



Pymble Ladies' College



Illuminate

RESEARCH AND INNOVATION

EDITION 1 2018

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FROM THE PRINCIPAL



New ventures bring with them great excitement at the possibilities ahead and the inaugural edition of the Pymble Research and Innovation Journal, Illuminate, is no exception.

This journal celebrates our teachers as designers and innovators of education, and most specifically, as thought leaders in the important space of girls' education. At Pymble Ladies' College, our work is to enable learning, and it is nothing less than our passion.

Educational research is not a new component of our work but it is exciting to see the ways our teachers reflect upon their practice with the benefits of sharpening their approach and pushing innovation further.

Enriching students' individual experiences with quality learning gives personal benefits – meaning, purpose, new opportunities, passion and spirit. It also brings collective benefits as education is increasingly recognised as the key to ongoing socio-economic success, security and agility in a changing world.

Research is a dynamic endeavour and one that needs a combination of problems, questions, inquiry, data, results and an audience with which to share the findings. *Illuminate* is the platform for sharing and celebrating the *Pymble* story with an audience of College families, staff members and the wider community. *Illuminate* was selected as the title of our journal because it simultaneously represents the action of shining a light on something one wishes to understand or see in more detail, and the action of stepping in closer and taking a look. It is an action of both lighting up and looking,

and an acknowledgement that we need both researchers and readers to bring our stories of teaching and learning to life.

As you read this edition, you will notice that in our faculties, staffrooms and classrooms, and in their planning, preparation and delivery, *Pymble* teachers are living the College motto, *All' Ultimo Lavoro*, to Strive for the Highest. The *Pymble* educators who have contributed their research and reflections not only have an outstanding passion for the craft of teaching, but a tangible commitment to keep the quest of professional learning at the forefront of their practice.

This is a collection of the work undertaken by our teachers to shine a light on the creative, connected and engaged practice in our community of learners. The articles will take readers into classrooms from Kindergarten in the Preparatory School to Year 12 in the Senior School, from Drama to Science to the Library. There is an indubitable sense of community as we share our discoveries and successes and lean in to learn from one another.

Please enjoy this insight into the depth and diversity of innovation in our learning environments and our commitment to sustainable capacity building.

MRS VICKI WATERS
PRINCIPAL



“Research is formalised curiosity. It is poking and prying with a purpose.” Zora Neale Hurston

Successful schools engage with the changing nature of educational discourse. Research is a key avenue through which teachers raise their voices about what they see happening and what they desire to improve. It is a pleasure to showcase the work already being done at the College through this inaugural edition of *Illuminate*.

Plato aptly turned the phrase “Necessity is the mother of invention”. Education is dynamic; it should not only be comprehensive, sustainable and innovative, but it must also evolve to meet the complexities of a rapidly changing and unpredictable globalised world. At Pymble Ladies’ College, we continue to innovate with the theory and practice of teaching and learning to ensure quality opportunities that prepare our students for life and work. Readers will notice the passion with which all contributors to this journal embrace the mission to connect and engage their learners in a changing global environment.

This edition of *Illuminate* takes readers on a journey through contemporary education. It is here our teachers challenge conventions in the learning environment to reveal themselves as innovators and designers with a passion to inquire ever further. As this edition came together, a core theme emerged: *Illuminate* is a collection of articles which illustrate ways our teachers and students are adapting and innovating. Literacy, as always, remains a central concern, but articles which explore the progressive narrative unit in Year 5, working with a playwright and the re-design of wide-reading programs in Senior School, point to ways of doing things differently – and better. In the area of Science, readers

will journey through units of work explicitly designed to maximise student engagement and intellectual challenge. Innovation is also apparent in the new course, Big History; the College’s suite of 20-hour courses; and learning spaces in both the Junior and Middle Schools. The

ways the College’s IT Integrators work, helps readers further understand the integral role of technology.

Educational innovation concerns all stakeholders: learners, parents, teachers, researchers and those with whom we have professional partnerships. To recognise the teaching practices that occur throughout the College, *Illuminate* was conceived with the aim to raise awareness of quality teaching evident through teacher education, professional development and lifelong learning. This inaugural edition of *Illuminate* reflects the work of many contributors who are passionate about inspiring learning for the future. We hope you enjoy this spotlight on teaching and learning at *Pymble*.

DR SARAH LOCH
DEAN OF STUDENTS

MS TRICIA ALLEN
DIRECTOR OF TEACHING
AND LEARNING

“ It is widely believed that countries’ social and economic wellbeing will depend to an ever greater extent on the quality of their citizens’ education: the emergence of the so-called ‘knowledge society’, the transformation of information and the media, and increasing specialisation on the part of organisations all call for high skill profiles and levels of knowledge. Today’s education systems are required to be both effective and efficient, or in other words, to reach the goals set for them while making the best use of available resources.” (Cornali, 2012, p. 255)

Contributors



Tricia Allen

Ms Tricia Allen is the Director of Teaching and Learning. She has more than 25 years teaching experience in schools and she believes that every student at *Pymble* has the right to demonstrate growth through a personalised learning environment so that she develops a passion for learning and scholarship, self-assurance and a capacity to contribute meaningfully to society. Students are no longer the passive recipients of knowledge; they are the co-creators of their own learning experience.

Ms Tricia Allen
DIRECTOR OF TEACHING
AND LEARNING



Emily Boyd

Miss Emily Boyd is committed to instilling her passion for science in her Preparatory School students at *Pymble*. She believes that Science provides students with the opportunity to acquire important learning skills such as problem solving and critical thinking. She is committed to furthering her work in the field of STEM programming at *Pymble*.

Miss Emily Boyd
KINDERGARTEN TEACHER



Kate Brown

Mrs Kate Brown has been teaching across Kindergarten to Year 8 for more than 11 years since changing careers from law to education. Her approach to teaching and learning has been shaped by her own curiosity and passion for questioning her world. This enables Mrs Brown to inspire *Pymble* students to think creatively and to keep asking questions both of themselves as learners, and of others.

Mrs Kate Brown
DEPUTY HEAD OF MIDDLE
SCHOOL (LEARNING)



Blythe Cassidy

Mrs Blythe Cassidy has been teaching for 21 years. She began her career as a Preparatory and Junior School Teacher and went on to study a Master of ICT Education. She joined the College in 2014 as an IT Integrator. Mrs Cassidy is passionate about helping other teachers to use technology to enhance the learning of their students, particularly in the early years of schooling.

Mrs Blythe Cassidy
IT INTEGRATOR



Ruqqiya Dean

Ms Ruqqiya Dean has been an educator for 17 years and a Teacher Librarian for more than 15 years. Ms Dean is passionate about enabling students to succeed at co-constructing knowledge with the help and support of caring adults who purposefully scaffold their learning. She advocates for libraries to be the heart of school learning, where innovation and best practice might originate and thrive.

Ms Ruqqiya Dean
CONDE LIBRARY MANAGER



Kate Giles

Mrs Kate Giles is the Year 5 Co-ordinator at Pymble Ladies' College. She has been teaching for eight years and has held the role of co-ordinator for a variety of grades. Mrs Giles has a passion for girls' education and encouraging every student to enjoy the opportunities and experiences when working at her point of challenge.

Mrs Kate Giles
YEAR 5 CO-ORDINATOR



James Lister

Mr James Lister has been teaching in primary schools for more than 15 years. He is passionate about researching student engagement in different learning environments, and about assisting teaching staff to refine and develop best practice techniques in the classroom.

Mr James Lister
YEAR 6 CO-ORDINATOR



Kim Maksimovic

Mrs Kim Maksimovic has always been an inquisitive learner and innovative thinker. She is currently studying a Master of Education (Learning and Leadership). Mrs Maksimovic's role as an IT Integrator has been shaped by her love for connecting with her local and global professional learning communities.

Mrs Kim Maksimovic
IT INTEGRATOR



John Stanton

Mr John Stanton has been teaching in school libraries for more than 14 years. He is passionate about the role school libraries can play in enhancing teaching and learning, and information literacy. He enjoys building professional connections with classroom teachers in order to customise library services.

Mr John Stanton
TEACHER LIBRARIAN



Tamara Sweetman

Miss Tamara Sweetman is *Pymble's* Drama Co-ordinator. She is currently completing her Masters of Philosophy in Research, Education, at The University of Sydney by investigating students' filmmaking. Throughout her teaching career, she has always sought to create opportunities for students to tell stories that are of importance to them, and to enable platforms for students' self-expression.

Miss Tamara Sweetman
DRAMA CO-ORDINATOR



Caragh Warth

Miss Caragh Warth has been teaching History for more than eight years. Her approach to teaching and learning has been shaped by her passion for History and the desire to inspire student curiosity in their learning. Miss Warth was motivated to investigate Big History with questions around how to enhance the teaching and learning of an interdisciplinary subject in the classroom.

Miss Caragh Warth
HISTORY TEACHER AND
ACTING DEPUTY HEAD OF
UPPER SCHOOL (LEARNING)



Kasey Wood

With expertise in scientific research and education across industry and academic environments, Dr Kasey Wood joined the *Pymble* staff in 2013. She is committed to developing authentic and engaging experiences that enable students to better understand the world around us. The origins for her article stemmed from the opening of the Middle School Learning Studio, and the new opportunities it created for shaping how students learn.

Dr Kasey Wood
SCIENCE TEACHER

The progressive narrative in Year 5: Student voice, choice and agency

by Director of Teaching and Learning, Ms Tricia Allen, and Year 5 Co-ordinator, Mrs Kate Giles

Narrative writing provides students with the opportunity to share their imagination, creativity, skill and understanding whilst incorporating many elements of the writing process. The purpose of the narrative is simple: to tell the audience a story; yet the skills involved are complex. Not only are students required to develop a good grasp of the mechanics of writing, such as spelling and punctuation, they also require an additional skill set – the ability to tell a good story. Telling stories is as old as humanity. Indeed, narratives are a tradition built upon a human need to “make meaning and to forge connections between seemingly disparate bits of knowledge and experience” in human culture (Blyler & Perkins, 1999, p. 245). Stories involve the reader and the listener by drawing them in and making them a part of their world or vision of reality (Kelly & Zak, 1999).

The Year 5 Progressive Narrative Project (PNP) originated from a discussion with Year 5 Co-ordinator, Mrs Kate Giles, and Director of Teaching and Learning, Ms Tricia Allen. The focus was on extending student writing to effectively deepen knowledge, engage in creativity, critical reflection, communication and collaboration. Using the *Pymble Learning Design Framework*, the PNP was deliberately designed from the beginning to incorporate student voice. The learning was framed around specific questions and planned to utilise co-teaching.

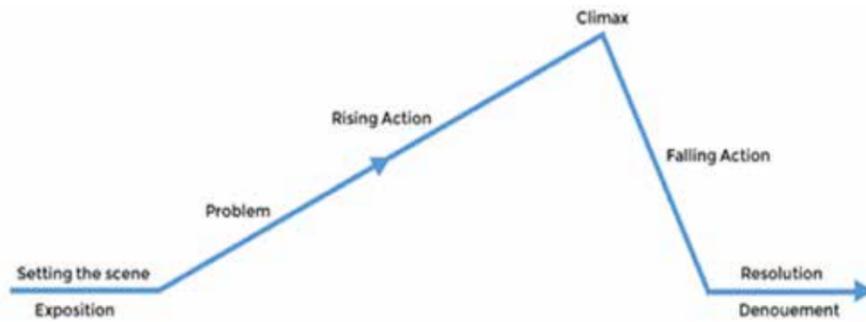


Figure 1: Structuring a narrative

Student vox pop #1

What do you enjoy about progressive narrative?

