

Sabbatical Report Anne Miles

Title: Investigation into Future Focused 21st Century Classrooms that provide teaching and learning that enables us to meet the key competencies of the New Zealand Curriculum.

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Time period: Term 2, 2016 (2 May – 8 July 2016)

Acknowledgements:

- Board of Trustees of McAuley High School
- Teach NZ
- Senior Management Team of McAuley High School.
- Clintondale High School web site.
- Association of Catholic Principals
- Penryn Sports Academy, Falmouth
- Sir John Hunt College, Plymouth (United Kingdom)
- All Saints Sports Academy, Plymouth (United Kingdom)
- Broadclyst Primary school, Exeter (United Kingdom)
- Cornerstone Teaching School

Purpose:

As principals of a school we have the responsibility to lead teaching and learning. My intentions were to further my knowledge and understanding of some of the pedagogy which could be used in Future Focused Classrooms.

- Differentiated Classrooms. An opportunity to visit and observe schools where there is no streaming and differentiation is successfully implemented.
- Flipped Classrooms. Clintondale High School in USA successfully and dramatically improved their results with the introduction of flipped classrooms.
- Use of student voice. I had had the privilege of seeing very effective use of student voice in a school in Great Britain and wished to further investigate how they had improved and moved forward.
- To visit and learn from a schools that have been very successful in implementing 21st Century pedagogy.
- To investigate the use of technology, where schools are, for example, successfully using technology such as Minecraft or Television studios to teach students to solve real problems. When we think of future focus we have to consider our students in their future lives – are we providing them with the tools they need? How is our schooling going to change to meet the needs of future students? We need to think of education as a preparation for the future.

Executive Summary:

“To investigate how to provide future focused 21st Century classrooms that provide teaching and learning that enables us to meet the key competencies of the New Zealand Curriculum.”

The revolution in Technology is having a greater impact than the Industrial Revolution. We, as teachers, are challenged to engage and motivate our students by using pedagogy with technology as a tool, whilst still retaining the important teacher/student relationship.

Background and Rationale:

Our Mission statement is to offer quality education in the tradition of Mercy, which challenges young women to strive for standards of personal excellence. Our vision statement sees us walking in the footsteps of Catherine McAuley seeking to realise our potential as a learning community answering the call of the Gospel by choosing to make a difference in the world and aiming for excellence, believing that everyone can achieve. Catherine believed that education was the means of lifting young women out of the barriers of poverty. We have an obligation and a trust to provide quality education to our Pasifika and Maori and all students from our Decile 1 community.

One of the principles of the New Zealand Curriculum is the principle of Future Focus. Our curriculum encourages students to look to the future by exploring such significant future focused issues as sustainability, citizenship, enterprise and globalization. As with the other principles (High Expectations, Treaty of Waitangi, Cultural Diversity, Inclusion, Coherence, Community Engagement and Learning to Learn) this focus, together with the others, should underpin all school decision making. We need to encourage students to look to the future and we need to base our decision making for curriculum to enable students to become the people they are capable of being.

Our classrooms have largely moved away from the traditional talk and chalk, one size fits all model. Developments in Technology are so rapid and are being enthusiastically embraced by our students offering enormous opportunities for innovative teaching and student ownership of their learning. Our social, environmental and technological changes mean we face an unknown future where students will need to develop coping strategies. Future focused classrooms are not so much as moving away but discovering future learning. We are shifting how we view knowledge and need to redesign educational approaches based on what we know about learning. Our learning needs to be real, makes sense to parents and teachers and above all our students. While the newly trained teachers embrace the changes, longer serving teachers are some - times challenged to adapt and move forward.

My research was to explore what future pedagogy could look like, what resources might be needed, how pedagogy has changed and will continue to change as we move forward, and how a principal could assist as a leader of curriculum.

Methodology:

The first objective was to read as widely as possible on the topic of future focused education. Each of the identified areas of research were investigated and implications considered:

Differentiation

Flipped classrooms

Student voice

Gamification and Technology

Findings:

1. This is an exciting time in education and pedagogy. It is important for all teachers to continuously upskill and to read widely. Our appraisal systems should include encourage personal professional development by reading and discussing the literature which is now available.
2. There is a wide range of reading material available that challenges educators to move forward.
3. ICT has had an enormous impact on society. UNESCO describes it as *The Third Revolution*. There is no going back.

