

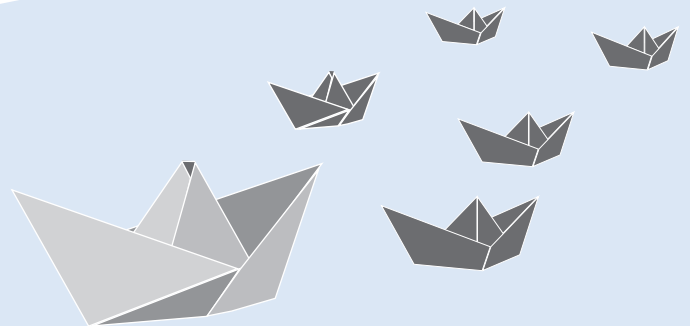


visible  
learning<sup>plus</sup><sub>TM</sub>

# International Impact Report

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# Visible Learning<sup>plus</sup> Impact

## Executive Summary

The implementation of the Visible Learning<sup>plus</sup> program across education systems and schools around the world is evidence of its success and impact. A large body of data has been collected from the evaluation and assessment tools that measure the impact of the training and development components of the Visible Learning<sup>plus</sup> program. The information from this data supports the underlying premise and long-term outcome of the program logic – that implementation of the Visible Learning principles and practices results in long-term improvements in student learning. The ultimate long-term impact of the program on learning is assessed through the analysis of the student achievement data from standardised norm-referenced tests.

The empirical evidence of impact presented in this report was derived from various countries where the Visible Learning<sup>plus</sup> program has been implemented. Data relating to the Visible Learning<sup>plus</sup> workshops included those that have been delivered across eight countries. Data relating to the intermediate, 3–9 months, and yearly outcomes were compiled from Australia and New Zealand, where evaluation tools form part of the system-wide projects, such as the Collaborative Impact Program. Using data from these projects, structural equation modelling was used to assess the relationship across each evaluation tool, and its relationship to student achievement results.<sup>1</sup>

Findings showed that each evaluation components had a positive gain over the duration of the Visible Learning<sup>plus</sup> program. Specifically:

- Workshops are delivering the Visible Learning message in an effective and meaningful way.
- School capability assessments showed an increase in the understanding and implementation of Visible Learning principles throughout the school.
- The mindframes of teachers and school leaders from Time 1 to Time 2 show significant increases in those that are more likely to have greater positive impacts on their students' learning.
- The Classroom Observation Tool provided real-time evidence that teacher and student behaviour and practices in class are demonstrating the principles of Visible Learning.
- There are increases in student learning and achievement, beyond that which is normally expected across a school year.

Relationships between the program's components were also modelled in relation to the amount of improvement in student achievement and learning. Results showed that schools that made strong improvements in their school's capability for implementing Visible Learning had the greatest relative gains in their students' end-of-year performance.

Similarly, student performance was greatest where school leaders and teachers had made significant progress in their mindframes towards their own pedagogy and practice.

The Visible Learning<sup>plus</sup> team's ongoing commitment to the evaluation of the program's impact on educational systems, schools, teachers and students, will ensure that empirically-driven evidence continues to validate and inform its success and ongoing development.

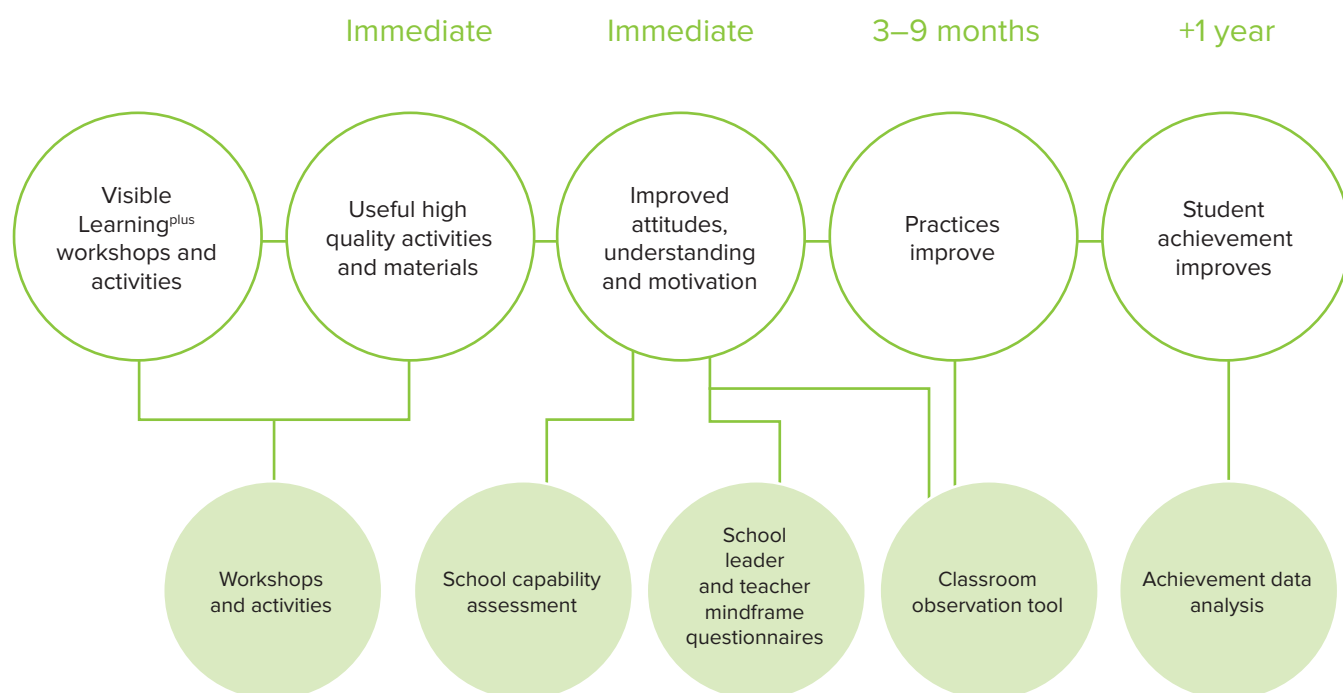
1 A technical report, which is available on request, provides in-depth explanations of the analysis that was conducted in this report.

# Introduction

Visible Learning<sup>plus</sup> is a professional development program that is based on Professor John Hattie’s research and the principles of Visible Learning and visible teaching. It draws on Hattie’s internationally acclaimed research in *Visible Learning: A synthesis of over 800 meta-analyses relating to achievement* (2009) and his book, *Visible Learning for teachers: Maximizing impact on learning* (2012). Visible Learning<sup>plus</sup> was formed by New Zealand company, Cognition Education Limited, to provide services and programs to support the application of John Hattie’s research.

