

Supported Students, Successful Students

Positive Behaviour for Learning evaluation

Final report appendices 2020

Centre for Education Statistics and Evaluation



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Appendix A

Positive Behaviour for Learning tiers

Tier 1

Tier 1 is for all students and involves staff engaging in direct, explicit teaching of behaviour expectations. Staff provide consistent positive feedback to students when they display the expected behaviours, and deliver consistent corrective feedback and consequences when expectations are not followed. The entire school, including the classrooms, corridors, canteen, school gates and public transport, can benefit from behaviour expectations that apply to each setting. The focus is on establishing or refining universal school-wide and classroom systems that support all students and all staff, across all settings within their school. These universal supports are established to create positive teaching and learning environments that promote social and academic success. The key features of universal support include developing a common language and focus for all students, staff and families, and establishing clear shared expectations for behaviour and learning that are explicitly taught for different school settings. The other key features include consistent acknowledgement and feedback as well as a continuum of strategies to respond to students who are not following the school's expectations and rules.

Tier 2

A key focus of tier 2 is to refine and establish systems and support for students who need additional support in learning and in managing their behaviour at school. Developing school systems that support students to access extra support early, reduces the likelihood that the learning and behaviour needs will become chronic. The aim is to proactively respond as early as possible. Tier 2 is characterised by a team driven process to proactively respond to student need. Approximately 10-15% of students may require tier 2 interventions. The goal is to provide students with additional support and feedback that will help them to use positive behaviours to effectively engage in learning. These interventions typically include frequent behaviour monitoring, feedback on behaviour, and regular support from adults within the school. Tier 2 interventions build on tier 1 by providing some students with additional social, emotional and behavioural support. However, these targeted supports are not intended to be a permanent intervention or adjustment for a student.

Tier 3

Tier 3 is characterised by intensive individualised interventions for a small proportion of students (approximately 1-5% of students may need tier 3 interventions). Some students may engage in chronic challenging behaviour particularly when they have experienced academic and or behavioural difficulties over an extended period of time. Other students may have complex academic and/or mental health needs that require intensive support. Developing systems to support these students involves working in consultation with the school learning and support team and other specialist support staff, such as the learning and support teacher or the school counsellor. Support also involves working with the individual student and people who know the student best, including family or carers. For students with chronic challenging behaviour, the interventions usually involve a functional behavioural assessment to identify factors in the environment that are influencing a student's behaviour. An individualised behavioural support plan is then developed which is linked to the universal tier 1 school-wide expectations.

Appendix B

Evidence for Positive Behaviour for Learning effectiveness

Positive Behaviour for Learning (PBL) has been adapted from a framework developed in the United States (US), called Positive Behaviour Interventions and Supports (PBIS). It is also known in the US as School Wide Positive Behaviour Support (SWPBS) or Positive Behaviour in Schools (PBS). In Australia, the framework has been modified to emphasise positive learning outcomes in addition to positive behaviour outcomes.

Examining the evidence base for PBL is challenging for a number of reasons. First, schools are very diverse and differ in size, location, local culture, socioeconomic status, staff characteristics, behaviour management practices, and methods of discipline referrals. Second, schools vary in their level of pre-existing behaviour problems. Third, schools vary in the extent to which they have collected data on pre-existing behaviour. Fourth, randomised control trials of PBL are rare due to difficulties associated with randomly allocating schools to either the treatment (PBL) or control group. Fifth, schools vary in the other programs they implement which makes it challenging to isolate the impact of PBL on student behaviour, engagement and learning outcomes.

In an attempt to examine the evidence base for PBL, Horner, Sugai and Anderson (2010)¹ reviewed 46 articles published between 2000 and 2009 against five criteria.² They concluded that the overall PBL approach can be classified as evidence based and is sufficient to warrant large scale implementation. However, Chitiyo, May, and Chitiyo (2012)³ later applied more stringent criteria in reviewing these studies, many of which they noted were descriptive, non-experimental studies based on a single-case design. Chitiyo et al. (2012) identified that only 10 studies published between 1990 and 2011 had experimental designs. Of these, only three had rigorous experimental designs and only two met their more stringent criteria. Chitiyo et al. (2012) concluded that “although there is evidence pointing to its efficacy, the research behind SWPBS [School Wide Positive Behaviour Support] is still weak”.

The two studies that met the stringent criteria were Bradshaw, Mitchell and Leaf (2010)⁴ and Horner et al. (2009)⁵. Bradshaw et al. (2010) found significant reductions in office discipline referrals and suspensions, and significant improvements in standardised test achievement scores. Attendance was not measured in this study. Horner et al. (2009) found improvements in the perceived safety of the school

- 1 Horner, R., Sugai, G., & Anderson, C. (2010). Examining the evidence base for school-wide positive behaviour support. *Focus on Exceptional Children*, 42(8), 1-14.
- 2 The five criteria identified by Horner et al. (2010) are: 1) The practice and participants are defined with operational precision to allow replication, 2) The research employs valid and reliable measures, 3) The research is grounded in rigorous methodological designs, 4) The research documents experimental effects without iatrogenic outcomes, and 5) The research documents effects.
- 3 Chitiyo, M., May, M.E., & Chitiyo, G. (2012). An assessment of the evidence-base for school-wide positive behavior support. *Education and Treatment of Children*, 35, 1-24.
- 4 Bradshaw, C. P., Mitchell, M. M., & Leaf, P. J. (2010). Examining the effects of schoolwide positive behavioral interventions and supports on student outcomes: Results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions*, 12, 133-148. doi:10.1177/1098300709334798
- 5 Horner, R. H., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A. W., & Esperanza, J. (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behaviour support in elementary schools. *Journal of Positive Behavior Interventions*, 11, 133-144. doi:10.1177/1098300709332067

setting and the proportion of students meeting or exceeding state reading assessment standards. Results also document low levels of office discipline referrals, but there was no experimental control for this variable. Suspensions and attendance were not measured in this study.

In evaluating PBL effectiveness the most common measure of behaviour change is office discipline referrals (Upreti, Liaupsin and Koonce, 2010)⁶, but others include suspension, expulsion and attendance. Academic changes are also sometimes examined. Researchers note that a key limitation in measuring these behavioural outcomes are the differing behaviour management practices across schools. A range of other evaluation challenges are documented by researchers, which they explain make it difficult to isolate the effects of PBL.

Another indicator of the effectiveness for PBL is the extent to which schools abandon it after implementation. Nese et al. (2016)⁷ examined over 900 US schools and found that only 7% abandoned PBL within five years. This low abandonment rate suggests that schools believe PBL is a successful and worthwhile framework.

In Australia, PBL was introduced at a small number of schools in the western Sydney region in 2005 and since then it has been progressively expanded to other schools. Mooney et al. (2008)⁸ evaluated a trial of PBL in 20 of these original western Sydney region schools. Across all schools, PBL did not appear to have an impact on attendance and suspension rates. However, these schools generally had high attendance and low suspension rates, so there may have been ceiling effects for attendance and floor effects for suspensions. There are also limitations to using attendance and suspensions as outcomes measures.

Mooney et al. (2008) also examined different types of suspensions (for example, short versus long) in primary and secondary schools. They found that in secondary schools implementing PBL, the number of long suspensions decreased by 26% in the period 2005 to 2007. In contrast, the number of long suspensions in a sample of non-PBL secondary schools increased by 34% over the same time period. This suggests that PBL may have an impact on long suspensions in secondary schools. In primary schools that were implementing PBL, as well as in a sample of non-PBL primary schools, suspension rates increased over the same time period. However, it should be noted that suspensions occur very infrequently in primary schools, so this may not be a good measure of PBL's effectiveness.

Mooney et al. (2008) also collected data on student self-concepts in domains of school competency, school affect, mathematics and English. Students in schools implementing PBL had significantly higher student self-concept ratings in school competency and mathematics compared to a sample of students in non-PBL schools. Students in PBL schools had higher scores on measures of motivation including belief, value, planning, management, and persistence, compared to students from non-PBL schools. Additionally, students in PBL schools had lower scores on a measure of disengagement than students in non-PBL schools.

6 Upreti, G., Liaupsin, C. and Koonce, D. (2010) Stakeholder utility: Perspectives on school-wide data for measurement, feedback, and evaluation, *Education and Treatment of Children*, 33 (4), 497-511.

7 Nese, R., McIntosh, K., Nese, J., Hoselton, R., Bloom, J., Johnson, N., Richter, M., Phillips, D., & Ghemraoui, A. (2016). Predicting Abandonment of school-wide positive behavioral interventions and supports. *Behavioral Disorders*, 42, 261-270.

8 Mooney, M., Dobia, B., Yeung, A., Barker, K., Power, A., & Watson, K. (2008). Positive behaviour for learning: Investigating the transfer of a United States system into NSW Department of Education and Training Western Sydney Region schools. Report published by The University of Western Sydney: Penrith NSW Australia.

Overall, Mooney et al. (2008) concluded that the introduction of PBL to schools in the Western Sydney Region had many positive benefits. Notably, it provided these schools with a systematic approach to behaviour management and enabled schools to develop a consistent, whole school approach to supporting positive behaviour.

Since the introduction of PBL to schools in the Western Sydney Region, an increasing number of schools across NSW have adopted the PBL framework. However, there has been no research conducted to systematically examine the widespread implementation or impact of the PBL framework in NSW public schools. Some schools have documented their impressions of PBL, citing benefits that include decreasing problematic behaviour incidents, decreasing suspensions and increasing levels of attendance.⁹

Together, the international and Australian research indicates that there is promising evidence for the positive effects of PBL. Schools that implement PBL report finding it a worthwhile investment of time and resources. Despite the difficulties associated with assessing whether PBL is an evidence-based practice, there appears to be emerging evidence pointing towards its effectiveness.

⁹ Lewis, T. and Mitchell, B. (2014). Keynote Address PBL: Wellbeing, Leadership and Engagement Conference, NSW Department of Education and Communities.

