing, adapting, managing and leading learning.

In recent years, we have been concerning ourselves as a staff with the concept of backward design where the teacher's role, behaviour, and strategies must stem deliberately from established goals and purposes, the curriculum and the agreed upon learning principles.

The backward design, or backwards by design, concept is part of our teaching lexicon these days, and so it should be as it was first written about by Ralph W Tyler in 1949 although he didn't coin the word. It was James Coleman who, in 1990, came up with the term. He is also responsible for popularising the term 'social capital' which has had such a huge impact on our thinking and ways of talking about social theory. But it was Jay McTighe and Grant Wiggins who really introduced the term backward design to the curriculum design literature in the late 1990s.

They logically derive from the desired student accomplishments and our profession's understanding of the learning process.

In backward design the particular approaches, methods, and resources employed are not primarily subjective "choices" or mere matters of style. They logically derive from the desired student accomplishments and our profession's understanding of the learning process. We teach to procure a desirable result. Teaching is successful only if the learning is related to purpose and not left to some random act of osmosis.

This leads naturally to considering the other term immediately associated with teaching – learning. The

objective of education is learning, not teaching, and increasingly teachers are seen professionally as facilitators of learning; without suggesting that the teacher as a sage can no longer be found on our school stage. Effective learning is what this monograph concerns itself with – learning, and the elements that are needed to be in place for successful learning to take place. Each of our authors has considered an element of learning. Thus the seven elements essential for good learning to be visible in our school, have been defined as planning for learning, launching learning, consolidating learning, assessing learning, adapting learning, managing learning, and leading learning.

Building learning capacity is a key aspect of the role of Head of Junior School

In describing the process of planning learning, Eva Perry writes of the need for teachers to share a common language, a common understanding, a common mental model of what we want to achieve in order to be successful and in order to provide our children with outstanding educational outcomes. Building learning capacity is a key aspect of the role of Head of Junior School, ensuring that each teacher is planning for effective learning in the classroom and at the same time ensuring that together we have a comprehensive and sequential plan for the learning that will take place across the whole Junior School.

In launching learning, Lou Thorpe, writes about the general philosophy of Reggio Emilia as a means to successfully launch children into learning and also prepare them to be active and participatory citizens in the future world. She writes of the intricately interwoven and interrelated elements of the complex and dynamic learner and the learning environment and the teacher's role in preparing them for a future world which many of us can not envisage.

Any skill based endeavour requires what has been learned to be consolidated in order for the student to progress through the stages of learning.

In considering the theme of consolidating learning, Nicole Tuck draws on her own experience as an elite swimmer. She notes that consolidation means bringing things together into a single unit. In learning, it means bringing together many

ideas into one single understanding - into something that makes sense as a whole. This is what we refer to as synthesis: the combining of separate elements or substances to form a coherent whole. So how do we consolidate learning to become an expert? Any skill based endeavour requires what has been learned to be consolidated in order for the student to progress through the stages of learning. Here, previous explicitly taught essential concepts and skills are recited, recalled and applied to ensure that they are moved from short to long term memory, and automatized.

Katie Walker examines the role of assessing in learning and suggests that we need to be 'assessment literate' so that we can understand: what it is students need to understand; how students learn; and how can that learning be promoted and supported: how best to gather evidence about learning; and how to interpret and use that evidence to plan for better learning. Drawing on a range of theorists she proposes that the two key requirements of quality assessment which will enhance learning are clear learning intentions linked to the assessment, and assessments that are regularly moderated.

... adapting what we teach and how we teach
is not just for students who are struggling
but is the right of all.

Deb Williamson has had an extensive teaching practice in the field of adapting learning and applies this knowledge to consider our legal and professional responsibilities to adapt learning to meet the needs of all learners. We are all fully aware of our legal obligations enacted through the Disability Standards for Education. Deb also argues that adapting what we teach and how we teach is not just for students who are struggling, but it is the right of all.

Managing learning across all the School is an enormous task, and in the sixth element of learning, Cawley Farrell reflects on the processes and undertakings of the last five years at Collegiate. From virtual learning environments, to curriculum management systems, from teaching and learning frameworks, to professional learning committees, it has been one long drive for improvement.

We have to encourage creativity, and
create environments where students learn to
work creatively with others.

Our Principal has the role of leading the learning in our School. In her article she reflects on this role and the students we are preparing for the 21st Century. What are

the most important elements we need to be fostering? For Judith creativity and innovation are of central interest. We have to encourage creativity, and create environments where students learn to work creatively with others. Judith writes of the need for 'bravery' in viewing failure as an opportunity to learn, and to understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes. Our role is to help students to elaborate, refine, analyse and evaluate their own ideas in order to improve and maximise their creative efforts.

In the final section of this monograph Will Simon writes about the teacher as a learner as he reflects on his role as an adult learner working in the post-graduate area writing a doctoral dissertation.

Collectively as a staff we are all committed to
academic excellence, to fostering understandings,
to teaching key competences, to developing
habits of mind and mature conduct.

At the outset I noted that it was difficult to encapsulate the roles of the teacher. Nevertheless these writers have each taken the role of teaching and provided insight into each of the elements. Collectively as a staff we are all committed to academic excellence, to fostering understandings, to teaching key competences, to developing habits of mind and mature conduct (Adler, 1984). This journal stands out as a beacon of our commitment to the teaching profession and our part within it.

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Planning for Learning

EVA PERRY



Reflecting on my role as Head of Junior School in relation to planning for learning, I see my work on many levels, including ongoing professional learning for teachers, continued curriculum development and developing clear planning documentation to inform quality teaching. In order to produce quality, cohesive planning for learning we inevitably require professional learning for teachers to ensure that we are all, what many might say, ‘on the same page’, but what Peter Senge (1990) calls having a mental model that is compatible with each other. We need to share a common language, a common understanding, a common mental model of what we want to achieve in order to be successful and in order to provide our children with outstanding educational outcomes.

In 1990, Peter Senge published his influential text, *The Fifth Discipline*. He later followed this by writing *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization* (1994). Senge described what different organisations do to build learning capacity – and why some organisations use learning better than others. Building learning capacity is a key aspect of my role as Head of Junior School. I need to ensure that each teacher is planning for effective learning in the classroom and at the same time I need to ensure that together we have a comprehensive and sequential plan for the learning that will take place across the whole Junior School.

Senge codified the practices of what he called ‘*The 5 Learning Disciplines*’ to describe what he termed ‘*learning organisations*’. His five learning disciplines are shared vision, mental models, personal mastery, team learning and systems thinking. This short article will describe how teachers in the Junior School have embraced these concepts, although we have not explicitly referenced them as such, and how I have sought to be a learning-centred leader as we have worked on a continual improvement cycle.

It is worth unpacking the five learning disciplines briefly as they describe what we have been undertaking for most of this year. Firstly, having a shared vision. We needed to know what we wanted to create together. Taking time early

in the change process to have the conversations needed to shape a truly shared vision is crucial in building common understandings and commitments.

What I am going to describe here is the processes that we undertook in relation to reframing our understanding and practices in the Mathematics area. In the process of revising our Mathematics Curriculum, we needed to have a shared vision of what we wanted to achieve. We were fortunate to have the guidance and assistance of a curriculum expert from the association of Independent Schools Tasmania along with funding to support teacher workshops, and from the Head of Faculty, Janeen Merchant, as we undertook our own planning in the Mathematics area.

As teachers we also needed to know what comes before our class level and what comes after.

Our first means of moving forward was attending closely to the Australian Curriculum. We agreed that we needed to really understand and engage with that curriculum; we needed a deep understanding of the curriculum, so that we could fully engage with the curriculum requirements. We needed to be able to apply these requirements to the individual students in classes so that we can discern that we are meeting curriculum requirements and that we are differentiating to meet every students’ individual needs. As teachers we also needed to know what comes before our class level and what comes after. By having a deep understanding of the curriculum we sought to ensure that we were not rushing ahead into the next year level but providing opportunities for enriching students’ understandings of the key concepts.

Senge writes that each person has a mental model, that is the beliefs, values, mind-sets and assumptions that determine the way people think and act. He also writes about personal mastery as being central to ‘self-awareness’. In some ways this is not unlike Hattie’s dictum for teachers to ‘know thy impact’ (Hattie, 2009). So how did we allow time to unpack our mental models and to challenge our personal mastery?