Differentiation:

Our local communities are becoming more diverse. Globalisation has changed the cultural mix of our classrooms and we mix with others in a virtual world. We need to develop capabilities for working with this changed world. Hipkins identifies eight important things to do: create tasks with a variety of viewpoints, help students access the existing knowledge, support students to build their own knowledge, provide opportunities to work with others, ensure group diversity, provide opportunities for collective knowledge building, and opportunities to revisit ideas over time.

Students learn at different paces and with different learning styles. The challenge for the teacher is how to harness these differences so that our students feel comfortable working at their own pace and owning their learning. If a student is working at a level that they are ready for and, at a level that matches their skill level, they will develop a passion and an interest in the topic that will enable ownership of the topic. Once the interest is aroused and confidence in their own abilities is high, the student will aim higher and raise their expectation of themselves. The teacher has to create tasks that allow for a sliding scale of complexity: move from the simple to the abstract: move from the plot to the themes. Some - times teachers will need to scaffold the tasks. The more ready the

student is to move forward, the less reliance is on the teacher and the greater is the student ownership of their learning.

It is important for teachers to differentiate content. Tomlinson states:

“We can adapt what we teach, and how we give student access to what we want them to learn.”
“By differentiating our teaching, we focus on concepts and principles instead of the acquisition of facts.”

If we focus on understanding and meaning we assist the students to develop skills that can be transferred.

Student interest will always be high if the investigation is real to them. The challenge is to expand the students' area of interest. Real life scenarios will be more successful. One area of interest can lead to cross curricular cooperation between departments and breaking down of subject barriers. Students appreciate a classroom where the teacher admits to not knowing everything and encourages new ideas. The teacher is the conductor of the orchestra.

Tomlinson in her book, *How to differentiate Instruction*, lists different strategies that can be used to support student interest in differentiation. These include encouraging students to research in an area of their interest, question areas of interest, setting their own goals, using groups to work cooperatively, using web quests, using jigsaw, establishing literature circles. Each one of these strategies employ the key competencies and encourage ownership of their learning.

Differentiated learning encourages students to think, use language, manage their own learning and relate to others whilst participating and contributing. When planning tasks, the teacher needs to take into account the cultural background of the students and how this would influence the learning preference of the student. Gender plays a role as well. At time girls can be more competitive than boys. It is important that each are comfortable with the learning. Auditory, visual and kinesthetic learners need to be catered for and the teacher's preferences should not sway the approach. Students must reflect on their own learning. The use of learning logs, for example, can help facilitate this. As teachers we need to move to being students of our students.

Tomlinson mentions the 4-MAT approach to planning of lessons. *“1 mastery of information.2 understanding of key ideas, 3 personal involvement 4 creating something new related to the topic,”* She points out that students can use this model to develop an understanding of their own learning styles.

Assessment of student progress is important. Mini conferences with students can inspire and indicate to the teacher what goals the students should be encouraged to set for themselves. It is important to have planning dates for conferences. These conferences encourage the students to share their knowledge and to set their goals for further tasks.

The use of flipped classrooms lends itself to differentiated learning. Here the students learn at their own pace on tasks set by the teacher. Cooperative group work encourages relating to others and differentiated learning. In the latter, weaker students are supported and encouraged. Ownership of their individualised learning programme assists in developing lifelong learners.

Flipped Classrooms:

When Jonathon Bergman and Aaron Sams initially collaborated to record their lessons, it was the start of the flipped classroom. They questioned the role of the teacher in a class – why were they needed if students could listen to or read the resource at home? Initially it was to save time and work load by sharing resources but, as the model developed and teachers around the world questioned as what was the best use of face to face time spent with the students, it became clear that the flipped model had a great deal to offer.

McAuley High School obtained IES funding to further develop this teaching method in the school. It was already successfully used, for example in Senior Calculus. There is no doubt that the best use of class time is to engage with students and rather than students facing a challenging problem at home where no assistance was available. The flipped classroom is only one basic form of the flipped learning model. Bergmann and Sams define the model as adapted from the work of Ramsey Musallam as follows:

“Flipped learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter.”

It is obvious that flipped learning, where students can work at their own pace, meets the New Zealand Curriculum’s aim of individualised learning where students own their own learning. It provides differentiated learning, facilitates individual learning and supports a diverse and creative learning environment. It also allows for individual strengths of the teachers.

