



# QUESTIONS OF ENGAGEMENT

Improving the learning experiences of students in Years 5 to 8

Peter Burridge, Wendy Pitt,  
Veronica Snook & Michael Kerin  
2016

  
**mmvllen**  
maribyrnong and moonee valley  
local learning employment network

  
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UNIVERSITY**  
MELBOURNE AUSTRALIA

Maribyrnong and Moonee Valley Local Learning and Employment Network (MMVLLLEN) is a non-government, place-based organisation which works to create positive futures for our young people. We work with young people, learning organisations, employers and others to enable young people to engage in their own learning, and to successfully transition through school and into further education, training and employment. For further information visit [www.mmvllen.org.au](http://www.mmvllen.org.au).

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# FOREWORD

Engagement with learning, at school and beyond, is a challenge confronting us all as we grapple with the pace of change.

In this time of exponential social, technological and economic transformation, it is particularly important that our young people grow up with the confidence, skills and knowledge to successfully adapt to the changes ahead. Engagement with learning in school is a key strategy for positioning them for a successful future.

*Questions of Engagement*, with its focus on improving students' learning experiences, provides valuable insight into how to create an environment where young people are better prepared for these challenges.

Interestingly, the study's success was built on the effective use of the very skills and knowledge required for meaningful participation in the knowledge and service economies of the 21st Century:

- a collaborative approach – building an inclusive community of researchers which demonstrated a capacity for cooperative interaction, and respect for varied and specialised skills and voices
- a process of enquiry – starting with 'the known' and making forays into 'the unknown' by asking questions and listening to answers from those who were living the experience – students and teachers
- openness to more than one solution – respecting that the 'right next thing' may be different for those in different contexts and circumstances
- a commitment to learning – through discussion, sharing information and ideas, and a sense of excitement about 'What Next?'

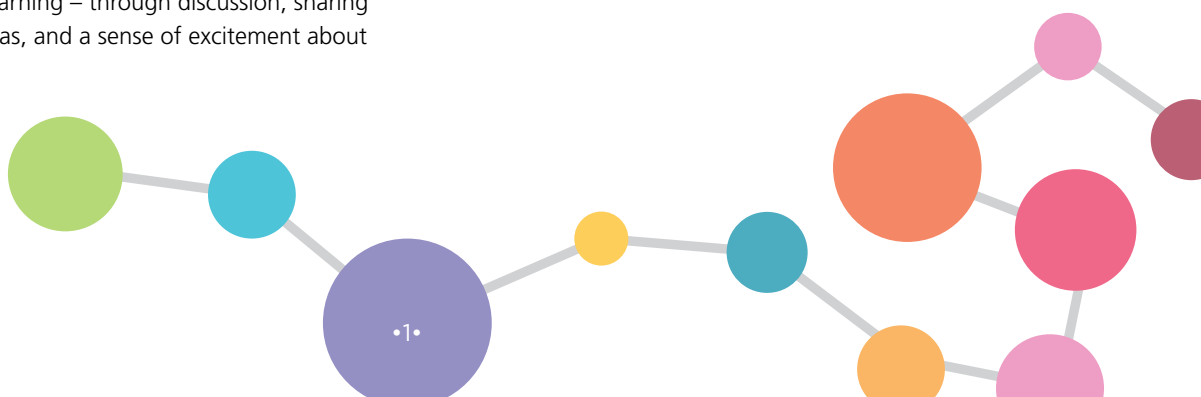
This valuable and rewarding collaboration is the result of the incredible commitment and hard work of many researchers, participants and supporters – teachers, VU staff, school students, pre-service teachers and youth work students, principals, parents and MMVLEN staff. Thank you all.

I wish to make special mention of three people who were vital to this project taking place and the level of its success – Dr Peter Burridge from the College of Education, Victoria University; Sue Fowler, then-CEO of the MMVLEN; and Wendy Pitt, Partnerships Manager at MMVLEN. They each 'walked the talk' in their leadership, followership, commitment to sharing and growing knowledge, and in valuing the relationships between all involved.

I commend this work to you, and look forward to its application and impact spreading across Maribyrnong and Moonee Valley and beyond.



Veronica Snook  
CEO, MMVLEN  
10 October 2016







# Questions of Engagement

Executive Summary .....	4
1. Introduction .....	6
2. Project Beginnings.....	7
3. Understanding Student Engagement.....	9
4. Questions of Engagement Research Process .....	11
4.1 Reconnaissance.....	11
4.2 Plan.....	13
4.3 Enact.....	16
4.4 Reflect.....	16
4.5 Re-Plan .....	18
4.6 Enact (2).....	18
5. Key Themes.....	21
5.1 The power of starting at the front line - giving students and teachers a voice....	21
5.2 The value of the collaborative approach .....	21
5.3 The importance of receptive and responsive leadership.....	23
5.4 Model of Professional Learning for in-service and pre-service teachers.....	23
5.5 Curriculum Delivery Options .....	23
6. Broader applications .....	24
6.1 Expansion of Community/School/University partnerships .....	24
6.2 Tools and frameworks .....	24
6.3 Classroom focused educational change.....	24
7. Conclusion .....	25
8. Case Study .....	26
References.....	32

## EXECUTIVE SUMMARY

This report describes a collaborative two-year action research project, *Questions of Engagement*, which aimed to identify influences on engagement and disengagement with learning of students in Years 5 to 8. This collaboration between the Maribyrnong and Moonee Valley Local Learning and Employment Network (MMVLLEN), Victoria University (VU) and five schools in the City of Moonee Valley commenced in 2014. The project emerged from growing concern amongst schools in the Kensington and Flemington areas of Moonee Valley that students were disengaging from learning and from school at a younger age.

Underpinning the research was the understanding that engagement with schooling is a complex interaction of emotional, cognitive and behavioural attributes which is difficult to define and measure (*Fredericks, Blumenfeld & Paris 2014; Wang & Holcombe 2010*).

The project used a participatory action research approach to: identify the factors in each school that promoted or undermined student engagement; stimulate reflection by teachers on how their teaching practices supported or discouraged student engagement; and acknowledge that students' learning experience needs to include knowing how to learn and take charge of their own learning in preparation for the fast-changing world of work.

Two attributes of participatory action research were critical to the project's success: the collaborative approach; and its focus on the teaching practices and student learning occurring in each school.

The research went through a number of stages of the action research cycle.

### 1. RECONNAISSANCE

This exploration phase of the project developed strategies

and measures through which the level of engagement and disengagement amongst students could be measured. Data was collected and analysed at two levels:

- **School-level data** such as school demographics, attendance rates, parent satisfaction surveys, student satisfaction surveys, NAPLAN<sup>1</sup> scores, and teacher and AusVELS<sup>2</sup> assessments
- **Student-focused data** comprising the administration of a Motivation and Engagement Survey (MES) (*Martin 2013*) and small group interviews with students.

An important element of the participatory research approach was the establishment of a professional learning team (PLT) at each school consisting of the teachers of the class/es participating in the study, VU pre-service teachers, the MMVLLEN coordinator and the VU researcher.

### 2. PLAN

The Plan stage of the project involved the PLT at each school considering the findings from the reconnaissance phase, and developing the changes to be enacted to bring about improvements.

Generally, it was found that the school-level data shed little light on the level of student engagement with schooling. In contrast, the student-focused data proved to be a rich source of data that catalysed reflective discussions with teachers and led to the identification of school specific projects focused on improving the results.

The MES data showed that students across all schools have high self-belief and are generally focused on schooling. However, it was found that a number of students are struggling with planning, task management, anxiety and uncertainty control, and that many students are undermining their own learning through self-sabotage and

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1. NAPLAN is the national assessment program for literacy and numeracy that involves the annual assessment of students in Years 3,5,7 and 9 (<http://www.nap.edu.au/naplan>)

2. AusVELS was the state curriculum framework for Victoria that has now been reviewed and replaced by the Victorian Curriculum F-10 in 2017 (<http://ausvels.vcaa.vic.edu.au/>)

disengagement. The student interviews provided qualitative data describing what students experience as ‘boosters’ and ‘guzzlers’. Two additional themes of significance to student engagement were identified – Learning and School.

The participating schools responded very differently to the findings. To ensure ‘best fit’, the actions built on programs that were already part of their school’s thinking and practice.

### 3. ENACT

All four schools carried out their plan of action during 2015. Two schools implemented specific programs – Student Voice and the GANAG approach to lesson planning. The other two schools used the data to inform a continuous improvement process, one at a whole-of-school level and the other at the level of the individual classroom. The PLTs at each school met regularly during the enactment phase to reflect on the implementation and adapt to ongoing learning from the process.

Student-focused data were collected in May and October of 2015 to examine the student responses to the action taken.

### 4. REFLECT

The Reflect stage of the project involved the research teams in each school engaging in conversation to critically evaluate the intended and unintended consequences of the action taken in the school. This involved comparative analysis of the student-focused data in 2014 and 2015 and discussion with the school staff on their experience of implementation and its potential impact on student outcomes.

Analysis of the student-focused data found that changes in the MES data were generally small and, due to the small numbers of students surveyed, could provide only indications of change. The student small group interviews provided greater insight into students’ responses to changes in practices.

### 5. RE-PLAN

Reflection took the project into Re-Plan, the next loop of participatory action research, for three of the participating schools. The Victoria University researcher linked the first-loop findings to the current academic literature and made suggestions tailored to each school’s context and needs. Self-regulated learning underpinned the pedagogical approach recommended to each school, which were Assessment for Learning, Student as Researcher and Funds of Knowledge.

### 6. ENACT (2)

A revised plan of action was developed by the schools in response to the recommendations.

## KEY THEMES AND BROADER APPLICATIONS

A number of themes emerged from this research which are important in ensuring the success of strategies for teaching practice improvement. These themes relate not only to student learning but also to teacher development and organisational change.

Direct feedback to teachers from their students was a powerful element of the research, enabling teachers to reflect on the efficacy of their teaching practices and how they might make changes to enhance the motivation, learning and development of their students. The collaborative approach created an environment of trust where all involved had an equal voice in the research, maximising its potential to change practices and improve student development. A receptive and responsive leadership ensured committed participation in the research and created opportunity for real and lasting change.

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“ ... I learn more ... by hearing [by] understanding ... with the mind ... like ... when you’re learning piano ... even if you see what they play, you still have to ... hear the tune to be able to play that song.”

– Student from Small Group Interview

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The research also demonstrates a school-based model of professional learning that is supported by a framework and interagency structure which, together, facilitate ongoing learning and continuous improvement. The learning has the potential to inform alternative approaches to curriculum delivery.

There is enormous potential for broader applications of this research approach and/or the use of the research tools to enhance student motivation and engagement with learning. The outcomes delivered by this project attest to the strength of partnerships across the community, school and university sectors. The tools and frameworks offer a valuable resource to schools and organisations with an interest in measuring and understanding young people’s level of engagement in learning.

The Case Study demonstrates the power of the student voice in bringing about system-wide change.

# 1 Introduction

This report describes a collaborative two-year action research project, *Questions of Engagement*, which aimed to improve engagement with schooling of students between 10 and 14 years of age. The project was a collaboration between the Maribyrnong and Moonee Valley Local Learning and Employment Network (MMVLLEN), Victoria University (VU) and five schools in the City of Moonee Valley.

The focus of the *Questions of Engagement* project was to identify influences on engagement and disengagement with learning. This involved working with local schools, teachers and students to:

- identify the factors in each school that promoted or undermined student engagement
- stimulate reflection by teachers on how their teaching practices supported or discouraged student engagement
- acknowledge that students today need to understand how to learn and to be in control of their own learning in preparation for the fast-changing future world of work.