We needed to make explicit how we were planning for the learning to occur and how we intended to assess this learning.

We successfully applied for and achieved a grant from IST that allowed us to set up a professional learning cycle to give teachers time to carefully question and engage with the curriculum documents with the support of curriculum experts and content specialists, our own colleagues, and together to work as part of a team to develop a professional dialogue. Initially the focus was looking at what the year level documentation was asking of teachers. We needed to make explicit how we were planning for the learning to occur and how we intended to assess this learning. We needed to be explicit about the meaningful learning activities that each year level would provide to ensure that rich learning could take place. The teachers worked through phases of the teaching and learning cycle and began by addressing learning intentions. Next it was on to considering assessment, including pre assessment, formative and summative assessment and post assessment. Thirdly, we focussed on developing and selecting intentional learning activities to support the former areas. At each part of this process, teachers were given the opportunity for time to reflect on each stage of the teaching and learning cycle and to take feedback from the experts and colleagues in the area.

Team learning happens when teams start ‘thinking together’ – sharing their experience, insights, knowledge and skills with each other and how to do things better.

Senge writes about this necessary part of becoming a learning organisation as the team learning element. He says that team learning happens when teams start ‘thinking together’ – sharing their experience, insights, knowledge and skills with each other and how to do things better. Teams develop reflection, inquiry and discussion skills to conduct more skilful change conversations with each other which form the basis for creating a shared vision of change and deciding on common commitments to action. Senge elaborates about one of the effects of team learning which occurs when teams develop the discipline to use the action learning cycle rigorously in their work.

It became a strong working document and the format will be the basis for other curriculum Key Learning Area documentation.

The teachers became their own change agents. They developed a clear and explicit planning proforma. Together we came up with the aspects of the non-negotiable, the ‘must have’ elements of what the planning documentation would consist. The initial development of the proforma came about using a consultative process involving the Head of Junior School, Head of Middle School, the Head of Mathematics, two key master teachers, and the IST curriculum expert. Together this group could act as facilitators and critical friends. Working in this way allowed us to gain agreement across all teachers from Prep to Year 6. To gain this agreement, teachers worked with the document and as part of the professional learning cycle we had amendments and opportunities to validate it. It became a strong working document and the format will be the basis for other curriculum Key Learning Area documentation. Teachers now had, through their own shared values and mastery developed a clear and explicit planning proforma which is now ensuring a seamless transition from the Prep class through to Middle school. The documentation includes all aspects of the teaching cycle, including learning intentions, vocabulary, differentiation, learning tasks and work sequences and assessment.

We have to be able to move beyond a linear cause and effect

Senge’s fifth dimension is systems thinking. He says to be a learning organisation we need to have the ability to analyse systems, that is, the ability to see the inter-relationships that underlie the complexity of the systems we work within. We have to be able to move beyond a linear cause and effect, which Senge reminds us is often inaccurate, and become aware of the hidden subtleties, influences, leverage points, intended and unintended consequences behind any complex system such as a school. Working together has certainly made this much more of a reality for our teachers.

We have been fortunate that through funding, some external and some internal, we have had the time and support to actually go through this process.

It has been clear through this short discussion of the many benefits that we have derived as part of this learning process. We have been fortunate that through funding, some external and some internal, we have had the time and support to actually go through this process. It is not a quick or easy ‘fix’. It requires deep commitment and a sense of professional purpose for it to happen. I am thankful that we had all these elements in place. Some additional benefits of this process is

the professional dialogue leading to collaboratively creating and writing the documentation that has made teachers really stop and consider, what am I teaching, who am I doing it for, what is the purpose behind it, and this has allowed them to gain a real sense of knowing how they are targeting individual students. In turn this has made them really look at the teaching and learning cycle, and confidently plan for well differentiated and meaningful learning activities.

This process has led directly onto our work with the whole of school goal of making visible and explicit our learning intentions. This has fitted in really well with our overall learning and allowed us to adopt the use of WALT and WILF, What Am I Learning Today, and What I'm Looking For. In this way, our students using WALT have a tool that reminds them to think about what is the aim of the lesson, what is the key topic for the lesson, and what is the skill being taught. With the WILF acronym they can have specific guidance to help them understand the success criteria for the learning, what they need to focus on, what the learning outcomes are, and what is the focus for assessment.

Being explicit about learning intentions and success criteria provides a vehicle for students to develop and use the vocabulary of learning.

Another huge benefit has been that, now that teachers are really familiar with the document they have been able to apply the process to other curriculum areas and to use the same proforma in other learning domains. They see the benefit of having explicit success criteria, being specific about how they are to make this clear for the student, and what are the best learning activities for each child to achieve the criteria. We are able to, as John Hattie reminds us, make it clear to students what we want them to learn in each lesson. Hattie reminds us that clarity is one of the most potent influences on student achievement. Being explicit about learning intentions and success criteria provides a vehicle for students to develop and use the vocabulary of learning. It enables time and opportunity for them to discuss and develop deeper understanding of what and how they are learning. This enables metacognition—a chance for children to develop their 'thinking about thinking'. This is a powerful tool for students to being able to self-reflect.

This may sounds like a simple premise but it required great care and deliberation on behalf of teachers and those working to support them.

In our professional learning cycle, we achieved two things concurrently. One goal was to work out a term's learning cycle in Mathematics. This needed to be a high quality learning model, created with the help and support of colleagues, specialists and external consultants. The second element was to develop a scope and sequence document. This ensured that the Head of the Faculty of Mathematics had time to meet with teachers across a whole year and across multiple years from Prep to Year 6. This may sounds like a simple premise but it required great care and deliberation on behalf of teachers and those working to support them.

We were all engaged in the process of planning for learning. So what does this mean for us and for our students? What is the purpose of all that we have done? As teachers we aim to engage our learners, help them to develop abilities and understanding. We want to be able to transform their learning by balancing teaching strategies with learning strategies so that both the teacher and the learner are actively engaged and focused on the same purpose. This requires a deep knowledge of the curriculum, standards, core concepts and content. It requires too that learners understand their role as active learners who initiate and control their own learning. As our teachers shift from solo to collaborative planning they become more fluent in making explicit their expectations and curriculum design, and to sharing it using a variety of media at their disposal. They become used to creating assessment before developing the content, and writing objectives that are designed to assist student learning. They become adept at developing a classroom which integrates creative struggle into the curriculum.

Yes, we are all engaged in the process of planning for learning, because we know and believe we can do it better.

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Launching Learning

LOU THORPE

How can we launch very young children into learning? What context can we offer for experiences which are joyful, engaging and supportive of each child's creative and educational journey? Does a 'one size fits all' approach to education give children skills and knowledge that can be applied to a multitude of contexts? How do we 'prepare' children for now and the future?

As an early childhood educator I believe that learning begins at birth. I believe that children are born learners. 'Brain development begins soon after conception, develops sequentially and cumulatively. It is integrated and continues throughout life.' (Winter, 2010, p 15). Indeed, studies in neuroscience confirm that the early years of life (birth to six years) are a critical time for children's wellbeing, development and learning,

Neuroscience is providing evidence that brain development in the first three years of life is more extensive, more vulnerable to environmental influences and has a longer-term impact than was previously thought. There is evidence that during the first three years of life, children's long-term capacities to trust, to empathise and feel concern for others, to think, understand and construct are being fundamentally shaped. Early experiences either enhance or diminish innate potential, laying either a strong or a fragile platform on which all further development and learning of the person, the body and the mind is built.

Winter 2010, p 10

It is encouraging that many educational approaches are drawing on socio-constructivist theories and studies in neuroscience to underpin frameworks and curriculums.

This view of early brain development and learning is in stark contrast to the thinking of past centuries. Children were often viewed as 'tabula rasa' a 'blank slate' eagerly waiting to be filled with knowledge. In the past in many industrialised countries the dominant discourse surrounding quality care and education for young children has been concerned implicitly with the notion that Early Childhood institutions "fill up the empty vessel that the young child

has often been understood to be" (Dahlberg, Moss & Pence, 1999, p. 63). It is encouraging today that many educational approaches are drawing on socio-constructivist theories and studies in neuroscience to underpin frameworks and curriculums. Embedded in such concepts is an image of a competent child. This belief is at the core of the values our colleagues in Reggio Emilia live and work by. Indeed, such socio-constructivist theories are completely echoed in and supported by the Australian Early Years Learning Framework, *Belonging, Being & Becoming*.