Use of flipped learning model encourages teachers to cooperate and collaborate with each other. This encourages a collaborative classroom. Furniture and lay out change as the teacher is no longer in the front of the classroom. In addition individualised spaces are created. Time is needed for the teacher to create the resources and complete the planning. Reflective practice on the part of the teacher is essential as work to adapt to the specific learning needs of their students.

Bergman and Sams take learning further and make connections with Bloom’s Taxonomy. Traditionally teachers strive to go deeper by building understanding and remembering. When the classroom is flipped teachers have more time to work from the top downwards spending time analysing, evaluating and creating. Higher level thinking is a result.

You cannot just flip a classroom. It requires teachers to make a bridge. Time has to be spent on preparing the students and introducing the concepts slowly. It could take a few years to fully implement. The concept also applies to principals and relationships with staff. We send emails, engage in professional development. Are we using the flipped model? This is now possible to be the flipped learning model across the world.

The delivery of the Religious Education curriculum lends itself to the flipped model. Starting with access to archived video-on-demand content, one can then provide students with opportunities to

move through the curriculum at their own pace and access content. The teacher can then give students teacher created projects, guide students to content when appropriate and finally let students generate problems and projects on their own where the teacher then provides support and recommends archived resources as needed. The teacher is the guide. The students own their own learning, work at their own pace and delve into the higher levels of Blooms Taxonomy.

Technology and Gamification

ICT is now part of how we communicate with each other. We cannot go back to pre ICT days. The role of the teacher has changed from delivering knowledge to being a learning facilitator, a coach and a co-learner. The student is now an active participant, producing a product using knowledge and able to learn cooperatively with others. Learning is now moving beyond the walls of the classroom and transforming pedagogy. Technology is a pedagogical tool.

As a result of the reading and research certain conclusions are drawn:

- 21st Century learning has a focus on learning rather than instruction.
- There should be conscious development of thinking skills, metalanguage and construction knowledge
- Left brain thinking is necessary but there is still primacy of right brain thinking.
- Independent thought and conscious concern has to be developed.
- Students must be encouraged to develop supportive relationships, teamwork skills and emotional intelligence.
- Assessment must be used to promote further learning.

These are powerful challenges with far reaching implications for our pedagogy. The role of the teacher moves from transmitted knowledge to working with future strengths, developing potential, a culture of continuous education, recognizing diversity, listening to student voice, digital assessment and use of technology as a tool.

Collaborative work implies that students DO work together with shared responsibility and make substantive decisions together and their work is interdependent. Knowledge construction requires students to construct knowledge by interpreting, analysing, synthesizing or evaluating information or ideas.. The learning activity is interdisciplinary and does require students to apply their knowledge in a new context. When students self-regulate the learning activity is long-term and students have goals and associated success criteria; they plan their own work and revise their work based on feedback.

Students need more than using ICT to learn or practice basic skills or reproduce information. They should use ICT to support knowledge construction and the ICT use is required for constructing this knowledge. Students should create an ICT product for authentic users.

Students should not be expected to produce multi-modal communication. However, they should be asked to produce extended communication with supportive evidence and design the communication for a particular audience.

It is important that problem solving relates to the real world and students are encouraged to innovate, communicate their ideas within the academic context and outside that context to those who can implement them.

The implications and challenges for us as teachers is exciting and demanding.

Student Voice

The use of student voice is a powerful tool in constructive feedback. Using the google apps it is now possible to get anonymous feedback collated and graphed for teacher. Feedback from peers should be encouraged as well.

Benefits:

The benefits of using differentiated teaching, flipped classrooms, ICT as a constructive tool and valuable feedback are enormous. This is part of our challenge as teacher for the future.

Conclusion:

From my visits and research, I found schools with teachers who were totally committed to excellence. However, they also realized that even more important was to provide a wrap around approach for their students. One school provided each student with an ipad and keyboard when they entered in Year 9. This placed all students on an equal footing Technology was used in every lesson but the wrap around approach to student care was always paramount.

Lewis Carroll wrote in “Alice’s Adventures in Wonderland”

“One cannot believe impossible things”

“I dare say you have not had much practice” said the Queen. “When I was your age I always did for half an hour per day.” “Why some times I’ve believed as many as six impossible things before Breakfast.”

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