The project used a participatory action research approach that involved principals, teachers, students, pre-service teachers, university researchers and an MMVLLEN coordinator. This collaborative model ensured that the range of perspectives were equally valued and provided depth and insight to the planning of the research, and the analysis and application of findings.

The project commenced in 2014 with the involvement of three primary and two secondary schools. Four schools remained engaged through to the completion of the project in 2015.





## 2 Project Beginnings

Development of the *Questions of Engagement* project started with MMVLLEN bringing together schools and other organisations with a stake in the issue of students becoming disengaged with school. This was in response to growing concern amongst schools in the Flemington and Kensington area that students were disengaging from learning and from school at a younger age.

Further investigation found that:

- as many as 30% of students in Victoria are considered potentially at risk of not completing Year 12 or its vocational equivalent (*Auditor General 2012*)
- there is less research on the disengagement of the younger students (10 to 14 years) than on adolescents (15+ years)
- disengagement is often a gradual process starting with early experiences of education
- traditional indicators of disengagement, such as poor attendance and disruptive behaviour, are inadequate when it is known that compliant students may also be disengaged from learning.

In 2013, MMVLLEN approached VU to explore how to progress working on this issue. This quickly developed

into a collaboration, with VU contributing a sophisticated understanding of the issue and concrete suggestions about implementation. This resulted in an action research proposal which involved:

- using a multi-faceted definition of engagement where emotional, cognitive and behavioural attributes interact to either connect students with or alienate them from learning tasks
- investigating the motivation and engagement of all students in a cohort, not just those who are deemed to be disengaged from schooling
- engaging pre-service teachers and youth work students in the research project.

Principals of primary and secondary schools in the Flemington/Kensington area were individually approached to gauge their interest in having their school participate in the research. The response was positive, in recognition of the potential of this work to provide data and strategies that would improve students' learning outcomes, and also advance their schools' strategic objectives.

Five schools in Moonee Valley committed to participating in the research project in 2014 and four continued their participation in 2015.

Engagement with schooling is  
“tied to students’ economic success  
and long-term health and wellbeing  
and, as such, deserves to be treated  
alongside academic achievement as  
a schooling outcome”.

- *Willms (2003) p.9*



# 3

## Understanding Student Engagement

Engagement with schooling is more than regular school attendance and compliance in class. Engagement is a complex interaction of emotional, cognitive and behavioural attributes which is both difficult to define and to measure (*Fredericks, Blumenfeld & Paris 2014; Wang & Holcombe 2010*).

Another layer of complexity is that the three attributes do not function as isolated elements but, rather, work together to constitute a holistic picture of a student's engagement:

- Affective engagement describes students' social, emotional and psychological attachment to school. This is influenced by the relationships they have with peers, teachers and other adults within the school, and their sense of belonging
- Cognitive engagement is the psychological investment a student has with the academic task. This is characterised by how deeply a student thinks about ideas and concepts and how involved they become in 'making sense of' the material being examined
- Behavioural engagement relates to a student's physical involvement in learning through task-related behaviours such as completing the reading, asking questions and following instructions. It is also seen in more general behaviours including class attendance, homework completion, and involvement in other school activities (*Fredericks, Blumenfeld & Paris, 2004*).

Disengagement is commonly understood as a passive lack of interest in schooling that may include feelings of dejection or apathy. However, it is a more complex construct (*Skinner, Kindermann & Furrer, 2009*). Students who report being disengaged from school are often academically capable, doing well with their grades and compliant in the classroom (*Lawson & Lawson, 2013; Zyngier, 2008*). Despite this apparent success with learning, these students can be as disconnected from school as those who withdraw from activities, are disruptive, or do not attend classes. In both groups, decisions are being made not to engage with school.

Engagement and disaffection are intrinsically linked to motivation. Motivation can be thought of as the energy students draw from internal sources, such as self-efficacy and self-concept, and from external sources including parents, peers and teachers (*Appleton, Christenson & Furlong, 2008*). The complexity of the interaction between internal and external sources of motivation is evident in feedback loops which can be "self-amplifying [by] forming virtuous or vicious cycles that magnify initial individual differences across time, making motivationally rich students richer, and motivationally poor students poorer" (*Skinner and Pitzer, 2012, p.31*).

It is also important to recognise that student engagement is malleable and "amenable to improvement via pedagogy and other interventions" (*Lawson & Lawson, 2013, p.435*). Teachers who develop close, caring relationships with their students tend to focus on the student's learning needs rather than the management of on or off task behaviour. A focus on students' learning needs increases engagement, regardless of student background (*Wooley & Brown, 2007*). A positive teacher-student relationship develops a positive classroom culture that builds friendships between students which can, in turn, increase affective engagement. This sense of belonging supports learning through class discussion, group projects and being able to talk through ideas (*Gorard & See, 2011*). Engagement with schooling is also increased by a focus on students having a mastery of learning and by ensuring young people have a level of control and autonomy over their learning (*Smyth, McInerney & Fish, 2013*).

There is a well-established link between engagement with learning and a student's future wellbeing and economic success (*Willms 2003*).





# 4

## Questions of Engagement Research Process

This project used a participatory action research approach in recognition of its potential to

*“empower teachers to examine their own beliefs, explore their own understandings of practice, foster critical reflection, and develop decision making capabilities that would enhance their teaching, and help them assume control over their respective situation”*

(Ginns, Heirdsfield, Atweh, and Watters 2001, p.129).

The Kemmis, McTaggart & Nixon (2014) stages of participatory action research were adopted for this project (Table 1).

Two attributes of participatory action research were critical to the project’s success in identifying, adopting and maintaining practices and structures that would improve student learning and development:

- the investigation was collaborative – all participants were researchers and involved in discussing the data and evidence, and reaching a mutual understanding of the issues and differing points of view
- the research was clearly focused on the teaching practices and student learning occurring in each school.

### 4.1 RECONNAISSANCE

The Reconnaissance phase of this project involved developing strategies and measures through which the level of engagement and disengagement amongst students in each of the participating schools could be established.

This exploration comprised:

- the identification and testing of tools for the effective measurement of student engagement and disengagement that recognised the complexity of the attributes
- the collection and analysis of the data, and reporting of findings.

A processional learning team (PLT) was established at each school comprising the teachers of the class/es participating in the study, VU pre-service teachers, the MMVLEN coordinator and the VU researcher. This was also important in that it established a culture of collaboration and trust between those involved in the research. It was recognised, during the exploration, that each school was different and unique, and that this needed to be reflected in the tools used to establish the levels of engagement and disengagement. There was also acknowledgment that it may be appropriate for schools to adopt different strategies in response to the reconnaissance findings. This strengthened the participants’ commitment to and focus on shared learning and the achievement of common goals.

TABLE 1. STAGES OF PARTICIPATORY ACTION RESEARCH

STAGE	DESCRIPTION
<b>Reconnaissance</b>	Bringing people together to explore issues of concern
<b>Plan</b>	Collaboratively identifying those aspects relating to the issue of concern that can change the situation and what evidence will capture the effect of changes made
<b>Enact</b>	Implementing the planned changes and collecting the evidence to evaluate their impact
<b>Reflect</b>	Through conversation, critically evaluating the intended and unintended consequences of the action and reaching consensus on the interpretation of evidence
<b>Re-plan &gt; Enact &gt; Reflect cycle</b>	Learning applied in a new Re-plan > Enact > Reflect cycle until new practices and structures have been authenticated as more rational and reasonable, more productive and sustainable, and more just and inclusive than former practices



### School-level data

The first step in the Reconnaissance stage involved collation of data that were already available at school level, and its presentation to the leadership team and the relevant teachers of the participating schools. This data comprised school demographics, attendance rates, parent satisfaction surveys, student satisfaction surveys, NAPLAN scores, and teacher and AusVELS assessments.

It was found that this school-level data shed little light on the level of student engagement with schooling and had little to add to consideration of teaching practice. The data did provide an indication of the school culture and a comparison of the students' academic performance against other schools around the state. This is not entirely unexpected, given that the school-level data are collected for these purposes.

### Student-focused data

The next step looked at student-focused data, which were found to provide useful evidence on the influence of school structures and teaching practices on students' motivation and engagement. The study used student-focused data collected from two sources:

#### (i) Motivation and Engagement Survey (MES)

(*Martin, 2013*) where students responded to 44 items in a questionnaire using a seven-point Likert scale from strongly disagree to strongly agree. The items measure 11 subscales of motivation and engagement (Table 2) that represent 'boosters' and 'guzzlers', characteristics that impact positively or negatively on student engagement in learning. The data are processed electronically and can be presented in a variety of ways.

The MES was administered to cohorts of students once in 2014, then twice in 2015. The small number of students being surveyed combined with the nature of the school projects determined that the data was not used as a statistical tool to measure change, but provided information about student engagement to inform teaching practice. Teachers were able to examine the range of individual student results to evaluate if they reflected the teachers' experience of the students' motivation and engagement in the classroom.

The MES data were analysed using three approaches:

- **Raw Scores** were obtained from the student rankings of each of the MES items on a 7-point Likert scale. Presented as a radar graph, these data were used to examine the results of individual students.
- **Motivation Quotient (MQ)** is a normative score based on a sample of 33,778 school students that has

a mean of 100, and standard deviation of 15. The MQ is calculated using the MQ tables developed by Martin (*2015, p.57–70*). The MQ scores allowed for a comparison between each of the subscales of motivation and engagement.

- **Percentage of students negative to the norm.**

An estimate of the number of students needing support with motivation and engagement was made by identifying the percentage of students who were

TABLE 2. SUBSCALES OF THE MES

### ↑ BOOSTERS

**SELF BELIEF** When given tasks, students have the belief and confidence that they will be able to do it

**PERSISTENCE** When a task becomes difficult, students keep trying different ways of overcoming the problem

**LEARNING FOCUS** Students are focused on learning to understand and develop skills to solve problems and get enjoyment out of learning new concepts and skills

**VALUING** Students see school as important and helping them understand things outside of school

**TASK MANAGEMENT** Students plan their study time and are organised in completing tasks like homework on time

**PLANNING** Students usually think about how they are going to manage a task. They follow the plan to complete the work effectively

### ↓ GUZZLERS

**DISENGAGEMENT** Students generally don't like school and don't get involved with school activities

**SELF SABOTAGE** Students don't try hard, put off doing assignments, or don't study for tests to have an excuse if they do poorly

**UNCERTAINTY CONTROL** Students don't understand why they do well or poorly on a project or test

**FAILURE AVOIDANCE** Students try hard at school because of external motivations. To do well for the teacher, parents or not to look silly in front of peers

**ANXIETY** Students get nervous and worry about doing tests and assignments. They generally worry about not doing well in their schoolwork.

(*Martin, 2003, pp.91–93; Martin, 2007 pp. 421–423*)

negative to a norm score of 100. This identified the number of students below 100 for booster subscales, and above 100 for guzzler subscales. The negative to the norm percentage gives an indication of the number of students that would benefit from support with engagement and motivation.

**(ii) Small group interviews** with students across Years 5 to 8, were facilitated by pre-service teachers and youth work students from VU. The pre-service teachers were selected for placement in each school with the expectation that they would be part of the *Questions of Engagement* project. Through their placement, they would understand the students and the work they were doing, while still being seen by students as being independent of the school, enabling them to speak freely. Youth work students participated as independent facilitators.

A set of questions was developed in consultation with each school. Students talked confidentially to the group facilitators about classroom activities, and the school and home factors identified in the survey data. These confidential sessions were de-identified, transcribed and analysed to identify common themes emerging from students' conversations.

