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Scan is a leading refereed journal that focuses on the interaction between information in a digital age and effective student learning. Scan offers engaging professional support for all educators.

Facilitating growth in literacy outcomes through Investigative Learning

Ariana Davis and Sophie Parsons from Balmain Public School

Investigative learning is an evidence-based program incorporating a range of theories of child development, with play-based learning as a central component. It is set in a child-centred, flexible learning environment specifically tailored to student's individual strengths, background and readiness. Real-life experiences and a rich variety of materials throughout the space ensure learning is authentic and meaningful, and students have opportunities to explore and create.

Teachers know that meaningful tasks in an authentic context equal engagement, and engagement equals learning. The impact of engagement and well-being on student learning outcomes were core reasons for initiating Investigative Learning at Balmain Public School (BPS). Over four years, we have collected data to measure the efficiency of our program in fostering early literacy and to help us reflect on *how* we implement our program in the BPS Early Stage One. Our Principal, Maria Lambos recently presented this data at an Iron Cove Network meeting this year.

What does our data show?

In 2015 Semester Two, prior to implementing Investigative Learning we had 14% of Kindergarten students achieving 'below' stage level in reading (below PM level 6). This number has steadily decreased over four years to 12% in 2016, 4% in 2017 and to 3% in 2018.

The amount of students achieving 'above' stage level has increased steadily over four years. In 2015, 22% of students were achieving above stage level (reading above PM level 11) in Semester Two. Students achieving 'above' rose to 50% in 2016, grew to 60% in 2017 and rose further to 70% in 2018. Teacher observations have been that the Investigative Learning program is effective for both students with learning difficulties and high performing gifted and talented students. The reduction in students testing as below stage level and the increase in students above stage level sustains these observations. Student results in speaking and listening, and writing, showed similar growth.

The credibility of our data is supported by several factors. Reading levels are prescribed for 'sound', 'at' and 'high' levels in each semester to ensure consistent teacher judgement. For example, to achieve a stage level in Semester Two a student must be reading fluently and with comprehension at a level 6 or above. To achieve a 'high' level a student must be reading at a level 11 or above. Students are flexibly grouped and assessed across classes, which means a student is tested by the teacher who is taking their reading group as well as their class teacher, with teachers working together to agree on levels. We used our Best Start data to look at the entry points of our cohorts, and found them to be similar across the four-year period.

Although we know, from teacher observations and our data, that the program is highly effective, the next step for us has been to make the leap from knowing it works, to fine-tuning our understanding of 'how' it works. Breaking down the details of exactly what we do to integrate literacy outcomes into our daily program and facilitate that growth, has been part of our reflection process.

How are literacy outcomes present in play-based learning stations?

There are many different learning stations in the investigative classroom and they continuously evolve to align with the syllabus outcomes of our current program. Some stations facilitate less reading and writing than others but literacy outcomes are threaded through every station. We have observed that we can purposefully weave literacy into a learning area in these five ways:

Literature as provocation

Quality texts, multimodal texts, factual texts are strong starting points for a learning station to hook the students in. Fictional texts can be excellent provocations for a geography or construction learning station. This year our map-making station used 'The Last Viking' as a provocation for sparking geographical inquiry skills and concepts. For our

art stations we used 'Welcome to Country' and other new Indigenous Australian texts as conceptual beginning points for paintings.

A print rich environment

A print rich environment is so much more than just a basic word wall. We do 'love' a word wall, but we create our own role, form and topic related vocabulary banks. For example, in our art station if the writing task was to complete the sentences 'I used _____ in my artwork. My artwork is about_____'. Students would need access to the practical words of 'paint, pastel, watercolour' but also thematic words such as 'friendship, family, adventures'. Towards the end of the year we would enrich the task by adding adjectives as students moved from a simple sentence, 'I used paint in my artwork' to more complex 'I used brightly coloured paint in my artwork'. Our print rich environment encompasses scaffolding that references previous explicit teaching. For example, first 100 sight word and initial sounds cards are included to support independent writing within the task. We also include quality texts that were initial provocations and environmental language to label the objects and processes within a learning area.