"I enjoy creating ideas for our story because we can all contribute to it and we can combine all of our ideas to make a whole story plan."

"I like illustrating the pictures and reading everyone's chapters and giving advice that will actually be used."

"I really like how we can work with other people to produce a story. You can make new friends whilst learning, which is amazing."

"I really enjoy getting to work together as a group and having all of our writing styles combined into one amazing writing piece."

"I like how we improve our writing techniques as well as developing new skills, like teamwork and courage."

THE PROCESS

Once the framing and planning of the PNP had been completed, co-teaching was utilised to review the narrative structure. Students were assessed on their prior knowledge and a scaffold was used to make the learning visible. Students were encouraged to use variations of the scaffold which could include multiple conflicts and resolutions.

The next phase of the PNP was to introduce students to the concept of the progressive narrative. Students were first led through the process of constructive peer feedback, respectful discussion and effective team collaboration. The class was also informed that their progressive narrative would be published and made available in both the Junior School and Secondary School libraries. This added the element of 'real world' significance to the project.

STEP 1

A total of 26 students took part in the PNP. The class was divided into two groups with 13 students in each group. The members of each group would be responsible for designing their narrative together. Initial lessons established the main elements of the progressive narrative including setting, characters, problem, climax, and resolution. This was done via collaborative, vigorous discussion and group consensus. Student voice and choice were key components of this stage. Voice is an important aspect of all writing. Without voice, a narrative becomes nothing more than a retelling of chronological events. Student dispositions were also used to address key competencies for learning. Once the parameters around the progressive narrative were set, the next stage commenced.

STEP 2

- Each student randomly selected a number one to 13 (lucky-dip style).
- The number selected would correspond to the chapter they would write. The student who selected '1' would write the opening chapter and establish the setting.

- The student would have approximately one week to write the chapter.
- Student roles were assigned within the group, based on passion and interest. These roles included: artist, illustrator, editor, narrative keeper.
- The chapter would then be read by the group and critically reflected upon, including robust discussion around plot development, characters and action. Group editing took place, paying close attention to grammar, punctuation, sentence structure and spelling.
- The student writing the chapter had literary licence to accept or decline suggestions based on reasoned justifications.
- Members of the group were required to respect this decision, realising that they would also be in this position when their chapter was reviewed.
- The student writing the following chapter would build upon the plot development and progress the narrative.

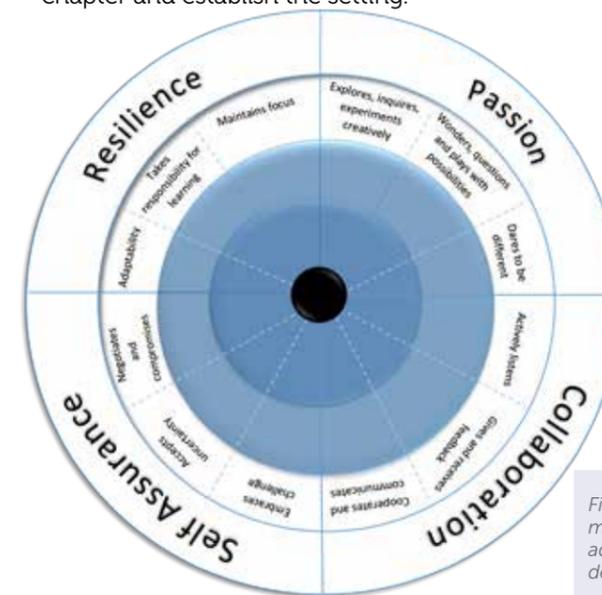


Figure 2: The Reflection Wheel, a measure for student dispositions, adapted from a concept developed by Ms Sarah Wells

STEP 3

- After nine weeks of ongoing writing and collaboration, student feedback was gathered via a survey. All students indicated their enjoyment of the Progressive Narrative Project.

Student vox pop #2

How does this project challenge you?

"Challenge is where you find yourself thinking hard but in a good way; where you really have to use your brain but you enjoy it."

"I think that a challenge is that we all have to agree on what we want to happen but it is hard because some people want this and others don't."

"It is challenging because you have to write a chapter that flows with the story and you have to co-operate with other people to produce a great final product."

"I was definitely challenged in this task because our story was set in the 1800s and I had to be mindful of the things I included in my chapter so that it would make sense in the time era. I made many mistakes such as including a Chupa Chup lollipop."

"It was challenging planning the story because we had to take everyone's opinions and votes and shape it into a story where everyone has a small bit of their idea included in the story."



STEP 4

- Once individual chapters have been completed, the students collectively edit the progressive narrative as a team.
- Illustrations and formatting are added to the final progressive narrative.
- The final progressive narrative is published and bound with copies provided to all College libraries, as well as to each student.

“Using the *Pymble Learning Design Framework*, the Progressive Narrative Project was deliberately designed from the beginning to incorporate student voice. The learning was framed around specific questions and planned to utilise co-teaching.”

Student vox pop #3

How does the Progressive Narrative Project compare to other activities you are doing in literacy?

“It is much more interesting because we get to do it as a group, compared to doing it in class at a desk by yourself. It also includes a lot of skills in class like editing, writing, communication and critical thinking.”

“I enjoy this much better than the other writing activities because I really enjoy getting to work as a group. It is also a lot more interesting because everyone takes their chapter their own way and that makes the narrative a lot more exciting and page turning.”

“It helps us with our personal narrative writing because we get to share new words and ways of writing with each other.”

Teacher observations

This task originated after recognising that the existing program of narrative writing was not sufficiently challenging and not extending the students. The student survey results confirmed teacher observations, as students were able to clearly articulate the positives and benefits of the task, as well as the areas for improvement.

During the task, teachers observed the following:

- *Considerable noise!* The students were highly engaged and keen to have their voices heard during the editing process.
- *Negotiation!* Students found this aspect challenging, with some students not keen to relinquish control over their ideas and their emerging story when it was not their turn to write.

Student vox pop #4

How might we improve the Progressive Narrative Project?

“To improve our progressive narrative, I think my group and I should try to listen to other people’s ideas, not just the ideas that suit us. I also think it would be easier to complete and write the narrative if the groups were slightly smaller.”

“We could write one chapter all together, so we could share all our ideas into one chapter.”

“Nothing! Progressive narrative writing is extremely fun and we love to do it. I love it the way it is!”

“I think the project really does not need any more improving because it was so well explained and everyone understood what they were doing. Though, we could have two teachers – one to supervise each of the two groups to keep the noise down.”

- *Collaboration and discussion!* Students were observed working together to edit each chapter, researching the accuracy of facts and details included in the narrative.
- *Enthusiasm!* In each Literacy lesson, students have been asking to work on the progressive narrative despite it being allocated only one weekly session.

Following the task, teachers observed:

- Improved and increased vocabulary and ideas in student narrative writing.
- Although the students found the collaboration and teamwork aspects of the task challenging, their negotiation skills, empathy and respect for the ideas of others has grown.
- Increased reflection, analysis and critical thinking in response to their own learning.
- Improved confidence in all students when writing.

The students continue to work on collaboration and teamwork, specifically on providing meaningful and constructive feedback to one another.

Next steps:

When implementing the progressive narrative task with groups of future students, more explicit teaching of collaboration and teamwork would be of benefit, as well as modelling of the editing process. Following both teacher observations and student feedback, the groupings would be smaller and the timeframe for completion of the progressive narrative would also be reduced.

References

Blyler, N., & Perkins, J. (1999). Culture and the power of narrative. *Journal of Business and Technical Communications*, 13(3), p. 245-248.
 Kelly, C., & Zak, M. (1999). Narrativity and professional communication: Folktales and community meaning. *Journal of Business and Technical Communication*, 13(3), 297-317.



Building passion for reading through personalisation, structure and differentiation

by *Teacher Librarian, Mr John Stanton*

When teachers recommend ‘wide reading’ to students (and parents), what is it that they are seeking to achieve? Briefly, they are trying to expose students to a broad range of texts, from different authors, eras, cultures, genres, and with different writing styles. This is so students can experience the breadth of literary possibilities to inform their own writing, develop empathy, broaden their understanding of the world, and enhance their academic performance.

My journey to rethinking wide reading really began during 2017 when I was able to observe students’ interaction and engagement with texts during wide-reading lessons. Wide reading forms an important part of the English curriculum for all classes in Years 7 to 10. One English lesson per fortnight is dedicated to wide reading, support for which is reinforced by innumerable academic studies (see references) which highlight the significant difference that wide reading makes to intellectual and social development. During 2017, I looked after the wide reading for 12 different English classes across Years 7 to 10. My observation was that whilst a relatively healthy number of students enjoyed and readily engaged with wide reading, there were also significant numbers of girls who were less actively involved with wide reading in class.

Towards the end of 2017, I read an interesting article from *The Guardian* entitled, ‘The difficulty is the point: Teaching spoon-fed students how to really read’, by Tegan Bennett Daylight. The author has experience as a tutor in postgraduate courses where she became aware of the deficiencies many young people, including those training to be teachers, had in their literary diet. In this article, Bennett Daylight laments at the appalling lack of depth and

breadth in the reading of her post-school, tertiary-level students. Most of these prospective teachers fall into two categories, she says: those who read popular fiction (e.g. *The Hunger Games*) and those whose reading extends no further than social media. Very few students had read anything more challenging, such as classics, Australian authors, prize winners and other literary texts.

At approximately the same time as I was reading this article, the English Department invited the Teacher Librarians to assist them with their planning for the new Preliminary English common module, ‘Reading to Write’, which would be taught for the first time in 2018. The English teachers were looking to expose students to a broad range of texts around four themes they felt were essential to students’ learning: character; voice and perspective; form; and a sense of the aesthetic.

This raised the question: How could I inject depth of engagement into wide-reading lessons in Years 9 and 10, and simultaneously expose students to texts and literary examples of form, character, voice and perspective, and aesthetics?

BINGO: THE MECHANICS

Enter my experiment: Bingo! At the beginning of 2018, students received a bingo card. On the back is a 6x6 grid (36 boxes) with each containing an author and title of a literary work. The boxes are colour coded – one colour for each of the four elements identified by the English staff for closer consideration in Year 11. Each week, students select one box and read the opening chapter or two, and make some brief notes about what they notice with respect to language and literary features, about writing techniques, and about their response to the text.



“ The English teachers were looking to expose students to a broad range of texts around four themes they felt were essential to students’ learning: character; voice and perspective; form, and a sense of the aesthetic.”



there is also a smattering of other English-language voices: Canadian, New Zealand, and post-colonial writers. There is a significant number of works by women authors. There are nineteenth century classics alongside recently published works. There are literary texts which have been translated from other languages. Only a few of the texts may be familiar to students already.

Students spend approximately 30 minutes (half the lesson) on a bingo activity. During the second half of the lesson, students are engaged in free-choice, wide reading because I want them to know that I value the role of free choice in reading.

In order that my project remained manageable, I initially targeted two Year 9 classes, and one Year 10 class. I explained how the bingo card worked, and set my expectations about engagement, the difficulty of some of the texts, and the challenge that lay before students as they progressed towards Year 11.