All data were collected in accordance with the university ethics committee approval. This ensured confidentiality of the participating students' survey results and comments, and a trusting school community context, with parents aware of the research and consenting to their child's participation.

### 4.2 PLAN

The Plan stage of the project involved each school's research team considering the findings from the Reconnaissance phase, and developing the changes to be enacted to achieve their objectives. The data provided the catalyst for reflective discussions with teachers which led to the school-specific action research projects.

### OVERVIEW OF FINDINGS

#### MES

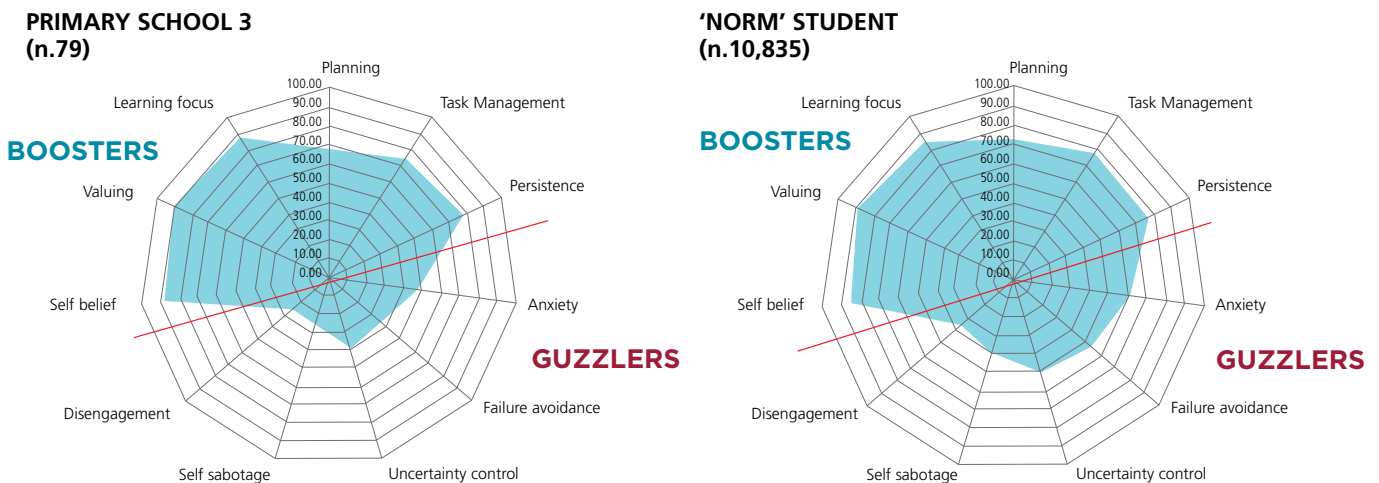
The MES data highlighted the differences between students, as well as identifying each of the student's strengths.

#### Raw Scores

Raw score radar graphs of the MES student data were generated for individual students using the data collected from participating students. In Figure 1 an average raw score of the students from primary school 3 are presented with a comparison of the scores for a 'norm' student from 10,835 survey results (Martin, 2014). The average student graphs indicate that students generally scored more highly on boosters than guzzlers, which is consistent with other studies (Martin, 2003).

Specifically, the data show that students across all schools value schooling, have high self-belief and believe they are generally focused on learning. Although the 'focus on learning' attribute is strong, the data show that, students, in some schools appear weaker in 'task management' and 'planning', and are anxious and unsure about how to ensure success with learning.

FIGURE 1. RADAR GRAPH FOR PRIMARY SCHOOL 3 AND THE 'NORM' STUDENT



### Motivational Quotient

The mean MQ scores for the school (Figure 2) allowed for comparison of the motivation and engagement facets of the schools, although it should be noted that there are limitations due to some small sample sizes and the nature of the measure. The relationship between boosters and guzzler attributes are shown, where schools with higher booster scores have lower guzzler scores. The guzzler attributes of 'anxiety' and 'self sabotage' seem to be areas of concern while the booster 'learning focus' attribute emerges as a potential area for improvement.

### Percentage of students negative to the norm

Students negative to the norm are those who score below 100 MQ points for booster attributes or above 100 MQ points for guzzler attributes. Ideally, the result would have all students at or positive to the norm. However, the data from the study show that one-third of participating students are negative to the norm for a booster or a guzzler attribute (Figure 3).

This view of the data indicates that a number of students are struggling with the attributes of planning, task management, anxiety and uncertainty control. In addition, the guzzler attributes of self-sabotage and disengagement are of concern, with more than a third of surveyed students in a number of schools indicating that they are undermining their own learning.

### SMALL GROUP INTERVIEWS

The student interviews identified the classroom practices that are supportive or undermining of engagement, and provided teachers and pre service teachers with direct feedback from students on their experience of classroom practice.

The interviews were confidential and conducted in groups of between two and five students. Multiple groups were interviewed at each of the schools. Students participated actively in these interviews and showed considerable insight into their learning styles and preferences.

The transcribed interviews were analysed and themes identified relating to the MES survey. An additional two significant themes emerged from the interview data with respect to students' engagement. These themes were Learning and School, and each had three specific attributes (Table 3).

Thematic analysis of the transcribed interviews identified additional elements that students reported as supporting and discouraging engagement (Table 4).

These data were presented by the researchers, in a detailed form, to teachers, the school administration team and pre service teachers as a round table discussion at each of the schools. During the discussion, all involved would ask questions, and share thoughts and insights on how the data related to classroom activities and school structures.

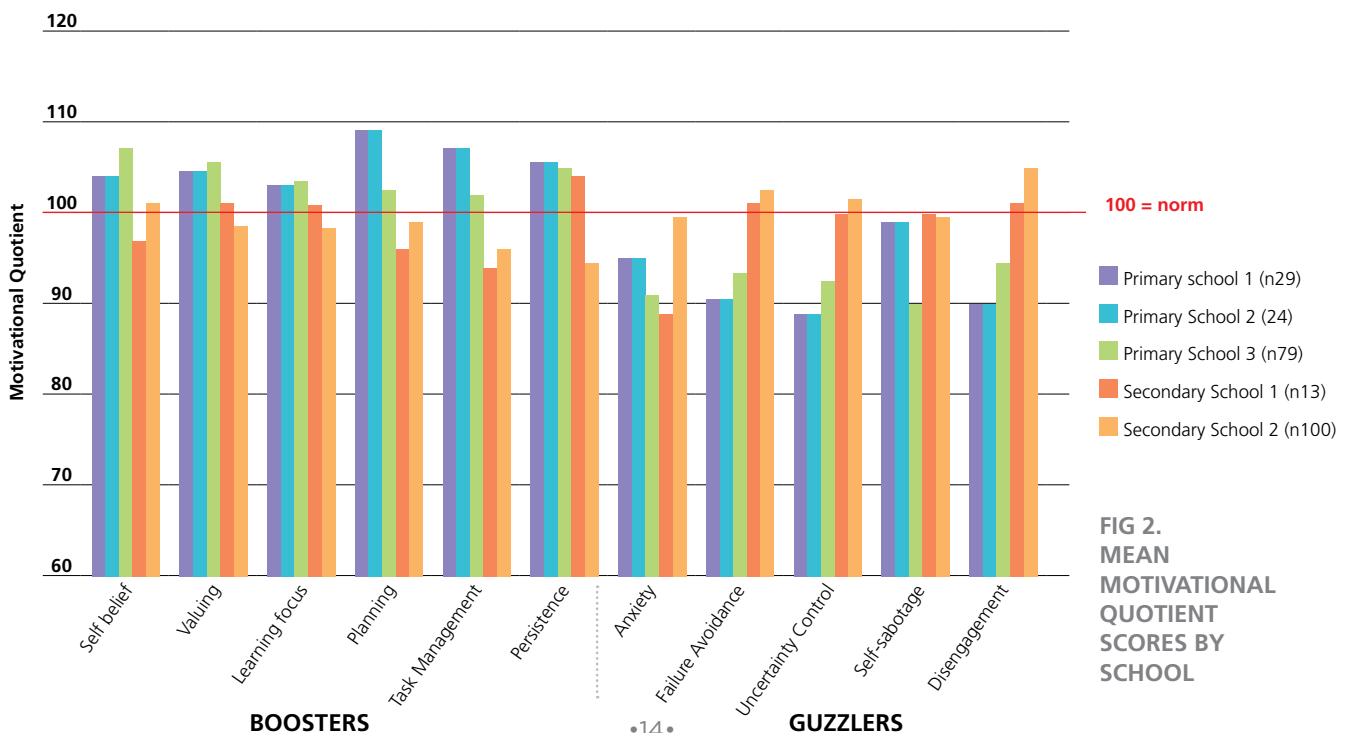


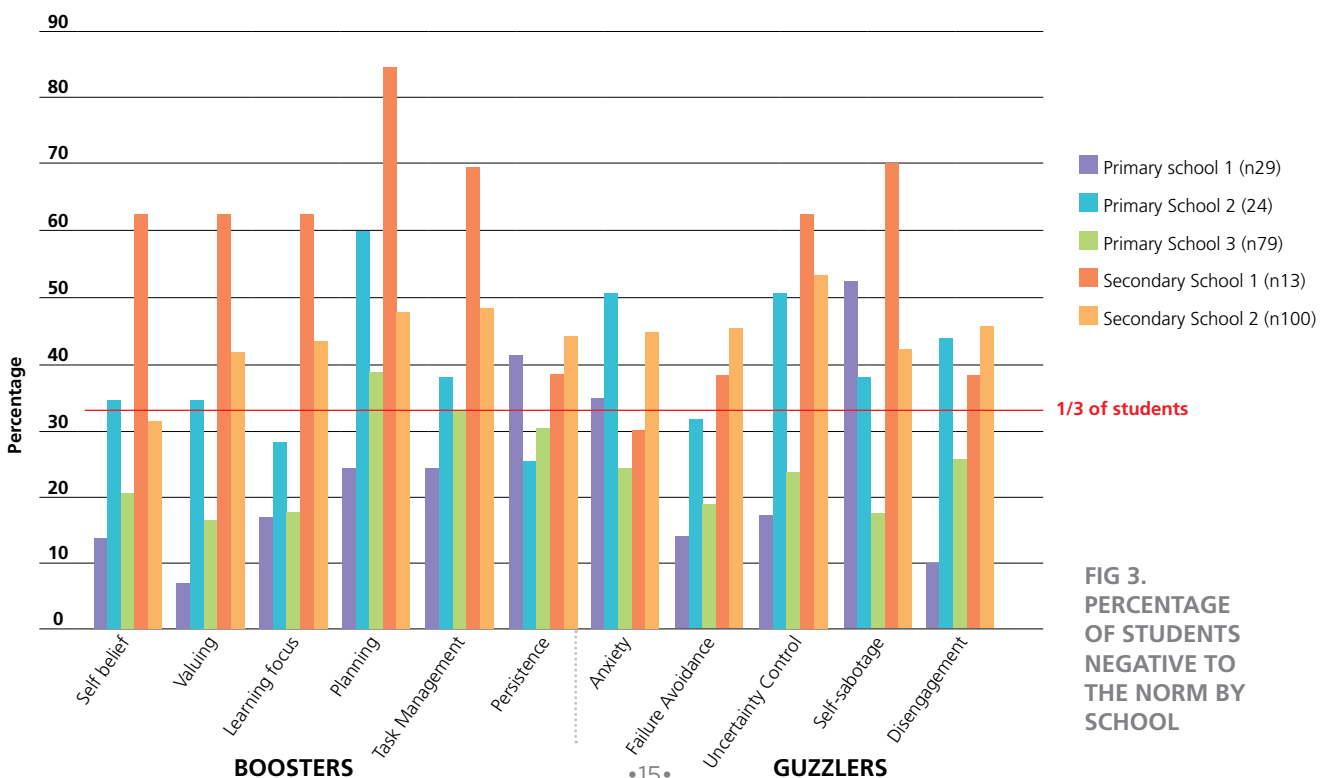
FIG 2. MEAN MOTIVATIONAL QUOTIENT SCORES BY SCHOOL