Appendix C

Summary of interview questions

Interview for schools who are new to Positive Behaviour for Learning

These questions examined why the school decided to implement Positive Behaviour for Learning (PBL) and key differences between PBL and the school's former approach to behaviour management. We explored early impacts of PBL on behaviour, school culture, and wellbeing. We also asked about the support structures around PBL, and whether the school had received support from a coach mentor or any other type of coach. Finally, we asked if there were any barriers to PBL implementation and any ways in which PBL could be improved.

Interview for schools who have been using Positive Behaviour for Learning for three or more years

These questions examined whether the school had a team leading PBL implementation and if so, how that team worked together. We explored the impacts of PBL, the aspects that were working well and the aspects that could be improved. We also asked if the school had received support from a coach mentor and whether they had used any PBL evaluation tools. Finally, we asked how the PBL support structures could be improved to further enhance the school's ability to implement PBL as intended.

Interview for former Positive Behaviour for Learning schools

These questions examined why the school stopped using PBL and the major challenges associated with PBL. We explored the school's current approach to managing social and behavioural expectations, and the perceived impacts on student behaviour and wellbeing. Finally, we asked about the strengths and limitations of the school's current approach and how this compared with PBL.

Interview for schools who have never used Positive Behaviour for Learning

These questions examined how the school manages social expectations and behaviour and the ways in which staff, parents and students contribute to behaviour management. We explored the impacts of the current approach as well as its strengths and limitations. We also asked if the school had ever considered implementing PBL and the issues that were considered in relation to this. Finally, we asked the interviewee to comment on their experience with other behaviour management approaches and how these compare to their current approach.

Interview for Positive Behaviour for Learning coach mentors

These questions examine the aspects of the coach mentor role that are working well and the aspects that are the most challenging. We explored the main ways in which coach mentors support schools and their perceptions of the key enablers and challenges for schools. We also asked about the extent to which coach mentors support schools in their use of PBL self-evaluation tools. Finally, we asked about the support available to coach mentors any suggestions to improve that support.

Interview for Positive Behaviour for Learning deputy principals

These questions explored how PBL deputy principals support PBL implementation, especially the support they provide to their teams of coach mentors. We examined how they build the capabilities of their coach mentors and how they coordinate and deliver local professional learning activities. Finally, we asked about their perceptions of the impact of PBL on student and staff wellbeing.

Interview for school services staff

These questions explored how school services staff support schools and their views on the effectiveness of PBL. We examined their perceptions of the major challenges faced by schools when implementing PBL. We also explored whether schools were integrating other wellbeing programs within their PBL frameworks. Finally, we examined how school services staff work with PBL deputy principals and any ways in which this could be improved.

Appendix D

PBL survey questions

Questions for schools that are currently implementing Positive Behaviour for Learning

Question no.	Question	Response type	Response options	Qualifiers
1	What is your role at the school?	Select one	Principal Deputy principal Head teacher Classroom teacher Other (please specify) <text box>	
2	Which of the following best describes Positive Behaviour for Learning at your school?	Select one	The school is currently implementing PBL The school is planning to implement PBL The school previously implemented PBL The school has never implemented PBL	If select a response other than 'The school is currently implementing PBL' skip to the corresponding question block.
3	How long has PBL been implemented at your school?	Select one	Less than one year One to three years More than three years	Only display if 'Yes, currently implementing PBL' selected at Q2.

Question no.	Question	Response type	Response options	Qualifiers
4	Describe the school's approach to behaviour management since implementing PBL.	Select all that apply	<p>There is a whole-school approach to discipline</p> <p>There is a teaching and learning approach to discipline</p> <p>A proactive approach, aimed at prevention, is used to manage behaviour</p> <p>Behavioural issues tend to be dealt with as they arise</p> <p>There is a punitive approach to behaviour management</p> <p>Our school doesn't have behavioural issues</p> <p>Other (please specify)</p>	Only display if 'Yes, currently implementing PBL' selected at Q2.
5	In what ways does the principal support implementation of a PBL approach?	Select any that are relevant	<p>Provides release time</p> <p>Organised funding for PBL</p> <p>Supported introduction of PBL</p> <p>Involved in the school's PBL team</p> <p>Reflects PBL in the school's strategic plan</p> <p>Other (please specify) <text box></p> <p>None of the above</p>	
6	How do students have a voice in the implementation of PBL, if at all?	Select any that are relevant	<p>Consultations with Student Representative Councils</p> <p>Consultations with student leadership groups</p> <p>Surveys</p> <p>Focus groups</p> <p>Student voice is not used for PBL implementation</p> <p>Other (please specify) <text box></p>	

Question no.	Question	Response type	Response options	Qualifiers
7	How do parents and caregivers have a voice in the implementation of PBL, if at all?	Select any that are relevant	<ul style="list-style-type: none"> Consultations via P & C meetings PBL information events School website or social media Surveys Focus groups Parental voice is not used for PBL implementation Other (please specify) <text box> 	
8	Does the school have a staff member who acts as a PBL coach within the school?	Select one	<ul style="list-style-type: none"> Yes (please specify this person's role) <text box> No Unsure 	
9	Has the school's team that leads PBL received professional learning or assistance from a state supported PBL coach mentor?	Select one	<ul style="list-style-type: none"> Yes No Unsure 	Only display if 'Yes, currently implementing PBL' selected at Q2

Question no.	Question	Response type	Response options	Qualifiers
10	What types of support has the school: requested from the PBL coach mentor? (may not have been provided) received from the PBL coach mentor (may not have been requested)	Select any that apply, matrix Column 1: School requested this support from the PBL coach mentor (may not have been provided) Column 2: PBL coach mentor provided this support (may not have been requested)	General information about PBL and what it involves Information about universal PBL processes Information about PBL evaluation tools Support with PBL evaluation tools Support in collecting and using data for decision making Advice about Tier 1 systems and practices Advice about Tier 2 and/or 3 systems, practices and specific interventions Information and/or training in functional behaviour assessments Professional learning on PBL Other (please specify) <text box> None of the above	Only display if 'Yes' selected in Q9.
11	How important was the support provided by the state supported PBL coach mentor?	Select one	Extremely important Very important Fairly important Not important Unsure	Only display if 'Yes' selected in Q9.
12	Does the school's team that implements PBL receive assistance from a coach outside of the school (e.g. staff member from another school), other than the state supported PBL coach mentors?	Select one	Yes No Unsure	

Question no.	Question	Response type	Response options	Qualifiers
13	How important was the support provided by the coach from outside the school (other than a PBL coach mentor)?	Select one	Extremely important Very important Fairly important Not important Unsure	Only display if 'Yes' selected in Q12.
Detailed questions about Positive Behaviour for Learning implementation				
14	<p>Please select either Yes or No for the following questions:</p> <ul style="list-style-type: none"> - Did the school develop a statement of purpose (that is, a common purpose and approach to discipline) specifically for PBL? - Did the school develop school-wide rules and expectations specifically for behaviour? - Are there systems or procedures in place that support staff to have a consistent approach to behaviour management? - Are there procedures for teaching expected behaviours to students? - Are there procedures for informing parents about expected behaviours? - Are there documented procedures for responding to problem behaviour? 	Answer all, select one response option for each	Yes No Unsure	
15	Are school-wide rules and/or expectations posted in a range of school settings including the classroom?	Select one	Yes No Unsure	Only display if 'Yes' is selected in Q14.

Question no.	Question	Response type	Response options	Qualifiers
16	Is there a school-wide reinforcement or feedback system linked to the expectations or rules?	Select one	Yes, we have specific verbal feedback Yes, we have a tangible reward system Yes, we have both a feedback and a tangible reward system No Unsure	Only display if 'Yes' is selected in Q14.
17	Please select either Yes or No for the following questions about data: - Does the school collect data on problem behaviour? - Does the team leading PBL keep track of whether the universal features of PBL are being implemented? - Does the team leading PBL use data to make planning decisions? - Before PBL, did the school collect any data on student behaviour?	Select one	Yes No Unsure	
18	Which of the following data on problem behaviour does the school collect?	Select all that apply	Location of problem behaviour Type of problem behaviour When the behaviour occurred Student/s involved Year group Summary of problem behaviours per day Late arrival of students to class None of the above	Only display if 'Yes' is selected for 'Does the school collect data on problem behaviour?' for Q17.

Question no.	Question	Response type	Response options	Qualifiers
19	How regularly is the data analysed to identify trends such as where and when problem behaviours occur?	Select one	A few times a year Once a term Once a month Weekly Unsure	Only display if 'Yes' is selected for 'Does the school collect data on problem behaviour?' for Q17.
20	What data management system does your school use to capture problem behaviours?	Open ended	<text box>	Only display if 'Yes' is selected for 'Does the school collect data on problem behaviour?' for Q17.
21	How easy is it to get data from this system to allow analysis of patterns across: - the school - individual students	Matrix	Very easy Fairly easy A little difficult Very difficult Unsure	Only display if 'Yes' is selected in matrix for Q17.
22	Has the school used any of the following PBL evaluation tools? - Benchmarks of Quality (BoQ) - Benchmarks for Advanced Tiers (BAT) - PBL Self-assessment Survey (SAS) - School-wide Evaluation Tool (SET) - Team Implementation Checklist (TIC)	Answer all, select one response for each	Yes No Unsure	

Question no.	Question	Response type	Response options	Qualifiers
23	Compared to other behaviour management approaches, how much time is needed to implement PBL effectively?	Select one	Much more time A little more time About the same time A little less time Much less time Unsure	Only display if 'Yes, currently implementing PBL' selected at Q2.
24	Which aspect of PBL is most time consuming to implement?	Text entry	<text box>	Only display if 'Yes, currently implementing PBL' selected at Q2.
25	Is there someone on the school team leading PBL who knows how to conduct functional behaviour assessments?	Select one	Yes No Unsure	
26	Is the school implementing a. Tier 2 – targeted interventions b. Tier 3 – intensive interventions	Matrix Two columns – Tier 2 and Tier 3 Select one	Yes No – but we are in planning stage No	Only display if 'Yes, currently implementing PBL' selected at Q2.
27	Have any students received a. Tier 2 support b. Tier 3 support	Matrix Two columns – Tier 2 and Tier 3 Select one	Yes No	Only display if 'Yes, currently implementing PBL' selected at Q2.