I also spoke explicitly about three responses I wanted to sideline as unhelpful. ‘It was boring’ is a lazy reaction, not a thoughtful response. Similarly, ‘I found it confusing’ can be teenage-reader code for ‘I don’t want to think about this’. Year 11 is not the time to start engaging with this sort of thinking: students should be well-practiced by then. I point out that it is normal to have some level of confusion around these texts – they are reading only the openings after all, and don’t have the whole story. There is new vocabulary and unusual writing techniques – so confusion is to be expected. But applying the ‘confusing’ label and expecting that to substitute for thoughtful engagement is not good enough. Finally, a simple re-telling of the narrative doesn’t advance student understanding of the language elements and writing techniques employed by authors to evoke responses in their readers, so I discouraged students from using that as their response.

In order to address some of the issues raised in *The Guardian* article, I have tried to ensure diversity within the selection of the 36 texts. To that end, texts by Australian authors sit alongside British and American authors, but

While free-choice reading is happening, I select the names of two or three students at random. Those students come and sit with me and we have a brief discussion about the text that they have just read. They can tell me anything they observed. They can recount part of the story to demonstrate their observations about the language and writing conventions they found. I ask them about the text, and focus on the colour-coded theme to get them to think about their reading. My aim is twofold: accountability for their reading, and helping students to become confident in expressing their own thoughts about a text by having an intelligent conversation.

“ Now that we are some way into the project, students who have read the same texts are beginning to talk to each other about what they have read, and offer opinions and discussion to one another. Many texts are recommended by students in the class and several are passed around a group of friends during the lesson.”

INSIGHTS GAINED

Reflecting on the 'bingo' experience, I have gained many insights into student reading engagement, and particularly with their connections with literary texts. The most significant insights are listed below:

- (1) Listening to student responses, I have found a significant number of students expressed surprise that they have enjoyed some of the books. I am certain that the text selection is not representative of students' usual reading preferences. Some students have gone on to find and read the whole text. One student made her mother buy a copy of one of the books, and one student commented that she enjoys it because I don't make her read the whole book.
- (2) Now that we are some way into the project, students who have read the same texts are beginning to talk to each other about what they have read, and offer opinions and discussion to one another. Many texts are recommended by students in the class and several are passed around a group of friends during the lesson.
- (3) I no longer select names at random for a one-on-one discussion. After the initial awkwardness wore off, students became keen to engage in the personalised learning opportunity that one-on-one conversations provide for listening and discussion, so most students approach me during free-reading time. I found this pleasantly surprising and have enjoyed listening to students discuss what they have noticed in the texts. This added layer of personalisation is beyond what I had anticipated.
- (4) As a form of personalised learning, scaffolding and support can be offered to students during the one-on-one discussions. I am free to ask questions of each student and give her time to consider her response. If I observe the student struggling to reply, I use a variety of questions to help reframe the discussion so that each student can demonstrate her current level of understanding. For some students, this includes a brief retelling of the narrative, out of which develops questions that allow a deeper probing of literary techniques.

“ The English teachers themselves have been extremely supportive of the project. Without exception, I have experienced support from all the English staff. They have observed a different level of engagement amongst the students, and have been as delighted as I have when insightful observations are made about wide-reading texts.”

- (5) Students' verbal insights are significantly more sophisticated than their written comments. During the verbal discussions, I am discovering a wealth of observations, insights and understandings that students' written notes do not reflect. This has given me the opportunity to consider how I might capture and record those verbal responses with an aim to helping students to improve their written responses.
- (6) The English teachers themselves have been extremely supportive of the project. Without exception, I have experienced support from all the English staff. They have observed a different level of engagement amongst the students, and have been as delighted as I have when insightful observations are made about wide-reading texts.
- (7) Feedback from parents has been overwhelmingly positive. I gave the student observations to the English teachers for parent-teacher learning discussions, and a huge number of parents expressed support for the project to the English Department. The project was useful for English teachers to have meaningful and positive discussions about supporting student reading.
- (8) Wide reading has always been an opportunity for personalised learning and differentiation. However, this format has raised the standard in terms of the texts encountered and also in the accountability students now have for their reading.

FUTURE DEVELOPMENTS

There are many opportunities for developing this approach to wide reading in the future, many of which are currently under development. Firstly, professional conversations have taken place in the English staffroom and wide-reading bingo has been promoted between colleagues. I was asked by two teachers of Year 8 classes to create a version suitable for them. Consequently, I am now conducting bingo in two Year 8 classes, using texts appropriate to the reading and developmental stage of those students.

The expansion of the selection of texts into 2019 is also being worked on. As the project clearly has the potential to be scalable with the capacity for differentiation, it can still retain student choice and voice. I am endeavouring to produce a second selection of texts for Year 10, and several 'intermediate' reading level versions for Years 7 to 10 so that students with varying reading levels can participate.



“ Wide reading has always been an opportunity for personalised learning and differentiation. However, this format has raised the standard in terms of the texts encountered and also in the accountability students now have for their reading.”

Secondly, I am considering video recording the viva voce components of the lessons to capture student insights and retain a record of student achievement. These could provide a snapshot of growth and development if taken at particular points throughout the year. A further area to explore could address the issue of how the video recordings can be used to assist students to improve their writing.

Thirdly, I have created a display of the texts in the library, accompanied by student observations and insights from their written notes. I was interested to know whether these texts would be borrowed and read in full by other students, and was interested to see that approximately two-thirds of them were taken from the display within a two-week period.

Finally, in terms of my own professional development, I attended the Association of Independent Schools of NSW's Teacher Librarians' Annual Conference and was given the opportunity to deliver a short presentation where I outlined the Wide Reading Bingo project. One consequence of that brief talk was that I was approached by one of the keynote speakers, a university lecturer from Western Australia who teaches in the field of education, who asked if she could show my project as an exemplar for her students.

References and further reading

Examples of studies examining the impact of wide reading on student learning include:

- Bradshaw, T. (2004). Reading at risk: A survey of literary reading in America.. National Endowment for the Arts (Research Report #46): Washington DC.
- Horbec, D. (2012). The link between reading and academic success. *English in Australia*, 47, pp. 58-67.
- Whitten, C., Labby, S., & Sullivan, S. (2016). The impact of pleasure reading on academic success. *The Journal of Multidisciplinary Graduate Research*, 2(4), pp.48-64.
- Daylight, T. B. (2017) The difficulty is the point: Teaching spoon-fed students how to really read. *The Guardian*, 24 December. Available: <https://www.theguardian.com/books/2017/dec/24/the-difficulty-is-the-point-teaching-spoon-fed-students-how-to-really-read>
- Paul, A. M. (2013). Reading literature makes us smarter and nicer. *Time Magazine*, 3 June. Available: <http://ideas.time.com/2013/06/03/why-we-should-read-literature/>

Sharing stories – *Almost Seventeen*

by Drama Co-ordinator, Miss Tamara Sweetman

ORIGINAL PLAYWRITING EXPERIENCE FOR YEAR 11 DRAMA

Walk into the Drama Studio, tucked away in the Gillian Moore Centre for Performing Arts, and you can hear Year 11 Drama students asking, "What stories do you want to tell?"; "What is important to us?"; "What do we care about?". They are debating and questioning what it is to be a young woman right now and the power of storytelling in a theatrical form.

Amidst it all, *Pymble's* Artist in Residence, playwright, Mr Richard Graham, is busy pulling all these ideas together, listening and sharing, and steering a holistic story from these confident young women.

In the current educational landscape, we have investigated new avenues and opportunities for students to not only be a part of plays and productions, but to find ways for them to have authentic, genuine

ways to express their voice and ideas. As educators, we have considered how to enable platforms for student voice and 'real world' theatre approaches, allowing for creative expression and innovation. *Pymble's* Artist in Residence program has been able to provide this platform.

Throughout 2018, Mr Graham—who was appointed as Artist in Residence thanks to the support of the Ex-Students' Union Grant—has worked with our Drama students to craft an original full-length script. The result is a play called *Almost Seventeen*, which celebrates friendship, standing up for what's right, and the experience of growing up. In 2019, *Almost Seventeen* will enjoy a full theatrical production.

As part of the strategic vision for learning and teaching at the College, we want every *Pymble* girl to move beyond what they know and "question, discover, reflect and improve" (*Towards 2020*).

“ I first chose drama because I was a quiet, shy girl and wanted to come out of my shell. Look at me now! Still perhaps a bit quiet, but so much more confident in myself and my ideas.”
– Year 12 Drama student

The playwriting project enables each student to learn about 'real world' approaches – in this case being a playwright in the theatre industry. The program supports our Drama teaching and learning philosophy which is about the ownership students have over their projects and how they can drive their learning and storytelling for their audience. It enables the Year 11 Drama students involved to focus on growth, authentic learning opportunities and choice, while embracing a highly challenging task with the support of a playwright.

The purpose of this playwriting project was to discover an answer to the question: How does working in a team as scriptwriters and theatre makers to create a full-length play enable Year 11 Drama students to explore their voice?

The answer lies in research that highlights the importance of students connecting to experiences outside of themselves, to those in their community. Having a deep emotional intelligence is not something directly taught, but indeed it is a skill needed in young people's lives (Anderson and Jefferson, 2009).

CASE STUDY

WORKSHOPPING THE PLAY

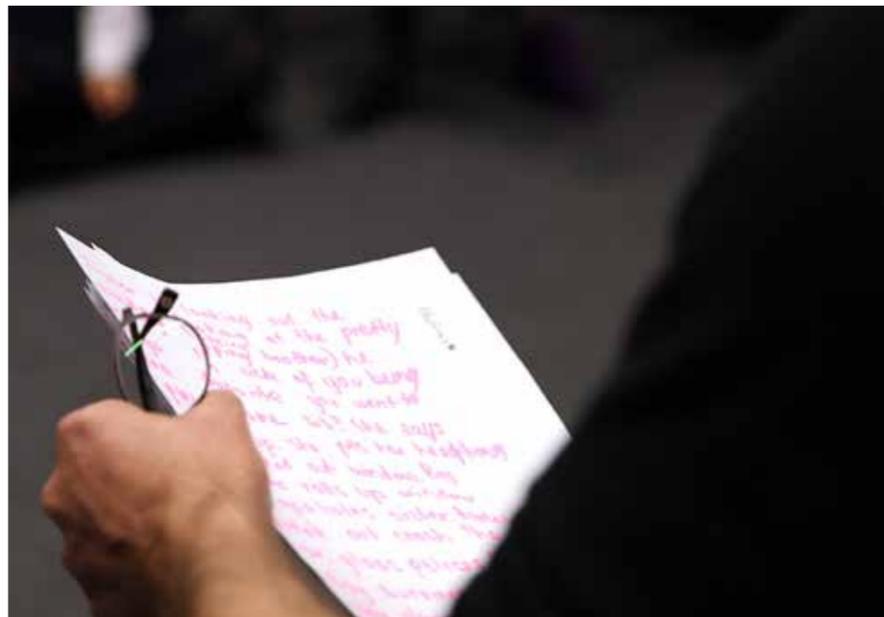
This year, Artist in Residence, Mr Richard Graham, brought an original perspective to scriptwriting, and the Year 11 *Pymble* Drama students were most excited to have the opportunity to work and learn with such an experienced playwright. Mr Graham himself commented: "I've really enjoyed working with the Year 11 Drama group who've taken on the daunting task of writing an original play. They've embraced this project and the results to date have been very impressive."