Children actively construct their own understandings and contribute to other's learning. They recognise their agency, capacity to initiate and lead learning and their rights to participate in decisions that affect them, including their learning.

(Australian Government Department of Education Employment and Workplace Relations, 2009, p. 9)

We also know that all aspects of learning are "intricately interwoven and interrelated" (Australian Government DEEWR, 2009, p. 9). A child's physical, social, emotional, creative, linguistic and cognitive development is complex and dynamic. How then, do educators launch young children into learning and help to prepare them for a future world, one which many of us can not envisage?

The relationships between teachers, children, specialists, administration staff, parents, the environment and the whole community are of central importance to a young child's feeling of security and belonging.

In quality educational settings, such as Collegiate's Early Learning Centre and Kindergarten, learning is optimised because educators develop programs that draw on The Early Years Framework, the Reggio Emilia Educational approach and other inquiry based methodologies. Simply stated, our programs are play and inquiry based. When children are given opportunities to actively co-construct learning through play, develop relationships with others, materials and the environment, cultivate a strong sense of agency and belonging and demonstrate their understandings in a multiplicity of ways then it follows that they are engaged

in the learning process. There is learning, but there is also joy. The type of joy that is found in everyday relationships and in everyday 'doing' and 'being'. This 'connectedness' is a central theme in the schools in Reggio Emilia, and at Collegiate's ELC and Kindergarten. The relationships between teachers, children, specialists, administration staff, parents, the environment and the whole community are of central importance to a young child's feelings of security and belonging.

When teachers use an inquiry approach to designing learning experiences for students, they provide an excellent opportunity to develop these very skills and disposition critical for 21st century living.

If all of these elements are vital for brain development and learning, how do teachers create programs or activities that develop skills which enable students to be masters of their learning? We believe that 'When teachers use an inquiry approach to designing learning experiences for students, they provide an excellent opportunity to develop these very skills and disposition critical for 21st century living. These skills must be developed for students to be able to inquire independently' (Murdoch, 2016, p 96). When educators develop programs based on inquiry methodologies, we grow the skills that 'act as important assets' to students as learners. These 'assets' continue with the student well beyond school. Kath Murdoch describes these assets as 'a set of skills which are commonly required by an inquirer: thinking, collaborating, self-managing, researching and communicating' (Murdoch, 2016 p 97). Murdoch goes further to explain that within each of these 'assets' there are a sub-collection of skills, to be used by the student a bit like a tool kit. These assets are trans-disciplinary and cross all areas of the curriculum, they are not just the domain of the classroom teacher. For example, Murdoch (2016, p 99) explains that when teachers talk about 'collaboration' there are many 'skills' involved within the act of collaborating, such as taking turns, consulting, sharing, compromising and agreeing.

Helping students to see the way they can use these skills in their lives outside the classroom is a significant step in consolidating the toolkit.

These assets and skills can be drawn upon in any curriculum area. When children are able to use the language involved with the explicit use of these 21st century skills or assets in the classroom, they are able to develop greater understanding of the differences between the skills and strategies used for

any given task. Students begin to develop and consolidate these skills and their own 'tool kit' for use in life. 'Helping students to see the way they can use these skills in their lives outside the classroom is a significant step in consolidating the toolkit' (Murdoch, 2016 p 105). These 'assets' are also referred to by educators and academics as '21st c skills', '21st century skills [are]... typically referred to, for example, as communication, personal and social skills and problem solving.' (McGraw, 2013, p4). These skills form the basis of the 'general capabilities' stream, which is embedded in within the Australian Curriculum (<http://www.acara.edu.au/curriculum/general-capabilities>).

At Collegiate the early year's programs in ELC and in Kindergarten promote the idea of children as lifelong learners. They are based on inquiry methodologies, with a strong emphasis on the development of 21st century skills or 'general capabilities'.

An important aim ... is to help students 'learn how to learn'... the construction of knowledge is a subjective process that proceeds in a spiralling rather than linear or stage-like way. Children sometimes work with teachers, and sometimes without them, projects are sometimes short, and sometimes long. The curriculum is ... based on more flexible strategies than rigid plans. I like to use the metaphor of taking a journey, where one finds the way using a compass rather than taking a train with its fixed routes and schedules.

(Rinaldi, in Edwards, Gandini & Forman, 1998, p 119)

What emerged from these observations and reflections was the children's interest in and ability to create dramatic stories and songs.

An inquiry project undertaken in Kindergarten during 2015 is an excellent example of children participating in classroom life and developing the skills to become active and participatory 21st century citizens. Our inquiry journey started from play provocations offered during Term 2. Staff had observed during first term that children were struggling to engage in long periods of self-regulated play, they were moving quickly from space to space without meaningful engagement. As a result of these observations staff decided to focus fully on creating engaging spaces directly related to the students observed and documented interests. Staff collected a large number of anecdotal records, photo documentation and observations. During planning time, the Kindergarten team worked collaboratively to reflect on the documentation. The purpose was to better understand what the children

were engaged in, how they were engaging and with whom were they playing. What emerged from these observations and reflections was the children's interest in, and ability to create, dramatic stories and songs. As staff responded to the children's interests a deeper relationship between storytelling and play gradually emerged. Staff observed that the children's stories were told and re-told, invented and transformed, verbal and non-verbal, real and unreal. The children's stories were intertwined, played out during the day, spoken, sung and drawn, using many possible 'languages'.

When educators give children the opportunity to create something, to work together, to solve problems, to engage in a constructive dialogue, to share and co-operate we begin to see the many, richly complex ways in which they co-construct knowledge.

Every morning during meeting time the children were encouraged to engage in a dialogue, share ideas, listen to each other and to discuss their stories. The children became more interested in telling their own, collaborative story, one that could be told without the need for 'written' words. The children felt strongly that a story could be told in a multitude of ways. Staff focused on creating deeper connections between the spoken word, drawing, imagination, dialogue and collaboration. Through the children the idea was born to create 'a story that has never been done before'. And so began 'The Story of the Talking Piano'. When educators give children the opportunity to create something, to work together, to solve problems, to engage in constructive dialogue, to share and co-operate we begin to see the many, richly complex ways in which they co-construct knowledge.

This is how we effectively 'launch children into learning', by giving them an active and participatory path in their learning.

Working alongside the children as facilitators, teachers carefully observe and document the children working and the learning processes. They are able to be reflexive and responsive when planning the next stage of learning, this in turn opens up opportunities for problem solving, co-operation and dialogue. It is only then that we begin to discern the development of 21st century skills, even in very young children. "If you work together then you will have good ideas to finish off our story" (Tommie, Kinder, 2015). It shows us that a classroom can be

a place of democratic practice, where students work towards a common shared goal.

This is not only how we successfully launch children in to learning but also prepare them to be active and participatory citizens in the future world.

This is how we effectively 'launch children into learning', by giving them an active and participatory path in their learning. The teacher's role is to provide the framework for learning, but it is the student's role to do the heavy lifting. A project such as The Talking Piano exemplifies respecting young students as legitimate, active citizens in our classroom and school. By drawing on inquiry models of teaching, with a strong emphasis on student participation, shared dialogue, respect for different points of view and collaborative learning teachers are able to develop the assets or tool kits so very important for 21st century learning and living. This is not only how we successfully launch children into learning but also prepare them to be active and participatory citizens in the future world.

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Consolidating Learning

NICOLE TUCK



“I know this already! Why do I need to keep on practising?” To any teacher, this is a familiar refrain from a student whether sitting in front of sheet music, rehearsing the elements of the periodic table or pouring over spelling lists. For many students it is difficult to understand why, after launching into learning and mastering a task, it is necessary to continue a lesson past this point. Cognitive science, however, has an answer: we don’t just need to learn a task in order to perform it well; we need to overlearn it (Murphy Hall, 2013). Any true consolidation of learning requires skills being practised beyond the point of mastery – the *overlearning* of that skill.