The purpose of this report is to assess the impact of the Visible Learning<sup>plus</sup> program using evidence from various projects where evaluation measures have been administered. Each measure has been designed to evaluate the components of the Visible Learning<sup>plus</sup> logic model (see Figure 1), which tracks the impact of the program across immediate-, medium- and long-term stages using formative and summative information.

Figure 1: Visible Learning<sup>plus</sup> logic model showing connections between the workshops, activities, and outcomes across a 1-year program



# Evaluation Evidence

## How is impact measured?

As shown in the Visible Learning<sup>plus</sup> logic model, there are multiple streams of evidence that are collected at various time periods throughout the program. This evidence has a twofold purpose: first, to provide feedback to the schools or educational systems. This feedback enables the school to identify where they are at the beginning of the year and the progress they have made throughout the year. Second, to inform the Visible Learning<sup>plus</sup> team and its partners of the impact and validity of the program.

For Visible Learning<sup>plus</sup>, program information from its evaluation measures is invaluable for understanding the degree to which the program is meeting the needs of the schools and its impact. Such data is typically collected over two time periods (e.g., baseline and end-of-year) such as school capability assessments, the Mindframes Survey, classroom observations, and student learning and achievement data.

A combination of qualitative and quantitative data is collected. The qualitative data provides an essential balance of in-depth contextualised descriptive analyses of schools' practice and performance. The quantitative data allows measures to capture data that can be compared with other data such as regional/national student achievement data.

The following sections outline each stream of evaluation information and the empirical data that has been collected from various international Visible Learning<sup>plus</sup> projects. The countries for which the information is presented are outlined at the beginning of each section.

## Workshop Evaluations

### What are Visible Learning<sup>plus</sup> workshop evaluations?

Information from the Foundation Series evaluations (Foundation Day, Visible Learning into Action for Teachers 1 & 2, Evidence into Action 1 & 2), and Inside Series evaluations (Using Data to Know Your Impact, Feedback to Make Learning Visible, Creating Effective Assessments for Teaching and Learning Using The SOLO Taxonomy, and Building and Developing Visible Learners) provides valuable data relating to four aspects of the program delivery (output quality). These include content usefulness, material quality, motivation, and facilitator delivery. Information from the evaluations also focuses on testing the level of understanding of the program theory. These evaluations provide an opportunity for participants to give feedback on the perceived support they have received in developing skills over the short- and medium-term. The following summarises the feedback on the value the workshops have provided participants from Australia, Sweden, Denmark, Norway, Belgium, Japan, The Netherlands, New Zealand, Thailand, Indonesia, Malaysia, the United Kingdom, and, the United States.

Quantitative information was analysed using proportional information and significance testing of gains made before and after the workshops. Text and document analysis has been used to establish the patterns and trends in responses from the open-ended sections of the workshop evaluations.

### What was our impact?

In relation to the quality of the workshop delivery, the following four areas were evaluated: facilitator delivery, material quality, motivation, and the perceived usefulness of the content. This aspect of the workshop evaluations is referred to as Visible Learning's immediate 'output quality', as shown in the first part of the program logic. The following four graphs (Figures 2, 3, 4, and 5) present the average levels of agreement for each of the workshops delivered from 2012 to 2015.

Figure 2: Visible Learning<sup>plus</sup> feedback results for overall facilitator delivery across various international projects

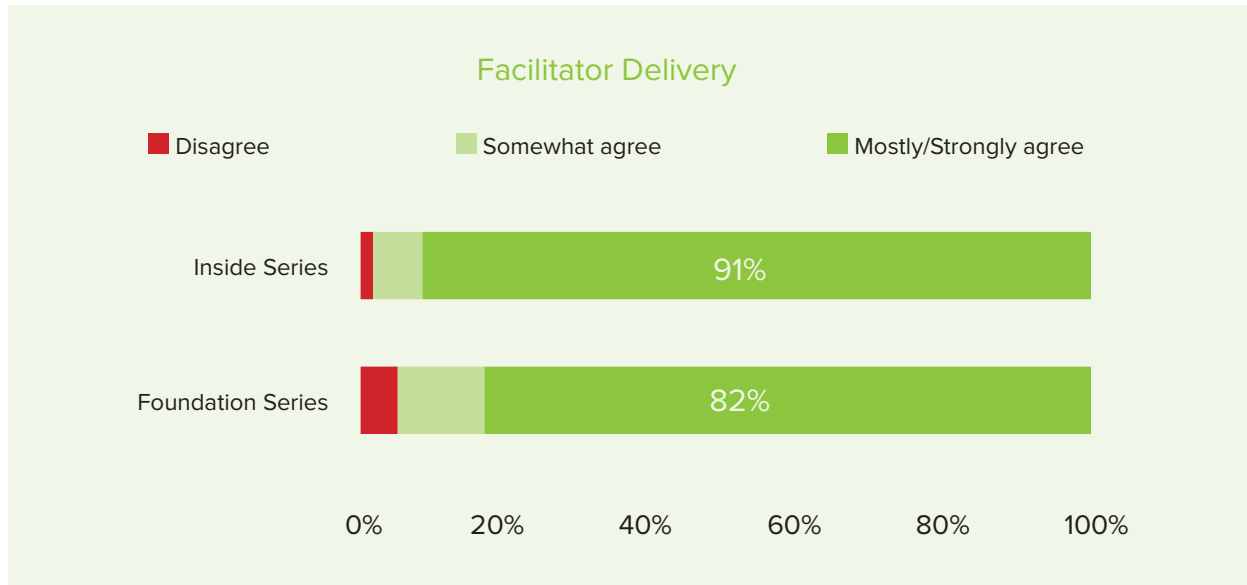


Figure 3. Visible Learning<sup>plus</sup> feedback results on the overall material quality across various international projects