Mr Graham engaged the students in various workshops on storytelling for an audience, writing effective dialogue, crafting characters, and exploring tension on stage.

Year 11 Drama Student, Dharma said, "I have learnt about the importance of creating vulnerable characters that the audience can connect with, and building tension slowly to ensure that the audience is engaged".

It was quite a daunting task for Mr Graham to involve 20 Drama students and for all students to have input in crafting the script and creating a story with a journey and clarity for their audience. This involved various sessions of coming together and revisiting the characters, the character journeys, and their arches across the script.

Students worked in script groups and were mentored by Mr Graham to write the dialogue and create the characters, as well as the theatrical elements. We also needed all of our students to be showcased equally as actors, and as such it was decided that the 20 students would perform the five main characters, in varied settings. The storyline of *Almost Seventeen* came to focus on something to which all students could relate: being seventeen, the various characters we face, and the different issues with this stage of life.





In the playwriting project, we wanted to examine ways of addressing and strengthening our students' original story-telling skills and how we can maximise 21st century competencies in this approach. It is highly effective for students to tell their stories as this in turn builds empathy, tolerance and understanding. It helps children to know and better understand their worlds, have a greater sense of identity and it improves literacy capability (Perso, Nutton, Fraser, Silburn & Tait, 2011). Enabling student voice through script and story can potentially address these complex skills for students and provides these learning opportunities.

Such outcomes return us to the collaborative nature of Drama. It is intrinsically interlocked in our interactions with others in the creation of it. In today's society, as teachers, we are challenged to consider how we can encourage students to communicate their ideas effectively, foster resilience and drive individuals to strive constantly for improvements and new ways of approaching situations (Ritchhart & Perkins, 2008). It is the opportunity for these skills to be enriched in our students' voice, drive and empathy which warrants this scriptwriting opportunity.

The Ex-Students' Union Artist in Residence Grant

The \$5,000 annual Ex-Students' Union Grant enables an academic member of staff to engage an artist to provide a significant opportunity for students and/or staff, that will enhance their learning and enrich their experiences at the College.

The 2018 recipient of this grant was Drama Co-ordinator, Miss Tamara Sweetman, who appointed theatre playwright, **Mr Richard Graham**, as Artist in Residence.

PYMBLE PLAYERS

At *Pymble*, I believe we have a unique opportunity to redefine how students tell and communicate their stories. Our aim is for the playwriting project to be embedded into the Year 11 Drama course in the future, as it enables unique storytelling approaches from our students. The skills learned and applied whilst working as a member of the scriptwriting team supports students in aspects of their life beyond the creation of the script and production. It has promoted creativity, problem solving, team work and decision making. It has also provided a collaborative and highly interactive pedagogy as I have worked alongside an experienced playwright and played a role in the mentoring process.

“ I enjoy all forms of writing, but playwriting is what made me what I am. Not only working with the ghosts of Chekhov and Ibsen and Shakespeare, but what it is to be a playwright, to be interacting with human beings in the live theatre and affect people on such a direct, emotional level.”
— John Logan, Producer

Our next steps are to complete *Almost Seventeen*, then create it ready for an audience by exploring acting, characterisation, movement and music. We will be working with a professional designer in creating the sets and costumes for the production in 2019. By engaging in this theatrical production, from its inception to its final performance for an audience, the students will learn about all aspects of theatre from mentors: with the scriptwriting phase from the playwright; directing and acting from myself; and design from a professional designer. Working together, the students will have input into all facets of this theatrical production.

To conclude, I'll return to the impetus for challenging our students and enabling student voice. One of our Year 11 Drama students, Jaime, will have the last word: "Working on the script project with Richard has been a complex, immersive experience in the process of creating a play. Over the year, I've developed my ability to write convincing and authentic dialogue, and gained knowledge about how to create characters who are interesting and believable. Despite the challenges we've faced along the way, this has been a fun project that I've genuinely enjoyed—I'm looking forward to the next step, bringing our script to life on stage!"

DRAMA AT PYMBLE LADIES' COLLEGE

Co-curricular Drama projects include:

- Drama Productions in the Gillian Moore Centre for the Performing Arts, Years 7 to 12
- Theatre Sports, Years 5 to 12
- Shakespeare Festival, Kindergarten to Year 12
- Centre Stage, Co-curricular Drama Showcase, Kindergarten to Year 12
- On Camera Film Festival, Kindergarten to Year 12

Curriculum Drama projects include:

- Year 9 Drama Learning Showcase - published full-length play
- Year 10 Drama Learning Showcase - published full-length play
- Year 11 Drama—original play, creation and theatrical production
- Year 12 Drama—individual project and group-devised performance
- Years 11 and 12 Theatre Club with Shore School – evening theatre excursions

Curriculum

- HSC Extension English, original play project
- Year 12 Drama, original play project (as option for individual project)

References:

Anderson, M. & Jefferson, M. (2009). *Teaching the screen: Film education for generation next*. Crows Nest, NSW: Allen & Unwin Publishing.

Perso, T., Nutton, G., Fraser, J., Silburn, S.R. & Tait, A. (2011). *The arts in education: A review of*

arts in schools and arts-based teaching models that improve school engagement, academic, social and cultural learning. Centre for Child Development and Education, Menzies School of Health Research: Darwin, N.T.

Pymble Ladies' College. (2012). *Towards 2020: Striving for the highest*. Available: <http://www.pymblelc.nsw.edu.au/en/About/Towards-2020.aspx>

Pymble's Artist in Residence



MR RICHARD GRAHAM

Mr Richard Graham is a former lawyer who started his playwright career in 2004 when he entered Short + Sweet – the biggest short-play festival in the world. His short play, *Trough*, won the comedy writing prize and it has since gone on to be performed in Australia and overseas, including the Edinburgh and Brighton Fringe Festivals in the UK. Since then Richard has had nearly 20 productions of his short plays performed in five countries.

To focus on full-length plays, Richard applied for, and won, a mentorship through the NSW Writers' Centre (now Writing NSW) with Timothy Daly, Australia's most internationally performed playwright. That play has now had a reading with professional actors and is due to be finalised this year.

Richard has three daughters, all of whom attended Pymble Ladies' College.

Why aren't we already living beyond Earth?

Project-based learning in Year 7 Science

by Science Teacher, Dr Kasey Wood

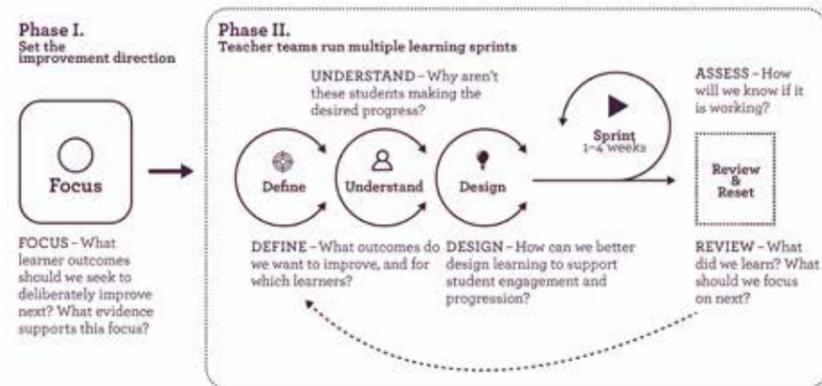


Figure 1. Agile Schools Learning Sprints Methodology, reprinted with permission (Breakspear et al., 2017)

Beyond Earth is a 10-week, Year 7 Science unit of work that is intentionally designed for the innovative learning environment of the Middle School Learning Studio. This article will introduce readers to the learning design process used by the Year 7 Science team, and to the ways in which the Science Department at *Pymble* uses learning outcomes and student feedback to continually improve and enhance their programs.

The design of Beyond Earth utilised education expert, Dr Simon Breakspear's learning sprint process (Figure 1) (Breakspear et al., 2017). The initial stage involved discussion about who our learners are and the specific outcomes the Year 7 Science teachers wished to improve. The focus then moved to designing a unit of work that would better

“ I enjoyed the group work aspect because everyone could share and contribute their different ideas and views.”
– Georgia, Year 7

support student engagement and progression of learning. An agile design approach was embraced to structure this stage (Breakspear, 2016). The planning team moved through an iterative cycle of blue sky brainstorming, clarification and refining of ideas, and then prototyping. This enabled feedback to be rapidly obtained over an intensive few weeks and subsequent adaptation and refinement of the teaching strategies, without needing to wait for the standard yearly feedback cycle upon delivery of a unit of work.

By the end of the learning sprint process, the team had engaged a range of pedagogical, ICT and physical accelerators to establish a program which met the targeted principles of being deliberately designed, learner centred, profoundly personalised, social and perspective rich.

PEDAGOGICAL ACCELERATORS

An approach inspired by project-based learning (PBL) was adopted as the foundation of this unit, with the learning framed around solving real-

world problems humans face when trying to survive in space and on other celestial bodies in the universe. The modified PBL was structured to have a launch, two cycles of content-knowledge learning and project-application phases, and a final project showcase.

The inquiry-based focus of Beyond Earth required students to engage in an extended process of questioning, researching and application of information. This process fostered a deeper understanding of the content knowledge and encouraged students to think both critically and creatively to develop solutions to the challenges they identified. Furthermore, students gained an appreciation of how the advancement of science and technology is a global endeavour as they discovered current and developing technologies from around the world which could enable human survival on the planet, moon or other celestial body they were investigating. Students synthesised these technologies into overall solutions which they communicated in the form of a digital presentation displayed in the final showcase.

Teachers intentionally organised students into groups of three to enhance and support the inquiry process. All available data from formal and informal assessments, as well as classroom observation, was used to identify and group students with similar learning needs. During the project application phases of Beyond Earth, the groups worked co-operatively and collaboratively to gather research, develop ideas and formulate solutions to problems

that would likely be encountered as humans try to survive elsewhere in the universe. This social element was balanced by students working independently to complete all the foundational knowledge learning, with the group being a support network each could access to discuss her work. Students found it valuable to obtain assistance from one another before they sought aid from a teacher.

With the intentional grouping of students based on data, it was recognised that groups would progress through the work at different rates. To this end, Beyond Earth was designed to enable students to personalise the pace of their learning. Opportunities were strategically created so groups could undertake further consolidation if needed, or alternatively, move on to the next activity irrespective of the class as a whole. In this manner, students who found the content knowledge challenging had additional time to develop their foundational understanding, while other students were able to spend more time developing their ability to apply their knowledge in the project.

Further opportunities to personalise student learning based on interest and level of challenge were also deliberately incorporated into the PBL project. Students were able to choose the celestial body they wished to focus on as well as the digital presentation format used to showcase their work. A standard and extension variation of the project were also provided, with each group being able to self-select the option they wished to complete. In the standard version, students illustrated a 24-hour tourist experience on their celestial destination, whilst in the extension option, students considered long-term human colonisation of their chosen location. The different time frames spent on the celestial body differentiated the types of solutions students needed to develop,

with the extension option solutions being more complex since they had to be self-sustaining.

