

School Based Research Project 2017 Interim Report Ravenswood School for Girls

Project overview

This project addresses the research question: *What is the impact of improvement science on teacher practice aimed at developing the resilient agency of students?* It aims to:

- investigate improvement science as a methodology for promoting and sustaining pedagogical change
- investigate and evaluate practices and interventions that may contribute to the development of cognitive engagement and resilient agency of students
- measure the short and long term impact of an improvement research project on teacher and student learning outcomes.

The research team was interested in the work of Professor Ruth Deakin Crick and colleagues (2015), which focuses on increased resilience as an outcome of developing student awareness, ownership and responsibility for learning. In this research, learner agency is seen as an “organising framework for different constructs — such as self-efficacy, grit and growth orientation” (2015, p.150). This conceptualisation empowers teachers to be architects of learning experiences that can foster and develop resilience through increasing learner agency and cognitive engagement. The research team chose to work with Stage 5 students to provide a two-year period to design learning experiences and interventions aimed at preparing students for the level of agency and resilience required in the final two years of schooling. The team chose to investigate improvement science methodology (Bryk et al., 2015) because it drives disciplined inquiry to solve specific problems of practice, and brings analytical discipline to design-development efforts. The application of this methodology enables an organisation to learn from its own practice and continuously improve.

The research team

The project is led by Terrie Jones, Deputy Principal, Head of Learning and Innovation, and Amy Van Arkkels, Director Ravenswood Institute and Teaching Quality. The team is supported by academic mentor Professor Ruth Deakin Crick (University of Technology Sydney).

Project design

Using improvement science protocols and data collected from students, the teaching staff worked together to

define the problems relating to learner resilience and agency within the contexts of their classrooms. The staff then analysed the system — the school — to better understand how local conditions contributed to low levels of resilience among senior students and shaped the Stage 5 students’ learning experiences in Mandatory Geography and History. Using this collective analysis, teachers have developed and tested hypotheses through cycles of rapid prototyping, using the PLAN-DO-STUDY-ACT framework. The problem, aim statement and measures of success are determined by the teaching staff, creating ownership of the solutions to the identified issues and a collective responsibility for evaluating the impact of any changes to practice. Results will demonstrate whether the students have observed an increase in the use of helpful teaching practices and whether the planned learning experiences are cognitively engaging and impact on their sense of efficacy and agency as learners.

The research team utilised the CLARA (Crick Learning Analytics for Resilient Agency) self-assessment tool which is a validated survey instrument, designed by Professor Deakin Crick. It provides immediate feedback to survey respondents, motivating them to reflect on eight dimensions of their learning power, including curiosity, creativity, sense making, belonging, collaboration, hope and optimism, mindful agency and openness to change (Deakin Crick et al., 2015). It is intended that the tool be administered online four times over the two-year course of this project to track the development of students’ resilient agency. While it will not be possible to isolate the impact of Mandatory History and Geography lessons, the team will be using this measure along with data collected from the My Experience as a Learner survey (Wiggins, 2014), student focus group interviews, individual reflections, lesson observations and work samples to consider the interplay of factors contributing to the quality of students’ learning outcomes and their sense of themselves as learners.

Progress to date

One of the aims of this project was to investigate improvement science as a framework for creating and sustaining pedagogical change within a school setting. In November of 2015, the team had an opportunity to participate in a one day workshop with Dr Anthony Bryk, President of Carnegie Foundation for the Advancement of Teaching, Stanford. During this workshop, team members became familiar with the principles of improvement science and applied the tools associated with this methodology. Further engagement with the literature on

Improvement science and the development of resilient agency

improvement science has led the project leaders to devise appropriate professional learning for Ravenswood staff members directly involved in the research project while adhering to the methodology.

This professional learning began in January, 2016 and involved Year 9 teachers working on data collected by the school in November, 2015. The initial stages of data analysis proved to be confronting for some teachers involved in the process. The use of the tools associated with improvement science proved productive in unpacking systemic factors which appeared to have led to the cognitive disengagement of Year 9 students. The protocols ultimately empowered teachers to propose solutions to the issues raised by the data and their own observations of students.

During Term 1 of 2016, the research team used improvement science to address the aim of improving Year 9 students' cognitive engagement with Mandatory Geography and History, as well as increasing the students' resilient agency. The working theory of improvement has provided both the History and Geography teams with a clear plan which has directed the iterations of pedagogical interventions throughout Terms 2 and 3.

Throughout 2016, Geography teachers were provided with training in the Coaching Conversation methodology. This has provided an opportunity to align students' understanding of their learning power with their classroom learning more closely. The History teachers also worked with a specialist to deepen and refine their understanding of historical literacy to aid in the intervention planned for the teaching of source analysis. Once the students were familiar with the CLARA tool's key concepts, it was administered at the beginning and end of the year, as a pre and post-test of students' resilient agency.



Preliminary results provided by teachers of the teams indicated a significant increase in levels of student engagement with both subjects. This was evident from the data collected from the Wiggins survey, the quality of discussion in lessons, student comments in their evaluations at the end of term, and students' confidence

in dealing with higher-order questions as demonstrated in the improved quality of their work samples.

The other aim of the project was to lead to a growth in the collective capacity of the academic staff. Given the positive response of the Ravenswood staff to a presentation made by the Geography and History teams on the Professional Learning Day at the beginning of Term 3, 2016, the school decided to engage all staff in this methodology beginning with an intensive Middle Leaders' Retreat and extending to the whole staff at the beginning of Term 4.

Where to next?

Based on the success of the staff's engagement with the improvement science methodology in 2016, Ravenswood anticipates similar outcomes in 2017. It is expected that planned interventions will continue to yield improvements in teacher practice, student learning outcomes and students' understanding of themselves as learners.

In 2017 the research team will expand to include teachers of Year 10 Mandatory Geography and History. This will necessitate additional training in the improvement science methodology for teachers who are new to the school. The current research team will facilitate this as the expanded team moves through the improvement science methodology with a new data set.

The team has been invited to present at the fourth annual *Carnegie Foundation Summit on Improvement in Education* in March, 2017.

References

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