Question no.	Question	Response type	Response options	Qualifiers
28	Who makes the decisions about which students access targeted and intensive interventions?	Select all that apply	Team leading PBL Learning and support team/teacher Senior executive Classroom teachers Other (please specify) <text box>	Only display if 'Yes' is selected at Q26 or Q27.
29	How are the decisions made for students to access Tier 2 targeted and Tier 3 intensive interventions?	Select all that apply	Once a certain number of problem behaviours have been reached Teacher referral By monitoring data on behavioural incidents Parental request Other please specify <text box>	Only display if 'Yes' is selected at Q26 or Q27.
30	What types of targeted or intensive interventions does the school provide?	Select all that apply	Regular checking in and out with teachers during the day Regular student reflection on behaviour with the teacher Social skills program Motivational interviewing Functional behaviour assessment Prevention of escalating behaviours Development of an individual behaviour support plan Other please specify <text box>	Only display if 'Yes' is selected at Q26 or Q27.

Question no.	Question	Response type	Response options	Qualifiers
Impact of Positive Behaviour for Learning (only display this section if answered 'Yes, currently implementing Positive Behaviour for Learning' selected at Q2)				
31	How likely would you be to recommend PBL as an approach to behaviour management to a school in similar circumstances to yours?	Select one	Very likely Fairly likely Fairly unlikely Very unlikely Undecided	
32	How has the leadership culture changed since PBL was introduced in your school?	Select all that apply	Leadership has become more instructional Leadership has been distributed between more staff members The approach to leadership is more collaborative There is a more bureaucratic leadership structure Responsibilities rest on primarily one or two people There has been little observable change to the leadership culture	
33	Since implementing PBL what has been the impact on student wellbeing?	Select one	Substantially improved Somewhat improved Not changed Somewhat reduced Substantially reduced Don't know	
34	How do you know that student wellbeing has INSERT RESPONSE?	Open ended	<text box>	Display unless select 'don't know' at Q33.

Question no.	Question	Response type	Response options	Qualifiers
35	Since implementing PBL what has been the impact on school attendance?	Select one	Substantially improved Somewhat improved Not changed Somewhat reduced Substantially reduced Don't know	
36	Since implementing PBL what has been the impact on the number of minor behaviour incidents?	Select one	Decreased a lot Decreased a little Not changed Increased a little Increased a lot	
37	How do you know that minor incidents have INSERT RESPONSE OPTION?	Open ended	<text box>	Display unless select 'don't know' at Q33.
38	Since implementing PBL what has been the impact on the number of major behavioural incidents?	Select one	Decreased a lot Decreased a little Not changed Increased a little Increased a lot	
39	How do you know that major incidents have INSERT RESPONSE OPTION?	Open ended	<text box>	Display unless select 'don't know' at Q33.
40	Since implementing PBL what has been the impact on the number of short suspensions?	Select one	Decreased a lot Decreased a little Not changed Increased a little Increased a lot	

Question no.	Question	Response type	Response options	Qualifiers
41	Would you be happy to share any de-identified data (from PBL evaluation tools or other) with the CESE SSSS Evaluation Team to support systemic improvement for schools?	Select one	Yes No	
42	Please describe any challenges you have encountered in planning to implement PBL.	Open ended	<text box>	
43	Do you have any other comments about PBL that you would like to make?	Open ended	<text box>	

Questions for schools that are planning to implement Positive Behaviour for Learning

Question no.	Question	Response type	Response options	Qualifiers
1	What is your role at the school?	Select one	Principal Deputy principal Head teacher Classroom teacher Other (please specify) <text box>	
2	Which of the following best describes Positive Behaviour for Learning at your school?	Select one	The school is currently implementing PBL The school is planning to implement PBL The school previously implemented PBL The school has never implemented PBL	If select a response other than 'The school is planning to implement PBL' skip to the corresponding question block.

Question no.	Question	Response type	Response options	Qualifiers
3	In what ways does the principal intend to support implementation of a PBL approach?	Select any that are relevant	Provide release time Organise funding for PBL Support introduction of PBL Be involved in the school's PBL team Reflect PBL in the school's strategic plan Other (please specify) <text box> Still to be decided None of the above	
4	How do/will students have a voice in the implementation of PBL, if at all?	Select any that are relevant	Consultations with Student Representative Councils Consultations with student leadership groups Surveys Focus groups Student voice is not used for PBL implementation Still to be decided Other (please specify) <text box>	
5	How do/will parents and caregivers have a voice in the implementation of PBL, if at all?	Select any that are relevant	Consultations via P & C meetings PBL information events School website or social media Surveys Focus groups Parental voice is not used for PBL implementation Still to be decided Other (please specify) <text box>	

Question no.	Question	Response type	Response options	Qualifiers
6	Does/will the school have a staff member who acts as a PBL coach within the school?	Select one	Yes (please specify this person's role) <text box> No Still to be decided Unsure	
7	Has the school received professional learning or assistance from a state supported PBL coach mentor?	Select one	Yes No No, but they intend to Unsure	
8	What types of support has the school: a. requested from the PBL coach mentor? (may not have been provided) b. received from the PBL coach mentor (may not have been requested)	Select any that apply, matrix Column 1: School requested this support from the PBL coach mentor (may not have been provided) Column 2: PBL coach mentor provided this support (may not have been requested)	General information about PBL and what it involves Information about universal PBL processes Information about PBL evaluation tools Support with PBL evaluation tools Support in collecting and using data for decision making Advice about Tier 1 systems and practices Advice about Tier 2 and/or 3 systems, practices and specific interventions Information and/or training in functional behaviour assessments Professional learning on PBL Other (please specify) <text box> None of the above	Only display if answer to Q7 is 'yes'.

Question no.	Question	Response type	Response options	Qualifiers
9	How important was the support provided by the state supported PBL coach mentor?	Select one	Extremely important Very important Fairly important Not important Unsure	Only display if answer to Q7 is 'yes'.
10	Has the school received assistance from a coach outside of the school (e.g. staff member from another school), other than the state supported PBL coach mentors?	Select one	Yes No Unsure	
11	How important was the support provided by the coach from outside the school (other than a PBL coach mentor)?	Select one	Extremely important Very important Fairly important Not important Unsure	Only display if answer to Q10 is 'yes'.
12	Please describe any challenges you have encountered in planning to implement PBL.			
13	Do you have any other comments about PBL that you would like to make?	Open ended	<text box>	

Questions for schools that previously implemented Positive Behaviour for Learning

Question no.	Question	Response type	Response options	Qualifiers
1	What is your role at the school?	Select one	Principal Deputy principal Head teacher Classroom teacher Other (please specify) <text box>	
2	Which of the following best describes PBL at your school?	Select one	The school is currently implementing PBL The school is planning to implement PBL The school previously implemented PBL The school has never implemented PBL	If select a response other than 'The school previously implemented PBL' skip to the corresponding question block.
3	What factors influenced you to stop implementing PBL at your school? (Select all that apply)	Multiple response	Too many other priorities competing for time Change of staff coordinating or leading implementation We use PBL principles and practices but at our school we don't call it PBL Reduction in teacher engagement with PBL led to gradual decrease in use An alternative whole school approach to behaviour management was developed Other PLEASE SPECIFY <TEXT BOX>	Display if the Annual Principal Survey WAS NOT COMPLETED.

Question no.	Question	Response type	Response options	Qualifiers
4	How does your school currently manage social and behavioural expectations? (select any that apply)	Multiple response	Reward system for positive behaviours Individual behaviour management plans Explicit teaching of rules and expectations Behaviour data is collected across the school Behaviour data is used to plan and make decisions Reinforcement or feedback for positive behaviours Consistent consequences for negative behaviours Punishment system such as detention for negative behaviours An alternative behaviour management approach is used PLEASE SPECIFY <TEXT BOX>	Display if the Annual Principal Survey WAS NOT COMPLETED.
5	How likely would you be to recommend your school's approach to behaviour management to a school in similar circumstances to yours?	Select one	Very likely Fairly likely Fairly unlikely Very unlikely Undecided	Display if the Annual Principal Survey WAS NOT COMPLETED.
6	In the CESE Annual Principal survey you advised that the school previously implemented Positive Behaviour for Learning but have since stopped. You also advised that the school currently manages behavioural expectations by implementing several strategies. How likely would you be to recommend your school's approach to behaviour management to a school in similar circumstances to yours?	Select one	Very likely Fairly likely Fairly unlikely Very unlikely Undecided	Only display if the principal completed the Annual Principal Survey AND indicated that they have stopped implementing PBL.

Question no.	Question	Response type	Response options	Qualifiers
7	Does the school have explicit teaching of behavioural expectations?	Select one	Yes No Unsure	
8	Does the school have a consistent set of rules and expectations regarding behaviour that are widely known by staff and students?	Select one	Yes No Unsure	
9	Are there systems or procedures in place that support staff to have a consistent approach to behaviour management?	Select one	Yes No Unsure	
10	Does the school systematically collect any data on: Major problem behaviours Minor problem behaviours Positive or expected behaviours	Yes, No matrix	Yes No Unsure	
11	How is this data used?	open ended	<text box>	Only display if 'Yes' selected for at least one part of Q10.
12	What school services support would be valuable to implement the behaviour management approach effectively?	open ended	<text box>	

Questions for schools that never implemented Positive Behaviour for Learning

Question no.	Question	Response type	Response options	Qualifiers
1	What is your role at the school?	Select one	Principal Deputy principal Head teacher Classroom teacher Other (please specify) <text box>	
2	Which of the following best describes Positive Behaviour for Learning at your school?	Select one	The school is currently implementing PBL The school is planning to implement PBL The school previously implemented PBL The school has never implemented PBL	If select a response other than 'The school has never implemented PBL' skip to the corresponding question block.
3	How does your school currently manage social and behavioural expectations? (select any that apply)	Multiple response	Reward system for positive behaviours Individual behaviour management plans Explicit teaching of rules and expectations Behaviour data is collected across the school Behaviour data is used to plan and make decisions Reinforcement or feedback for positive behaviours Consistent consequences for negative behaviours Punishment system such as detention for negative behaviours An alternative behaviour management approach is used PLEASE SPECIFY <TEXT BOX>	Only display if the Annual Principal Survey WAS NOT COMPLETED.