Consolidation means bringing things together into a single unit. In learning, it means bringing together many ideas into one single understanding - into something that makes sense as a whole. This is what we refer to as synthesis: the combining of separate elements or substances to form a coherent whole. So how do we consolidate learning to become an expert? Any skill based endeavour requires what has been learned to be consolidated in order for the student to progress through the stages of learning. Here, previous explicitly taught essential concepts and skills are recited, recalled and applied to ensure that they are moved from short to long term memory, and automatised (Department of Education, Training and Employment, 2014).

Skill acquisition to become an expert, in any form, is dependent upon learning. A widely recognised theory on the process of learning motor skills was presented by Fitts and Posner in 1967. They proposed that the learning process is sequential and that we move through specific phases as we learn (Fitts & Posner, 1967). There are three stages to learning a new skill: the cognitive (understanding) stage, the associative (practice) stage and the autonomous (automatic reference) stage. For one to move from the associative stage to the autonomous stage, practice must be consistently undertaken. Whilst this theory is based on an athlete’s ability to acquire new skills, the notion of consolidating one’s learning has many core crossovers between the sporting arena and the general classroom.

In this theory the practice stage is where the performer becomes familiar with the sequencing and timing of the movement. Linking the component parts into a smooth action involves practising the skill and using feedback to perfect the skill (Fitts & Posner, 1967). The complexity of the skill will determine the time needed in this phase and specific and targeted feedback is important. The main determinant here in moving beyond this associative stage to become an expert (autonomous) is practice. Practice of what one has just learned – consolidation of the skill set. Athletes spend countless hours in this stage with the hope

that one day they will achieve the old adage of ‘practice makes perfect’. This too rings true in the classroom; the more time one spends on ‘practising’ newly acquired knowledge, the greater the mastery, and in turn the easier it is to translate this into succeeding in formative assessment tasks.

Practice only makes perfect, however, if it is deliberate and frequent. Practice makes perfect if we *overlearn*. Overlearning is the pedagogical theory that practising newly acquired skills beyond the point of initial mastery leads to automaticity. The theory of overlearning links into Fitts and Posner’s (1967) third stage of automatic reference. Here, the athlete will develop the learned skill so that it becomes automatic; where performance of the skill involves little or no conscious thought or attention (Fitts & Posner, 1967). During the autonomous stage of skill learning, the skill becomes so much easier to perform, that it requires a lower energy input to perform. This has been demonstrated through a study conducted at the University of Colorado-Boulder in 2012 by Huang, Kram and Ahmed. They hypothesised that metabolic power would decrease with increased motor learning. The study measured the amount of energy expended on a task that was repeated over and over. Huang, Kram and Ahmed (2012) found that as participants became more skilled at a task, the amount of energy used to perform that task decreased; ‘by the end of the learning process, the amount of effort they expended to carry out the task had declined about 20 percent from when they started,’ (as cited in Murphy Hall, 2013).

From a physical sense, repeating a task allows you to commit a specific movement to muscle memory, which in turn allows you to ‘cut down on unnecessary movements and eliminate wasted energy’ (Beach, 2013; Murphy Paul, 2013). Take, for example, an elite swimmer. They can spend 25 hours per week in the pool perfecting their technique; hand placement, the underwater stroke pattern, timing of a breath and kick. They practise these skills over and over so that when they are faced with the pressure of competition they are able to perform the same tasks without distraction. A musician doesn’t stop practising when they have memorised the music. Every time they play, it takes less energy, allowing them to concentrate on other ways to improve the performance, such as infusing emotion into their music. In both examples they lower any chance of error with each practice session. Huang, Kram and Ahmed’s (2012) explanation is that even after participants have fine-tuned their muscle movements, the neural processes controlling the movements continued to grow more efficient (as cited in Briggs, 2014).

The same holds true for learning as there is a correlation to mental capability (Beach, 2013). Other studies have demonstrated that the amount of mental exertion required across a wide range of academic activities decreases following overlearning. This in turn leads to superior performances, particularly when in high pressure situations (Briggs, 2014). Overlearning to consolidate knowledge is the key component to becoming an expert. Practising or studying theory in a classroom over and over will lead to students being more competent and familiar with their work. The more familiar a student is with a test situation, the format, instructions, question types, the theory and strategies involved, the more mental capacity they will have free to use during the test for the harder work such as problem-solving and critical thinking (Beach, 2013).

As with the learning of any new skill or knowledge, the largest, most rapid gains are made during the initial stages of the learning program, with later gains being more difficult to achieve. In a sporting sense, this is known as the principle of diminishing returns. Consolidation of learning, however, may follow similar patterns. As a student gains more knowledge and skill on any particular subject matter, gains will become smaller and incremental. This is also where the notion of overlearning in order to improve can aid further improvement. Schendel and Hagman's study (as cited in Driskell, Willis & Copper, 1992) found that the constant repetition of additional practise promotes the deeper encoding of a skill in memory, making it in turn, more resistant to forgetting.

The real advantage of overlearning a skill in order to become an expert, however, along with increasing retention rates, is its effect on the automaticity of performance. Automaticity is the characteristic that a skill or task has been well learned. Even if overlearning does not result in dramatic increases in the execution of any given skill, it may still lead to the ability to perform the skill more automatically in various and challenging situations, such as academic examinations (Edwards, 2010). As noted earlier, this also allows one to use fewer conscious resources and thus require less effort.

As one reaches automaticity of a skill or task through overlearning, whether it be physical or mental, the attainment of what is often called the flow state will also be reached. Flow state is characterised by complete immersion in an activity, to the degree that nothing else matters (Csikszentmihalyi, 1990). During flow, self-consciousness is lost and the performer becomes one with the activity. Central to this is a situation in which there is a perfect match between the perceived demands of an activity and a performer's perceived ability or skills. Here, the performer has practised and overlearned their skills to the point that they are performed automatically with little thought (Jackson & Csikszentmihalyi, 1999). Jackson and Csikszentmihalyi (1999) state that an individual who enters a flow state is thoroughly familiar with their subject matter and has thought extensively about the different elements that all seem to come together to create the flow experience. It has been

argued that once one has reached flow state, they are considered an expert in that field (Jackson & Csikszentmihalyi, 1999).

The central message here is that in order to consolidate any learning to become an expert, overlearning is the key to success. To be able to execute any skill to a high standard, whether intellectual or physical, one needs to keep on practising, even after it appears the skill or task has been learned. The evidence suggests that there is a distinct advantage to the continuation of practise past any visible changes in performance. The field of memory consolidation is another research area worthy of noting but beyond the scope of this paper. So, for any teacher who hears those words "why do I need to keep on practising?" your response now can be "you're getting better and better, even if you can't tell you're improving!" Perhaps a thought to keep anyone going through those many hours of practise.

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Assessing Learning

KATIE WALKER



Assessment has always been an essential part of teaching. Traditionally, assessment was used simply to recognise the extent of learning progress and was seen as separate to the act of teaching and learning. Research now demands that teachers need to reconsider the role of assessment in their teaching: ‘Our experiences...all point to the need to rethink a teacher’s core aim – enhancing students’ learning’ through the diagnostic assessment of learning and understanding (Black, 2013:19). Whilst learning goals and curriculum have changed dramatically in the 21st Century, ‘in many countries, the assessment system has not changed and is still primarily focussed on summative assessment of static knowledge and end-results, without attention on the learning process...’ (Russman, 2014:2). In fact, with a rise in funding accountability, some developed nations are becoming increasingly focussed on summative test based assessment tools to simply measure student achievement rather than generating further learning (Livingston, 2016). How then should teachers best approach the assessment of learning in their classroom to ensure that student learning potential is realised?

Livingston suggests that for a teacher to be ‘assessment literate’ they need to understand: what it is students need to understand; how their students learn; and how they can promote and support that learning; how best to gather evidence about learning; and how to interpret and use that evidence to plan for better learning (Livingston, 2016). The importance of how we assess student learning can be understood when we know that ineffective assessment tools have in fact been shown to have a detrimental effect on student learning (Harris, 2009). Cummins argues that the two key requirements of quality assessment which will enhance learning are clear learning intentions linked to the assessment and assessments that are regularly moderated.