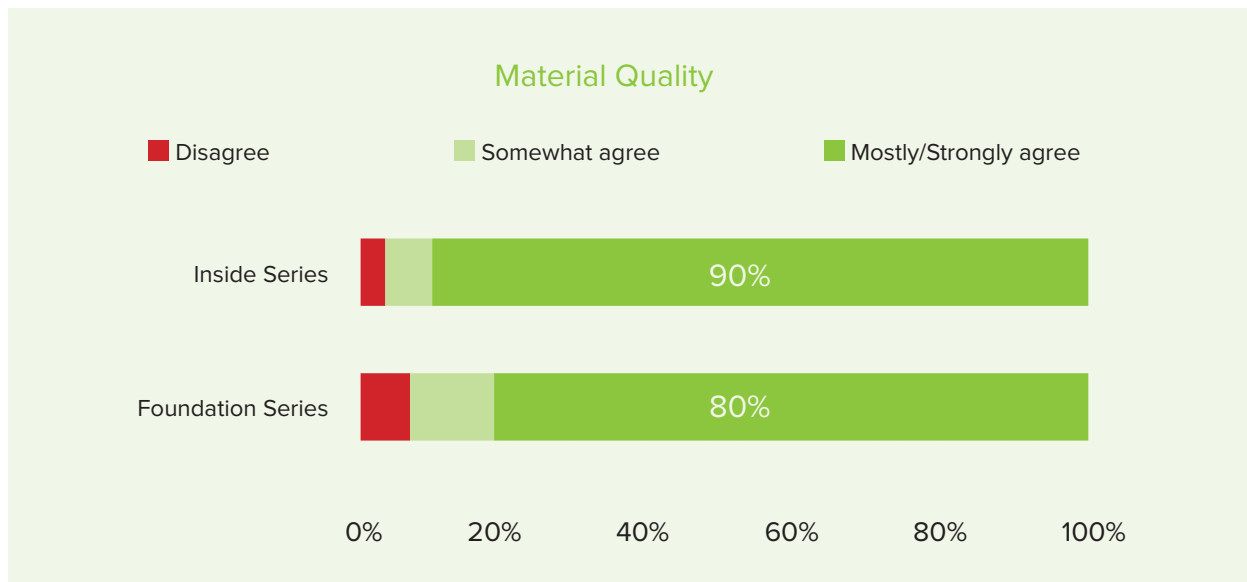


Figure 4: Visible Learning<sup>plus</sup> feedback results on how useful the content was across various international projects

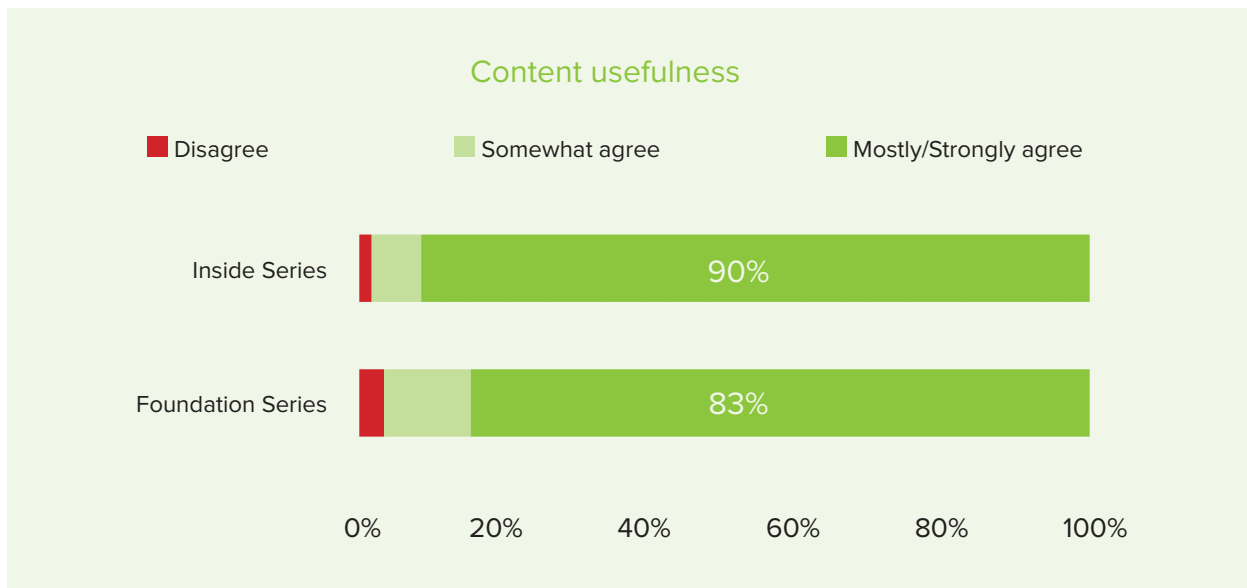
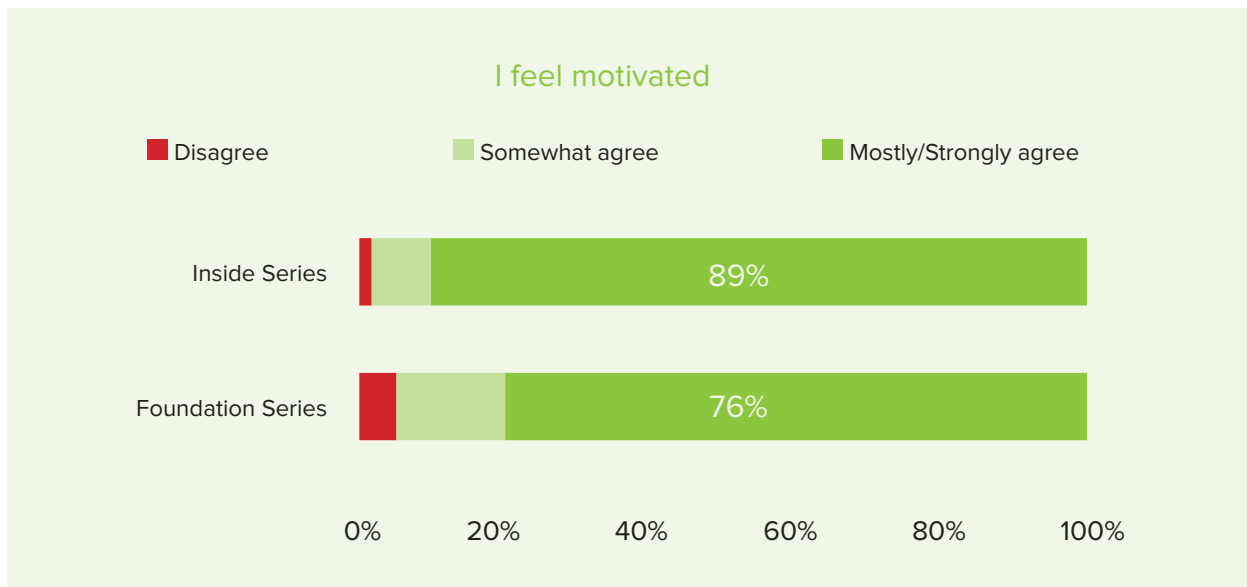


Figure 5: Visible Learning<sup>plus</sup> feedback results on the level of participants' motivation to incorporate the learning of the workshops for various international projects





## What was our impact?

The results across the four indicators of output quality show that overall the Visible Learning<sup>plus</sup> workshops are well received by participants. Most areas achieve levels of agreement above the Visible Learning<sup>plus</sup> quality standard where 80% mostly/strongly agree that these areas are of high quality. From the Foundation Series, the level of participants' motivation to incorporate the learning in their own context is just below the Visible Learning<sup>plus</sup> quality standard (76%). However, this result was impacted by the omission of this item at one of the workshops, and the data for motivation is therefore skewed.