ICT ACCELERATORS

The Education Perfect online learning platform is an ICT accelerator. This technological platform was employed to enable self-paced delivery of the basic content knowledge of the unit. Students could gather and apply knowledge through the resources and activities within the platform and receive almost instantaneous feedback on their mastery of the concepts via the embedded informal assessment. This feedback

“ I enjoyed how we were able to go at our own pace and how we weren't always just sitting in classrooms.”
– Sophie, Year 7

empowered students to make appropriate choices about their learning, and many students used their initiative to revise their written responses, seek out teacher assistance, or attend a teacher-led workshop before deciding they were ready to move on to the next topic. The monitoring and analytic components of Education Perfect were also crucial in enabling teachers to identify and respond to individual learning needs as they arose by deliberately targeting students to initiate conversations with, when the data showed they were challenged by an aspect of the content.

The Canvas Learning Management System (*Pymble's* virtual classroom software) was a second ICT accelerator employed to manage the structure and flow of the unit of work. Students were able to progress in a linear fashion through the virtual classroom modules which were organised to cycle the content

knowledge and project-application phases. This meant students were able to take greater ownership of their learning by moving directly onto the next task when ready, without pausing to seek out further instruction.

PHYSICAL ACCELERATORS

The large and open physical environment of the Middle School Learning Studio created an excellent opportunity for co-teaching this unit, with three classes combining to work together as a pod. Combining classes meant there was greater scope in terms of using data to strategically group students to create purposeful peer partnerships. In addition, the capability to team teach was a core element in enabling students to personalise the pace of their learning because the teachers were able to oversee a wider variety of activities occurring simultaneously within the same lesson. The physical space further accelerated these opportunities through the capacity to designate different rooms and areas to each of the theory, practical and instructional activities taking place at any one time. Students were able to move in and out of each area depending on the activity they were ready to undertake, whilst always having a teacher close at hand to oversee their progress.

SHOWCASE

At the showcase, students presented products ranging from tourism websites to travel diaries and live news broadcasts. The featured locations spanned from Mars to the stunning sights of the rocky exoplanet, Kepler 62f. As we move towards living beyond Earth, Year 7 students revealed how technologies such as concrete-soled shoes, astrobiology labs and space suits with lithium hydroxide canisters to remove carbon dioxide, could help us to survive and thrive as we explore the vast unknown beyond our small blue planet.

During the reflection process, students were asked what aspects of the Beyond Earth unit they enjoyed, what enhanced their learning and when they felt best supported. The responses were found to vary quite significantly, with the most common elements valued by students being:

- the structure provided by the Education Perfect lessons
- the hands-on nature of the practical activities
- the greater freedom to work at their own pace
- the sharing of ideas during group work
- the application and deepening of knowledge in the project.

For the Year 7 Science teachers, the most informative characteristic of the student feedback was that it encompassed the range of pedagogical, ICT and physical accelerators employed. There was also a degree of correlation between the student data and the valuing of the more structured elements versus the self-paced and extension elements. Overall, the student feedback is a positive indicator that all the accelerators added value to the unit of work, and that students of diverse ability were engaged and progressed in their learning.

It is generally well established that the type of physical space offered by the Middle School Learning Studio promotes social interaction and collaborative problem-solving, but must be supported by sound pedagogical strategies if a true impact on student outcomes is to result (Cleveland & Imms, 2015). The intrinsic nature of this aspect was most evident to the Year 7 Science teachers in terms of how the intentional grouping of students facilitated self-paced learning. As expected, high-potential learners were found to progress at a faster rate, and the extended time they spent enhancing their analysis and problem-solving skills was inherent in the detailed projects they produced. Conversely, some of the students who received greater structure and direct instruction from teachers were observed to contribute much more to their group project compared to other collaborative projects in which they had previously participated, possibly because they felt valued by their group and more confident in their knowledge.

While innovative physical spaces encourage a shift towards innovative pedagogical strategies, the drawback is that students and teachers alike will not necessarily alter their habits to maximise the new opportunities

References

Breakspear, S. (2016). Agile implementation for learning: How adopting an agile mindset can help leaders achieve meaningful progress in student learning. *CSE Publications Occasional Paper, 147*. <http://simonbreakspear.com/wp-content/uploads/2017/01/Agile-Implementation-for-Learning.pdf>

without support (Cleveland & Imms, 2015). The most notable shift in expectation for students pertained to the greater level of autonomy. For some students, this opportunity was accompanied by an increase in their level of resourcefulness, while others found it a challenge to self-determine when they had mastered a concept and were ready to progress. For teachers, the greatest shift in practice was the corresponding release of control to students whilst trying to maintain the standard of work. Frequent and sustained conversation, between both teachers, and students and teachers, was critical in supporting the required changes in habit. Regular campfire discussions and the reporting of individual groups to a specific teacher was essential in facilitating conversations with students. The monitoring of student learning journals as they transitioned from one activity to the next was also found to be a key check and balance that provided reassurance to both teachers and students.

CONCLUSION

Overall, the design of the Beyond Earth unit of work enabled students to make regular decisions about their learning over a sustained period of time. This required a level of maturity that not all Year 7 students were ready for, but it is important to provide such opportunities to encourage growth. With the right pedagogical support and guidance from teachers, all students were able to move further along the continuum towards becoming independent and self-directed learners.

There is no doubt that the design of an entirely new unit of work is a large undertaking. However, the design processes and accelerator strategies discussed in this article can easily be employed, separately or in tandem, to great effect on a much smaller scale. Ultimately, what the Science teachers have learned from designing Beyond Earth is that any desired improvement process can be started by asking three questions:

1. What specific student outcome needs to be improved?
2. What pedagogical, ICT and physical accelerators do you have available to leverage and how do they align with the targeted outcome?
3. Would a learning sprint process help to rejuvenate your approach to more rapidly increase student engagement and progression towards the targeted outcome?

Breakspear, S., Paterson, A. Alfadala, A. Khair, M. (2017). Developing agile leaders of learning: School leadership policy for dynamic times. *2017 WISE Research #07*. https://www.wise-qatar.org/sites/default/files/rr.7.2017_wise-learnlabs.pdf

Cleveland, B. & Imms, W. (2015). Improving the (not so) new landscape of teaching and learning. *Professional Educator, 14(4)*, pp. 4-11.

“ I felt that this project helped me have a deeper and fluent understanding of space.”
– Molly, Year 7

STEP-BY-STEP STAGES OF THE BEYOND EARTH UNIT

Launch

Students considered whether movies like *The Martian* and *Gravity* which show humans living in space, are just science fiction and what challenges we might face to make them real.



Working collaboratively

Students discussed the personal strengths they bring to a team and established group guidelines for how they would manage decision making, resolve conflict and share the workload throughout the unit.



Learning – phase one

Students used Education Perfect to learn about the solar system and causes of day and night, years, seasons and eclipses. They made notes in their individual learning journals along the way.



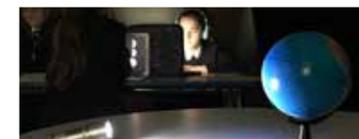
Teacher-led workshop

Students consolidated their learning by self-selecting to attend a teacher-led workshop. Some students were required to attend at teachers' requests.



Modelling

Students applied their knowledge to construct physical models of day and night, years, seasons and eclipses using globes and torches.



Checkpoint quiz

Students completed a checkpoint quiz to obtain formal feedback on how well they had understood the concepts studied in the first learning phase.



Travel proposal

Groups researched the features of three celestial bodies and created a proposal about which was most suitable for humans to visit based on their knowledge and collected data.



Learning – phase two

Through continued use of Education Perfect, students learned about forces, gravity and friction.



Experimentation

Students undertook experiments to explore the difference between mass and weight and to investigate the amount of friction produced by different surfaces.



Workshop and checkpoint quiz

Further opportunities to attend teacher-led workshops were provided to support student learning before they were formally assessed on their progress.



Beyond Earth project

Students demonstrated humans surviving on the destination chosen in their travel proposal. Researched technologies were incorporated to show how problems like lower gravity were overcome.



Showcase and reflection

Students showcased their presentations and gave feedback to other groups. Individuals then reflected on their own journey and their ability to work collaboratively throughout the unit.



A passion for teaching: The International Conference on Science and Education

by Kindergarten Teacher, Miss Emily Boyd

The Pymble Parents' Association Professional Learning Grant

This grant enables Pymble's academic staff members to undertake professional learning that will enhance their own learning and enrich the experiences of students within the College. Past grants have enabled teachers to investigate programs and pedagogies overseas, and to develop research partnerships. Pymble invests in our people so they can invest in our students and deliver rich, challenging and innovative learning.



In 2017, I received the Pymble Parent Association Professional Learning Grant which sent me to Maui, Hawaii, to attend the International Conference on Science and Education. This five-day interactive workshop was run by the Clute Institute and was attended by more than 500 educators from across the world. The conference allowed me to engage with other teaching professionals on subjects regarding Science, STEM, Literacy and Mathematics.

I have always had a strong passion for Science in all of its forms and greatly felt that the knowledge and problem-solving skills that it can instil are imperative for future generations. During previous years, there has been a strong focus in education on Mathematics and Literacy; however, the significance of Science and STEM has only recently come to fruition. I wanted to attend this conference so that I could learn a range of different and new teaching practices from other educators. This knowledge would allow me to extend our current Preparatory School programs and to better facilitate student learning.

One of the keynote speakers, Dr Wei Zhang, from The University of Akron, Ohio, USA, gave an insightful presentation on 'Training Teachers to Teach the Language of Science'. Her workshop discussed the importance of teaching students topical scientific terminology from an early age which would then progress in their subsequent education. Dr Zhang strongly encouraged the theory that suggests using appropriate terminology commencing in the early primary years allows for a deeper understanding of content and more challenging topics as students progress through the grades.

Dr Carol Bennett from Brigham Young University in Hawaii, discussed how picture book read-alouds can be used to support Science lessons and should not be solely used in early primary settings but are also beneficial in senior grades. Through her research, Dr Bennett found that using picture books as a strategy in instruction, engages students in Science and Mathematics lessons. During this workshop, many picture books were displayed with links to various Science topics, as well as multiple relevant activities.

After attending this conference, my passion for Science was heightened and I was excited to bring this back to the Preparatory School to reinvigorate the current Science programs and enthuse the staff. Since then, the Preparatory School programs have received an overhaul to include more engaging provocation at the beginning of units to engross students in the topic; including

“ I have always had a strong passion for Science in all of its forms and greatly felt that the knowledge and problem-solving skills that it can instil are imperative for future generations.”



real-world examples in the program to which students can relate has also been a key outcome.

As a further result of attending the conference, I felt that I wanted to further enhance my knowledge of the Science curriculum and ways to implement it effectively in a classroom setting. I have since been involved with working directly with the Association of Independent Schools on a Spiral Research Project to identify further areas where our Science programs can be enhanced, particularly with the new curriculum being implemented shortly. This project is quite significant and

explores scope and sequences as well as programs from Kindergarten to Year 6, and will continue into 2019.

I give my sincere thanks to the Pymble Parent Association for providing me with the opportunity to attend this conference. I concluded the conference with vigour and new ideas, and I am passionate and better equipped to continue this important stage of learning.

CASE STUDY

BRINGING REAL-WORLD SCIENCE TO THE CLASSROOM

In Terms 2 and 3 Science, our Kindergarten students studied two units – Living Things and Where Does My Food Come From? – with a focus on farms. As a provocation for this unit, each Kindergarten classroom was set up with produce from different types of farms, including a cut-flower farm, sugarcane farm, fruit farm and cotton farm. Each class rotated between the rooms completing various activities about the farms. At the end of this lesson, the students were so excited to learn that there were farms other than animal farms and this insight opened up so many conversations.