Frey has gone further arguing that the following five elements are required in order to develop assessments which enhance learning: assessment must be timely to ensure motivation and relevance; it must be specific in the information it gives both students and teachers in order to ensure future learning; grades are unnecessary and have, in fact, been shown to hamper learning as they distract students from quality feedback; clearly understandable for students, limited in nature and skills or future learning focussed; it must be actionable goals to generate change in levels of understanding and learning; lastly, it should be phrased in a manner which encourages a growth mindset in students by praising effort not static achievements and suggesting goals for future growth or progress (Dweck as cited in Frey & Fisher, 2011).

In order to assist teachers, the following approaches are all aimed at improving student learning and understanding by developing a best practice approach to assessment. Dylan Wiliam has developed his formative assessment approach as a practical guide for teachers to structure their learning programs through the following priorities: the development of clear learning intentions and success criteria for students, the engineering of effective strategies for learning which are able to be adapted according to student need, the provision of feedback which propels future learning, the activation of students as owners of their own learning and, lastly, the activation of students as learning resources for their peers. (Wiliam & Leahy, 2015)

Frey has also identified the importance of formative assessment in generating future learning in students. She has developed a cycle of three intermingled steps as crucial for student learning: ‘feeding up’ where students are given clear learning intentions and success criteria; ‘feeding back’ where feedback is provided to students and should connect to the learning intentions, be clear to students and provide future goals in an action based manner; and lastly, ‘feeding forward’ whereby the information gleaned from summative assessments is used to guide the future direction of learning which will frequently result in differentiation being required in order for all students to continue to progress from their current point of understanding (Frey and Fisher, 2011). Frey demands that teachers are making regular diagnostic checks of understanding simultaneously to learning in order to deliver a dynamic classroom environment which optimises learning. (Frey & Fisher, 61) She argues that “feedback has no effect in a vacuum, to be powerful in its effect, there must be a learning context to which feedback is addressed” (Frey & Fisher, 2011:).

An alternative pedagogical approach to assessment is outlined by Wiggins and McTighe (2011). In this instance, the focus is on the order in which teachers identify their learning intentions, consider which forms of assessment may accurately assess student understanding in each area and then, lastly, coordinate a series of lessons which will allow students to effectively prepare for these learning intentions and diagnostic assessments. It is understood that students who have not developed understanding in those areas may need to be differentiated for in order to maximise learning potential.

Whilst these three pedagogical approaches have varying terminology and processes, it is evident that, overall, their priorities in terms of assessment and their views on what is best-practice assessment are very similar. The pedagogical approaches all demand a new way of thinking about how to improve student learning. This process begins with the development of clear learning intentions in all models, the creation of

assessment tasks designed to effectively assess student learning and then, finally, the planning of learning activities to support students in achieving the aforesaid learning goals. All of the approaches also suggest the crucial nature of teacher/student communication as well as a teacher's ability to be flexible in their approach to teaching students: "a good unit is not a rigid plan but a flexible framework in which we are always prepared to adjust based on feedback...In the best designs we plan to be responsive, we plan to adjust" (Wiggins and McTighe, 2001:25). Formative assessment and Understanding by Design are highly complementary pedagogical approaches.

The reality of assessment in the classroom

What educational research defines as best practice assessment can, at times, seem a little idealistic within the realities of the average classroom. How much time does one have to develop diagnostic hinge questions amongst the 14 student questions, a teetering mountain of marking and 21 unread emails? Thankfully, some researchers have approached their academic musings with a sense of realism and an understanding of the classroom and aim for teachers to be able to 'work smarter not harder' when it comes to assessment. The three approaches to assessment which have been outlined above aim for teachers to be able to prioritise assessment and the advancement of learning; to be able to use their assessment time more meaningfully; and to assess in real time, simultaneous to learning, more frequently.

Frey and Fisher (2011) suggests that without effective use of assessment led differentiation and students being activated to direct their own learning, there will simply not be sufficient time to develop effective assessments. By using formative assessment results teachers are able to set student groups based on their understanding and prioritise who is most in need of support. If students have the skills and habits of mind to support their own learning and that of their neighbours', they will be able to self and peer assess as well as further guide learning independently, thus freeing teachers to focus on other tasks (Frey & Fisher, 2011).

Frey also encourages teachers to redistribute their time by reducing the amount of time spent on feedback in order to allow more time for 'feeding up' and 'feeding on' as the effectiveness of feedback (particularly extensive or ineffective feedback) is limited and can lead to students not even engaging with the comments teachers may have spent hours dutifully scribing in their red pen (Frey & Fisher, 2011). Teachers are able to achieve this reduction in marking time by following the evidence based guidelines and focussing on providing meaningful, action-based comments or rubrics. Teachers can limit their comments to a positive achievement and two specific, easily understood and action based goals (Frey & Fisher, 2011). They could also provide feedback on 3 sticky notes: one for positive achievements, one for constructive goals and one as a general summary of the task. (Frey & Fisher, 2011) Black assures teachers that the development of such meaningful action based comments becomes easier with time and practise. (Black,

2013:8) Frey encourages teachers to assess only one paragraph of a written response in terms of editing and then consider the entire piece only in terms of structure or content.

If teachers allow this reduction in time required for feedback and marking to occur, they will be more able to develop effective learning intentions and diagnostic assessments (Black, 2013). In doing so, the effective cycle of pre-testing, understanding based groupings, targeted teaching; and the replanning of learning can be managed efficiently. It is also possible to increase assessment efficiency by utilising strategies such as traffic light diagnostic quizzes and so on for instant assessment of learning.

It is clear that assessment is a teacher's best opportunity to identify student understanding and to rectify any problems through targeted teaching and instruction. Frey, Wiliam and Understanding by design pedagogies all offer teachers a variety of practical strategies and pedagogical approaches in order for them to develop their own assessment praxis and enhance their students' learning. In order to realistically achieve the not insignificant suggestions of these pedagogies, teachers need to alter their core aims as a teacher and their priorities in the allocation of time. If a teachers' goal is to assist their students to achieve their optimum learning then assessment is a teacher's most valuable tool in the classroom and is worthy of reconsideration and additional effort.

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Adapting Learning

DEB WILLIAMSON



Who deserves for their learning to be adapted to meet their learning needs? The answer is everyone. Adapting what we teach, and how we teach is not just for students who are struggling, adapting for student needs is for all. Our School values remind us of our obligations in regard to diversity; we assert that we value diversity, and this is all about making adjustments to enable learning for all.

Firstly, we all have legal obligations in this regard. The DDA – the Disability Discrimination Act – enacted through the Disability Standards for Education requires all those involved with education to take reasonable steps to enable students with a disability to participate in education on the same basis as a student without a disability. All of our teachers and many of our support staff members have undertaken the Disability Standards for Education online modules. Reasonable adjustments refer to a ‘measure or action taken to assist a student with disability to participate in education and training on the same basis as other students’ (ACARA, 2013). An adjustment is considered reasonable if it achieves this purpose while taking into account a student’s learning needs and balancing the interests of all parties affected including those of the student with disability, the education provider, staff and other students (Commonwealth of Australia, 2005).

While all teachers will be in the frontline of delivery for our students with special needs, the identification and support for these students is largely managed through the EDGE faculty.

There are four levels of adjustment. The first is quality, differentiated teaching practice referred to as QDTP, the second is supplementary, the third is substantial adjustment and the fourth is referred to as extensive adjustment. These adjustments can encompass a range of areas including the physical environment, teaching delivery and format, utilisation of assistance equipment and reduction of study load, see for example, Commonwealth of Australia (2006). They are based on reducing the impact of the student’s disability on their studies. While all teachers will be in the frontline of delivery for our students with special needs,

the identification and support for these students is largely managed through the EDGE faculty. Reasonable adjustments apply to all types of learning to support students learning; they are developed with the student, or their parent or carer; they will frequently assist all students to learn, whether they have a disability or not.

Differentiated instruction is a great strategy that teachers use to accommodate a wide variety of learning needs.

However the first level of adjustment, that is, quality, differentiated teaching practice is an area that rightly concerns all teachers and their practice. Differentiated instruction is a great strategy that teachers use to accommodate a wide variety of learning needs. Accommodations do not fundamentally alter or lower expectations or standards in instructional level or the conceptual difficulty, the content, or performance criteria. Instead, changes are made in the instructional delivery method, assessment method, or both to enable the student to have access to the same learning and equal opportunity to demonstrate learning.

An a priori element of any lesson or learning sequence is that it must take into account the students’ prior knowledge, the students’ skills and the students’ capabilities.