Question no.	Question	Response type	Response options	Qualifiers
4	How likely would you be to recommend your school's approach to behaviour management to a school in similar circumstances to yours?	Select one	Very likely Fairly likely Fairly unlikely Very unlikely Undecided	Only display if the Annual Principal Survey WAS NOT COMPLETED.
5	In the CESE Annual Principal Survey you advised of the school's approach to behaviour management. How likely would you be to recommend your school's approach to behaviour management to a school in similar circumstances to yours?	Select one	Very likely Fairly likely Fairly unlikely Very unlikely Undecided	Only display if the principal completed the Annual Principal Survey.
6	Has the school ever considered using PBL?	Select one	Yes No Don't know	
7	Why has the school never considered using PBL?	Select one	Not aware of this option Did not have a need to change the school's existing approach to behaviour management Other (please specify) <text box> Don't know	Only display if 'No' selected in Q6.
8	Why was the current approach selected instead of PBL?	Open ended	<text box>	Only display if 'Yes' selected in Q6.
9	Does the school explicitly teach behavioural expectations?	Select one	Yes No Unsure	

Question no.	Question	Response type	Response options	Qualifiers
10	Does the school have a consistent set of rules and expectations regarding behaviour that are widely known by staff and students?	Select one	Yes No Unsure	
11	Are there systems or procedures in place that support staff to have a consistent approach to behaviour management?	Select one	Yes No Unsure	
12	Does the school collect any data on: - Major problem behaviours - Minor problem behaviours - Positive or expected behaviours	Yes, No matrix	Yes No Unsure	
13	How is this data used?	Open ended	<text box>	Only display if 'Yes' selected for at least one part Q12.
14	What school services support would be valuable to implement the behaviour management approach effectively?	Open ended	<text box>	

Appendix E

Positive Behaviour for Learning survey analysis

This survey sought to gather the views of a range of schools including those that are implementing Positive Behaviour for Learning (PBL), those that previously implemented PBL, and those that have never implemented PBL. This was designed to provide insight into the PBL approach, why some schools cease using PBL, and alternative approaches to behaviour management that are being implemented in NSW public schools.

A list of potential schools (the sample frame) was compiled from existing departmental data indicating whether or not each school was likely to be implementing PBL. This was supplemented with more recent information gathered from the 2018 Centre for Education Statistics and Evaluation (CESE) annual principal survey¹⁰, where respondents had indicated if their school currently implemented PBL, had previously implemented PBL, or had never implemented PBL.

A survey invitation was distributed to 1,707 schools via the principal's email address (or the school's email address if the principal was unknown). All schools who were likely to be implementing PBL as well as those who had previously implemented PBL received this invitation. However, schools who were likely to have never implemented PBL only received this invitation if they had not been invited to complete the 2018 CESE annual principal survey. This was to minimise the burden placed upon principals who receive a large number of survey invitations each year.

The email to schools who were likely to be implementing PBL invited two staff members to complete the survey. These included:

- the principal or someone else from the PBL leadership team, and
- a classroom teacher.

The email to all other schools invited an individual in the leadership team to complete the survey.

The survey asked respondents to indicate which of the following best described PBL at their school. Response options were:

- the school is currently implementing PBL
- the school is planning to implement PBL
- the school previously implemented PBL
- the school has never implemented PBL.

Based on responses to this question, the survey branched into four corresponding question sets.

Since the existing departmental data on the schools who fell into each of the above categories contained some conflicting information, we were unable to gauge how representative of the population our samples were. As such, survey data is reported without any weighting.

¹⁰ The department's existing data on whether or not schools were implementing PBL was not always up to date because schools may elect to start or stop using PBL at any time and are not required to report this to state office.

Characteristics of survey respondents

Partial or complete survey responses were received from 852 schools (response rate = 50%). This included 566 schools that indicated they were currently implementing PBL (hereafter known as 'PBL survey schools'), 30 that were planning to implement PBL (hereafter known as 'planning-to-implement PBL survey schools'), 43 that had previously implemented PBL (hereafter known as 'previous PBL survey schools'), and 196 that had never implemented PBL (hereafter known as 'non-PBL survey schools').¹¹

Of the 566 schools that indicated they were currently implementing PBL, there were 395 schools where one individual completed the survey and 171 schools where two individuals completed the survey. In total, partial or complete responses were received from 737 individuals at schools implementing PBL.

Of the 43 respondents from schools that had previously implemented PBL, 16 had recently completed the CESE annual principal survey. This annual principal survey contained a number of the same questions as the PBL survey. Those who had completed the annual principal survey were not asked the same questions again in the PBL survey (that is, they skipped any duplicate questions). For these questions, we report the responses they entered in the annual principal survey.

Similarly, of the 196 respondents from schools that had never implemented PBL, seven had recently completed the CESE annual principal survey. The approach described above was also employed in this survey.

School type and role of respondents

Table E1 presents the school type of respondents across the four PBL surveys. The majority were primary schools (63-75%), followed by a smaller proportion of secondary schools (16-28%). There were also small proportions of schools for specific purposes (SSPs; 4-7%), central schools (0-3%), infants schools (0-1%), and environmental education centres (EECs; 0-3%).

Table E1

School type of survey respondents

	PBL	Planning	Previous	Non-PBL
Primary	75% (n = 427)	73% (n = 22)	63% (n = 27)	72% (n = 141)
Secondary	17% (n = 96)	17% (n = 5)	28% (n = 12)	16% (n = 32)
SSP	4% (n = 23)	7% (n = 2)	7% (n = 3)	7% (n = 14)
Central	3% (n = 23)	0% (n = 0)	2% (n = 1)	2% (n = 4)
Infants	< 1% (n = 2)	0% (n = 0)	0% (n = 0)	1% (n = 1)
EEC	< 1% (n = 1)	3% (n = 1)	0% (n = 0)	2% (n = 4)

Note. SSP = School for specific purposes; EEC = Environmental education centre

¹¹ Seventeen schools with multiple respondents provided conflicting information about the school's use of PBL and were excluded from analysis. This may have been due to staff variation in their knowledge of the school's approach, their knowledge of PBL and/or the length of time they had worked at the school.

Table E2 presents the role of respondents across the four PBL surveys. The majority were principals (48-93%), followed by a smaller proportion of classroom teachers (0-25%). There were also small proportions of deputy principals (3-6%), head teachers (0-7%), and 'other' roles such as assistant principals, teaching principals, learning and support teachers, and PBL co-ordinators (0-13%).

Table E2**Role of respondents**

	PBL	Planning	Previous	Non-PBL
Principal	48% (n = 354)	87% (n = 26)	93% (n = 40)	93% (n = 182)
Deputy principal	6% (n = 47)	3% (n = 1)	5% (n = 2)	3% (n = 5)
Head teacher	7% (n = 54)	3% (n = 1)	2% (n = 1)	0% (n = 0)
Classroom teacher	25% (n = 183)	7% (n = 2)	0% (n = 0)	0% (n = 0)
Other ¹²	13% (n = 99)	0% (n = 0)	0% (n = 0)	5% (n = 9)

General approach to behaviour management

Positive Behaviour for Learning survey schools

PBL schools we surveyed were asked to describe their school's approach to behaviour management since implementing PBL. Figure E1 illustrates responses to this question (multiple options could be selected) and includes schools with one survey respondent and schools with multiple respondents who provided consistent information. The majority of PBL survey schools indicated that they had a whole-school approach (87%; n = 456)¹³ and over three quarters (78%; n = 400) indicated that they had a proactive approach aimed at prevention.¹⁴ Two thirds of PBL survey schools (67%; n = 331) indicated that they had a teaching and learning approach to discipline.¹⁵

These findings are encouraging given that PBL is intended to be a whole-school approach that focuses on prevention and the explicit teaching of behavioural expectations. However, over a third of schools (39%, n = 186) nevertheless indicated that they dealt with issues as they arose.

¹² Respondents who selected "other" were mainly assistant principals, teaching principals, Learning and Support teachers, and PBL co-ordinators.