These results indicate that participants value the workshops and that the immediate output quality of the Visible Learning workshops is deemed high. Text and sentiment analysis affirmed the responses to the workshops presented above. Results show that a high proportion of participants (87%) commented that their professional practices were challenged in the workshop and they left the workshops valuing the information that was presented.

As mentioned previously, another piece of information obtained from the workshop evaluations relates to understanding the relationships between the intermediate-long-term stages and the Visible Learning program theory. Again, Visible Learning uses the criteria where more than 80% of participants mostly/strongly agree that the areas covered are evidence of the impact of the program.

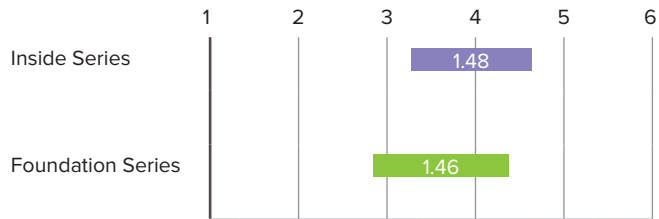
Text and sentiment analysis of the open-ended information section of the workshop evaluations affirmed the responses presented above, where 85% of participants reported a similar sentiment that the program worked well to support student achievement through enhancing respondents' understanding of concepts, practices, and processes.

The analysis provided strong evidence that the workshops successfully increased the level of participants' understanding of the principles and research behind Visible Learning, and the attitudes they need as educators to challenge and change these.

Participants also left understanding what influences student achievement and felt motivated to make changes in their classrooms and schools. This finding reinforces the value of the Visible Learning<sup>plus</sup> workshops for participants.

Figure 6: Visible Learning<sup>plus</sup> feedback results for the shift in understanding participants' experiences across the international projects

### Shift in understanding before vs after the workshops



Participants were also motivated and encouraged to put the workshop theory into practice, indicating that at an individual- and a school-level, they had a strong readiness to change.

Figure 6 shows the average gains in understanding that participants felt before and after the Foundation Series and Inside Series. The average shift of understanding across the workshops of 1.46 for the Foundation Series and 1.48 for the Inside Series is higher than the 1.00 standard minimum shift expected for all Visible Learning<sup>plus</sup> workshops.

Overall, document analyses showed the following themes relating to the quality and learning participants experienced at the workshops:

- excellent practical tools and examples
- comprehensive learning was delivered in relation to the importance of providing effective feedback to students
- group discussion greatly enhanced the learning of the Visible Learning<sup>plus</sup> concepts
- a deepening in the understanding of the Visible Learning research
- use of high-quality workshop materials.

## School Capability Assessments

### What are Visible Learning School Capability Assessments?

As part of the Visible Learning<sup>plus</sup> program, Impact Schools received two half-day site visits from the consultants. The purpose is to evaluate schools' current practices against the characteristics outlined in the four Visible Learning<sup>plus</sup> strands and then again at the end of the year. These two evaluations allow schools and the Visible Learning<sup>plus</sup> team to measure the impact of the Visible Learning<sup>plus</sup> program at the school level, namely:

- *The Visible Learner*: Students who know about and are active in their learning. They understand where they are at, how they are doing, and where they are going to next. These students self-assess against success criteria, as well as give and receive feedback based on success criteria.
- *Know thy Impact*: Teachers who evaluate what they are doing and adjust their programs according to the evidence they have collected and analysed, thus allowing all students to succeed. This may involve using an effect size to understand student progress.
- *Inspired and Passionate Teachers*: Teachers who develop strong relationships with their students, engage in dialogue, challenge students to go beyond what they thought they could achieve, evaluate their practice, and see assessment as feedback about them.
- *Feedback*: Understanding the role of feedback in the classroom and the power of providing students with information about where they are at, how they are doing, where they are going, and how they are going to get there. Feedback works best when teachers understand and use the four feedback levels in their practice.

The following aggregates the findings of school capability assessments from 110 schools located in New Zealand and Australia (Northern Territory and Queensland states) from 2012 to 2014.

Focus questions for each strand enabled the consultants to analyse the schools' systems and their supporting documents systematically, facilitate semi-structured interviews with school leaders, teachers, and students, and conduct qualitative observations of a sample of classroom interactions. This allows the consultant and the school to understand which of their current practices are already meeting some or all of the characteristics within each strand.

Against the categories of *vision and values, knowledge and understanding, personal qualities, and professional practices*, the consultants rated the degree to which evidence of the four VL strands was present. Quantitative information was analysed using the proportional information made at Time 1 of the assessment and again at Time 2. Text and document analysis was used to establish the patterns and trends in the responses from the open-ended sections of the workshop evaluations.

## How well are schools going?

Gains analysis of the consultants' ratings showed that Impact Schools greatly increase their capability to make the Visible Learning<sup>plus</sup> strands commonplace and embedded within their schools. An example of this progress is shown in a project that Visible Learning<sup>plus</sup> conducted in 2014, which consisted of New Zealand and Australian schools.

Results showed that within each of the four categories, the ratings increased systematically across all the Visible Learning<sup>plus</sup> strands. This finding is also supported by the consultants' reports across the school year (March and November), where the majority of schools have on average moved from not having established practices to having practices that either exist or that are commonplace and systematically embedded throughout the school year.

Another example of the Visible Learning<sup>plus</sup> program's impact at the school level is from the Northern Territory project. The power of this analysis is that it is longitudinal, thus allowing for school capability progress to be assessed across multiple years (2012, 2013, and 2014).

The following figure provides a graphical presentation of this progress for each Visible Learning<sup>plus</sup> strand (see Figures 6 and 7). Each graph shows a bar graduating from the colour red through to blue. These colours represent the gradual progress that schools go through under each category on each strand, where:

- the **red** gradient within the bar represents vision and values, knowledge and understanding, and personal qualities and professional practices that are not established within the sample of schools
- the **orange** gradient within the middle section of the bar represents vision and values, knowledge and understanding, and personal qualities and professional practices that have been found to exist in the sample but in small pockets only
- the **green** gradient within the middle section of the bar represents vision and values, knowledge and understanding, and personal qualities and professional practices that have been found to exist in the sample but which could not be considered commonplace or systematic
- the **blue** gradient within the bar represents vision and values, knowledge and understanding, and personal qualities and professional practices that have been found to be commonplace and systematically embedded in the cluster.