The great American educational writer Carol Ann Tomlinson (2014) reminds us that accommodations or adjustments or what is usually referred to now as differentiation falls into three major categories: content, process and product. Content: what we teach, or what the student needs to learn. Process: how the students learn the content, or how we go about helping them to learn; and product: how the students demonstrate their learning. A student may only need to have their learning adapted in only one of these areas, but all students benefit from having all or any of these valid forms of differentiation available to them. An a priori element of any lesson or learning sequence is that it must take into account the students’ prior knowledge, the students’ skills and the students’ capabilities.

Just consider for a moment our own experience of learning. Take a professional learning session on computers as an example. We all arrive at the session with different standards of prior knowledge, different ways that we prefer to learn - quietly getting on with it ourselves, chatting and receiving help from others, listening and then trying the new learning out later, writing notes, or listening, active learning and so on. We come away frustrated when we have spent an hour in a session and our needs have not been met.

We all recognise that some students will need constant revision, while others will know the material already and have a need for curriculum compacting – a fast track through the content.

Carol Ann Tomlinson is considered the guru of differentiation and she has written extensively on this area for over thirty years. Her work is very readily accessible; she writes well, and her knowledge is based on her own and observed classroom experience. Writing about the process element, she provides examples of differentiating process activities that include scaffolding, flexible grouping, interest centres, using concrete materials, varying the length of time for a student to master content, and encouraging an advanced learner to pursue a topic in greater depth. We all recognise that some students will need constant revision, while others will know the material already and have a need for curriculum compacting – a fast track through the content.

Product is about different ways of demonstrating that the student knows the content. It is about the culminating projects that ask students to apply and extend what they have learned. Products should provide students with different ways to demonstrate their knowledge as well as various levels of difficulty, group or individual work, and various means of scoring. One student may present the work in an essay format, someone might present an oral presentation, another student may do a PowerPoint, another a graphic representation.

Today's classrooms are more diverse, more inclusive, and more plugged into technology and they are led by teachers who are highly accountable for what their students are able to know and do.

The differentiated classroom should include times and spaces where students can work quietly as well as collaborate with others, materials that reflect diverse cultures and

abilities, and routines that allow students to get help and learn effectively when the teacher isn't available. There is no doubt this is challenging as teachers plan and prepare how to divide their time, resources, and efforts to effectively instruct students of various backgrounds, readiness and skill levels, and interests. Today's classrooms are more diverse, more inclusive, and more plugged into technology and they are led by teachers who are highly accountable for what their students are able to know and do.

Every student has a right to access the teaching and learning that we provide.

Differentiation and making adaptations is not another 'add-on' and it is a non-negotiable. Every student has a right to access the teaching and learning that we provide. As we all know one size does not fit all. The idea of differentiating instruction to accommodate and adapt our teaching to the different ways that students learn involves a good deal of common sense, as well as robust support in the theory and research of education. It is an approach to teaching that advocates active planning for student differences in classrooms.

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Managing Learning

CAWLEY FARRELL



As educators all teachers have a shared responsibility to design, implement and monitor curriculum in order to prepare students to be effective citizens in the 21st century. Robert Marzano's work (2012) reveals that an instructional framework that develops and maintains effective instruction in every classroom is a key predictor of student achievement and John Hattie research (2009) highlights that teacher efficacy has the second highest effect on students learning and achievement. Collegiate has traditionally been at the forefront of educational innovation and providing an outstanding curriculum; this is reflected in the achievement accreditation with the Council for International Schools.

Managing learning is about managing the approaches and systems that support learning from Learning Management Systems, and managing learning projects.

It doesn't seem so very long ago that the idea of managing learning was a concept that was not at the forefront of the minds of teachers. Each teacher managed their own learning, they might collaborate with a colleague, but largely they managed themselves and the learning they created and then presented to their students. I used the word 'presented' advisedly, because that is often what happened, as teachers we presented or delivered a lesson, or a series of lessons. But looking through the academic literature these days, the concept of managing learning has a new and broader context. Managing learning is about managing the approaches and systems that support learning from Learning Management Systems, and managing learning projects. As Marzano (2012) reminds us, it is about managing our instructional framework.

Much of my time is spent in managing learning projects of one kind or another, and supporting others' management of learning projects. Here the role of managing learning centres around collaborating successfully, managing the scope and trials and tribulations of the project, identifying and managing risk, and adjusting the timelines to meet the scheduled 'deadline' – one hopes! As a manager of learning I have had to learn to embrace the natural 'chaos' that is inherent in working in schools, with students and with

teachers. This isn't a criticism, it is a reality, chaos happens and the unexpected happens, and yet the projects have to keep on evolving and be brought to fruition.

The goal of becoming an accredited member of the Council of International Schools (CIS) was a major educational focus in our Strategic Plan for 2012-2016, and one we achieved at the end of 2014. This was a huge learning management exercise, and if I reflect back on it, from our hesitant beginnings as we unpacked the various criteria and made sense of the requirements, and somewhat reluctantly learnt to interpret the language of the Standards, we have come a long way. This has meant that over the past 5 years our School has been involved in a curriculum review through a management process which saw all professional teaching staff involved in reflection, review, planning and development of our curriculum. While as Deputy Principal I have had the overarching responsibility for effecting these changes it is the professionalism and commitment to robust student outcomes that propelled the Collegiate staff. Over time they have individually and collectively become totally committed to the change and improvement that this process has wrought.

This whole process was designed to achieve the primary aim of ensuring that the curriculum offered at Collegiate meets the needs of our students.

We have had four distinct foundational phases to support our learning aims. We identified these as being the need to map the curriculum through a searchable Curriculum Management System (ATLAS), develop a Teaching and Learning Framework, implement a Virtual Learning Environment (SchoolBox) and finally establish a professional learning community with our curriculum leaders. This whole process was designed to achieve the primary aim of ensuring that the curriculum offered at Collegiate meets the needs of our students. A secondary aim was to ensure that our Teaching and Learning Framework supported staff to deliver programs that are designed to support the way students best learn. While each phase is well established we are still in the implementation phase and there is still much work to be done.

From the beginning I led our Curriculum Team in a paced development phase and set realistic timeframes that allowed

teachers to keep abreast of requirements and developments. It was also a decision made through team consensus on what systems to adopt and the timing of implementation. Every step taken was also supported through Professional Learning and facilitated by the adoption of these core aims as central to our whole of School annual goals.

The importance of building capacity by taking all staff on the journey rather than imposing a top-down decision by management was paramount to our thinking. Every step involved staff consultation where direct possibilities were reviewed, debated and a consensus reached on the next step. We hoped to achieve a balanced approach. This process may not be quick but it is sustainable and staff across all campuses to develop the best fit for the stage of schooling across Junior, Middle and Senior School.

If we evaluate the past four years it is possible to discern the four distinct phases, although at the time, they were overlapping and complementary.

Phase 1: Our Teaching and Learning Framework was the first document to be prepared during our preparation for the CIS accreditation. As a School we were committed to offering the best teaching and learning program for girls through offering an academically rigorous curriculum that was underpinned by sound pedagogy. We needed this to be explicit and agreed upon by all staff. This meant we needed to document what we did and how we did it. The staff across all 3 school locations was asked to look through the lens of the School's guiding statements and to document a philosophical overview, what we want from our learners, how we approached assessment and learning, what teaching strategies we used, what we expected of our learning environment. This exercise resulted in a framework to guide and support all teachers in a unified understanding of what we, our students and their parents can expect of a Collegiate education.

Phase 2: The next step was to investigate an online tool to manage and map our curriculum that was flexible and easy to use. We were looking for a platform that met teacher needs, was easy to access, collaborative and set standard expectations. We were also looking for something that was robust and enabled data to be analysed and used for whole school improvement. This phase happened during the Council for International Schools accreditation period and with the support of our Director of ICT, and after considerable research and consultation, we implemented ATLAS Rubicon and were able to modify and develop it for our School's needs. With the accountability, collaboration, transparency central to this tool it was an easy decision to embrace what this CMS has to offer our School. We have found that ATLAS lives up to its aims of providing for: collaboration, transparency, accountability, integration, perspective and knowledge transfer.