**TABLE 3.**  
**THEMES FROM STUDENT INTERVIEWS**

BOOSTERS	GUZZLERS	LEARNING	SCHOOL
<ul style="list-style-type: none"> <li>• Self belief</li> <li>• Valuing</li> <li>• Learning focus</li> <li>• Planning</li> <li>• Task management</li> <li>• Persistence</li> </ul>	<ul style="list-style-type: none"> <li>• Anxiety</li> <li>• Failure avoidance</li> <li>• Uncertainty control</li> <li>• Self sabotage</li> <li>• Disengagement</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers checking students' understanding</li> <li>• Clarifying what to do</li> <li>• Identifying engaging / boring activities</li> </ul>	<ul style="list-style-type: none"> <li>• Don't like school</li> <li>• Look forward to school</li> <li>• Different at secondary school</li> </ul>

**TABLE 4.**  
**STUDENT REPORTED ELEMENTS OF MOTIVATION AND ENGAGEMENT**

SUPPORTING ELEMENTS	DISCOURAGING ELEMENTS
<ul style="list-style-type: none"> <li>• The subject area or the topic /concept being studied connecting with students' interest</li> <li>• Learning activities or tasks being more active or creative</li> <li>• Learning activities where students had choice or input into the curriculum decisions</li> <li>• Learning tasks being challenging, but seen as achievable</li> <li>• Teacher's enthusiasm and understanding of the topic being studied</li> <li>• Critical teacher feedback that enabled students to improve on the next task</li> <li>• Group work and opportunities to discuss issues and concepts</li> <li>• Co-curricular activities, sport, excursions, music, camps</li> </ul>	<ul style="list-style-type: none"> <li>• Repetitive tasks</li> <li>• Tasks that did not seem to have a reason, such as copying off the board</li> <li>• Poor or no feedback on students' work or progress</li> <li>• Anxiety and uncertainty about what to do next in a learning task</li> <li>• Unsure of the teachers' expectations and how to achieve them</li> <li>• Concepts or tasks that seemed too hard</li> </ul>



## PLANNED RESPONSE

The four schools responded very differently to the findings, each reflecting the “best fit” for their school. (It is noted that one school was unable to continue its involvement in 2015 due to changes in key staff.)

There was general agreement amongst the participating schools to respond by building on programs with which they were already familiar, and that were already a part of their thinking and practice.

This led to two schools planning action based on specific programs, and the other two schools using the data to inform continuous improvement at the whole of school or individual classroom levels. (Table 5)

The school administration teams at all schools commented on the usefulness of the MES and student interview data. Even though the data was only from a selection of students, it was used to inform the school's Strategic Plan or Annual Implementation Plan processes.

## 4.3 ENACT

All four schools carried out their plan of action during 2015. The research teams at each school met regularly during the enactment phase to review the process. The impact of the action was monitored by the collection of student-focused data in May and October of 2015. Both the MES and small group student interviews were conducted to examine the student responses to the action taken.

## 4.4 REFLECT

The Reflect stage of the project involved the research teams in each school engaging in conversation to critically evaluate the intended and unintended consequences of the action taken in the school. This involved a comparative analysis of the student-focused data in 2014 and 2015, and discussion with the school staff on their experience of implementation, and its potential impact on student outcomes.

Analysis of the student-focused data found that differences in the MES data between the cohorts were generally

**TABLE 5.**  
**SCHOOL ACTION IN RESPONSE TO THE STUDENT-FOCUSED FINDINGS**

SCHOOL	PLANNED ACTION
PRIMARY SCHOOL 1	This school identified a range of ways to <b>modify aspects of classroom practice</b> to better respond to individual students' learning needs and styles. Strategies to be implemented included providing more critical feedback on student work and making expectations of learning activities more explicit by providing examples and detail.
PRIMARY SCHOOL 2	This school decided on further development of the <b>Student Voice</b> approach, a whole-school strategy to facilitate greater involvement of students in the development of a cooperative school culture. To facilitate the process, it was agreed that a teacher would be given responsibility to implement Student Voice. This included working closely with students to facilitate the development of skills and confidence to participate in and contribute to school processes and structures.
PRIMARY SCHOOL 3	This school decided on a <b>whole-of-school continuous improvement</b> approach which delegated responsibility for implementation of practice change to each teacher. This reflected a high level of interest in the findings by all teaching staff, and a principal leadership style which demonstrated confidence in staff to implement practice improvement at an individual level, in response to the research findings.
SECONDARY SCHOOL 1	This school planned a pilot program using the <b>'GANAG'</b> lesson planning approach (Pollock & Ford, 2009), which comprises a set of sequenced lesson planning steps – <b>G</b> oal-setting, <b>A</b> ccessing prior knowledge, acquiring <b>N</b> ew information, <b>A</b> pplying knowledge and revisiting the <b>G</b> oal. The plan was to trial this approach in a Year 7/8 English classroom and assess its impact on supporting classroom practice to better engage students. Two units of study were planned for the year – one on poetry and the other on text. The approach to the second unit of study was informed by data collected from the students after the first unit.



**TABLE 6.**  
**2015 DATA REPORTS BY SCHOOL**

SCHOOL	2015 DATA REPORT
PRIMARY SCHOOL 1	<p>The MES showed that the Year 5 and 6 students appeared to be engaged and motivated with their learning, with positive mean scores for the MES scale (all booster items scoring above the MQ norm of 100 and guzzler items scoring below the MQ norm of 100).</p> <p>The student small group interview responses in 2015 confirmed the 2014 results. They again highlighted the importance of activities that provide challenging but not daunting tasks, where students can be creative, and provide some decision making in the curriculum content. Student awareness of what is required was identified as an important element in understanding the concepts being presented. Receiving feedback on their level of understanding as they undertake a task also emerged as an important factor in sustaining students' engagement.</p>
PRIMARY SCHOOL 2	<p>The 2015 data indicates that motivation and engagement of the students has been stable, with students on average scoring at or above the norm for boosters and below the norm for guzzlers.</p> <p>The MES scores for six students from Years 5 and 6 who participated in the Student Voice Council mirrors the student averages, suggesting that the Student Voice program had no apparent influence on the average scores of the Year 5 and 6 students over this period. The small amount of interview data indicate that students have benefited from involvement in school governance, through taking on responsibility for school activities and initiating new projects. They reported calmer and more cooperative relationships between students who are enjoying the challenges of performing on the sports field and in the school concert. The statement "we have all these opportunities" summarises the extent to which students value having responsibility for activities within the school, and in managing their own behaviour.</p>
SECONDARY SCHOOL 1	<p>Nine students were surveyed in 2015. While a small number, this comprised 60% of the Year 7/8 class. Thirteen students were surveyed in 2014, and five of these were surveyed again in 2015.</p> <p>The MES data collected indicate that these students need support in developing the booster attributes of motivation and engagement, and in managing the negative influence of guzzler attributes.</p> <p>The responses of students about learning tasks and the work they completed were often vague. Failure avoidance and self-sabotage may be linked to issues with planning and task management, and uncertainty on what to do in class. The students had difficulty recalling learning activities or tasks completed. The activities they recalled with more clarity had a practical aspect to them, such as in the story writing unit where students were asked to draw the character in the story.</p> <p>The helpful and collaborative learning environment teachers developed with students appears to have provided a foundation on which students can build. Students engaged with a range of learning activities, particularly those with a practical aspect. However, they had difficulty when trying to describe or identify in detail the learning they have derived from these activities. Although only a small number of students have been involved in the data collection, their comments and survey responses suggest that greater involvement of students in their own learning may help support greater motivation and engagement.</p>

small, providing indications of change in some aspects of engagement. The student small group interviews provided a greater detail of students’ responses to the change in practices.

A summary report was presented to each school at the end of 2015, with a comparative analysis of the student-focussed data collected during the Enact phase in 2015 and the findings from the 2014 Reconnaissance phase (Table 6).

#### 4.5 RE-PLAN

This phase of the participatory action research process involved the VU researcher linking the data analysis to current academic literature in order to better understand the teaching practices and school structures that support students’ motivation and engagement. This process took place with three schools – Primary School 1, Primary School 2 and Secondary School 1.

Suggestions were tailored to each school context and teacher-identified students’ needs and backgrounds. Teachers and the leadership teams responded to the recommendations with revised plans to enact in 2016.

In all three schools, development of students as independent learners was identified as a key issue, leading to exploration of how deeper learning would enhance student engagement and support the development of the skills required for independent learning. This became the foundation (Table 7) on which a pedagogical approach for each school context was based (Table 8).

#### 4.6 ENACT (2)

Teachers and the leadership teams responded to the recommendations with revised plans to enact in 2016. The three schools have proceeded with these plans to continue the participatory action research cycle. Table 9 summarises the initial progress of enactment.

These discussions are great; it is really PD, thinking about our kids and how to work with them.

*Year 5/6 Teacher, Primary school 1*

TABLE 7. STUDENTS AS INDEPENDENT LEARNERS

#### FOUNDATION

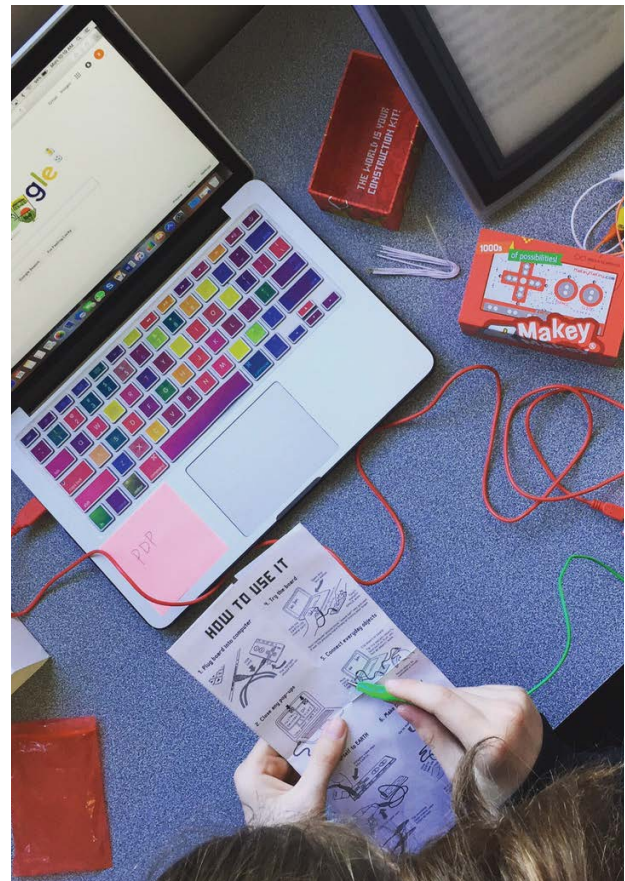
##### SELF-REGULATED LEARNERS

Self-regulated learning is generally defined as, “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate and control their cognition, motivation and behaviour, guided and constrained by their goals and the contextual features in the environment. These self-regulatory activities can mediate the relationships between individuals and the context and their overall achievement.” (Pintrich, 2004 p.453).