This was followed up with a visit from our College groundsman and animal keeper, Farmer David, who brought with him trays of farm produce (eggs, lettuce, ham, carrots etc.) to show the girls. The students then visited Farmer David at the College farm (also known as the ag plot).

Adding this real-world element engaged students in the learning and gave them a sense of ownership with its familiarity.



Kindergarten students enjoying a visit from College groundsman and animal keeper, Farmer David and students enjoying their visit to the College Agriculture plot with Farmer David

Design thinking in action: Pymble's new 20-Hour Courses

by Conde Library Manager, Ms Ruqqiya Dean

Conde Library Manager, Ms Ruqqiya Dean, discusses an innovative approach to teaching students design thinking skills with her colleagues, Dean of Curriculum Innovation, Mr Justin Raymond; Director of Teaching and Learning, Ms Tricia Allen, and Teacher Librarian, Mr John Stanton.

What is design thinking?

Unlike its conservative cousins, 'problem solving' and 'decision making', design thinking is a creative cognitive approach that is used to develop innovative solutions to problems that are typically ill-defined and sometimes even unknown. It draws on the techniques used by designers and other creative types and it involves repeated trial and error of new concepts and ideas; it embraces both divergent and convergent styles of thinking and most importantly, it starts with empathy: All problems and challenges are examined from the perspective of the human experience. Many successful companies including Apple, Google and Samsung have adopted design thinking and it is now being taught at leading universities around the world.

Walk into a Year 8 class, Period 2, on a Friday in the Dorothy Knox Building, and you might see girls on hands and knees manoeuvring little robots. Or, you might see a group of students bent over desks moulding cardboard tubing, play dough, lolly sticks and sticky tape into various structures. If you didn't know better, you might think it was a return to preschool!

In Semester 1 of 2018, one-half of the Year 8 cohort participated in the inaugural 20-Hour Course, where for one period a week, students engaged in 'lifeworthy' projects. Using design thinking as the underpinning pedagogy, students generated real-life solutions to existing social and environmental problems.

Q: Ruqqiya Dean — Tell me about the 20-Hour Courses and why they were developed?

A: John Stanton — The 20-Hour Social Thinking Course was created as a way in which the design-thinking process could be taught and applied in the context of social issues. The course does not assume that students will tackle large social problems, but rather apply design thinking to solve a small component of a much larger problem.

A: Tricia Allen — 20-Hour Courses were implemented to allow for vertical learning across year groups, where we could in the future have Years 8, 9 and 10 in one space. We started with Year 8 as a prototype. It is based on the design thinking principles of learning whereby you empathise, you define, you ideate, you prototype and you test.

Q: Ruqqiya Dean — How have students responded?

A: Justin Raymond — A highlight has been getting the girls to really tune into the core of design-thinking empathy: We've been getting them to build a product for someone, or for something, rather than just doing it for themselves.

A: Tricia Allen — The creativity with which the students have responded has been mind-blowing. What really appealed to them was the ability to make a choice and being able to select a passion project.

Q: Ruqqiya Dean — Which projects particularly stood out?

A: Tricia Allen — One student had the idea that all phones should come with an emergency app which would direct them to a person that you nominate. It notifies them that you need help or are in trouble. It automatically links to co-ordinates so that when you dial triple zero, they know where you are. Another girl designed an app for sick children in hospital so that they could participate in self-directed learning.

A: John Stanton — A highlight was seeing one student attempt to solve an actual problem faced by a family member. Even though her final prototype was incomplete and still needed refining and retesting, she made a serious attempt to think through the complexities of an issue and try to get to the essence of a solution.

Q: Ruqqiya Dean — What were some highlights from a teaching and learning perspective?

A: Justin Raymond — Teacher collaboration has been a game changer and a highlight of 2018. Working with ICT Integrator, Mrs Blythe Cassidy, has been fantastic as we have complementary strengths. A highlight for me this year were the Wednesday meetings with the 20-Hour Group. Working in an agile way allowed us to come to the group and say we have a problem this week, create a prototype, test out some solutions and get some feedback on it, changing it for the week after. This has just affirmed for me how we need to be working as an organisation across the board. It was pure design thinking in action.

A: Tricia Allen — Just having the time for like minds to sit down, discuss and work collaboratively! I think that the rubric we came up with for design thinking is fantastic.

A: John Stanton — Seeing the students brainstorm a huge number of ideas towards the beginning of the course, which really demonstrated the boldness and creativity in the room. It is heartening to see students not succeed easily. The resilience that comes from working through a challenge is a valuable life skill.

Q: Ruqqiya Dean — What were some points of challenge?

A: Justin Raymond — Some momentum got lost when we missed lessons, which is difficult when you only have 20 lessons for the semester. But we really leveraged online tools to get the girls to work digitally from home. I think the other challenge was really knowing how hard we could stretch and push the girls and how we could best support the girls to reach their ceiling.

The 20-Hour Courses offered to Year 8, 2018

1. Design Thinking – Coding

Students applied the design-thinking process to a coding context where they developed JavaScript-based applications designed to meet a user's need.

2. Design Thinking – Social

Students used the design-thinking process in a social context to explore an issue of personal choice. They considered the power of their choices as individuals and how people join together in collective action to influence change on a global scale.

3. Design Thinking – STEM

Students used the design-thinking process in a STEM context to develop a STEM-based project to solve a real-world problem.

4. Design Thinking – Entrepreneurship

Students used the design-thinking process in an entrepreneurial context to develop concepts for their own enterprising solution.

5. My Mini-robot (STEM)

Students used the design-thinking process in a robotics context to develop concepts for their own robotics solution.

6. Sokratis

Students used the design-thinking process in a research context with the opportunity to extend their academic interests and passions through an individually selected project.

A: John Stanton — The transition from ideation to creation was difficult for most students. Almost everyone began with quite idealistic, big-picture solutions to problems, which were relatively removed from their daily experience. So, finding an aspect to focus on and solve for, in a realistic manner, was challenging.

Q: Ruqqiya Dean — The reporting of the 20-Hour Course outcomes was quite different from the traditional Pymble structures, in that the course outcomes were synthesised using a spider diagram and highlighted growth of students' non-cognitive skills such as the design-thinking process, problem solving, creativity and a range of other course-specific skills. Can you speak about that?

A: Tricia Allen — As one of the key intents of the 20-Hour Course is to develop habits, dispositions, and skills, we had to completely re-think reports. As a 20-Hour Course team, we created a robust five-point rubric to measure student skills such as empathy, defining problems, ideation, prototyping and testing. As well, we reported on some course-specific skills such as problem solving. For the first time, students had the opportunity to self-assess their effort and application. Teachers had the opportunity to compare the reporting of student effort and application with the students' self-reports. In the next iteration of the course, we need to have a dialogue with the student regarding the effort and application, particularly when the teacher versus student results are not aligned.

Big History, big future

by History Teacher and Acting Deputy Head of Upper School (Learning), Miss Caragh Warth

As a recipient of the Ex-Students' Union Grant, I travelled to Philadelphia in the United States of America to attend the International Big History Association's biennial conference, Big History, Big Future: A Cosmic Perspective. This conference draws people from all over the world who have a keen interest in continually developing and understanding an integrated history of the cosmos, Earth, life and humanity, using the best available empirical evidence and scholarly methods.

Big History has now been implemented at university level for more than 25 years and since 2011 has become part of curricula in schools across the world. The aim of the conference was to reflect on the past of Big History as a transdisciplinary course and ask the question—where to from here? For myself, as a teacher of Big History and a representative of Pymble Ladies' College, attendance at the conference was an opportunity to forge relationships with the wider international Big History teaching community.

“This conference draws people from all over the world who have a keen interest in continually developing and understanding an integrated history of the cosmos, Earth, life and humanity, using the best available empirical evidence and scholarly methods.”

MAIN THEMES OF THE CONFERENCE

A main focus for the conference was looking at the future of Big History and the role this course can play in assisting with discussions around climate change and issues being presented in our current time of the Anthropocene. The Anthropocene is a proposed definition for a new epoch where humans are altering Earth's geological and environmental systems.

Presenters from different sectors and disciplines including Macquarie University's, Professor David Christian; author of *Quarks to Culture*, Tyler Volk; and Director of the North Carolina Museum of Natural Sciences, Emlyn Koster, discussed how the study of Big History analyses the past and present to plan for the future and therefore provides a greater understanding of our global needs from a transdisciplinary approach. Other presenters explored ideas such as geology and art; philosophy and Big History; Big History and education in Asia.

DEEP DIVE: LEARNING TO THINK IN THE ANTHROPOCENE

A thought-provoking plenary session was 'Learning to Think in the Anthropocene' presented by key speakers from the Learning Development Institute in collaboration with the Institute for Interdisciplinary Research into the Anthropocene. The aim of this session was to open discussion around "an acute need to build awareness among our planetary citizens regarding the complex nature of their habitat and the need to conceive of their interactions with it in a complex transdisciplinary manner". The session highlighted the need to teach our students to develop complex thinking as outlined by Edgar Morin in *Seven Complex Lessons in Education for the Future*, and for educators to provide learning spaces that assist in the growth of complex thinking and open discussion.

Upon reflection, this session validated our approach to learning within the Big History classroom at Pymble. We are encouraging students to think beyond the linear and see the transdisciplinary nature of the course as a complex web which requires multiple and diverse connections between ideas, rather than a linear timeline. In many of our class discussions, we

ask students to consider an idea such as globalisation, and we challenge them to discover and develop their thinking through our understanding of the past, present and future and a variety of perspectives which require team work and empathy. Furthermore, in creating an open and supported learning environment, our students are asked to present their ideas based on knowledge. They are then encouraged to grapple with ideas, problems and issues which draw on their knowledge from across their program of study and to take risks as they develop hypotheses and apply new knowledge to the concept, rather than stay safe within the confines of content alone.

Emily Vargas-Barón, a panellist representing the RISE Institute, challenged delegates to consider where our focus fell. She asserted that it should be on educating students within the Anthropocene where students will be responsible for overcoming problems in the future with the need to be complex, flexible thinkers who have "the capacity for exerting courageous leadership". Therefore, it is our responsibility as teachers to step out of our comfort zone and engage with new ideas and approaches such as Big History and provide opportunities for students to develop this complex and flexible thinking.

REFLECTION

As I reflect on the sessions and the discussion, I am conscious of the opportunities I have to explore creative ways of implementing interdisciplinary knowledge to allow my students to become flexible and complex thinkers. The conference emphasised the importance of creating connections across local and global communities which we are establishing at Pymble. As we are global citizens and our aim is to create and engage our students with sustainable practices, I believe Big History is a stepping stone in the direction of ensuring the prosperity of our world.

“...within the Big History classroom at Pymble, ...we are encouraging students to think beyond the linear and see the transdisciplinary nature of the course as a complex web which requires multiple and diverse connections between ideas, rather than a linear timeline... we challenge them to discover and develop their thinking through our understanding of the past, present and future and a variety of perspectives which require team work and empathy.”