Phase 3: The next step in our School improvement process was to find a Virtual Learning Environment which was adaptable to our School requirements. We needed one that enabled us to bring services to one place. After research we reached the agreement to use SchoolBox, an all-in-one portal and learning management system. This virtual learning environment hosts our Learning Management System, intranet and portal. We have since customised the name to become *myCollegiate*. Our Virtual Learning Environment provides a seamless transition to hybrid and blended learning and optimises learning management. We are becoming more fluent as time goes on with all the capacities it presents to us, including supporting student with learning analytics and delivering continuous assessment information for students and parents.

Phase 4: Engaging in a whole of School Professional Learning Community. With all the support required to underpin an exceptional teaching and learning environment the Curriculum Team established a Professional Learning Community in February 2016 to initially reflect on the progress we have made in our journey of school improvement within individual Faculties and School sections. This two day review provided us with a platform to investigate what is needed to take us to next level in order to improve outcomes. The Curriculum Team formed into three separate professional learning communities to examine the research underpinning John Hattie and Robert Marzano's respective work. Both offer practical translation of the most current research and theory into classroom strategies and we wanted to be better informed about our overall learning approaches.

As I write the Curriculum Team has been debating the way forward and determining an external consultant to help us drive the process. It is an evolutionary and iterative approach and process as we move forward and consider international research findings on best practice and how these will help us to achieve our desired goals. I am in a very privileged position as a core driver of the ways in which we manage our learning and I acknowledge with gratitude all the people who help me in this role.

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Leading Learning in the 21st Century

JUDITH TUDBALL



The work of the Principal is ‘multi-faceted, hectic and fraught with uncertainties’ but at the same time an immense privilege. My central role as Principal is to set the vision and culture that supports the learning in the school, in other words it is all about leading learning. I am no longer in a position to do much direct teaching, but I am in a role where every facet of my role directly contributes to the learning in the school.

Much is written about innovation in schools, yet the challenge lies in finding the balance between trying new things and the notion of consistency, because ‘if it ain’t broke, don’t fix it!’ While the word innovation typically implies the introduction of something new, or an end product, in girls’ schools, it is important to dig deeper and to challenge limits and explore opportunities. For teachers, this could include exploring the delivery content in more engaging, creative and effective ways. For me, this means providing our teaching staff with opportunities to develop 21st Century skills in our girls so that they can tackle the future confidently with the necessary skill set to succeed.

In addition to teaching our girls content, we need to assist them to be global citizens who are curious, creative, courageous, empathic, and collaborative.

Following from the highly successful inaugural Global Forum on Girls’ Education which I attended in New York earlier this year, the National Coalition of Girls’ School in North America is focusing their 2017 annual conference on the topic of building creativity. They are exploring what innovation means for girls’ schools, namely the provision of opportunities for girls to develop the behaviours, skills, habits and mindsets that will allow them to dream big, to try new things, to fail, to reimagine and try again so that they can make their way confidently through the world. This resonates strongly with me as an educational leader. In addition to teaching our girls content, we need to assist them to be global citizens who are curious, creative, courageous, empathic, and collaborative. We need to show and teach them how to embrace resilience and problem

solve to overcome what is becoming known as ‘toxic perfectionism’, and to embrace their failures as steps to life learning. In the words of Reshma Saujani in her TED Talk, “we’re raising our girls to be perfect, and we’re raising our boys to be brave”. At Collegiate, I see the braveness in our girls when they are coding and the code breaks down and they have to start all over again. I see resilience in our girls when they receive a disappointing exam result, but they resolve to learn from their mistakes and improve in a retest. I see courageous efforts on the sporting fields and in our outdoor education programs, and I witness curiosity and creativity all around me, from our exceptional expressive arts programs through to the cutting edge, award winning work we are undertaking in STEAM (Science, Technology, Engineering, Arts and Mathematics). And woven amongst all of this, is a deeply empathetic School community who come together in collaborative ways to support each other.

Learning is no longer confined to the four walls of the formal classroom and teachers are increasingly becoming facilitators to a ‘whatever, whenever, wherever’ approach to learning.

There is much debate about the relevance of schools as we know them and whether they will continue to be part of the Australian educational landscape in the future. I do believe that this is a significant time for schools to re-examine the model of schooling and respond and adapt accordingly. The Generation Z students (those born 1996 – 2009) we are educating have shorter concentration spans and engage quite differently in this 24/7 interconnected world we live in. Learning is no longer confined to the four walls of the formal classroom and teachers are increasingly becoming facilitators to a ‘whatever, whenever, wherever’ approach to learning. Students learn best when they need to know something, therefore, inspiring curiosity in learning is essential for this generation. They are drawn to authentic learning with opportunities for self-directed activities where the teacher facilitates, rather than ‘imposes’, knowledge acquisition.

This is a challenge in a world where we are being told that collaboration is an essential skill for success in the 21st century.

While teamwork is increasingly important in the classroom, and we know that girls like to ‘talk-think-do’ in their learning, we also have a responsibility to provide the quiet, reflective time they require for thinking and creativity. This is a challenge in a world where we are being told that collaboration is an essential skill for success in the 21st century. Author Susan Cain in her book ‘Quiet: The Power of Introverts in a World That Can’t Stop Talking’ reflects that Steve Wozniak, co-founder of Apple Inc, single-handedly developed the Apple 1 and was all alone when he achieved the ground-breaking moment of switching on the world’s first personal computer. Imagine a world filled with outgoing extroverts; we need to value our introverts, although they are often simply labelled as quiet, it is to introverts that we owe many of the great contributions to society.

I am deeply committed to ensuring the students of St Michael’s Collegiate are well prepared by their outstanding teachers for the uncertain future that lies ahead.

Yes, leading learning in the 21st Century is challenging, but it is also one of life’s great rewards. We are focusing on igniting curiosity by developing learner-centred classrooms with new approaches to work where the students are innovative ‘producers’, not merely ‘completers’, of work tasks. We are also expanding opportunities for our students to connect in a global learning community through collaborative digital projects with schools in Singapore and India. If it is indeed true that our current students will work seventeen jobs across five careers, then I am deeply committed to ensuring the students of St Michael’s Collegiate School are well prepared by their outstanding teachers for the uncertain future that lies ahead. Research tells us they will be the most empowered generation to enter the workforce and they will be motivated by job variety and engaging communication styles. As the Principal of Collegiate, it is my responsibility to lead learning that will help show them the way.

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The Teacher as Learner and Researcher

WILLIAM SIMON



As a teacher and part-time researcher, completing my thesis for a Doctor of Philosophy, trying to make meaning in an ever-changing world, my aim is to use my experience to enrich the learning of the 'screenagers' I teach.

Anyone wanting to embark on a similar pathway or is curious about my struggles might find my story, and humbly offered advice, of interest. My intent is to consider the role we play as both learner and researcher in our professional journeys.

Students today are permanently plugged-in to an interconnected world, are highly competitive, seemingly pragmatic and adaptive.

The teacher part comes before researcher

I have taught full-time in a variety of schools both government and independent in NSW and Tasmania since 1984. I was born in the dying days of the Baby Boomer generation, which according to sociologists concludes in 1964. My generational peers have, allegedly, redefined the three Rs: we are responsible, respectful and reticent. Such traits make us ideal academic researchers apparently; in stark contrast to the young people we are presently teaching in schools.

Students today are permanently plugged-in to an interconnected world, are highly competitive, seemingly pragmatic and adaptive. They would like to view themselves as both self-reliant and highly ethical in their consumerist choices, although sadly, often the latter does not extend always to their choices with technology.

Professionally as a teacher I have always maintained that the best way to keep abreast in your chosen field is by participating in an ongoing review of relevant research and literature. Teachers routinely carry this out, either as something that is officially prescribed by a university course or as a self-devised professional learning program undertaken by many teachers annually at their own school.

I would like to think that to a large extent, all teachers are researchers who constantly look for ways to improve their pedagogical practice by researching the nexus between what they teach and how students learn.

The children we teach are also researchers

Ironically, the Generation Z we are currently teaching, are also amateur researchers accustomed to amassing huge chunks of data and information but, unsurprisingly, many are lacking the ability to meaningfully and critically harness such riches.

These Googlephiles, for instance, seem to disregard all searches that are not located at the top of a page; viewing these as unworthy. They live in fear that they will find themselves in a dark spot without Wi-Fi connectivity.