##### DEEPER LEARNING

Deeper learning has occurred when students can demonstrate transferable knowledge by applying the knowledge developed in one setting or context to a new problem or question. In doing so, students become more expert in that area of study. Mayer (2010) suggest this involves five connecting areas:

1. Facts – statements about characteristics and relationships
2. Concepts – schemas, models or principles
3. Procedures – step by step processes
4. Strategies – general methods of approaching problems
5. Beliefs – the self efficacy of learner belief to persist with problems.



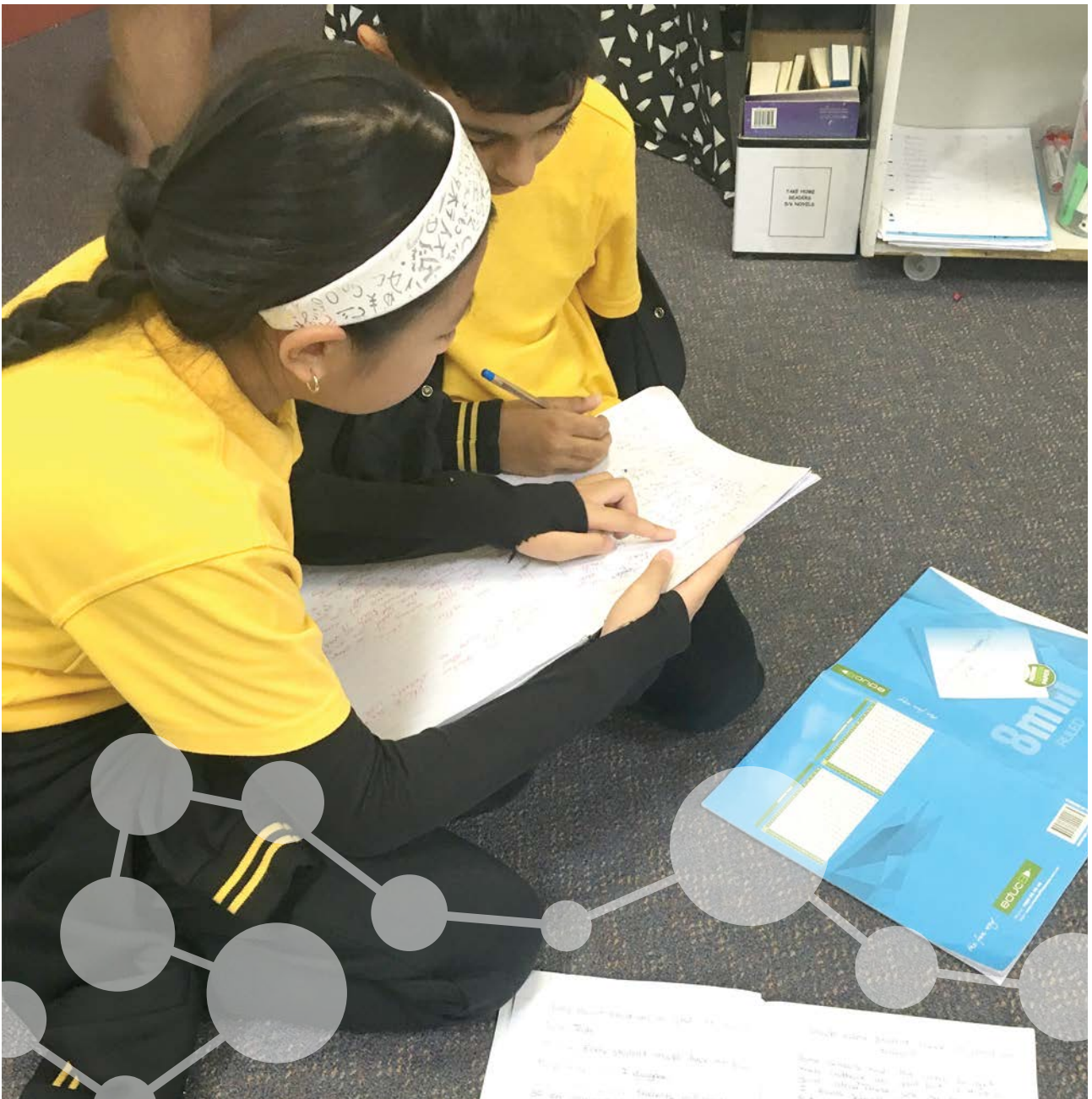
**TABLE 8.**  
**RECOMMENDED PEDAGOGICAL APPROACHES TO PARTICIPATING SCHOOLS**

SCHOOL CONTEXT	RECOMMENDED PEDAGOGICAL APPROACH
<p><b>PRIMARY SCHOOL 1</b> – students requiring clear understanding of learning requirements, opportunities for creativity and regular feedback on progress.</p>	<p><b>ASSESSMENT FOR LEARNING</b> Developing curriculum with an Assessment for Learning approach can change the learning focus. Mastery of learning, where the learner’s aim is to become more competent at the activity, takes precedent over performance. This means that the “first priority in [assessment] design and practice [is] to serve the purpose of promoting student learning. It thus differs from assessment designed primarily to serve the purpose of accountability, ranking or certifying competence.” (<i>Black et al 2004, p.10</i>). Formative rather than summative assessment becomes dominant in the curriculum.</p>
<p><b>PRIMARY SCHOOL 2</b> – development of school culture to provide students with a greater sense of belonging and opportunities to participate in decision-making processes.</p>	<p><b>STUDENT AS RESEARCHER</b> SaR is where students “identify aspects of school in which they want to make a difference. Students are supported in developing skills in investigating an area of interest, in sharing what they discover with others, in planning to do something to continue to make a difference, and in putting their plans into action.” (<i>Roberts &amp; Nash, 2009, p.176</i>). Extending the student voice program into this domain has the potential to strengthen the culture already developed, as SaR has the potential to strengthen the students’ capability regarding: 1. a positive sense of self and agency 2. an inquiry approach to learning new skills 3. social competencies and relationships 4. ability to reflect on one’s own learning 5. opportunities to be active and creative (<i>Noyce, 2005</i>).</p>
<p><b>SECONDARY SCHOOL 1</b> – connection of learning to students’ lives, highlighting the relevance of ‘formal education’ to personal goals.</p>	<p><b>FUNDS OF KNOWLEDGE</b> Funds of Knowledge is a concept originally coined by Wolf (1966). It is the knowledge and skills that communities have provided to students that is not recognised by schools and comes from the students’ home, peers, social systems and networks. This knowledge provides essential information on how to make one’s way in the world. The aim is to help students make connections between their own lives and knowledge and the curriculum, in ways which validate their local knowledge and perspectives. Ideally, the connections that learning activities and curriculum have with students’ lives will help them to express ideas, explore issues of relevance to them, and present possibilities to solving or understanding problems.</p>

**TABLE 9.**  
**SUMMARIES OF THE INITIAL PROGRESS OF ENACTMENT**

SCHOOL	2015 DATA REPORT
PRIMARY SCHOOL 1	Three Year 5/6 teachers and two VU pre-service teachers completing placement at the school, in conjunction with the VU researcher, have developed a science unit guided by the Assessment for Learning curriculum approach. The science unit was taught in Term 3, 2016. Evaluation of the approach to motivation and engagement of the students will occur in Term 4, 2016.
PRIMARY SCHOOL 2	The Student Voice program that was run in 2015 has been continued in 2016 with a focus of further developing students’ skills with the guidance of the SaR approach. Ongoing collection of data from the MES will continue to inform the Student Voice program.
SECONDARY SCHOOL 1	The teacher initially involved in the research moved to another school at the end of 2015. A colleague took over their involvement in exploring the concepts underpinning the Funds of Knowledge approach. This involvement is still at an early stage and has yet to result in the development of new curriculum or teaching approaches.





# 5 Key Themes

A number of themes emerged from this participatory action research that are important to the success of strategies for improvement to teaching practice and learning. These themes relate not only to student learning, but also to teacher development and organisational change.

## 5.1 THE POWER OF STARTING AT THE FRONT LINE – GIVING STUDENTS AND TEACHERS A VOICE

Direct feedback to teachers from their students was a powerful element of this research, providing teachers with important information on how their students experienced and learned from the way they were taught in the classroom.

Perhaps most importantly, the feedback was structured to support a shared commitment to improving student engagement in learning. It avoided anything that might be interpreted as a judgement of their teaching practice, good or bad. This ensured that teachers received information from their students that helped them to reflect on the efficacy of their teaching practice, and how they might make changes to enhance the motivation, learning and development of their students.

Student data provided a catalyst for critical reflection on teaching practice and school processes that promote or undermine student engagement. It enabled consideration of how to augment positive and minimise negative practice, and modify structures and arrangements to better support practice improvements.

In service-intensive industries, such as education and health care, there is growing recognition that the success of the organisation relies on the quality of the performance of the professionals delivering the service at the front line. Just as students identified the need for more 'real' feedback on their learning, the performance of teaching professionals at the 'front line' can also benefit from 'real' feedback from the school community and students on how well their practice, strategies and relationship management is improving learning outcomes.

This participatory action research affirmed the value of empowering teachers with student-based data. Schools and teachers reported they highly valued the data provided on their students' experience of 'guzzlers' and 'boosters' and the classroom environment. Clearly, the school and the teachers who work with a classroom of students are those with the greatest investment in making use of such data to inform the improvement of practices and behaviours to enhance student learning.

## 5.2 THE VALUE OF THE COLLABORATIVE APPROACH

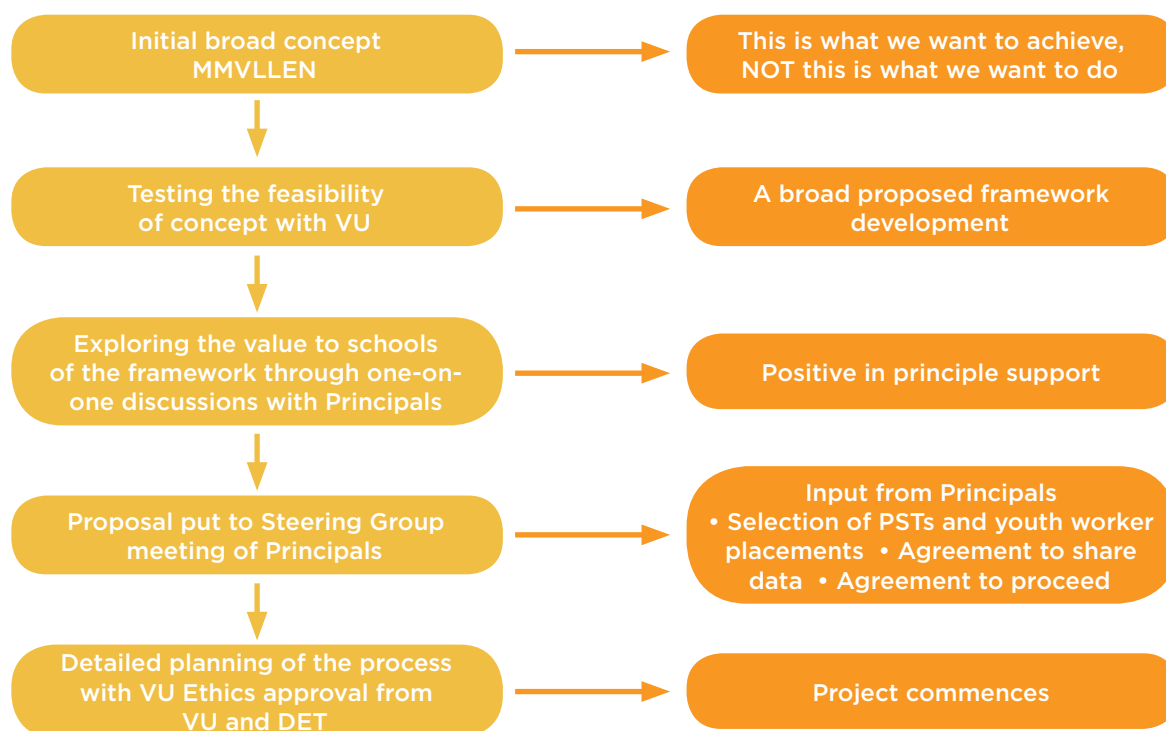
Creating an environment for inter-professional collaboration was key to developing a shared perspective of the issue and potential solutions. The level of trust achieved allowed for different knowledge and interests to be harnessed. This led to developing a deeper understanding of the issues and potential areas for action. There was a shared commitment to improving student outcomes, understanding and respect for the roles of the different members of the research team, and the value they contributed. Figure 4 illustrates the steps taken to establish the inter-professional collaboration).