References

- International Big History Association, 'Big History', accessed 20 August 2018, <https://bighistory.org/>
- International Big History Association, 'Learning to Think in the Anthropocene', accessed 30 July 2018, <http://www.learndev.org/dl/HLA-IBHA2018-LTA.html>
- Morin, E. (1999). *Seven complex lessons in education for the future*. UNESCO. Available: <http://unesdoc.unesco.org/images/0011/001177/117740eo.pdf>
- Vargas-Baron, E. (2018). The child and the anthropocene. Accessed 31 August 2018, [http://www.learndev.org/dl/HLA-IBHA2018/Vargas-Baron%2C%20E.%20\(2018\).%20The%20Child%20and%20The%20Anthropocene.pdf](http://www.learndev.org/dl/HLA-IBHA2018/Vargas-Baron%2C%20E.%20(2018).%20The%20Child%20and%20The%20Anthropocene.pdf) .p. 3

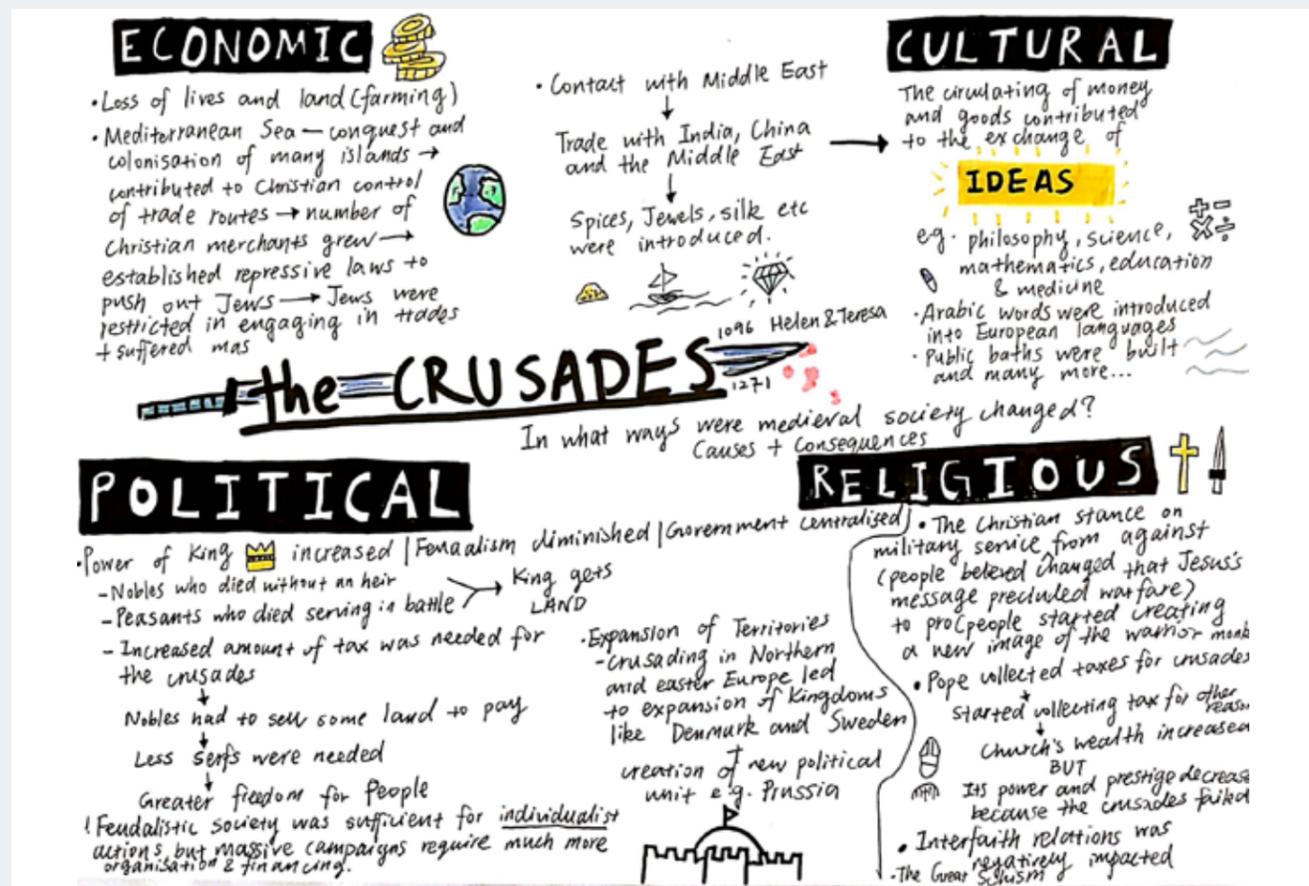
“The session highlighted the need to teach our students to develop complex thinking...and for educators to provide learning spaces that assist in the growth of complex thinking and open discussion.”

Ex-Students' Union Grant

This grant, of up to \$6000 value, was awarded to History Teacher and Acting Deputy Head of Upper School (Learning), Miss Caragh Warth. The grant enables an academic staff member to undertake a professional learning opportunity that will enhance her own learning and enrich the experiences of students within the Department.

Pymble's Big History: Involving the expert

by History Teacher and Acting Deputy Head of Upper School (Learning), Miss Caragh Warth



The Interconnection Period within Big History, created by Year 10 students, Teresa and Helen

“ At Pymble, our aim for Big History is to use the past to inform the future as well as explore and challenge students along the way.”

In 2017, the Big History Preliminary Course was introduced as an elective to accelerate and extend Year 10 students. Big History is an interdisciplinary or transdisciplinary course founded by Macquarie University's Professor David Christian, exploring the narrative of the universe from the Big Bang to today. Its aim is to grapple with the questions that many humans struggle with—who am I, where do I belong and, ultimately, how did we as humans come to be here today?—using disciplines from the

sciences, philosophy, anthropology and history, among others, to assist in answering these questions.

As the majority of our students in Australia go through an education system based in disciplinary silos, these silos create barriers in their learning and overall understanding of big issues and problems. Many students do not see the connection between the subjects they learn unless it is emphasised by the teacher. The problems that our students and we, as humanity, face



An image from a picture book to tell the story of Big History; created for a Preparatory School audience. By Joy, Yvonne, Helen, Sophie, Alexandra, Tiffany and Teresa

now and into the future, are ones that require an interdisciplinary approach and cannot be solved from one disciplinary silo alone. At Pymble, our aim for Big History is to use the past to inform the future, as well as explore and challenge students along the way.

Using the Big History framework of Thresholds of Increasing Complexity, our students explore big questions and themes. By asking larger questions (such as how and why our understanding of the universe has changed?), students are required to draw from two or more disciplines to produce cognitive advancement. In thinking about these questions, students are exposed to a myriad of disciplines including religious, scientific and historical perspectives. These larger questions are challenging for them, as it is their interpretation of the question, argument and supporting evidence that extend them and require thinking beyond the confines of one discipline.

As a teacher of Big History, it is important to note that we are the

lead learners, exploring, challenging and facilitating the exploration of the narrative of the universe, and not always the expert of everything. We have therefore designed the course with a view to expose students to experts within their field. In the year and a half that the course has been running, we

“ These larger questions are challenging for them, as it is their interpretation of the question, argument and supporting evidence to these questions that extend them and require thinking beyond the confines of one discipline.”

lectures have seen students engage with disciplines beyond the high-school framework as it is the role of the Big History teacher to ensure students understand how this expertise and information fits within the framework of the course.

As we move forward with the course, expanding our expert community is a necessary step to ensure an authentic approach to the interdisciplinary nature of the course.

FURTHER READING

Boix Mansilla, V. 2005. 'Assessing student work at disciplinary crossroads', *Change*, 37 (1): pp. 14-21.
 Christian, D. 2005. *Maps of Time*, University of California Press: Berkley: pp. 2-7.



Senior Curator of the Nicholson Museum, Dr Jamie Fraser, with (L-R) students Sabrina and Naveesha.

Innovative Learning Environment in Pymble Junior School, Years 5 and 6

by Year 6 Co-ordinator, Mr James Lister

“Flexible learning is a set of educational philosophies and systems concerned with providing learners with increased choice, convenience and personalisation to suit the learner.”
– Shurville, O’Grady and Myall, 2008

The Innovative Learning Environment (ILE) at Pymble is based upon the principles of both open and flexible learning within a classroom setting. Teachers and students recognise that the underlying principles of a flexible learning environment bring together the expertise of teaching staff, and provide opportunities for students to make choices about where and how their best learning occurs.

The ILE for Stage 3 at Pymble enables teaching and learning to flourish simultaneously through personalised and student-focused opportunities that employ a wide variety of activities and modalities. These learning spaces make purposeful use of flexible spaces to support deep engagement of agile learners who are comfortable learning in a variety of ways and places. The space deliberately allows for individual, small-group and large-group, student-focused collaboration.

At the end of Term 3, 2017, the Year 6 team surveyed Year 6 learners (n=93) in order to ascertain students’ understanding of themselves as learners within the Stage 3 learning environment. A phenomenological framework was used to describe and explain students’ responses to challenge.

Student responses to the survey included:

“You achieve things that you have never done before and never thought possible.”

“A successful learner is someone who can ask and answer questions and someone who is positive and confident about their learning.”

“A canteen is when the teacher comes in a group with everyone who is still unsure on the topic and teaches them further into depth and answers all their questions. We use it to have extra help if we don’t understand anything or to have our questions answered.”

“I sit where I can focus. I move around and meet new people that I haven’t fully gotten to know. I sit where I know I am going to work well and going to get my work completed.”

PHILOSOPHY AND RATIONALE

Learning is a social practice. Constructivist theories of learning emphasise the need for learners to participate in metacognitive processes for self-reflection as well as sophisticated practices for learning with peers and teachers. In addition, the College intent for personalised learning outlines that each learner proceeds from her point of personal challenge, developing the passion and scholarship required for independence in lifelong learning.

This rationale provides the guidelines for teachers to be able to know, guide and challenge our students in their learning.

Specific protocols have been established in the ILE in Stage 3. Direct student instruction has been reduced as our teachers facilitate the Pymble vision to know, guide and challenge through the promotion of discovery learning and enabling the students to be responsible and independent learners.



The Campfire: Teach new knowledge, understanding and skills to a targeted instruction group based upon readiness, need, ability, expertise, interest or choice.

The Canteen: Provide responsive feedback and instruction to groups of students on their learning journey.

Conferencing: Provide specific and timely feedback to individual students, and plan with students next steps in response to that feedback.

The Cave: Provide responsive feedback and instruction to groups of students on their learning journey.

FUTURE DIRECTIONS

The ILE within Pymble has been extremely successful. Student growth has been measured over time, and there has been a clear and evident shift in the paradigm of thinking around the use of open spaces and learning for students. Importantly, by providing consistent structures across Stage 3, we have been able to accelerate growth and learning. The key stakeholders of parents, students and teachers can clearly see the positive effects on student learning outcomes in a way that embraces the vision of personalised learning. The nature of the space and the teaching and

learning practices encourage us to remain flexible, agile and robust in the learning environment.

Following the publication of Pymble’s strategic vision document, *Towards 2020: Striving for the Highest*, and the subsequent creation of the College’s Personalised Learning Framework, our programs have been structured to provide differentiation of learning activities that can support and enrich every student at her point of challenge. Multiple assessment opportunities combined with fluid and flexible class groupings have helped students identify how they learn. Co-teaching and collaboration have allowed teachers to track growth and understand personalised learning.