A print rich art station incorporating Darug language. (One of the Indigenous Australian languages of the Sydney region).

Dramatic role play

Development of literacy depends on oral language and the dramatic role-play aspects of our stations are crucial in building verbal communication skills. As students take on the role of 'artist' or 'builder', the conversations they have with each other are part of the process of making meaning and building vocabulary. Communicating, collaborating and developing inquiry skills happen fluidly through dramatic role-play.

Drama role-play provocation for a geographical inquiry station. Using costumes and props, students take on the role of explorers or pirates as they create their maps.

A writing task

Many of our stations invite students to participate in a writing task. We prepare materials that encourage writing, but ideas for writing are usually student generated and students are invited rather than instructed to complete them. A writing task could look like creating a menu in the café area, a 'Shop' sign, tickets for the 'art gallery', postcards to characters in our small world play, letters, maps, little books. It is crucial that all tasks are differentiated and have different entry points. For example, in the post card area we provide different templates so students can select the appropriate line size and amount of scaffolding for themselves. Some templates might already have the words 'to' and 'from' on them, where others might require students to write the words themselves. We source materials and create tasks specifically to tempt our most reluctant writers and organise stations so writing tasks have meaning and purpose within the play. These writing tasks become important evidence for how a student's skills are progressing.
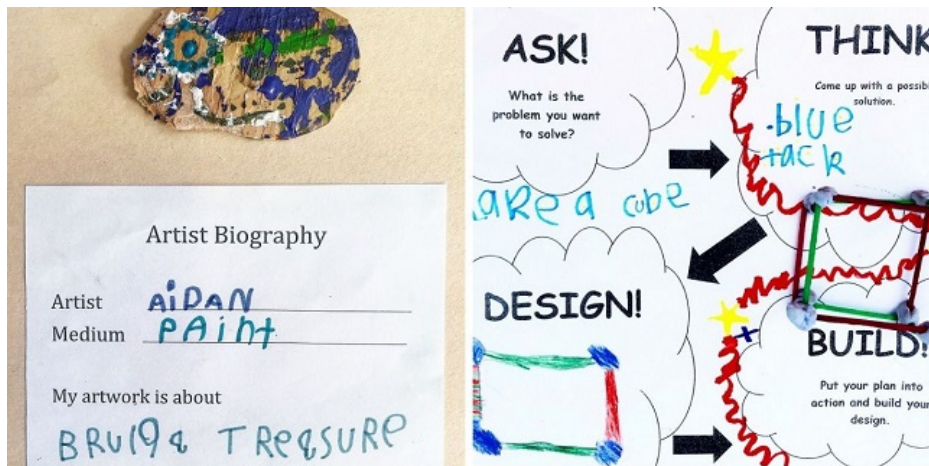
Example of writing tasks at art and STEM stations.

Reflection on learning

Reflecting on learning provides opportunities for teachers to build on the language used throughout the process. Drawing the classes' attention to written and oral language skills in examples of high quality work is pivotal during this time to ensuring learning is visible and expectations are explicit. You might refer back to your initial provocations in this time and the process starts to feel circular in nature. This ensures that student expectations of their own work continually evolve.

How do I know literacy is successfully embedded in my play-based program – what does consistent growth look like in the classroom?

We have found some of the signs that literacy outcomes are successfully embedded in our program are:

Extended engagement

We know a learning station is working when students become wrapped up in the task for weeks on end. You may find yourself adjusting the provocation slightly each week to extend a task. Adding the compass rose to a map-making task one week, encouraging students to use a key the next week. When a station is highly engaging, students will spend days in a row writing the same type of 'postcard' or 'menu'. This repetition facilitates mastery and a state of flow, so that students are consistently 'in' task.