Within each graph, the three lines are:

- the **blue** line represents the cluster average of the colour ratings attributed by the Visible Learning<sup>plus</sup> team to each component in 2012
- the **black** line represents the cluster average of the colour ratings attributed by the Visible Learning<sup>plus</sup> team to each component in 2013
- the **purple** line represents the cluster average of the colour ratings attributed by the Visible Learning<sup>plus</sup> team to each component in 2014.

Figure 6: Northern Territory School Capability Assessments for the Visible Learner and Know thy Impact strands (2012, 2013, and 2014)

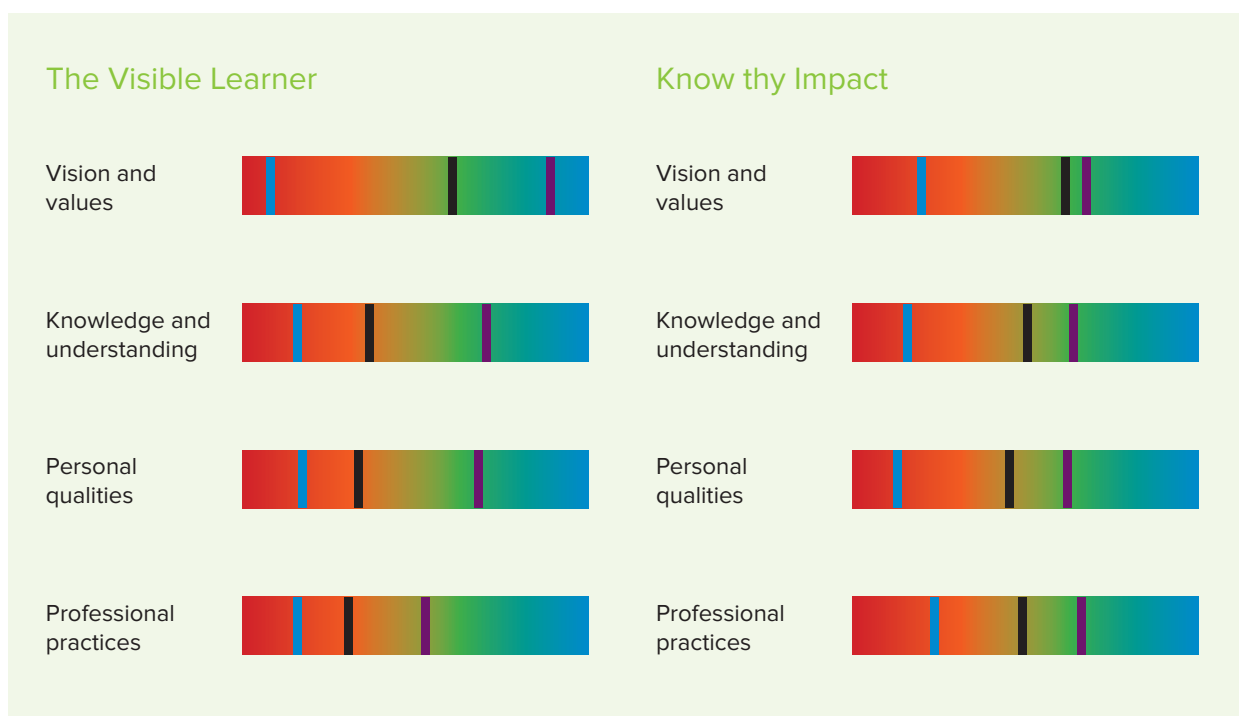
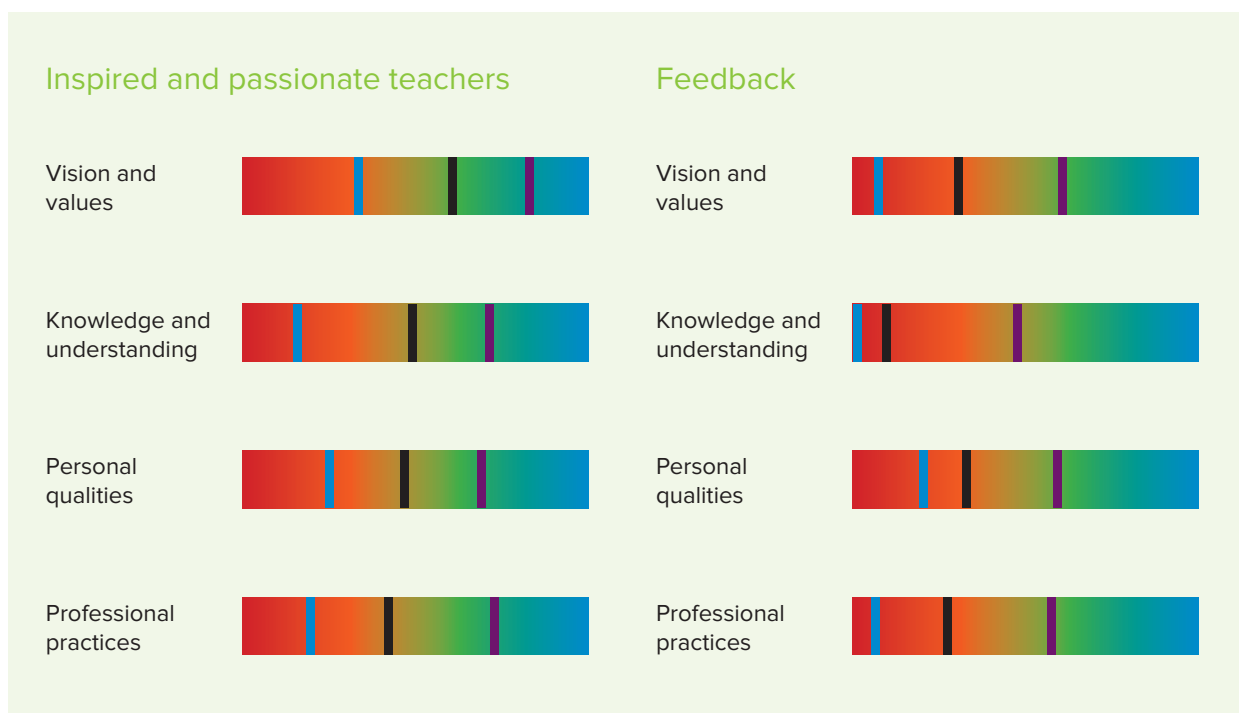


Figure 7: Northern Territory School Capability Assessments for the Inspired and Passionate Teachers and Feedback strands (2012, 2013, and 2014)



## How well are schools going (continued)?

Results across all strands showed an ongoing improvement over the last three years. Some of the strand categories have increased relatively evenly across the schools, such as professional practices. Others, such as the development of personal qualities for Feedback, have taken longer to become embedded in schools. However, this area had a three-fold improvement in the 2013–2014 period.