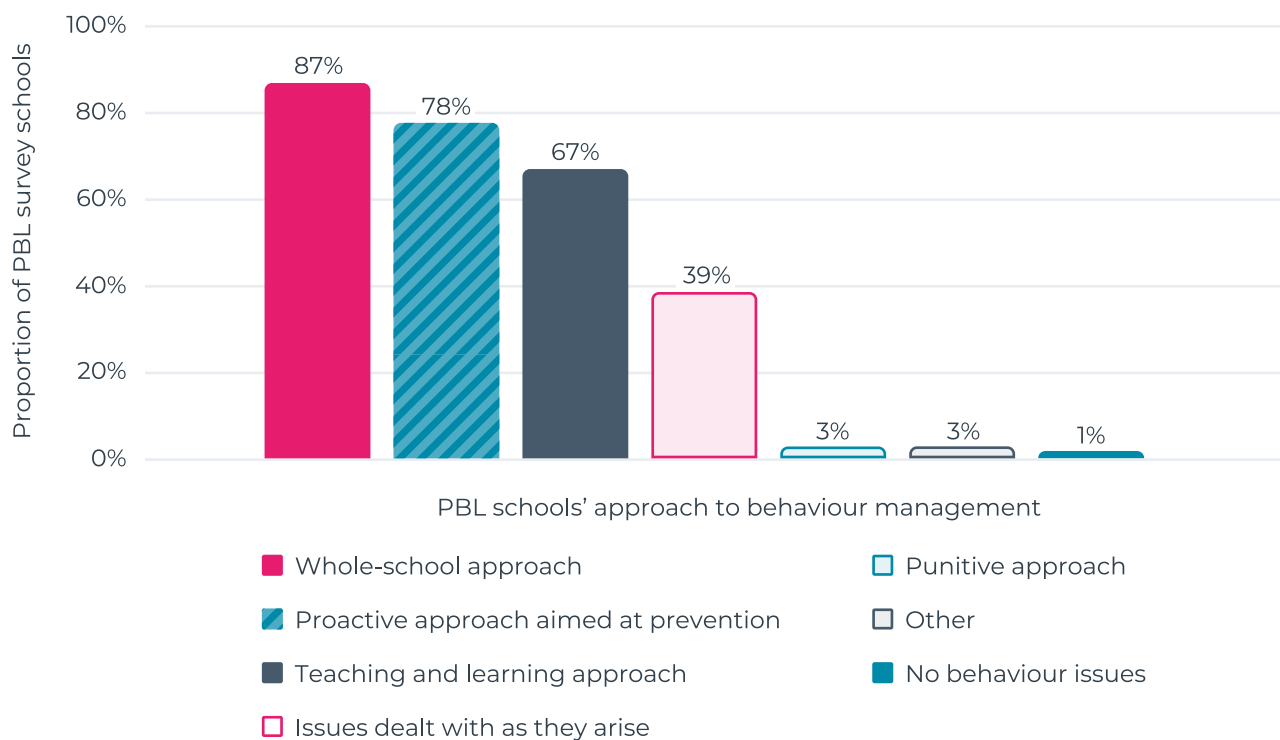
¹³ Amongst schools with multiple survey respondents there were 44 additional schools where one respondent indicated a whole school approach but the other did not.

¹⁴ Amongst schools with multiple survey respondents, there were 51 additional schools where one respondent indicated they had a proactive approach but the other did not.

¹⁵ Amongst schools with multiple respondents, there were 74 additional schools where one respondent indicated they had a teaching and learning approach but the other did not.

Figure E1

Positive Behaviour for Learning survey schools' approach to behaviour management



Note. The base size for these proportions ranges from $n = 482$ to $n = 564$, due to the exclusion of schools with multiple respondents who provided conflicting information.

Non-Positive Behaviour for Learning survey schools

Non-PBL schools we surveyed were also asked to describe how their school currently manages social and behavioural expectations. As shown in figure E2, of the 195 respondents who answered this question, the most commonly reported strategies were:

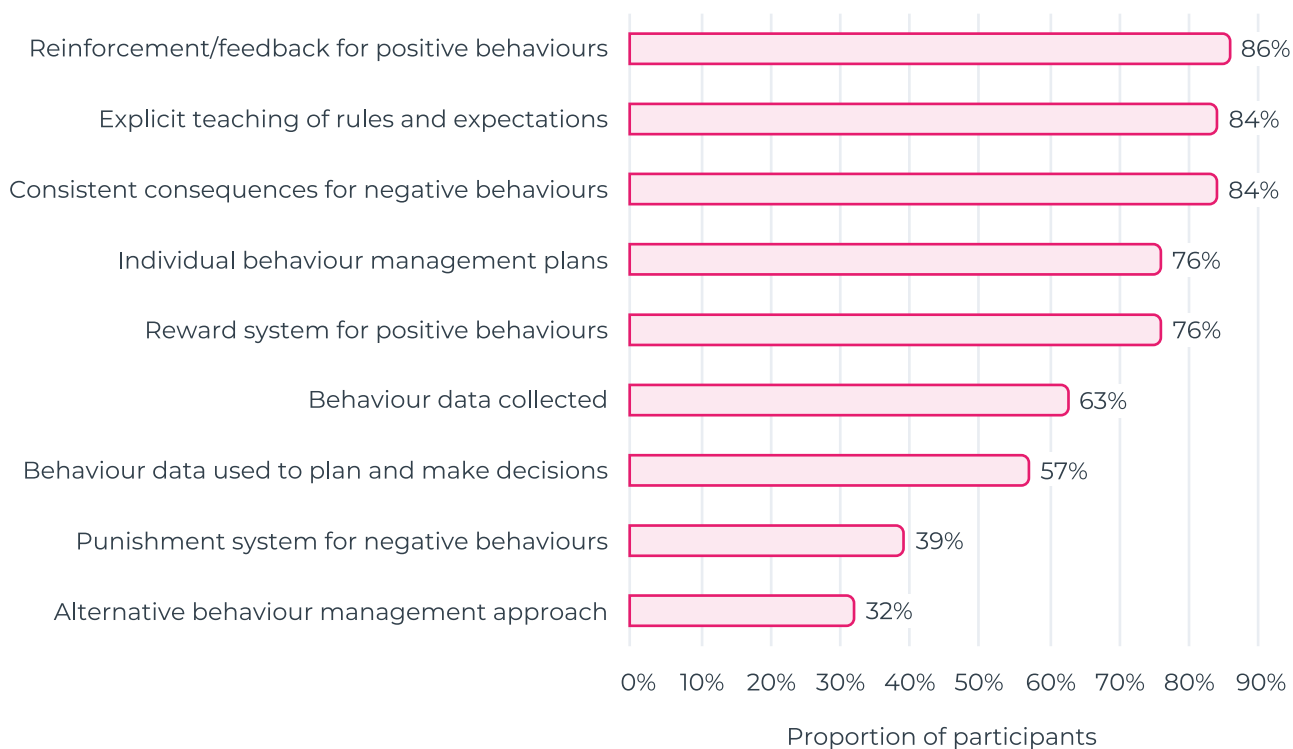
- reinforcement or feedback for positive behaviours – 167 (86%) schools
- consistent consequences for negative behaviours – 163 (84%) schools
- explicit teaching of rules and expectations – 163 (84%) schools.

Two of the least common strategies, which were nevertheless implemented by about a third of schools were:

- an alternative behaviour management approach – 62 (32%) schools
- punishment system for negative behaviours – 76 (39%) schools.

Figure E2**How non-Positive Behaviour for Learning survey schools manage social and behavioural expectations**

(n = 195)



The 62 respondents who indicated that their school implemented an alternative behaviour management approach were asked to specify which approach they used. The most common alternatives were:

- restorative justice (nine schools)
- school follows a PBL approach but does not consider itself a 'PBL school' (seven schools)
- explicit, high expectations (six schools)
- whole of school values system (six schools)
- positive reinforcement (four schools)
- negative consequences (for example, demerit system; four schools)
- alternative programs were used at 25 schools and included:
 - 'You Can Do It'
 - 'Bounce Back'
 - 'Fish philosophy'
 - 'Choice theory'
 - positive psychology inspired programs such as 'Power of Positives'.

Thus, the majority of non-PBL schools had a reinforcement system for positive behaviours, consistent consequences for negative behaviours, and explicit teaching of rules and expectations. Notably, a large proportion also had individual behaviour management plans.

Previous Positive Behaviour for Learning survey schools

Figure E3 shows how previous PBL schools that we surveyed currently manage social and behavioural expectations. Of the 42 respondents who provided this information, the most commonly reported strategies were:

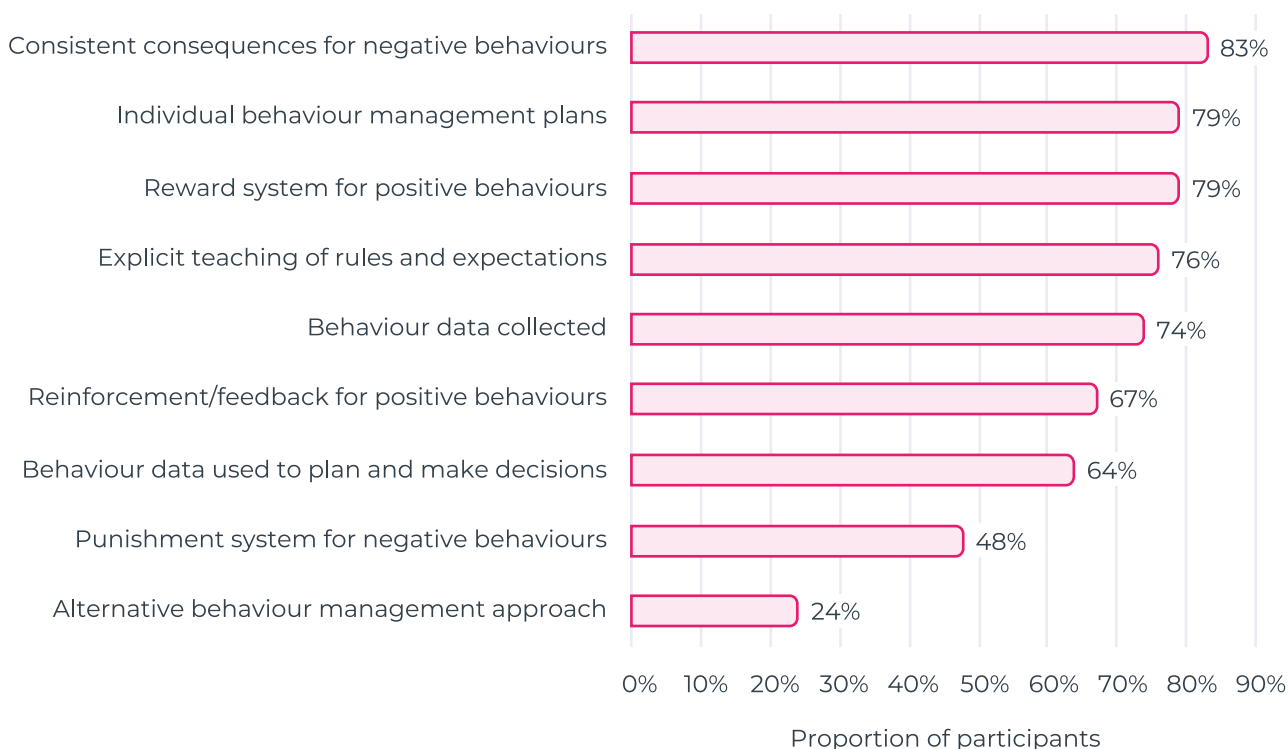
- consistent consequences for negative behaviour – 35 (83%) schools
- individual behaviour management plans – 33 (79%) schools
- reward system for positive behaviours within the school – 33 (79%) schools.