The further development of the ILE has seen significant changes in teaching and learning practices. Critical thinking, problem solving and collaboration have been focus areas included in every learning program in the ILE. Specifically, the inclusion of design thinking, project-based learning, collaborative grouping and the inclusion of targeted and specific ICT skills, has allowed students to develop the critical-thinking and problem-solving skills necessary in a rapidly changing world.

The Kate Mason Professional Learning Grant

The 2018 Kate Mason Professional Learning Grant was awarded to Year 6 Co-ordinator, Mr James Lister, along with Junior School colleagues, Ms Jane Worthington, Ms Talitha Burton and Mr Stephen Robinson. The team attended the Flexible Learning Association NZ (FLANZ) conference on open-learning pedagogics.

This annual grant of up to \$12,000 enables an academic member of staff to undertake significant professional learning that will enhance their own learning, as well as enrich the experiences of students, the faculty and the College.

Attending the FLANZ conference was an exceptional learning opportunity for Junior School staff as it built upon their research, data collection, and journey of discovery. Interacting with academics from around the world also ratified that, as educators at Pymble, their ILEs are providing students with a challenging and engaging environment.

Special thanks must go to the College and Mrs Kate Mason AO, for supplying this professional learning opportunity.

The ICT Integration Model: Growing individual capacity to learn together

by IT Integrators, Mrs Blythe Cassidy and Mrs Kim Maksimovic

The *Pymble* Personalised Learning Framework identifies technology as an accelerator for learning. With this in mind, in late 2017 the Director of Teaching and Learning, Ms Tricia Allen, with the help of IT Integrators, Mrs Kim Maksimovic and Mrs Blythe Cassidy, developed and launched *Pymble's* ICT Integration Model.

The ICT Integration Model establishes pedagogical and strategic focus points by empowering teachers to purposefully plan the use of innovative technologies in their classrooms using the guidance of the IT Integrators. In this way, emphasis is taken away from the technological tools, and shifted to the importance of the learning and teaching goals.

HOW DO PYMBLE TEACHERS WORK WITH IT INTEGRATORS?

PEDAGOGICALLY



Collaborative planning for innovative curriculum



Co-teaching



Promoting and developing digital citizenship



Preparing and implementing digital resources

Pedagogically

As members of the Academic Enhancement Team, the IT Integrators participate in collaborative planning sessions across Kindergarten to Year 12. This provides opportunities to be part of the **ideation phase of programming** to design and contribute innovative technology solutions to enhance personalised learning. These contributions include preparing a range of solutions that provides opportunities for choice, pace, differentiation, purposeful grouping, challenge and extension. These contributions help shape teaching and learning activities, assessment, and feedback opportunities for innovative units of work.

The next step of this process involves planning of co-teaching opportunities to enable teachers to work together in the **delivery** of the lesson content. This may involve a series of lessons scheduled in innovative learning spaces such as the Middle School and Library Learning Studios and the Junior School Learning Spaces. These spaces complement the engagement of our agile learners in their use of technology by providing flexible furniture, breakout spaces, multiple avenues for sharing and collaborating on projection screens and utilising wireless projection facilities.

The IT Integrators guide, inform and collaboratively plan with the Dean of Students, Heads of School and Year Co-ordinators on strategies to educate students in becoming **responsible digital citizens**. Aligning to *Pymble* core values, we promote the ethical use of online resources and provide guidance on sourcing creative common resources.

The IT Integrators have developed an **ICT continuum** which draws together the ICT general capabilities and the key technology outcomes of Kindergarten to Year 12 syllabi. This is used by teachers to guide their practice. IT Integrators also assist teachers by preparing guides, screencasts and other **digital resources** to support the learning in the classroom.



Support and mentorship of teachers' professional goals in relation to ICT



Provide expertise, research and evidence for technological solutions to learning opportunities



Deliver professional learning opportunities and induction



Assist in design, collection, interpretation of data to guide teaching and learning practice

Strategically

The role of the IT Integrator also involves planning for innovative opportunities to build the capacity of the teaching and support staff at *Pymble*.

This is achieved by:

- engaging with teaching staff in their development to achieve their Reflect Review Renew goals
- meeting with teachers to identify the learning goals of their students, researching solutions and providing guidance on the most suitable and age-appropriate tools
- providing informal and formal training sessions in a variety of tools for teaching and support staff
- delivering IT induction opportunities for all new staff and students of the College
- participating in data-driven, future planning discussions with key members of the *Pymble* Leadership team.

HOW DO PYMBLE STUDENTS WORK WITH IT INTEGRATORS?

How can students work with an Integrator?



Orientation



Leadership



Programs

The IT Integrators work with the College IT Hub staff to deliver a comprehensive IT Orientation Program. This is targeted at students new to the Bring Your Own Technology (BYOT) program (i.e. Year 5, Year 7 and new student enrolments). This program works towards the development of the Learner Disposition of **self-assurance** and equips students with the skills necessary to participate in the innovative curriculum opportunities at *Pymble*. It also integrates learning opportunities to develop digital citizenship skills. A series of face-to-face sessions is supported by online modules delivered through the College's Virtual Classrooms.

The student leadership position of IT Captain fosters leadership skills and provides an avenue for representing student voice in the technology initiatives that are run at the College. In partnership with the IT Integrators, the IT Captain seeks to develop new strategies for engaging and developing girls' interests and the Learner Disposition of **passion** with technology.

To develop the Learner Disposition of **scholarship**, opportunities are provided for students to participate in technology events. These offerings are aimed at encouraging young women to consider potential career paths in technology-focused fields. They also inspire the girls to consider different avenues for engagement with technology. Past excursion offerings to the Amazon Web Summit, Young Women in STEM Day at UTS, Sommerville Virtual Reality Workshop, as well as incursions such as the Adobe Photoshop workshop, have provided insight, connection and exposure to the technology industry.

CASE STUDY

Kindergarten to Year 6 Seesaw digital portfolios

The Kindergarten to Year 6 leadership team expressed a desire for a digital platform to showcase student growth and provide 'lights on learning' opportunities for parents. The IT Integrators researched and evaluated a variety of digital solutions for their accessibility, security and ease of management, and presented Seesaw as the most appropriate tool. The platform was trialed and evaluated by a small number of staff and students to assess its suitability. The IT Integrators then provided training to academic staff and co-ordinated the creation of student accounts. Information sessions were run for Preparatory and Junior School parent groups where they were invited to ask questions and demonstrate various aspects of the tool.

Students have begun to use Seesaw to upload items to their journal and write or record a reflection on their learning. The program is accessible to even the youngest learners with the ability to upload images, video and voice recordings. Parents are encouraged to leave positive and constructive feedback for their daughters, which involves them in valuable learning conversations.

Challenge Café: The why, who and when of a Middle School learning initiative

by Deputy Head of Middle School (Learning), Mrs Kate Brown

Challenge Café is a lunch-time club designed to extend the girls' intellectual curiosity, creative thinking and scholarship through informal group discussion and self-directed learning. The club was established to provide a forum for our Middle School high-potential learners who have a hunger for collaborative learning and challenge.

What began, in 2017, with a small group of Year 7 students with a shared passion for Ancient Greece and literature, has expanded into two large groups of Year 7, Year 8 and Year 11 girls who are enthusiastically committed to meeting each Friday to build and share knowledge through sustained inquiry.

Students are attracted to the opportunity to extend their thinking, passion for learning and acquisition of knowledge in an environment that is, as they say, "free from assessment and therefore pressure". The growth in student confidence is evident as they challenge their own thinking and that of their peers in a relaxed and nurturing space. In Challenge Café, the students assume ownership for their learning and, through negotiation, structure the flow of their learning activities. They plan and facilitate the celebrations of learning which are shared with their families at the end of each semester.

After a very successful beginning, student voice is ensuring that Challenge Café is thriving and even growing in numbers.

YEAR 7 PROGRAM

In Challenge Café, our Year 7 girls are investigating the progression of drama from its beginnings in Ancient Greece. They have written from the perspective of Greek Gods and performed poems at an impromptu Dionysian festival of poetry, appropriated Greek myths, designed and created traditional Greek dramatic masks, and begun to delve into the world of Sophocles' *Antigone*.

Extract from *Aphrodite* – by Piper, Year 7

Aphrodite, oh how I adore you
You have brought the world love
and what a wonderful thing it is!

You are a picture of timeless
beauty
and endless generosity
oh how I appreciate you

how could I possibly live
without your kind-hearted
gifts of love and desire

*but how love is cruel
how the pain of affection
creates crevices that will never
be filled*

*and beauty is nothing
but a livid beast
craving blood and bones*

*your intentions are malevolent
and your action benefit only one
you are a monster*

Extract from *Poseidon poem* – by Angie, Year 7

Every drop of brine
E-VE-RY flick of broth
The salted air
The beautiful pictures

The Ninety *five* percent
Undiscovered.
All had been
Crafted
By
Poseidon.
Our god
Of the sea.

This churn
UN-matched by any
Factory in this world
The *hush*
And *run*
The *spread*
The calm
The *crash!*
The storm!
Of the surface.

“Challenge Café is vastly different to any other learning experience I have participated in during my schooling. It has allowed me to learn about these things in a different light. I have gained new knowledge on how to interpret a task and let my own creativity be showcased.”
– Piper, Year 7

YEAR 8 PROGRAM



Year 8 girls discussing the social issue they have identified

Our Year 8 girls have agitated for change within their world by raising their voices for the voiceless or those who are marginalised within our society. Using their creativity, the girls have written and illustrated picture books, designed apps, created companies, developed websites and composed music to raise awareness and suggest solutions to issues including: discrimination, indigenous health barriers, how Science and technology can empower refugees, and the need to keep striving for global gender equality. The girls enthusiastically shared and celebrated their depth of passion and knowledge in a showcase designed and managed by themselves. The girls are now delving into philosophy and applying their philosophical thinking to moral dilemmas.



Year 8 showcase. Parents and staff interacting with the girls' design ideas promoting awareness and change for their identified global issue.

STUDENT-TO-STUDENT MENTORING



Year 11 students mentoring a group of Year 7 students

This year, the program has extended to include Year 11 Subject Captains who have dedicated their time to mentor students through their chosen area and mode of inquiry. Discussion has been dynamic and noisy, and bonds have been created across year groups through shared questioning and passion.

“As Year 11 students, we have thoroughly enjoyed guiding the Year 7 students through this exploration of Greek culture and literature, and it has been a unique opportunity to assist the younger students in their research, to facilitate effective group work and enjoy some good academic conversations.”
– Georgina and Grace, Year 11

“As a Year 11 Learning Mentor working with one of these groups, I have been challenged to think about the learning process and this experience has compelled me to explore ways to guide understanding and shape thinking in a way that does not interfere in the students' process. As a Senior student, it has been inspiring to see the passion and willingness of the Year 8 girls, who strived to not only answer questions put to them, but to raise questions to debate and discuss. The Year 11 Subject Captains aimed to aid the Year 8 students' journey of inquiry by igniting curiosities and guiding interest, but we quickly realised that we were also exposed to new ways of thinking about learning.”
– Sophie, Year 11



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*A school of the Uniting Church in Australia for girls from
Kindergarten to Year 12, with boarding available from Year 7*

'All' Ultimo Lavoro' – Strive for the highest



Pymble Ladies' College