Combined text and document analysis across all New Zealand and Australian schools showed the recurring themes that indicated the impact of the program across the school year.

### The Visible Learner

- Schools have a clear vision for their learners and have developed mission statements with staff, which are shared with the parent community.
- There is a clear understanding of what a ‘visible learner’ looks like, especially in relation to students’ ability to self-regulate and monitor their learning.
- Behaviour in classrooms indicates that they are more student-directed, relying less on the teacher being responsible for student learning.
- The language of Visible Learning is embedded among school leaders, impact coaches, teachers, and students.
- There are regular meetings of student leaders and school leadership, where students have the confidence to engage comfortably.
- There is visible documented evidence and understanding of what progress looks like across the curriculum.

### Know thy Impact

- Effect sizes are used and understood in the school.
- There is a shared understanding of data and data plans, with senior leadership driving these conversations and actions.
- Leadership has developed a rigorous assessment schedule.
- Learning is displayed in classrooms, e.g., data progress walls.
- Students can articulate where they are at in their learning and what their next learning steps will be.
- Collaborative planning times are timetabled.
- Formative and summative data collection is commonplace.

## Inspired and Passionate Teachers

- This is strongly leadership led
- The leadership aim is for all teachers to believe that they are the agents of change in recognising learning opportunities and making links between tasks, questions, and challenges.
- Leadership is driving the focus for success criteria to be on learning and success in learning rather than on the completion of tasks.
- There is a common language of learning across all areas of the curriculum.
- There is a common understanding and vision of the teacher capabilities that leadership wants to be developed.

## Feedback

- There is a high degree of relational trust.
- Teacher voice vs student voice dynamic, where teachers need to let go of their locus of control to allow for student voice.
- Leadership clearly communicates the desire/vision of a feedback culture within their school.
- Leadership ensures that feedback is part of the school's action plan.
- Leadership ensures that feedback is occurring with students and parents.
- Leadership and teachers value student feedback, and students are confident in the changing relationship dynamic with their teacher.

In general, whether progress is within a school year or across many, there is clear evidence that the Visible Learning<sup>plus</sup> program continues to develop, deepen, and grow in order to support ongoing and sustained school-wide capability.

## Mindframes Survey

### What are the Visible Learning<sup>plus</sup> mindframes?

The Mindframes Survey is a tool that was developed to represent the mindframes that Professor John Hattie's research has shown are integral to understanding the set of beliefs that teachers and school leaders have towards the impact of their practice.

A major argument in Hattie's book *Visible Learning for Teachers: Maximizing Impact on Learning* (2012, p. 159) relates to how teachers think:

“There are a set of mind frames that underpin our every action and decision in a school; it is a belief that we are evaluators, change agents, adaptive learning experts, seekers of feedback about our impact, engaged in dialogue and challenge, and developers of trust with all, and that we see opportunity in error, and are keen to spread the message about the power, fun and impact we have on learning.”

Therefore, teachers need to be aware of their mindframes or ways of thinking, because we know that how we think impacts on what we do and the messages we convey. Teachers who are aware of and can adopt the mindframes outlined in Professor Hattie's book are more likely to have a greater positive impact on their students' learning.

The Mindframes Survey consists of 58 statements that measure 12 areas relating to a range of mindframes that reflect teachers' pedagogical beliefs and approaches. Participants respond by indicating the extent to which they agree (e.g., *somewhat agree*, *agree*, *strongly agree*, or *very strongly agree*) or disagree (e.g., *disagree*, *strongly disagree*) that each statement reflects their mindframes. The aim is that teachers and school leaders will be able to evaluate the extent to which the 'theories of practice' are evidence of their school's results. This in turn can assist teachers to optimise the awareness of their mindframes and help school leaders to identify the mindframes that teachers in their school hold most strongly or weakly.

This measure is implemented at least twice throughout a year-long Visible Learning<sup>plus</sup> program, typically near the beginning and at the end of the year.

The following is an aggregation of findings from the Mindframes Survey data that comes from more than a thousand teachers and school leaders in New Zealand and Australia (Northern Territory and Queensland states) from 2013 to 2014.



## What are their mindframes?

The Visible Learning<sup>plus</sup> philosophy posits that the way educators frame how they think about teaching and learning has a strong impact on their students' learning and achievement outcomes. Empirical data from multiple projects has confirmed this theoretical position, with data from the Mindframes Survey showing a strong correlation between student achievement data ( $r = .75$ ). For example, at the beginning of the Visible Learning<sup>plus</sup> program, some Northern Territory teachers believed that a student's ability could not be changed through teaching. Therefore, some students fail because they are not able to succeed. An example of this finding came from indigenous Australian students, where teachers had more negative views about their learning abilities compared with non-indigenous students, believing that it was not possible for them to learn. When repeated at Time 2, survey results showed a statistically significant shift in these attitudes, with most teachers instead recognising themselves as change agents with regard to raising all students' levels of achievement.

There is positive growth in participants' levels of agreement across all the twelve mindframes. The gain for each of these areas is typically close to a full response option. For example, items measuring the degree to which teachers see errors as being a welcomed part of students' learning moves from *agree* (average = 3.50) to *agree strongly* (average = 4.43).

The following table shows the average of participants' responses at the beginning of the year (Time 1) and at the end of the year (Time 2).

Table 1: Aggregated Mindframes Survey responses average gain for the 12 mindframe at Times 1 and 2

Mindframes – Time 1	Average T1	Average T2	Average gain
Fixed vs Growth (change agent)	2.77	3.56	0.79
Focus on learning	3.00	4.10	1.10
Student voice	3.25	4.05	0.80
Know thy Impact	3.29	4.41	1.12
High expectations for all	3.39	4.75	1.36
Dialogue, not monologue	3.44	4.58	1.14
Trust in class	3.44	4.12	0.68
Errors are welcome	3.50	4.43	0.93
Teaching is to DIE for	3.50	4.79	1.29
Awareness of growth	3.55	4.63	1.08
Challenge vs do your best	3.61	4.46	0.85
Assessment for teaching	3.70	4.95	1.25

## Classroom Observation Tool

### What is the Classroom Observation Tool?

Observation of teacher practice is recognised as an essential element of all teachers' performance and development process. Research argues that the most effective way to change teacher practice is to conduct classroom observations that are accompanied by individualised and structured feedback to the teacher (Timperley, Wilson, Barrar, & Fung, 2007). It is proposed that this is the most effective approach to enhance a teacher's learning and show how he or she is improving his or her practice in order to have a greater impact on student learning, engagement, progress, and achievement.