Two of the least common strategies, which were nevertheless implemented by a substantial proportion of schools were:

- an alternative behaviour management approach – 10 (24%) schools
- punishment system for negative behaviour – 20 (48%) schools.

Figure E3

How previous Positive Behaviour for Learning survey schools manage social and behavioural expectations (n = 42)



The 10 respondents who indicated that their school implemented an alternative behaviour management approach were asked to specify which approach was used. The six respondents who provided this information indicated that their schools used the following approaches:

- 'Positive Choices for Learning' – the respondent stated that this approach incorporated many aspects of PBL in addition to other best practice principles such as mindfulness and growth mindset.
- 'You Can Do It' and 'Five Keys to Success' programs.

- A combination of approaches including tracking of social and antisocial behaviours, behavioural interventions and utilisation of programs run by external service providers.
- Restorative justice (two respondents).
- Use of a time out space.

Thus, many schools who previously implemented PBL had consistent consequences for negative behaviour and a reward system for positive behaviour. Notably, a large proportion of these schools also developed individual behaviour management plans for students.

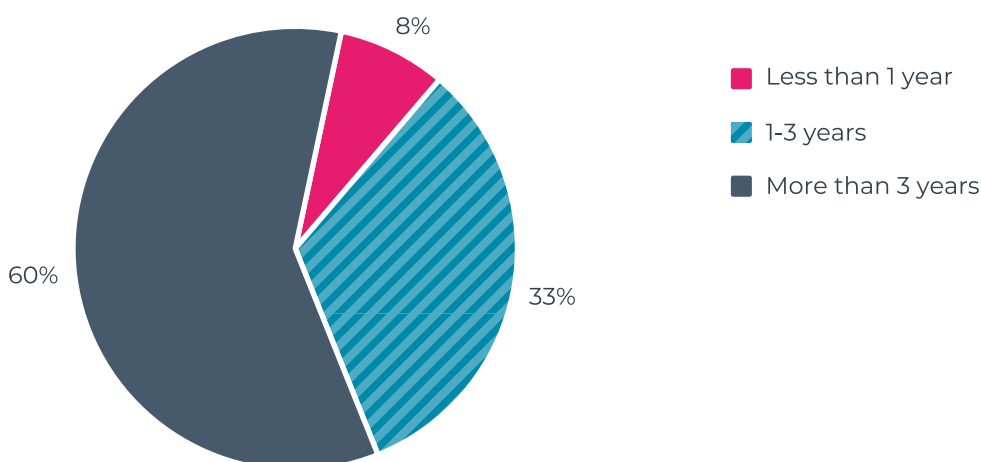
How is Positive Behaviour for Learning being implemented and is it being implemented as intended?

Length of time that Positive Behaviour for Learning has been implemented

PBL schools we surveyed indicated the length of time that their school had been implementing PBL. Figure E4 presents this data from 540 schools and includes schools with a single respondent and schools with multiple respondents who provided consistent information. Of the 540 schools who were currently implementing PBL, a minority (8%; n = 41) had been implementing PBL for less than one year, about a third (33%; n = 177) had been implementing for 1-3 years, and the majority (60%; n = 322) had been implementing for more than three years.¹⁶

Figure E4

Length of time implementing Positive Behaviour for Learning (n = 540)



Note. The 540 schools presented in this figure includes schools with a single respondent and schools with multiple respondents who provided consistent information.

¹⁶ There were 26 additional schools with multiple respondents who provided conflicting information about how long they had been implementing PBL. The data for these schools has been excluded from analysis.

Implementation of universal features

The PBL survey examined whether schools were implementing the universal features of PBL. The proportion of schools who self-reported that they were currently implementing these universal features is presented in table E3. This table presents data from schools with one respondent and schools with multiple respondents who provided consistent information. Additional information on the implementation of universal features is presented in supplementary information.

Table E3

Proportion of Positive Behaviour for Learning survey schools implementing universal features

Universal feature	Proportion of PBL schools implementing universal features
Principal support, participation, and leadership	99% (n = 561) ¹⁷
Rules and expectations specifically for behaviour	99% (n = 544) ¹⁸
School-wide reinforcement system	98% (n = 524) ¹⁹
Procedures for a consistent staff approach to behaviour management	97% (n = 525) ²⁰
Collection of data	96% (n = 520) ²¹
Procedures for responding to problem behaviours	95% (n = 512) ²²
Procedures for teaching expected behaviours	93% (n = 493) ²³
Procedures for informing parents about expected behaviours	86% (n = 439) ²⁴
Common purpose and approach to discipline	86% (n = 442) ²⁵
Proportion implementing 8 or 9 universal features	85% (n = 420)

Note. The base size for these proportions ranges from n = 493 to n = 566 due to survey drop-out and the exclusion of schools with multiple respondents who provided conflicting information.

As shown in table E3, 85% of PBL schools we surveyed are implementing all or almost all of the universal features. Features such as principal support, rules and

¹⁷ Amongst schools with multiple respondents there was 1 additional school where one respondent indicated that the principal supported PBL implementation but the other did not.

¹⁸ Amongst schools with multiple respondents there was 1 additional school that provided conflicting information.

¹⁹ Amongst schools with multiple respondents there were 8 additional schools that provided conflicting information.

²⁰ Amongst schools with multiple respondents there were 9 additional schools that provided conflicting information.

²¹ Amongst schools with multiple respondents there were 11 additional schools that provided conflicting information.

²² Amongst schools with multiple respondents there were 12 additional schools that provided conflicting information.

²³ Amongst schools with multiple respondents there were 19 additional schools that provided conflicting information.

²⁴ Amongst schools with multiple respondents there were 43 additional schools that provided conflicting information.

²⁵ Amongst schools with multiple respondents there were 36 additional schools that provided conflicting information.

expectations, school-wide reinforcement systems, data collection, and procedures for behaviour management are used by the great majority of PBL schools we surveyed. There is potentially room for improvement around procedures for informing parents about expected behaviour, and the development of a common purpose and approach to discipline.

Principal support, participation, and leadership

As shown in table E3, almost all respondents from PBL schools we surveyed indicated that the principal supported the implementation of PBL (99%; n = 561). Figure E5 illustrates the specific ways that the principal supported PBL implementation. The most common way was by reflecting PBL in the strategic plan (87%; n = 455)²⁶ followed by being involved in the school's PBL team (77%; n = 407).²⁷

Other ways in which the principal supported PBL implementation included:

- organising funding for PBL – 373 (74%) schools²⁸
- supporting the introduction of PBL at the schools - 337 (65%) schools.²⁹

However, as shown in figure E5, principal support does not extend to all potential areas. In particular, only 47% of respondents indicated that the principal provided release time.³⁰ This could potentially make it difficult for some schools to design PBL lessons and attend PBL training.

26 Amongst schools with multiple survey respondents, there were 40 additional schools where one respondent indicated the principal reflected PBL in the school's strategic plan but the other did not.

27 Amongst schools with multiple survey respondents, there were 37 additional schools where one respondent indicated the principal was involved in the school's PBL team but the other did not.

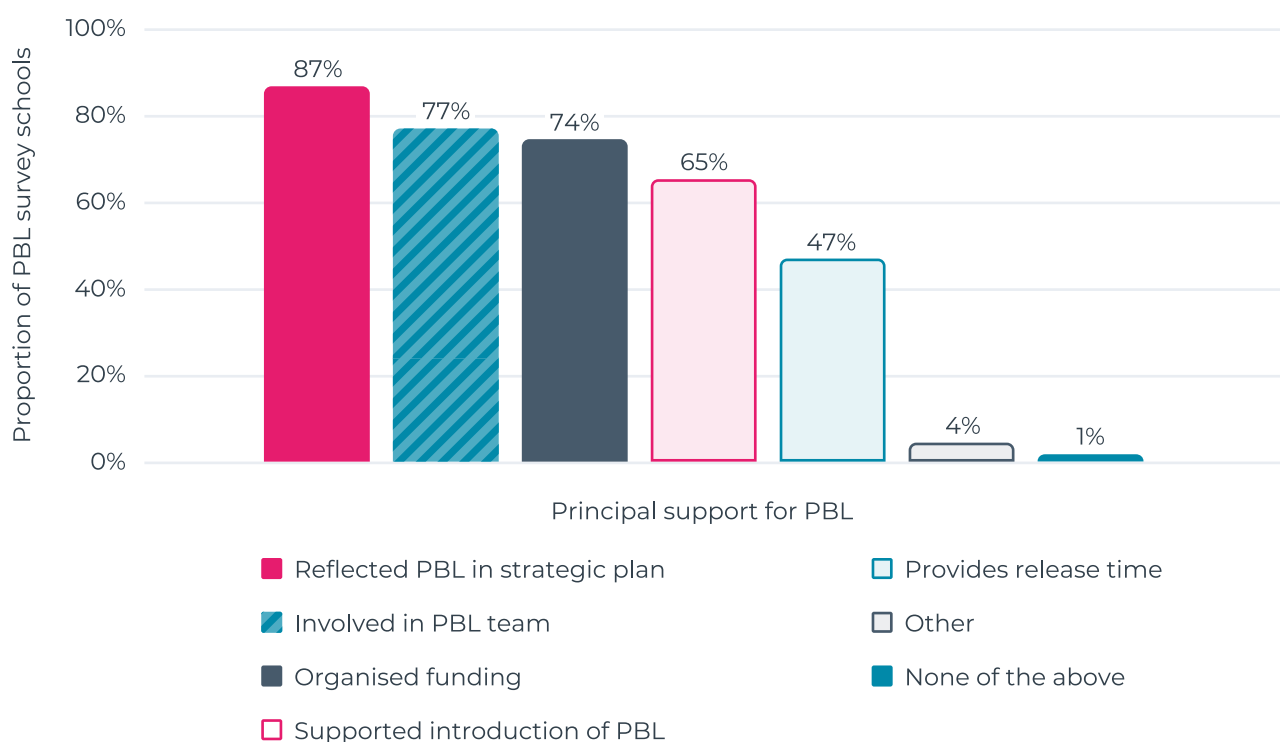
28 Amongst schools with multiple survey respondents, there were 63 additional schools where one respondent indicated that the principal organised funding but the other did not.