MMVLLLEN played a critical role in the initiation and ongoing coordination of this project. As an independent partnership broker, MMVLLLEN was able to bring different school principals and university researchers together to consider the issue, and act as the conduit for sharing information on student engagement.

The collaboration process was managed by establishing professional learning teams (PLTs) at each of the participating schools. Each PLT comprised teachers, pre-service teachers and a university colleague. The team followed an agreed process to collect and analyse data to explore the question. This model enabled people from different backgrounds and levels of influence to be involved and act as researchers. All involved had an equal voice in the research, maximising its potential to change practices and improve student development.



**FIGURE 4.**  
**PROCESS FOR ESTABLISHING INTER-PROFESSIONAL COLLABORATION**



**TABLE 10.**  
**DESIRED OUTCOME FOR PROJECT PARTICIPANTS**

STAKEHOLDER	SPECIFIC FOCUS	DESIRED OUTCOME
<b>MMVLLEN</b>	<ul style="list-style-type: none"> <li>To create partnership arrangements that offer a solution to an identified local need</li> </ul>	<ul style="list-style-type: none"> <li>Application of lessons learned to improve student engagement across the wider school community</li> </ul>
<b>VICTORIA UNIVERSITY – COLLEGE OF EDUCATION</b>	<ul style="list-style-type: none"> <li>To establish on-going relationships with schools</li> <li>To support the development of reflective graduate teachers</li> <li>To research the key factors influencing 12–14 year old students' engagement in their own learning</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity to place pre-service teachers in schools with skilled mentor teachers</li> <li>To grow and share new knowledge on student engagement</li> </ul>
<b>SCHOOL PRINCIPALS</b>	<ul style="list-style-type: none"> <li>To improve school performance through participation in research focused on improving student engagement</li> </ul>	<ul style="list-style-type: none"> <li>Embedding and realising practice improvements through Strategic Planning and Annual Implementation Plans</li> </ul>
<b>CLASSROOM TEACHERS</b>	<ul style="list-style-type: none"> <li>To improve the effectiveness of teaching practice</li> </ul>	<ul style="list-style-type: none"> <li>Professional development which deepens understanding of student learning and the implications for teaching practice</li> </ul>
<b>PRE-SERVICE TEACHERS</b>	<ul style="list-style-type: none"> <li>To enrich school placement experience by including a research component</li> </ul>	<ul style="list-style-type: none"> <li>Capacity to use the research project to fulfill course requirements</li> <li>Professional development which enhances and enriches teaching practice</li> </ul>

I want teachers to be, like, ‘real’ with me, with my projects... tell me what’s wrong, so I know what I can improve on, instead of just going “Oh, that’s great”.

*Year 6 Student, Primary school 1*

The PLT strategy enabled the collaboration to gain added value from the differing interests of participants (Table 10). The shared understanding of the common goal, individual role and required outcomes of each stakeholder provided a project structure that met both individual and team needs.

Each stakeholder played a unique role in the process. This shared the workload and kept the research process on track.

### 5.3 THE IMPORTANCE OF RECEPTIVE AND RESPONSIVE LEADERSHIP

The leadership teams of the five schools that joined the project were receptive to possibilities and open to working with partners. Discussions commenced at the leadership level with principals and leadership team members responsive to the project bringing teachers into the discussions. These early conversations developed trust and collaboration around a shared concern. The leadership team consenting to the teachers’ involvement supported teacher agency and action.

A central part of this collaboration of schools with the MMVLLLEN and VU occurred through acknowledging that each school had a specific context, and would take a different approach to addressing the shared issue of student engagement based upon current needs and the strategic priorities of the school. Acknowledging this diversity strengthened the support from school leaders and clarified the role of the university researchers.

The *Questions of Engagement* process provided school leadership teams with the opportunity to use the data obtained at a whole school level to develop a course of action and promote student engagement across the whole school and, in turn, enhance school culture.

### 5.4 MODEL OF PROFESSIONAL LEARNING FOR IN-SERVICE AND PRE-SERVICE TEACHERS

The *Questions of Engagement* research approach demonstrates a school-based model of professional learning, based upon a framework of tools and practices to guide learning and support a process of change.

The partnership between the VU, MMVLLLEN and the school was essential to this framework in providing:

- a structure and timeframe for professional learning
- placement opportunities for pre-service teachers and a focus to apply their learning
- a productive and positive connection between the MMVLLLEN and schools with respect to the shared issue of student engagement
- schools with data to inform teaching practice and curriculum development.

The approach is adaptable to the issue or concern being explored, and can be completed over a school term or number of years, depending on an agreed partnership structure.

An integral part of this approach is bringing together, researchers, teachers, school leaders and pre-service teachers. Throughout the research project, teachers both mentored pre-service teachers and learned with them. Everyone participating in the research contributes to the collection and analysis of data to improve practices that support the learning of school students.

### 5.5 CURRICULUM DELIVERY OPTIONS

The school was provided with support to examine curriculum delivery and explore alternative approaches, such as, student inquiry-based learning through the partnership with the university. Schools were able to go beyond reflecting on just teaching practice, they could expand more broadly into curriculum development.

Being able to bring student voices and perspectives into the development of learning activities and unit topics has the potential to enable schools to tailor units of study directly to the context and needs of students’ lives.

# 6

## Broader Applications

The experience of the people and organisations involved in the *Questions of Engagement* project suggests that there are a number of applications of the research. These applications relate to the role of community organisations in building collaborations, wider use of an established set of tools to improve practice, and the classroom as the starting point for whole-of-school change.

### 6.1 EXPANSION OF COMMUNITY / SCHOOL / UNIVERSITY PARTNERSHIPS

The *Questions of Engagement* project has identified the strength of community organisations taking an active role improving student learning and engagement. The inter-collaboration process proved to be a useful model for community organisations to be actively involved in supporting young people by bringing schools and universities together. The community partner's role in the *Questions of Engagement* project was critical to maintain the momentum of the research, and the development of a trusting environment for effective discussions and decision-making to occur.

### 6.2 TOOLS AND FRAMEWORKS

The schools involved in the research gained valuable insights through the MES and small group student interviews. These tools are an essential resource for schools and organisations working with young people. Care needs to be taken in managing and respecting the ethical requirements and the role of the pre-service teachers in creating a safe and confidential environment for the school students.

### 6.3 CLASSROOM FOCUSED EDUCATIONAL CHANGE

Expanding participatory action research to include more teachers across a school and pre-service teachers to facilitate the collection of data, has the potential for whole-of-school change. The strength of teachers' researching teaching practice with their students can create improvements to practice that will not come from top down directives.

Teachers sharing their findings across the school can enhance this process, as teachers learn from each other's experience.

A process supported by university researchers and pre-service teachers provides teachers with data not usually available to them. It also provides access to current educational research that relates directly to the context of their school and students.

# 7

## Conclusion

The power of this research lies in the development of a methodology that engages classroom teachers and school leadership teams in understanding and taking action to improve the learning experience of their students. Teachers were catalysed to action by hearing direct feedback from their students about their level of engagement in learning in the classroom.

The success of the study was the extent to which it raised teachers' awareness of their own teaching practice. This was achieved by gathering information from their own students and feeding this back to teachers in ways which deepened insight into individual student's own perceptions

of their motivation and engagement. The evidence was data that resonated at a personal level with teachers, very different to general findings that are the likely result of a statistical approach to establishing an evidence-base.

*Questions of Engagement* provides an approach to school improvement that can catalyse change in schools despite their conservative nature and the complexity of school cultures. The beauty of this methodology is its capacity to be successfully applied at the levels of an individual classroom, a single school and across a number of schools to improve students' experiences of learning.





## Case Study: 'Oakland' Primary School

'Oakland' Primary School, is a well-established urban, State primary school in the Kensington/Flemington area. Typical of many state government primary schools in that location, it has a high social capital and is culturally diverse (33% of families speak a language other than English).

The school's curriculum and wellbeing approach is organised around multi-age classrooms. Prep/Year 1 and Year 5/6 share a large teaching and learning space and, while Year 2, 3 and 4 are in separate configurations, they also use shared learning spaces. This developmental learning model is used to match students' programs with their needs, and to provide for social and academic interaction between younger and older students. A variety of specialist and enrichment programs support the curriculum structure.

### The issue

The school leadership and teaching staff were concerned about some students not achieving as well as expected, particularly in Year 5/6. Data indicated that students were generally achieving at or above the State's standard, but they were not achieving to the level of schools with a similar Index of Community Socio-Educational Advantage (*MySchool website, 2013*). One teacher reflected that

*"the students come from a wide range of backgrounds with some children doing many activities outside school that may make school seem less exciting".*

### The team

The participatory research approach involved the development of a professional learning team (PLT) consisting of two Year 5/6 teachers, Victoria University(VU) pre-service teachers, MMVLLN coordinator and VU researcher. The leadership team was also actively involved, attending many of the PLT meetings and keeping parents advised. Trust developed in the group through the collection and discussion of student data.

### The data

Pre-service teachers, with the guidance of the VU researcher, administered the Motivational and Engagement Survey (MES), which took students around 30 minutes to complete during class time.

The data analysis prompted animated discussions about what the survey items indicated about students and classroom practice. The presentation of the data in two forms, class averages (Fig 1) and individual scores, initiated two main conversations – one about general teaching approaches and the second about individual student responses to different learning activities. This provided new information to teachers

*"... we thought our kids were ... engaged but ... quite a few are disengaged [and] ... we were surprised by the levels of anxiety."*

Different questions were raised by examining the individual data, and by comparing the average Motivation Quotient scores with the number of students who scored negative to the norm (Fig 2).