By extrapolating useful information, based on evidence from students' work, you will be able to reorganize what you are teaching them depending on their demonstrated needs.

Researching my own students taught me a lot

By far the most advantageous aspect of a teacher as researcher is how closely you will monitor what your students are saying in your own classroom. Historically, I have always kept 'good' examples of my students' work and I have a long association with academic researchers who have made great use of such samples of work and who have worked with me collaboratively in a number of academic projects. Back in the early 1990s, I was advised by a thoughtful Faculty Head in my second posting, to keep a record of 'all' samples of work from my classes, not just the good ones. This catalysed for me the importance of collecting, scrutinising data and basing my teaching on the findings from such data. By extrapolating useful information, based on evidence from students' work, you will be able to reorganise what you are teaching them depending on their demonstrated needs.

The alertness of mind that is needed to carry out both tasks to the best of one's ability and with the exactitude and dedication both deserve is a given.

Relationship between full-time teaching and researching

Goldoni, writing in the mid-18th century was on the money when he remarked that it was most arduous being 'the servant to two masters.' This sentiment is pertinent today to the researcher who is also a full-time teacher. The

alertness of mind that is needed to carry out both tasks to the best of one's ability and with the exactitude and dedication both deserve is a given. Finding a happy medium here is not an option because you do not want either jobs to be compromised. And let us not kid ourselves. A PhD candidature is a full-time job even if one is deluding oneself that they are doing it on a part-time basis!

The relationship between research and teaching is a two-way street. It is hoped that by being able to translate theoretical work into the classroom the work of researchers can be validated and acknowledged and perhaps even be remunerated. Teachers on the other hand, are best suited to make informed decisions about what kind of research can best meet the needs of an ever-increasingly diverse school population.

Your school-life can also be enriched in practical ways by your 'researcher hat'. Even if the school does not grant you any study leave, they can still provide you support both collegial and practical. On the university side, access to expensive databases like Taylor & Francis Online through your university account is a godsend. The opportunity to plunder the richness of such databases for my own schoolwork has truly benefited many of my students, particularly in their own independent studies.

Younger researchers often overlook the importance of establishing professional networks that will be beneficial for their future careers and lives.

The importance of building professional networks

Professional networking is paramount in one's work and professional status and something which is encouraged and nurtured, not only through online services/apps, such as Linked-in, but also by attending conferences and workshops in one's areas of expertise. Younger researchers often overlook the importance of establishing professional networks that will be beneficial for their future careers and lives.

Paying respect/homage to more established researchers in one's field is far from kowtowing but a clever move that will be mutually beneficial. Younger researchers should consider themselves fortunate if they can find and cultivate trusted mentors, and must not underestimate the importance of networking with other researchers. Mentors and fellow researchers can often provide fresh insights into your work, which can enhance the perspectives of a sole researcher.

Practical advice

I have some practical advice for anyone who is trying to combine researching with full-time teaching. I wish someone had given me this list before I started. Hopefully some or all of the things on my list are useful.

- Hugh Kearns (2008) advises, and I couldn't agree more, that it is wrong to wait for a moment of clarity before you start writing. An apple may never fall on your head! By far, the best way to gain confidence in writing your thesis is by eschewing procrastination and actually start doing it.
- Learn to touch-type, too, because this has been an efficient way to multitask since 1888.
- When you are writing make sure you do this in a place you have designated as sacrosanct, such as your study at home. Partners, dogs, and especially offspring, are forbidden from crossing this threshold.
- Also make sure you physically disconnect from distractions, such as social media and your phone. When working, I switch my iPhone to 'airplane mode' to ensure that nothing gets through.
- Save all you work on Googledocs or iCloud so that it is always available to you wherever you are. I always make back-up copies of all my work and when I reach a milestone I make a hard copy as well.
- Do not delete anything permanently. Make sure you save all drafts of your work and that such files are appropriately named. You might end up discarding thousands of words from the first draft you show to your supervisors, as I have done, but these thousands of words can be rescued at a later date and be reworked into publishable academic articles.
- Forget technological devices when making notes in lectures. The most professional tool available to researchers and to school students is an old fashioned A5 spiral notebook. This generative note-taking, according to researchers Mueller and Oppenheimer (2014), relates to "summarizing, paraphrasing, concept mapping". I carry mine everywhere and I think it is a courtesy which is appreciated by university supervisors. At school, I refuse to explain anything unless a student has a notebook in which they are going to record my recommendations.
- Become a devotee of Endnotes because this will ensure that your bibliography and your in-text citations are always acknowledged and up-to-date. Most universities run courses in this but I have found that it is best to pay for one-to-one tutorial with a tech-savvy user.

- Learn to ask the right questions with your supervisors because this is a way of showing that you are in control of your own research. Make friends with staff at the postgraduate office and the Library. In addition, consider forming 'a study group' with other researchers.
- Familiarise yourself with the end-product as early as possible. Reading through completed theses will make you familiar with the tone, register, syntax and vocabulary which is considered appropriate in academic writing. Hopefully it will also demonstrate to you that you need not sound pompous and that clarity is all. Also, seek help with how to write a literature review very early in your candidature from the university's post-graduate research centre.
- All the anxiety, fear, trepidation, exhaustion, stress and insecurity you may be feeling at various junctures in your candidature are real. Never forget this. Don't be hard on yourself. You have never done this before, so every facet of the experience of being a doctoral candidate is unique and new. So now apply this to the school scenario. Yes, you might have taught algebra and Pythagoras theorem for the umpteenth time in your school life but learning these processes is new for the students in front of you.
- Increasingly, supervisors assess your work online, which poses a unique problem. When you are not physically writing on paper, what you write and the tone of what you write, can both sound harsh and judgmental and can catapult you into a state of catatonia. I have learnt from this bitter experience and ensured that when I assess students' work at school I balance my comments by providing them with both ticks and exhortation, as well as practical ways of improving their work.
- Consider your pastoral and emotional needs whilst you are a doctoral aspirant. Your supervisor is simply too busy to see you as 'a person with needs' and your emotional well-being will probably never be addressed by them. Some think that if they had the persistence to get through, so should you. A handful will be too judgmental to be of any help to you, in which case think about changing supervisors fast. And the rest are too busy to care. Kearns, suggests that a PhD is 90% persistence and 10% intelligence.
- Expunge all non-essential activities from your professional life because being a doctoral candidate, on top of your full-time work is a cannibalistic time-vortex. Accept the fact that for the time involved in academic research you will become something of a social pariah. Rethink the definition of friendship, and even though this might sound heretical, freeze your social media accounts. I have personally talked to a handful of friends over coffee how

my study might affect our friendship socially and begged for their forgiveness and understanding, when I enrolled.

- top volunteering for tasks, activities and/or continuing your proactive work as treasurer for your professional teaching association. This also might mean scaling down or abandoning 'parent' duties like coaching football for your son's school team. Getting home cleaning help and an ironing person also absolves you from your share of the house chores. There is a degree of selfishness in this, but also a degree of realism of the task that you are undertaking.

Being 'the researcher' at your school, or with friends and associates, can be a delicate process

I concur with the advice of professional researchers, such as Ed Pultorak, Jane McCarthy and Martha W. Young (2006) that teachers as researchers need to navigate through their own professional learning and find efficient ways that produce positive results. Not only for themselves and other teachers but also for their students and their schools.

Another area that has been crystallised for me as a full-time teacher and researcher is one which Graham Peek recognizes as affinity difficulties. This relates to the intrapersonal problems that could be encountered when conducting research through friends and associates, and especially, when the action research, or case studies, are enacted in your primary place of employment. Whilst some researchers of course rely on friends and associates to provide access to potential sources of data, the objectivity of such data could be compromised, particularly when one needs to extrapolate in a certain light whether the findings reflect badly for the people who were kind enough to provide the subjects of case studies and so forth.

By insisting on principles of objective research, a multidisciplinary approach and academic integrity, your students will learn to be better informed and more critical.

Ultimately, applying what one learns as a researcher in the classroom results in an equalizing effect. By insisting on principles of objective research, a multidisciplinary approach and academic integrity, your students will learn to be better informed and more critical. In addition, they learn to value rich learning that is embedded in sound theoretical meaning, and not something that has popped up as a search on Google instantly. And I think that is an invaluable lesson to impart to the 'screenagers' of 2016.

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