Every student is an enthusiastic writer

We rotate the topics and provocations of our writing centres to target the most reluctant writers, creating specific stations to engage students that are struggling, where they are supported by friends and peers in their explorations of literacy. For example, if you have a child obsessed with dinosaurs, you can set up a 'dinosaur area' with initial sounds linked to different dinosaurs and create maps of where dinosaurs live (even if you as a teacher

really don't like dinosaurs!). This ensures all children spend the amount of time engaged in reading and writing that is required to kick-start their positive engagement with literacy.

Assessment exists easily within the investigative process

Work samples produced in investigations are a valid snapshot of a child's progress and can be used to inform reporting. We have a clear understanding of what a 'sound' and a 'high' look like in an investigative writing sample. We include work samples in literacy books as evidence of progress, as we find children show us what they are really capable of when working on interest-based tasks.

Investigative design brief work samples from Terms One, Two and Three showing how open-ended tasks facilitate student progress in writing throughout the year.

Robin Ewing (2018) states, 'Learning to be literate is a highly complex contextualised social practice – not a series of hierarchical skills'. The individualised, child-centred nature of our program has gifted us continuous room to reflect on the multitude of ways that learning about literacy happens, and the links between context, memory and the building of skills. As each teacher brings different background knowledge, interests, talents, training and skills to the creation of learning areas, play based learning can be a lovely melting pot of pedagogies; one where we appreciate the richness of the learning process and every child can feel truly known and valued on their literacy journey.

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Our journey with project-based learning
and flexible learning spaces.
Monica St. Baker, Gary Workman & Gaynor Castellaro

Our journey with project-based learning and flexible learning spaces

Monica St Baker, Gary Workman and Gaynor Castellaro from Hanwood Public School

Our commitment

At Hanwood Public School, we have been on a journey. We knew that there was a need for educational change and a change in our school vision that was meaningful and future-focused. We also knew that we wanted to head down the path of project-based learning (PBL) and flexible learning spaces (FLS). However, we did not have the means to do this. We wanted to be innovative and felt strongly that being a rural school should not be a blocker in providing the highest educational standards possible for our students. We wanted to think outside the box to produce an environment and learning opportunities that are first class.

At Hanwood, all stakeholders share the drive and commitment to be a school of excellence. Our dilemma was how we were going to get to this point. We needed to walk the walk in our educational practice.

Thinking outside the box

In 2016, we were fortunate to have the opportunity to submit a **Schools Plus** and the Vincent Fairfax Family Foundation (**VFFF**) application to be a Fair Education phase 1 project school. This application was successful, which allowed us to turn all of our ideas for our school into a reality. We are now on our way to achieving our milestones for our Fair Education project at Hanwood.

We wanted teaching and learning practices that built, established and maintained genuine partnerships with our school community to promote higher-order thinking for our students and skills that would equip them to thrive in the future. We needed to change

our educational vision and mindset to match this. Our revised vision statement re-affirms this. It states that our purpose is to be a school of excellence in which deep knowledge, understanding, and ownership in learning and engagement develops the skills of our greater community, to thrive within the future global context.

Create and maintain partnerships

As a leadership team, we learnt about the importance of developing authentic project-based learning experiences. Students were excited about PBL and having authorship over their learning. This excitement, incidentally, led to meaningful parent and community involvement. Having parents and wider community members involved in PBL activities has increased the quality of conversation at home between our students and parents. This has had a great impact on student learning outcomes at school, and more parents and grandparents are wanting to be involved as a result.

Student voice has also increased. Students are becoming more confident with accepting and receiving feedback from teachers, community members and peers. At Hanwood, we follow the feedback prompts of:

- be kind
- be helpful
- be specific.