*" (the scores for) Persistence make sense, as some of my students do give up when a task gets difficult, but self-sabotage I am not so sure of....."*

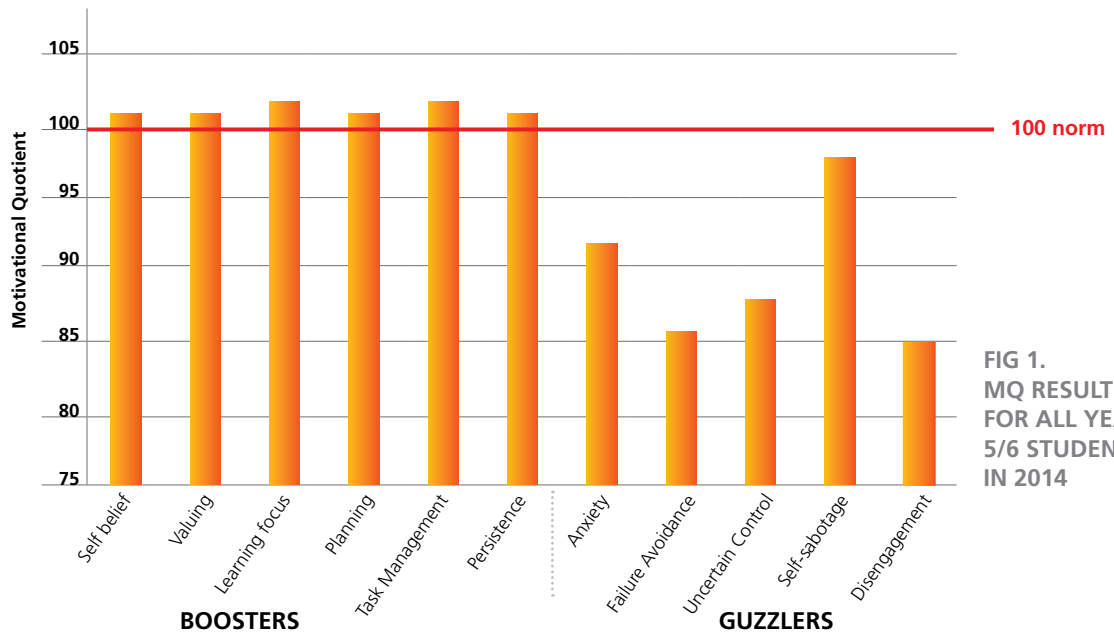
Small group student discussions were then held to explore the issues emerging from the students' responses in the MES data such as persistence, learning focus and self-sabotage. The interviews were conducted by the pre-service teachers who worked with the students, an independent person who the students knew, and who knew them and their classrooms. This strategy was successful in promoting open and confidential discussion which provided teachers with insights into their classrooms that were not normally available to them.

Four key themes emerged from these small group interviews:

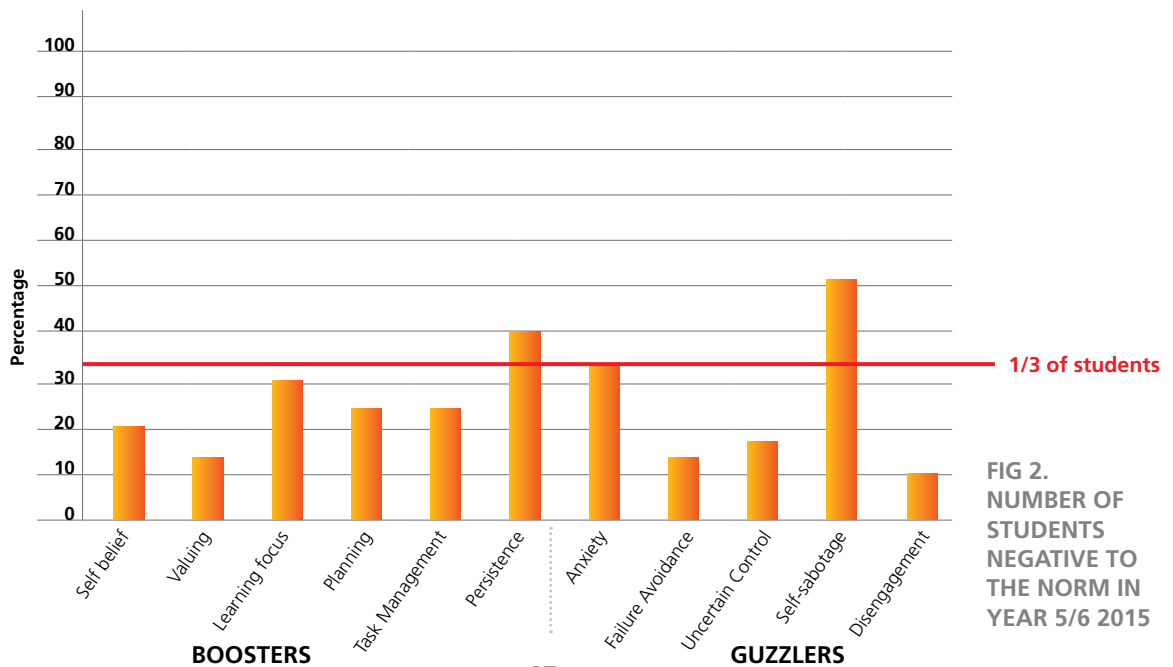




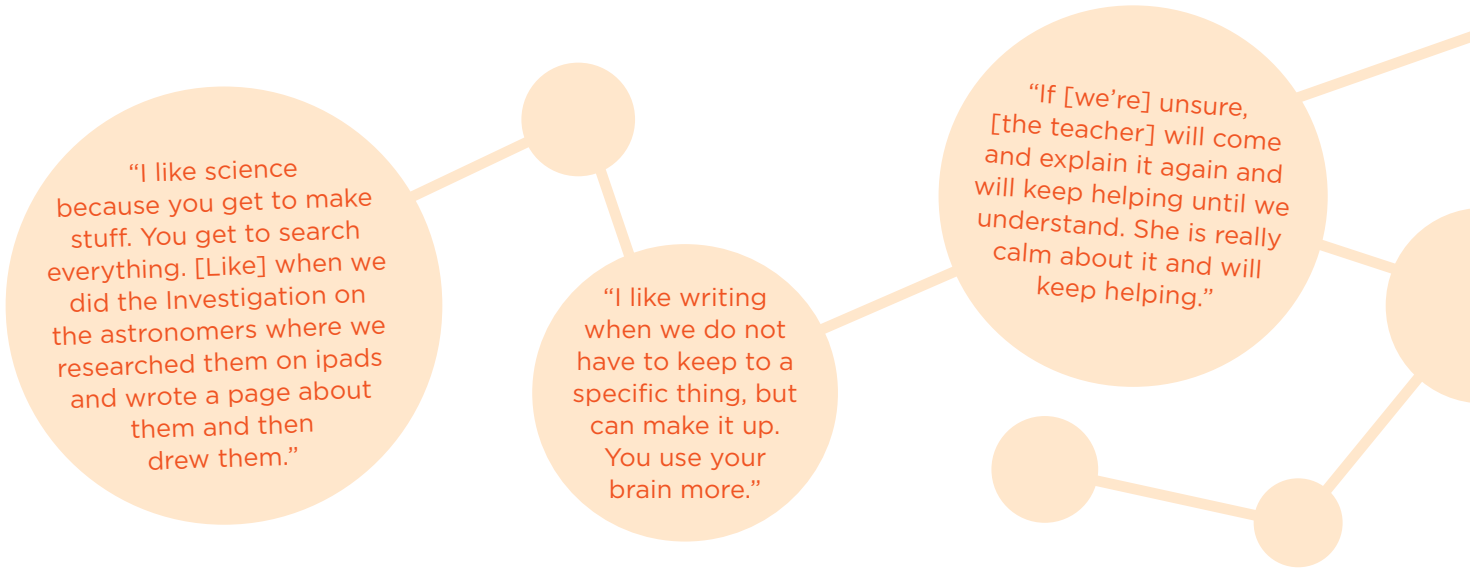
**CASE STUDY**



**FIG 1.**  
MQ RESULTS  
FOR ALL YEAR  
5/6 STUDENTS  
IN 2014



**FIG 2.**  
NUMBER OF  
STUDENTS  
NEGATIVE TO  
THE NORM IN  
YEAR 5/6 2015



"I like science because you get to make stuff. You get to search everything. [Like] when we did the Investigation on the astronomers where we researched them on ipads and wrote a page about them and then drew them."

"I like writing when we do not have to keep to a specific thing, but can make it up. You use your brain more."

"If [we're] unsure, [the teacher] will come and explain it again and will keep helping until we understand. She is really calm about it and will keep helping."

## 1. MOTIVATION AND ENJOYMENT

Learning activities that students found motivating had the common characteristics of personal input, creativity, challenge level, competition, novelty and success:

**Personal input** – being able to draw on your own experience and interests with narrative writing as a regular example.

**Creative projects** – allowing personal input as well as opportunities to produce different final products or choose different aspects of the topic – ZOO and astronaut tasks were examples of this.

**Level of challenge** – if the activity is not challenging enough students find it boring or repetitive, and if the challenge is too high they tended to switch off. Writing, as often cited as a look-forward-to activity was a good example. Some students like to have free reign to do what they wanted as it was challenging to create the characters and the plot. Other students like to have some guidance with a set topic or process to follow. Competition, such as, beat the clock was cited by most students as fun and something to look forward to. In the "beat the clock" activity, beating your own time was the focus. No one mentioned leader boards or beating others in the class.

**Novelty** – Activities different to the norm were mentioned by a number of students, such as using lollies in Maths and designing their own ZOO.

**Success** – students enjoyed subjects they felt they were good at.

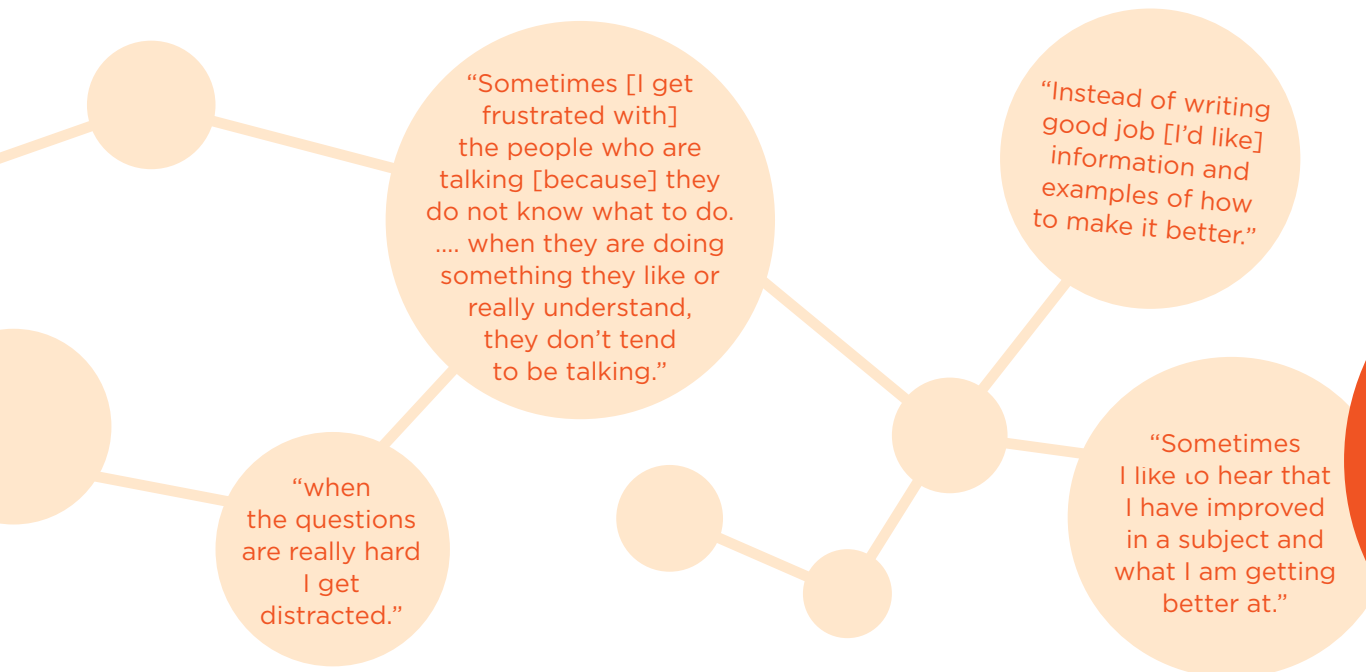
## 2. LEARNING FOCUS

Instructions and knowing what to do did not seem to faze students. They commented that, if they did not understand a concept or a task, they preferred to ask their teacher as they would know the answer. A number said that it helped when the teachers explained the information in a different way or gave more detail. A strategy in both classes was for teachers to invite students who were unsure to 'come to the floor' where they would work with them in small groups while students who understood continued. Students saw this as an effective strategy to meet everyone's needs. This does, however, rely on them being aware of their level of understanding. Some students may have misconceptions about a concept and remain unaware of their misunderstanding.

