



Project-based learning

School Based Research Project 2015 Interim Report – St Philip's Christian College (SPCC) – Newcastle

Project overview

SPCC's *Project-based learning* project is a result of educator desires to improve student engagement, with a focus on fostering independent and critical thinking, and the production of innovative ideas. This focus involves a school-wide change in pedagogical approach by the teaching staff at SPCC, namely a move to project-based learning (PBL). The College is currently in the process of implementing a PBL program based on the New Tech Network model, and staff are engaged in capacity building for assessing program efficacy, and program development for delivery in the classroom.

The research project aims to investigate the effectiveness of a well-designed project-based learning model for the development of 21st century skills (critical thinking, collaboration, and communication) among students over multiple school sites. As one of several schools in Australia using the New Tech model, the project will contribute to a growing body of evidence on the efficacy of this model for promoting the growth of 21st century skills in students.

The research team

The project is being led by Robyn Horsley, Director of Teaching and Learning (Innovation). The team is supported by academic mentor Glen O'Grady (Australian National University).

Project design

A multi-stage design has been implemented for this project. Stage One involved identifying key partnerships and refining the school-wide vision for

the research project. Early decisions were made to change SPCC's orientation from problem-based learning (an approach used in Australia for Stage 6 students) to project-based learning, an approach that appears to be more appropriate for Stage 4 students. Along with this change, the research team established relationships with The New Tech Network (NTN) — a not-for-profit school development organisation that provides support to over 170 US schools in using a project-based learning approach. NTN has a long track record of training educators and supporting schools in project-based learning pedagogy, and their research results suggest significant positive impacts on higher order thinking outcomes for students educated using its model.

Currently nine schools in Australia are partnered with NTN. One of these schools — Parramatta Marist High — was chosen to support SPCC's with its staff training and support.

Stage Two of the project involved staff training, the development of the PBL model for SPCC, and the construction of measures to capture collaboration, communication and critical thinking (3 Cs), the three target improvement outcomes of the project.

Development of the PBL model includes access to NTN's Learning Management System, a rich resource of teachable units and instruments of measure, which the SPCC team has used as tools for guidance, adapted to their context and aligned with appropriate NSW syllabus documents.

Nine teachers were selected to be trained and form the core teaching group for the project, and are currently undergoing up-skilling in PBL pedagogy with Parramatta Marist. Academic mentor Glen O'Grady is also providing instruction and insight on effective PBL instruction. In addition, he is



undertaking the training of teachers in the use of refined data collection measures to ensure that indicators of the 3 Cs are correctly captured.

Progress to date

Along with significant progress in staff training at Parramatta Marist, Glen O'Grady has been involved in presentations and training days to inform and upskill staff across the SPCC's four campuses. More than 400 staff members have been updated about the teaching model, which has positively impacted SPCC's whole school approach to change. SPCC now has 12 staff members who are well-trained in PBL and who are now able to plan and implement units under this pedagogical framework.

In a demonstration of commitment to the project SPCC funded members of the research team to attend the 4th International PBL Symposium in Singapore, and the NTN Annual Conference in Chicago in 2015. Both events were of considerable value, have greatly informed both pedagogical and research approaches, and have significantly contributed to ensuring effective program delivery in 2016.

As a result of the training and research process, the core PBL team has been engaged in collaborative learning and planning — an experience that has been of considerable benefit and enjoyment for all concerned. This core team relationship has been a valuable asset as SPCC moves to create whole school change. As the research team note, "new pedagogies bring an element of uncertainty and discomfort" and the challenge can be to keep all members of staff connected and moving forward. This core team, and the anticipated research results, are part of a positive conversation of change, and are foundational to a cohesive whole-of-school pedagogical shift.

The research process itself has been of considerable value to SPCC. Those involved have gained a deeper understanding of the research process and its value, as well as the steps needed to undertake good quality research in a dynamic school setting.

Staff generally are developing a greater appreciation for the value of data to inform their professional practice.

Being involved in the research process has allowed SPCC *"to ready itself for improvements in pedagogy so that students outcomes can be improved and that as a school [SPCC] can become part of an action research community, building evidence and data that will inform... practices and the wider school community."*



Where to next

In 2016, the project will implement Stage Three which will entail the implementation of the PBL approach, data gathering and analysis, and reporting.

The PBL pedagogy will be delivered to a group of Year 8 students, during Term 1 and Term 2 in 2016. These students will experience PBL as co-curriculum units of English/HSIE and Science/PD. The sample group consists of 140 students at SPCC, Newcastle, and a control group of 30 students from SPCC, Port Stevens. Baseline data were collected from these students during Term 3 of 2015.

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