In relation to our authentic partners, we have involved our school community in meaningful ways. Our community has engaged in genuine PBL interactions that benefit student learning. Examples of this have included:

- inviting community members to speak to the students as experts in their field. We have had real estate agents, carpenters, National Parks employees, and parents from other cultures speaking about their country of birth
- strengthening middle school links by inviting a secondary science teacher to work with year 5 and 6 students on solar energy
- engaging local businesses to support our projects. Our local radio station has interviewed students about a Haunted House project that the students created collaboratively for a school fete
- requiring students to contact our local bus company to book buses for excursions
- contacting local businesses for donations. In 2018, three businesses in the Griffith area donated items such as soil, logs, paint and plants to a Stage 3 gardening project which enhanced the school environment
- completing a gardening project in which 35 parents and grandparents assisted over two school days to be our gardening experts. They worked collaboratively with the students to complete an array of projects such as sculptures, vertical gardens, murals and garden re-design. Students outlined their projects to adults and communicated ways that parents could assist them. They even created budgets and negotiated these with our principal for approval.

Our end of project exhibitions engaged the school and wider community. Exhibitions are always tailored to suit the project, so they are varied. Some take place within the school, where students present their projects to parents. Other exhibitions take place off-site, such as the Stage 3 class who created solar lanterns. For the exhibition, the students travelled to an aged care facility to donate the lanterns for use in the gardens.

Kindergarten created minibeasts and Stage 1 students created board games. Kindergarten students presented their bugs at an open exhibition at the Griffith City Library and Year 1 and 2 students visited local schools and an aged care facility to play their games with peers and elders in our community.

Stage 2 students studied an area of interest of an Asian country. They then organised a community trade fair to present their findings. This was extremely successful. As you can see, on each occasion the exhibitions were very different and authentic.

Other projects have included:

- taking selfies, which involved drawing, drafting and critiquing
- learning about street art techniques
- designing and making a music wall
- researching, designing and making gondolas.

Flexible learning spaces

There have been many benefits of introducing flexible learning spaces at Hanwood Public. The students can choose spaces to work in to meet the needs of learning tasks and their individual learning styles. There is scope for students to work individually, in pairs, in small groups or as a whole class. Furniture is moved to suit the needs of learning tasks. We noticed an increase in students being able to self-regulate their learning and manage their distractions as a result of creating flexible learning spaces.

Students mentor other students in their peer support lesson.

Students are more on-task, and there is school-based evidence of a decrease in students K-6 displaying off task behaviours. This is an unexpected benefit of both project-based learning and flexible learning spaces. Teachers are increasingly confident in trialling the use of different furniture in their classrooms. The increase in student collaboration and engagement can be partially attributed to the introduction of flexible spaces.

Small groups of students can work together in this campfire space. They can stand to work, or use a stool if they wish.

Results

We have developed staged success criteria across our school. This has allowed us to track the levels students, staff and community members are at against the **School Excellence Framework** in relation to project-based learning and flexible learning spaces. As these levels and associated descriptors are linked specifically to the School Excellence Framework, we are able to use the criteria to plan for where to next. This ensures that we are always upping the ante and keeps us focused on our journey towards excellence.

We have also recorded anecdotal comments from our authentic partners, where they have articulated their knowledge of PBL and FLS. Two examples of this anecdotal evidence are:

'Project-based learning brings the school community together to work with the students on ideas they created in class.'

'Flexible learning allows students to learn in a comfortable environment. [This style of learning is] more applicable to life in the real world.'

This is a cave space where students want to focus and not be disturbed by others.

In relation to flexible learning spaces, we have developed authentic partnerships through:

- holding parent meetings in flexible spaces
- communicating with the school community of this concept and our expectations for flexible learning
- sharing photographs of students working in these spaces.

The library is a flexible learning space. Community meetings are held here after hours.

Students, teachers and community members are:

- becoming better able to articulate the reasons for flexible learning

- demonstrating an understanding that increased collaboration and participation in higher-order learning tasks can occur in flexible learning spaces
- showing other schools our spaces upon request.

We are extremely proud of our school's journey in project-based learning and flexible learning spaces.