Overall it appears that clear explanations and checking the understanding of concepts are more important to students than having a learning intention written on the board. When doing activities, getting stuck or not understanding a concept created issues for what to do next or how to keep going with a task. This seemed to be linked to planning how to go about a task.

Planning did occur with writing activities but does not seem to be used as much in other subject areas. While students identified a number of planning strategies, it is unclear whether all students used them or needed them. For example, in Maths some students wrote down the steps of a mathematical process in their own words, so they could refer back to the process when doing problems. Some student also talked about planning out the steps for longer tasks, such as, projects or creation of posters but not for other activities.

"I ask my friends or the teacher if I do not understand. My teacher usually keeps us on the floor. When you understand you can go, and if not stay on the floor for more explanation."



### 3. FRUSTRATION AND DISTRACTION

Students were able to describe when they found it difficult to understand and/or engage with certain learning activities. The characteristics around these activities were; fear of failure, challenge, relevance, repetition, too much direction, and noise.

**Fear of failure** – evident from negative attitudes towards subjects that the student felt they were not good at.

**Challenge** – disengaging when the task is too easy or too hard.

**Relevance** – When students were unsure of how to relate the activity to other areas of learning or to real life. (“ Why do we need to know this?”)

**Repetition** – Repetitive tasks such as a weekly spelling test were mentioned by a number of students, with those who found the task more difficult being more vocal.

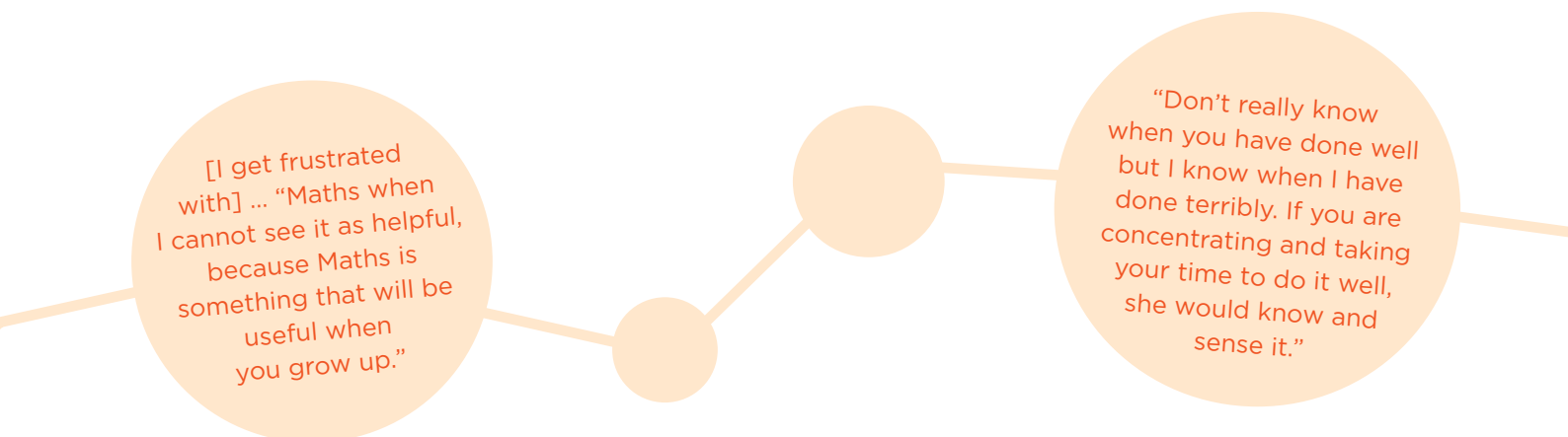
**Too much direction** – Highly directed activities with only one outcome or very little student input seemed to decrease enjoyment.

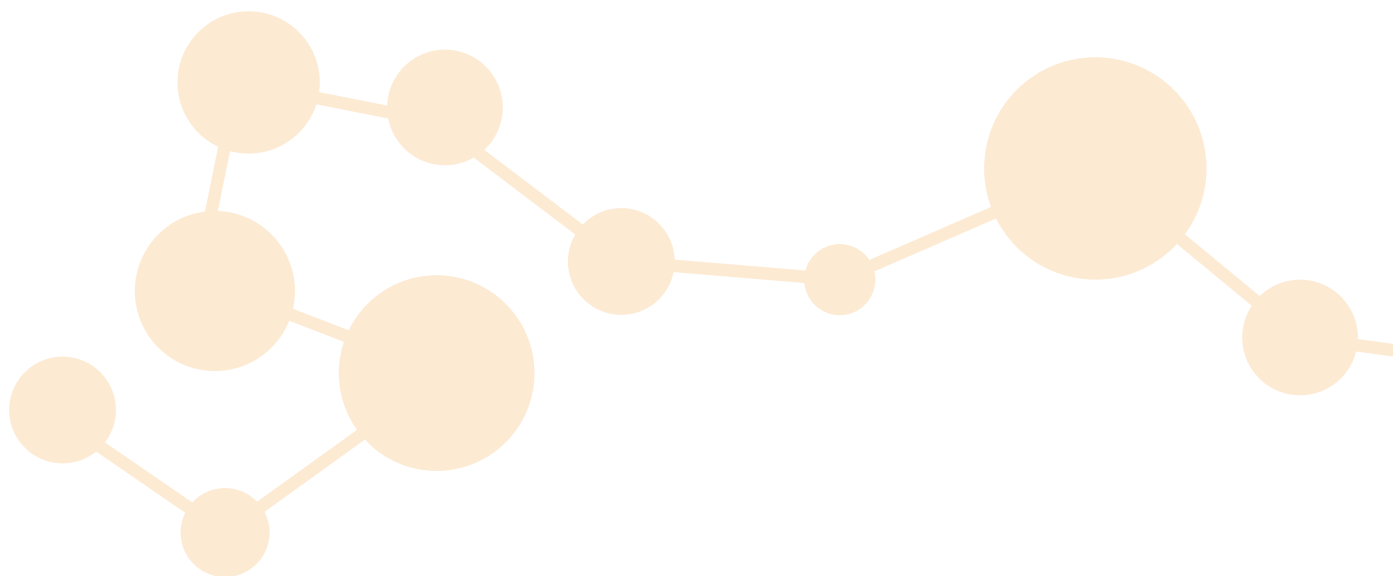
**Noise** – external noise, sudden movement or things going on outside easily distracted them from the task at hand.

### 4. UNDERSTANDING ACHIEVEMENT

There appeared to be haziness around whether students understood if they have done well on a task or not. A common perception was related to the amount of effort put into a task. This would indicate how well you would do. Generally, students felt that if you put lots of effort into a task, you would do well. There was no awareness of levels of understanding of concepts or skills that one may apply to a task or project. However, students were able to identify what they were good or not good at in some areas. Several students were able to distinguish between not doing well due to poor effort and due to simply “not getting it”.

Feedback on progress was provided in different ways with verbal feedback from the teacher being the quick and the most cited method. Students seemed to identify feedback on final pieces of work more than receiving feedback as part of the process in completing a task. The exception was project work or writing tasks that had a drafting process. In order to improve students identified the need for critical feedback as they were completing tasks. However, this was contrasted with the desire not to feel like a failure and not disappoint the teacher.





### The findings

The complex relationship between learning and engagement that emerged from students' feedback enabled teachers to reflect on their teaching practice and understanding of learning. It provided new insights

*"Like the planning section, I realised that it does not have to be a big process like a project. It could relate to a quick 5-minute thing (to help) them to get organised and think about the steps"*

and confirmed their effective practice.

*"It really confirmed our thoughts about open-ended tasks. Like the maths Zoo project. They really liked the freedom of choice; we also saw that in the way they worked in class".*

Pre-service teachers also offered thoughts on how they might respond,

*"I found the haziness around 'if I am doing well or not' interesting. I was thinking, at times during the lesson, to have a sharing activity where students can show how they improved something or to highlight what a well-done task looks like and the reasons why it looks like this".*

This open discussion deepened understanding about teaching practice and students' experience of learning. For example, knowing the math zoo project was engaging but not being aware how important freedom of choice was to students' engagement expanded teachers' practice to better support student engagement. Awareness is the first step to the change process,

*"when I was reading the students' comments it made me want to highlight everything I do which they found useful to reaffirm my practice and then all the things I could improve on like giving specific feedback".*

### Taking action

Teachers responded proactively to the study results, modifying their teaching practices to include different approaches to check understanding, provide more critical feedback, and offer more opportunities for student choice.

*"I now make sure I ask students more questions after explaining a new concept and I tell them to keep asking me questions if they are unsure".*

A unit of work was then devised that aimed to develop students as independent learners through an inquiry approach to learning. The unit used two curriculum development approaches, deeper learning and assessment for learning to achieve this objective (Table 1).

This new approach to curriculum in the middle years was developed to specifically address the areas of concern that students identified – learning focus, anxiety, and understanding personal achievement. The unit was completed by students in 2016 and data from students on their experience is currently being collected to inform the ongoing cycle of the participatory action research occurring at the school.







TABLE 1.  
OUTLINE OF INVESTIGATING FORCES UNIT

MAIN IDEA	SCIENCE STRAND	LEVEL
MOVING OBJECTS	SCIENCE AS A HUMAN ENDEAVOUR	5/6

**OVERARCHING LEARNING OUTCOMES**

- Explore how energy can be transformed into force to move objects
- Develop skills in design and prediction
- Develop skills in designing and completing controlled experiments

CONCEPTUAL LEARNING OUTCOMES DECLARATIVE KNOWLEDGE	PROCEDURAL LEARNING OUTCOMES PROCEDURAL KNOWLEDGE	TECHNICAL LEARNING OUTCOMES TRANSFERABLE KNOWLEDGE
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Students will understand that:

- energy can be categorised as potential and kinetic energy
- the conservation of energy means energy within a system stays constant. It cannot be created or destroyed, only transformed from one form to another
- force is the push or pull on an object and is reliant on the energy
- forces work in pairs. There is always a push and a pull at work.
- objects will keep moving or stay motionless unless acted upon by a force

Students will be able to:

- identify the category of energy in the state of an object (potential or kinetic energy)
- describe the changes in energy as it is transformed from one form to another
- identify the push and pull forces acting on an object
- describe how the change in the forces enables an object to move or be slowed down
- make and record measurements
- make and record observations
- control variables in a simple experiment to explain changes observed
- draw diagrams of forces at work on an object

Students will be able to:

- use their understanding of energy and force to explain why objects move
- design and build a model car to test out the effect of energy and forces
- experiment with their car to make it go fastest or furthest in the class
- complete a poster with an annotated diagram of their car explaining how it works and the forces involved

**ASSESSMENT**

- Build a model car that is powered by air (Balloon car)
- Present a poster of their car describing the forces involved in moving the car. The poster will list the modifications made to the car to improve its performance.



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