29 Amongst schools with multiple survey respondents, there were 51 additional schools where one respondent indicated that the principal supported the introduction of PBL but the other did not.

30 Amongst schools with multiple respondents, there were 54 additional schools where one respondent indicated that the principal provided release time but the other did not.

Figure E5

Principal support for Positive Behaviour for Learning implementation at Positive Behaviour for Learning survey schools

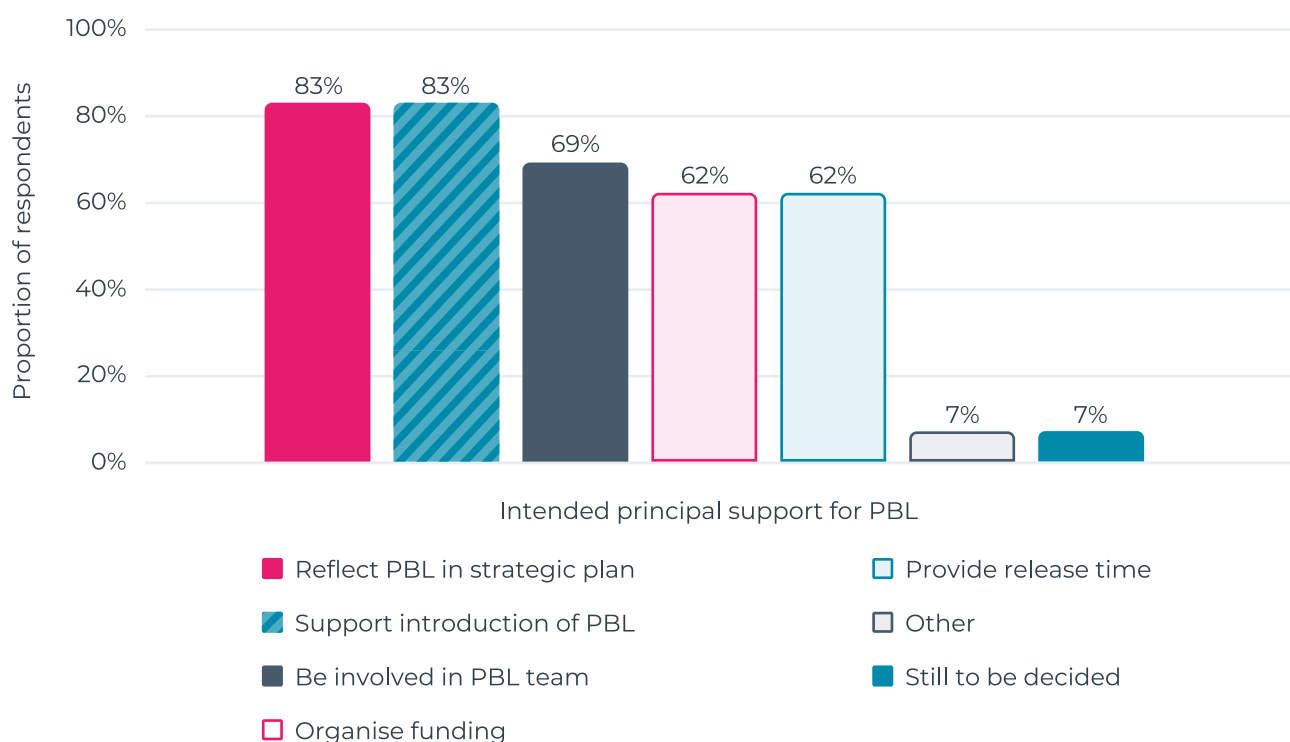


Note. The base size for these proportions ranges from $n = 503$ to $n = 565$, due to the exclusion of schools with multiple respondents who provided conflicting information.

Figure E6 shows how the principal intended to support PBL implementation at planning-to-implement PBL survey schools. Of the 29 respondents who answered this question, the most common ways were by intending to reflect PBL in the strategic plan (83%; $n = 24$) and by supporting the introduction of PBL (83%; $n = 24$).

Figure E6

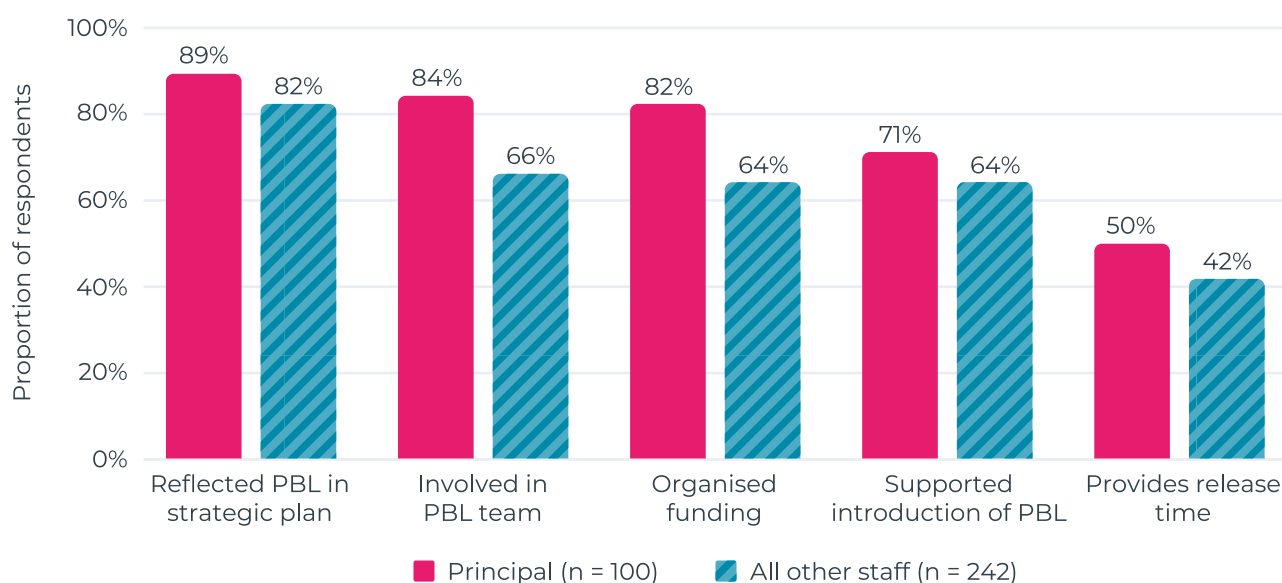
Intended principal support for Positive Behaviour for Learning implementation at planning-to-implement Positive Behaviour for Learning survey schools (n = 29)



For PBL survey schools where both the principal and another staff member answered the survey, analyses also compared the way the principal was perceived to support PBL implementation. One noteworthy difference, as shown in figure E7, was that principals viewed themselves as being involved in the PBL team to a greater extent than other staff viewed their involvement. Another noteworthy difference was that principals were more likely to report having organised funding for PBL than other staff reported them doing so. This may be because other staff are not always aware of funding decisions made by the principal.

Figure E7

Principal support for Positive Behaviour for Learning at schools with multiple respondents: views of principals compared to all other staff



Expected behaviours and rules

As shown in table E3, 99% of respondents from PBL survey schools said the school had developed rules and expectations specifically for behaviour. Respondents indicated whether these school-wide rules and expectations were posted in a range of school settings including the classroom. The following results were received from 524 schools and include schools with a single respondent and schools with multiple respondents who provided consistent feedback. The great majority of PBL survey schools had posted the rules and expectations in a range of settings (96%; n=502). Only 19 (4%) schools indicated they had not done so and three (1%) were unsure.³¹

Table E3 also shows that almost all PBL survey schools had a continuum of procedures that enabled staff to have a consistent approach to behaviour management (97%; n = 525) as well as a school-wide reinforcement system (97%; n = 470). The great majority also had procedures in place for responding to problem behaviours (95%; n = 512), and teaching expected behaviours (93%; n = 493).

To examine how PBL survey schools encouraged expected behaviours, the survey asked whether there was a school-wide reinforcement or feedback system linked to the expected behaviours. As shown in table E3, the great majority of schools indicated that they did have this type of feedback system (98%; n = 524). In terms of the type of system, of the 483 PBL survey schools who responded to this question and provided consistent information, the majority (79%; n=382) had both a verbal feedback system and a tangible reward system, while 10 (2%) schools had just a verbal feedback system, 78 (16%) had just a tangible reward system, 11 (2%) schools did not have any feedback system linked to expected behaviours, and two (<1%) schools were unsure.³²

31 Amongst school with multiple respondents, there were 21 additional schools where respondents provided conflicting answers about whether the school had posted the rules and expectations in a range of settings.

32 Amongst schools with multiple respondents, there were 62 additional schools where respondents provided conflicting answers to this question.