Based on the philosophy of Visible Learning, the Visible Learning<sup>plus</sup> Classroom Observation Tool (COT) has been designed to gather evidence of teacher practice from the following three areas: students as visible learners, students' engagement in their own learning, and teachers' interactions with students within the classroom environment. Classroom observations over two or three time series also allow an assessment of the degree to which practices and teacher-student interactions change as the school evolves in its professional learning and implementation of the Visible Learning<sup>plus</sup> strands. Based on this relationship, the impact of a school's capability assessment is modelled against the performance of the classroom observations.

Given that the tool was developed in 2014, only schools in the Northern Territory of Australia have used it in their classrooms. A total of 16 Impact Coaches conducted 46 classroom observations – 25 in urban schools and 21 in remote schools. Almost half of the observations were conducted in English (including literacy and reading) classes, with the others during mathematics (28%) or science (7%) classes. The majority of observations were carried out in primary and middle schools (80%), with senior schools representing 20% of the classrooms observed (years 10–11).

As multiple Impact Coaches were applying the observation tool to various learning environments, it was important to establish how consistently Impact Coaches were assessing the same teacher and student behaviors and interactions. Using Cohen's Kappa inter-rater reliability approach, the findings showed that all three parts of the tool had high reliability coefficients of 0.67 (Part 1), 0.74 (Part 2), and 0.88 (Part 3). These results indicate a high degree of similarity across observers, and therefore, there can be a high level of confidence in the results, which are presented in the following section.

The following analysis was conducted using text and document analysis on the Impact Coach's observation tool and post-observation report. The analysis here summarises the findings from all three parts of the tool: The Visible Learner, Inspired and Passionate Teachers, and student engagement in their learning.

## What is happening in the classroom?

Text analytics were used to show the changes in teachers' classroom behaviour across the Time 1 and Time 2 observations. The interactions among the students in the class showed strong evidence of the Visible Learning<sup>plus</sup> principles. Students were supporting their peers in their learning by reading out specific areas and helping answer questions. Students were also observed checking each other's work and asking them questions about what they were doing. Students were also seeking feedback from other students, including helping to identify errors in their work and asking others or their teacher for clarification. Ideas were being shared, and students frequently asked for feedback from other students and the teacher. In relation to being aware of what their next steps are, students had distinct steps in their learning that were attached to tasks (e.g., task sheets) throughout the lesson.

Teachers were most successful at displaying Inspired and Passionate Teaching in the classroom. Dominant behaviours that were visible under this strand included teachers making learning progressions clear to all students, providing feedback to students and engaging in dialogue with them. Observations also found that teachers were strong at Knowing thy Impact, particularly in relation to gathering evidence of student progress and learning and an increased engagement in dialogue with students, particularly providing increased levels of feedback to students.

Part 3 of the Classroom Observation Tool focuses on asking students about their perceived engagement in their learning. Most indigenous and non-indigenous students (86%) could articulate what they had learned in the lesson, making both specific (task-related) and general learning references. This was a statistically significant gain from the 32% of students that were assessed at the first observation. Observations of teacher-student and student-student interactions reflected that indigenous students were more positive, engaged, and motivated during classroom activities. This was validated by the students' feedback, which showed that these students had developed a clearer focus on what their next learning steps were and confidence in their ability to achieve these progressions.

There was an overall positive reaction to the tool and the observational process. Evidence of this came from text and sentiment analysis conducted on post-observation interviews with the Impact Coaches and observed teachers.

Impact Coaches stated that the tool:

- provided an opportunity for the teacher being observed to draw their own conclusions about their teaching behavior and practices
- assisted in understanding the Visible Learning<sup>plus</sup> strands and characteristics by seeing them in the classroom environment.

The teachers were equally positive about the use of the Classroom Observation Tool stating that:

- the observations on their interactions and practice in the classroom are extremely valuable
- it provided standardised evidence as to what they are doing well and what they need to work on.

Overall, the schools were enthusiastic about having a robust, standardised tool with strong psychometric properties, which could be used on an ongoing basis with their teachers to assess and develop in the various Visible Learning<sup>plus</sup> strands.

## Student Achievement

### What is the impact on students?

Ultimately, the long-term impact of the Visible Learning<sup>plus</sup> program is evidence of the progress in learning that students make. The challenge in measuring the impact of the program is establishing which changes in student achievement can be attributed beyond the normal maturation and learning gains made by students over a school year. As Professor Hattie argues, at least half of all teachers attain an effect size of 0.4 as a consequence of their actions. Interpreted further, an effect of 0.4 can be seen on average, as the typical effect occurring across a school year. Therefore, when analysing the impact of the Visible Learning<sup>plus</sup> program, we can say that anything with an effect size of over 0.4 is likely to be attributable to the program having a *positive* additive effect on student outcomes.

The following aggregates the findings of student achievement from 100 schools (over 2000 students) in New Zealand and Australia, longitudinally across the last three years (2012, 2013, and 2014).

The following normed-referenced standardised tests have been used to assess this impact: Progressive Achievement Test (PAT) – reading; Progressive Achievement Test (PAT) – Mathematics; Australian Victorian Essential Learning Standards (AusVELS); National Assessment Program – Literacy and Numeracy (NAPLAN) data. In summarising the impact of student achievement under these different tests across multiple projects, test alignment and growth score analysis was based on the proportion of students achieving the national minimum standards<sup>2</sup>.

Gains analyses provided a clear picture of student progress in literacy and numeracy within a set time frame. The average scores across each test that was administered twice during the school year (February/March and November) were higher at the end of the year (approximately eight months after Time 1). Independent group's *t*-tests confirmed that students across all year levels (1–10) achieved statistically significant improvements in performance from Test 1 to Test 2.

Importantly on average, 65% of students performed *at* or above each respective test's national (or regional) norms. Further impact was found where schools had been involved in the Visible Learning<sup>plus</sup> program for more than one year, where on average 72% of students performed *at* or above normed performance scores by 2014. The overall effect sizes relative to each year level were established across each of the schools, across all the projects (see Table 2).

Table 2: Aggregated student achievement data showing growth in student achievement scores and effect sizes for PAT-R, PAT-M, and AusVELS tests (2012 to 2014)

Year level	Time 1 Time 2 effect sizes (8–9 months)
1	1.34
2	0.69
3	0.64
4	0.72
5	0.66
6	0.69
7	0.65
8	0.52
9	0.53
10	0.63

**What is the impact on students?**

Effect sizes were used so that the overall impact of the Visible Learning<sup>plus</sup> program could be quantified, interpreted, and compared. Results over the past three years show that effect sizes, beyond the normative effect sizes, across years 1 to 10 have been achieved. According to Cohen’s (1997) effect size criteria, these findings indicate a medium to large impact on increasing the learning and achievement of students involved in the Visible Learning<sup>plus</sup> program.