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Developing a Board endorsed course for HSC research proficiencies

Nicole Yule, Head of Library Services (P-12) at William Clarke College and the Head of Faculty for the Research Studies Preliminary course

Background

In this current age of information overload, one of the greatest challenges for our students, during their years of schooling and beyond, is how to be discerning users of information. Unlike students in the past, who were limited to books in the school or local library, current students have access through the internet to eBooks, magazines, websites, journals, video streaming services as well as to social media which can influence their view of issues.

When facing this challenge at William Clarke College, a decision was made to ensure to equip our students with the necessary skills for their schooling and beyond with any future study or work opportunities they embrace. One way we decided to do this was to develop a 1-unit Preliminary course which focuses on developing research proficiencies and teaching students the skills they will need to succeed academically in their Stage 6 courses.

The Research studies course

Our 1-unit Research studies course is an elective students can choose to take as part of their Preliminary studies in Year 11. We believe that research is an integral aspect of academic success and the field of enquiry. A robust understanding of research is implied in most of the Stage 5 and 6 Board courses and is a fundamental component of assessment

in a wide range of Stage 6 courses. It is also an essential skill for higher education. To support this need, the Research studies course is designed to assist students in:

- acquiring deep understanding and proficiency in the research process
- accessing quality academic sources
- developing sophisticated academic practices.

The hope is that students will then apply their understanding and skills ethically in their studies across the broader curriculum. Although these skills are so crucial, current Board developed courses do not explicitly teach this area in depth, and yet, many Stage 6 courses have an implicit need for these skills to be demonstrated in an ethical manner. We believe that students at William Clarke College will benefit from studying research methodology, as this will raise the academic standards of evidence-based sourcing, analysis, synthesis and reporting in research tasks across Stage 6 courses.

The course has been endorsed by the NSW Education Standards Authority (**NESA**) as one of their School Developed Board Endorsed Courses (SDBEC) which means that, while the course was developed by William Clarke College, it counts towards a student's Preliminary units of study. The decision to have it endorsed is an important one, as it increases the value and credibility of the course for students when they consider their subject choices. The endorsement process involves teaching staff outlining the rationale and aim of the course, as well as the course structure, objectives and outcomes and submitting this in an endorsement proposal to NESA. More details on how schools can **create school developed Board endorsed courses** are available on the NESA website.

The endorsement of courses is routinely renewed by NESA. The last endorsement proposal was developed and submitted by Rebecca Jarvis (Director of Student Learning) and Nicole Yule (Head of Library Services). Both teachers have previously taught the course, which has a history of being taught by teacher librarians at William Clarke College. Teacher librarians are uniquely placed to teach a course such as Research studies because of their training and experience in research methodologies and the research process. They also have extensive knowledge regarding academic writing, source analysis and critical reading skills, and how to teach these skills to students.

When undertaking the course, students can choose any topic of interest; it may relate to other subjects or it may be a topic of unique interest to that student. Students in the past have chosen such wide-ranging topics as overcrowding in gaols, the history of jazz music, perceptions regarding the authority of a woman's consent, gender equality in the film industry, comic books throughout history and human rights violations of prisoners. Once they have chosen their topic students are taught the research skills. To teach this course, teacher librarians do not need to be experts in the field of every area of study. However, they need to be experts in research and in equipping students to know how they can take any topic and conduct academic research.

Any NSW school can utilise this Board endorsed course with permission from the Principal or curriculum leadership.

Course structure

There are three core modules for the Research studies course. The modules follow the steps of the research process, particularly the work of Carol Kuhlthau (2004, 2012 & 2015) and Ross Todd (2007 & 2010).

Module one

Module one explores the process of developing a research focus and question. Topics covered include understanding the research process, exploring the topic, brainstorming and mind mapping techniques, developing research questions, learning about search strategies including using online databases and Google, critical reading and notetaking, APA referencing and writing annotated bibliographies.