## Explaining Impact

### Can the impact on student achievement be predicted?

As mentioned earlier, the evaluation tools outlined in this report provide the mechanisms from which each of the program's components (workshops and activities) can be assessed. Effect sizes show that collectively the components within the Visible Learning<sup>plus</sup> program have a significant impact on contributing to increasing student learning and achievement. Also of interest is how much each of the program's components is contributing.

Regression and path analysis was conducted to allow the modelling of the program's components in order to assess their individual impact on student achievement. Data from the school capability assessment (ratings and theme analysis) and the Mindframes Survey was analysed using an unmediated and a mediated modelling approach. Direct effects show that schools that had strong gains in their school capability assessments (across Time 1 and Time 2) had a positive significant relationship with the relative gains of their students' performance ( $r = 0.77, p < .01$ ). Similarly, schools with the largest gains in the mindframes results of their school leaders and teachers (across Time 1 and Time 2), also had a significant positive relationship with the relative gains of their students' performance ( $r = .58, p < .01$ ).

In summary, the gains that schools make in their Visible Learning capabilities across the year strongly predict the expected outcomes in student achievement.

To a lesser degree, school leader and teacher mindframes predict the end of year student achievement. These two components of the Visible Learning<sup>plus</sup> evaluation are mutually exclusive – you do not need to have high performances in both areas to have an impact on student achievement.

By the end of 2015, the Visible Learning<sup>plus</sup> team will have enough assessment and evaluation data to conduct further sophisticated structural equation modelling. For example, a substantial amount of Time 1 and Time 2 classroom observation data will have been collected. However, the analysis presented here clearly indicates that both school-level developments in Visible Learning and school leader and teacher-level attitudes towards pedagogy and practice have a profound impact on the subsequent achievement students make.

## Conclusion

**There has been an impact!**

The evaluation information generated from the Visible Learning<sup>plus</sup> tools is vitally important for the Visible Learning<sup>plus</sup> team. First, it provides empirical evidence of the impact that is being made at each major step of the program's delivery. It also provides an insight into each school's capability, development, and implementation of Visible Learning throughout the program.

For schools, such evaluative information provides vital feedback on their performance from the visionary and aspirational levels through to the procedures and practices that ensure they are living and breathing the Visible Learning philosophy. The feedback importantly helps schools to develop a culture of self-reflection at an organisational level, which in the long term generates and maintains an ongoing process of internal evaluation.

Feedback from the workshop evaluations overwhelmingly shows that the facilitation of the workshops and the resources used are high quality. Participants also found the content valuable in making connections between the Visible Learning philosophy and its practical application to school and classroom practices and processes. Longitudinal data that becomes available from other Visible Learning<sup>plus</sup> workshops, such as the Inside Series, will also provide additional feedback on the overall quality of the Visible Learning<sup>plus</sup> workshops. Similarly, school capability assessments showed statistically significant gains from the beginning of the year to the end of year performance. Findings derived from three years of assessments across Northern Territory schools in Australia showed that across all the Visible Learning strands, schools continued to develop their proficiencies. So much so, that by 2014, schools were showing evidence that vision and values, knowledge and understanding, and personal qualities and professional practices were being embedded and integrated throughout the schools.

Across all the strands, significant progress was made in the vision and values held by schools for each of the four strands. Given that a clear vision is one of the most important functions of any organisation, this is an important result. In addition to the vision being the first and vital step in a school's strategic planning, a vision that is shared by all within a school helps goals to be set, motivation to be maintained and all participants (teachers and students) to feel empowered.

The assessment of teachers' mindframes in relation to their practice and the perceived learning capability of their students are of paramount importance. Time 1 data shows considerable variability of responses across participants.



By Time 2, however, there has been a statistically significant change in perceptions towards teaching. One of the biggest mindframe changes by Time 2 is that teachers view assessment as feedback about their impact. Here the changes in mindframes progress from believing the fundamental reason for assessment is to find out 'what you taught well (or not)', to 'whom you taught well'.

School leaders and teachers also showed a significant change in developing high expectations for all their students. This is an encouraging result given that numerous studies have shown a strong correlation between student achievement and schools that have built a culture where there is a demand that teachers have high expectations of their students and where students also have high expectations for themselves.

Classroom observations are an excellent way of determining the level to which the Visible Learning<sup>plus</sup> program has been embedded within teachers' classroom practices. Findings from the text analytics of the Classroom Observation Tool showed that teachers were most successful at implementing the characteristics of Inspired and Passionate Teaching in their classroom.

### There has been an impact!

The optimum outcome for schools participating in the program is to see increases in their student achievement data. Effects sizes showed that across all school years 1 to 10, the philosophy and practice of Visible Learning is positively impacting on student learning. Proportional findings showed that on average, Visible Learning students were performing at or above their peers across these years, with this finding cross-validated across different normed-referenced standardised tests. An exciting finding is the increase in the number of students outperforming their non-Visible Learning peers beyond the first year of the program. This indicates that the program not only has an impact in the first year of implementation, but that this impact builds and is sustained in subsequent years.

When examining the relationships between each evaluation component and student learning, results conveyed that the progress made by schools at the school-level were the best predictor of an increase in student performance. Given that this capability data showed that schools had made the greatest gains in their Visible Learning vision and aspirations, it can be inferred that the visionary-aspirational impact alone has a considerable impact on the subsequent performance outcomes of students.

The student achievement findings also show the generic applicability of the Visible Learning<sup>plus</sup> program to different educational curriculums and contexts. This is evidenced by the student achievement analysis conducted for this report where the empirical evidence of impact was found across different standardised normed-referenced tests in two countries. Even within Australia, the performance data from three different tests still showed the impact of the program. As such, the effectiveness of Visible Learning is not dependent on prescribed learning standards or context.

The degree of impact is also not subject-specific, as strong performances against norms were found in both numeracy and literacy results.

Given Visible Learning's commitment to gathering evaluation data from all the schools it is engaged with, future analysis will not only serve to affirm the findings presented here but allow for more specific and detailed analysis to be conducted at each level of the program's activities. For example, new international projects commencing in 2015 include metrics on teacher turnover and system-level capabilities and operations. In addition, in-depth analysis is being conducted on some of the specific roles that are part of the program's success, such as the Impact Coaches and community engagement.

Ongoing, such information will continue to build on the knowledge and understanding that the Visible Learning team has on their program's impact across schools, communities, educational systems – and most importantly on student learning – around the world.





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