Module two

Module two focuses on collecting and using evidence, and includes finding and evaluating information and the ethical use of this information. Topics include accessing academic sources, evaluating sources for relevant information, identifying bias in sources and oral presentations skills.

Module three

Module three focuses on academic writing and includes the synthesis of the analysed information, and the presentation of cogent argument with valid and reliable supporting evidence. Topics include academic writing skills, ethical scholarship, conducting a literature review, synthesising skills, writing abstracts, creating appendices in a report, and a personal reflection on the research process.

Assessment

Students are required to complete three assessment tasks throughout the course. Each assessment occurs at the end of one of the modules and assesses learning in that area.

Module one

At the end of module one, students submit a process diary and annotated bibliography. The process diary assesses the student's interaction with the research process, such as

formulating a topic, designing research questions and conducting initial research. The annotated bibliography assesses students on their ability to gather relevant sources of information, make judgements about sources by considering the credibility, reliability and relevance of the source, and how they effectively use the APA referencing style.

Module two

At the end of module two, students submit a symposium paper on their topic, detailing their current state of research and future direction. Students then present a viva voce to their peers and a panel of teachers.

Module three

At the end of module three, students submit their final research report on their topic. This report includes an abstract, literature review, findings and limitations, as well as areas for future research.

The skills that students demonstrate in these assessment tasks are not only relevant to research studies but are also transferable to other subjects they are studying during Stage 6. Students are required to develop skills in sourcing academic sources, analysing them and then presenting them through academic writing. These skills have proven invaluable to students in all subject areas.

Value to students

Research studies has proved to be beneficial to many students in the five years it has been offered at William Clarke College. When students are considering their Year 11 subject selections, those who are planning on studying subjects which have a significant research component are encouraged to choose Research studies, either as part of their 12 units or as an additional 13th unit to equip them in their Preliminary and HSC studies.

Teacher librarians are uniquely placed to teach a course such as Research Studies because of their training and experience in research methodologies and the research process.

Students studying a range of different courses, such as those in HSIE, English, science, PDHPE and the creative arts, reported on the benefit of studying Research studies as one of their Preliminary subjects. Feedback at the end of Year 11 included:

- I learnt how to write a literary review and how to write academically, along with the correct sourcing and layout of reports. I also learnt efficient research techniques and different places to look for relevant sources, rather than just Google.
- I learnt how to APA reference in more detail. I also learnt how to structure a research report and a symposium paper, as these are skills I had not previously

developed. Databases were not something I was familiar with before doing Research studies and learning about them and how to use them has not only been helpful to my research project this year but will also be useful for future research in my other subjects and in University.

- I would definitely recommend it – I have noticed a distinct advantage of students in this class in other subjects, especially in content subjects such as history, business, extension English and the like.

Students at the end of Year 12 also reflected on the benefits of studying Research studies in Year 11:

- Learning about and being shown academic databases was extremely useful for later use in Prelim and HSC courses for research tasks and depth studies in my humanities and science subjects. [Research studies] was instrumental in finding a wide variety of valid and credible sources to obtain the highest marks possible in the tasks.
- Being given a foundation course on academic writing skills, like annotated bibliographies and literature reviews, provided an in-depth understanding to be used in HSC tasks that required them, meaning more time could be spent on actual research instead of learning how to write the report.
- Research studies as a course not only was highly useful in completing a variety of Year 12 tasks, like depth studies and research reports, I see it as being extremely useful in university to complete such tasks quicker and easier as the fundamentals of top-quality research are already understood.
- Research studies has provided me with extensive fundamental base knowledge that I have utilised repeatedly throughout Year 12, from chemistry and biology depth study reports to my Extension 2 English major work journal and various literature reviews. Very helpful!

Based on this feedback and the data collected, Research studies will continue to be offered at William Clarke College, and students are encouraged to choose the subject to equip them with the necessary skills they need to succeed academically in their chosen subjects.

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