Data collection

Before Positive Behaviour for Learning

PBL schools we surveyed were asked whether the school collected data on student behaviour before implementing PBL. Of the 452 PBL schools who responded to this question (and provided consistent information), almost half (n=204; 45%) said that they did collect data, around two in ten (22%; n=101) said they did not and the rest (33%; n=147) were unsure.³³

Currently

A much larger proportion of PBL schools we surveyed indicated that they currently collected data on problem behaviour. Of the 540 PBL schools who responded to this question (and provided consistent information), almost all (96%; n=520) responded affirmatively, while 17 (3%) said they did not and three (<1%) were unsure.³⁴

Those who said they did collect data on problem behaviour were asked to specify which types of data were collected. As shown in figure E8, the great majority of schools collected data on the type of problem behaviour (98%; n = 509)³⁵, the students involved (97%; n = 499)³⁶, when the behaviour occurred (95%; n = 486)³⁷, and the location of the behaviour (94%; n = 481).³⁸

33 Amongst schools with multiple respondents, there were 99 additional schools where respondents provided conflicting answers to this question.

34 Amongst schools with multiple respondents, there were 11 additional schools where respondents provided conflicting answers to this question.

35 Amongst schools with multiple respondents, there were 13 additional schools where respondents provided conflicting answers to this question.

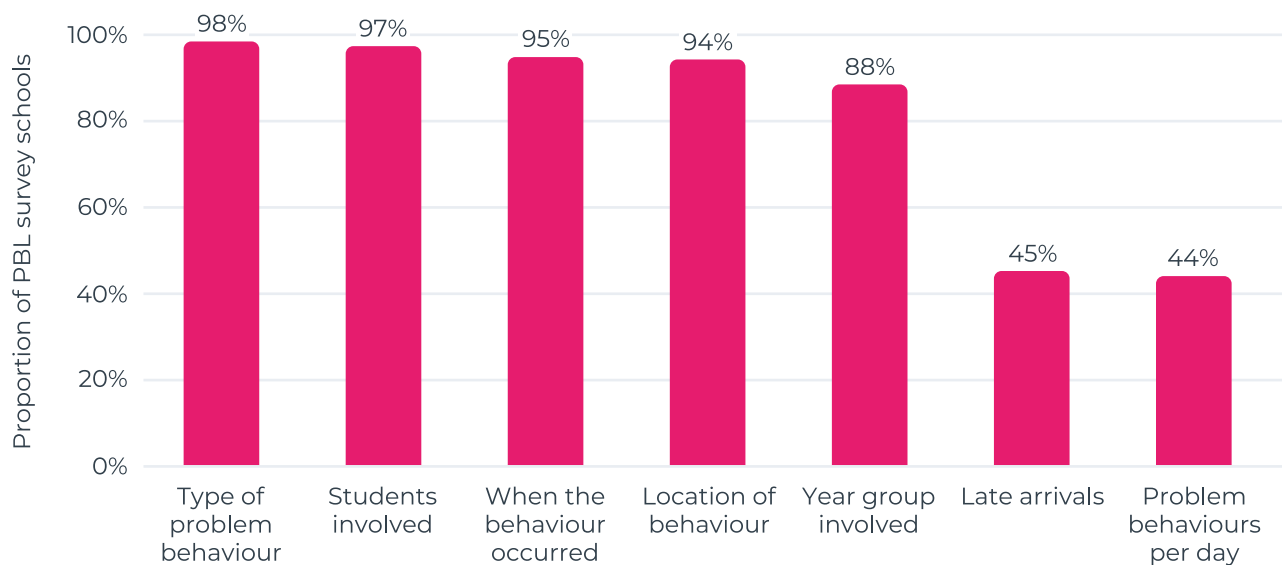
36 Amongst schools with multiple respondents, there were 19 additional schools where respondents provided conflicting answers to this question.

37 Amongst schools with multiple respondents, there were 21 additional schools where respondents provided conflicting answers to this question.

38 Amongst schools with multiple respondents, there were 24 additional schools where respondents provided conflicting answers to this question.

Figure E8

Type of problem data collected by schools



Note. The base size for these proportions ranges from $n = 465$ to $n = 521$, due to exclusion of schools with multiple respondents who provided conflicting information.

PBL schools we surveyed were presented with a list of PBL evaluation tools and were asked if the school had used any of them. Table E4 presents these evaluation tools, a description of their purpose, and the proportion of survey respondents who had used them.

Table E4**Proportion of Positive Behaviour for Learning survey schools who used Positive Behaviour for Learning evaluation tools**

Evaluation tool	Description	Proportion who used tool
School-Wide Evaluation Tool (SET)	Assesses the major features of the school-wide PBL approach via interviews, observations, and a review of school records	365/482 schools (76%) ³⁹
PBL Self-Assessment Survey (SAS)	Measures staff perceptions of behavioural support systems in the school	345/478 schools (72%) ⁴⁰
Team Implementation Checklist (TIC)	Assesses the development, implementation and monitoring of the actions of the PBL team	201/456 schools (44%) ⁴¹
Benchmarks of Quality (BOQ)	Assesses the universal school-wide PBL process	183/449 schools (41%) ⁴²
Benchmarks for Advanced Tiers (BAT)	Assesses the implementation of tiers 2 and 3 behavioural support systems and a school's readiness to implement these systems	44/447 schools (10%) ⁴³

The most commonly used PBL evaluation tools were the School-Wide Evaluation Tool (SET) and the PBL Self-Assessment Survey (SAS). Of the 458 schools that had been using PBL for at least one year, 85% (n = 390) had used at least one evaluation tool.

Schools that use these PBL evaluation tools are not required to centrally report the outcomes and this makes it challenging to identify the proportion of schools that are implementing PBL with fidelity. However, our findings suggest that the majority of PBL survey schools are using evaluation tools to examine various elements of their implementation and inform their decision making about PBL.

Data use

In terms of data use, PBL schools we surveyed were asked whether the team leading PBL implementation used data to make planning decisions. Of the 523 PBL schools who responded to this question (and provided consistent information), 456 (87%) said the team did use data to make planning decisions, 50 (10%) said the team did not use data to make planning decisions, and 17 (3%) were unsure.⁴⁴

³⁹ Amongst schools with multiple respondents, there were 65 additional schools where respondents provided conflicting answers to this question.

⁴⁰ Amongst schools with multiple respondents, there were 69 additional schools where respondents provided conflicting answers to this question.

⁴¹ Amongst schools with multiple respondents, there were 91 additional schools where respondents provided conflicting answers to this question.

⁴² Amongst schools with multiple respondents, there were 98 additional schools where respondents provided conflicting answers to this question.

⁴³ Amongst schools with multiple respondents, there were 100 additional schools where respondents provided conflicting answers to this question.

⁴⁴ Amongst schools with multiple respondents, there were 28 additional schools where respondents provided conflicting answers to this question.

Schools who indicated that they currently collected data on problem behaviour, were asked how often they analysed their data to identify trends. Amongst the 435 PBL schools who responded to this question (and provided consistent information), findings indicate that data was analysed with the following frequency:

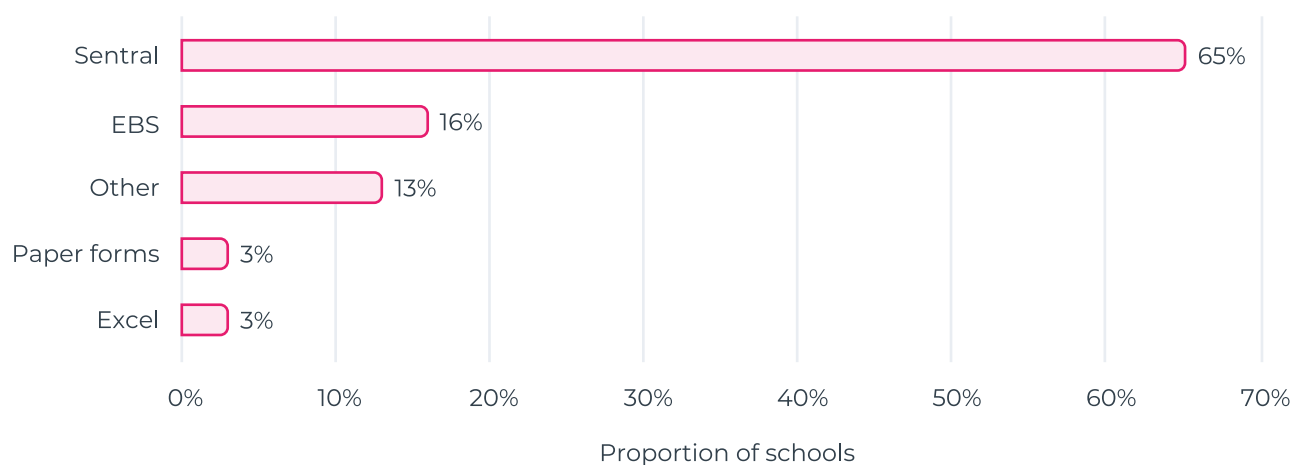
- once per month – 131 (30%) schools
- weekly – 115 (26%) schools
- once per term – 109 (25%) schools
- a few times per year – 53 (12%) schools
- unsure – 27 (6%) schools.

Thus, the majority of schools analysed their data at least once per term.⁴⁵

All respondents who indicated that they collected problem behaviour data, were asked which data management system their school used to do this. As shown in figure E9, of the 518 schools who responded to this question (and provided consistent information), the majority used sentral (65%; n = 335). Less common systems included Educational Based Services (EBS) (16%; n = 82), paper forms (3%; n = 16) and excel (3%; n = 16). Other software packages that were mentioned (13%; n = 69) included momentum ESR, stars, millenium, google docs and dojo.⁴⁶

Figure E9

Data management systems used by Positive Behaviour for Learning survey schools (n = 518)



Respondents who indicated that the school collected data were asked how easy it was to get data from their data management system to analyse patterns of behaviour across: a) the school and b) individual students. Figure E10 illustrates these findings for 422 schools at the whole-school level⁴⁷ and 426 schools at the individual student level.⁴⁸ The majority of schools found it easy to get data from their systems to allow analysis at both levels.

⁴⁵ Amongst schools with multiple respondents there were 94 additional schools where respondents provided conflicting answers to this question.

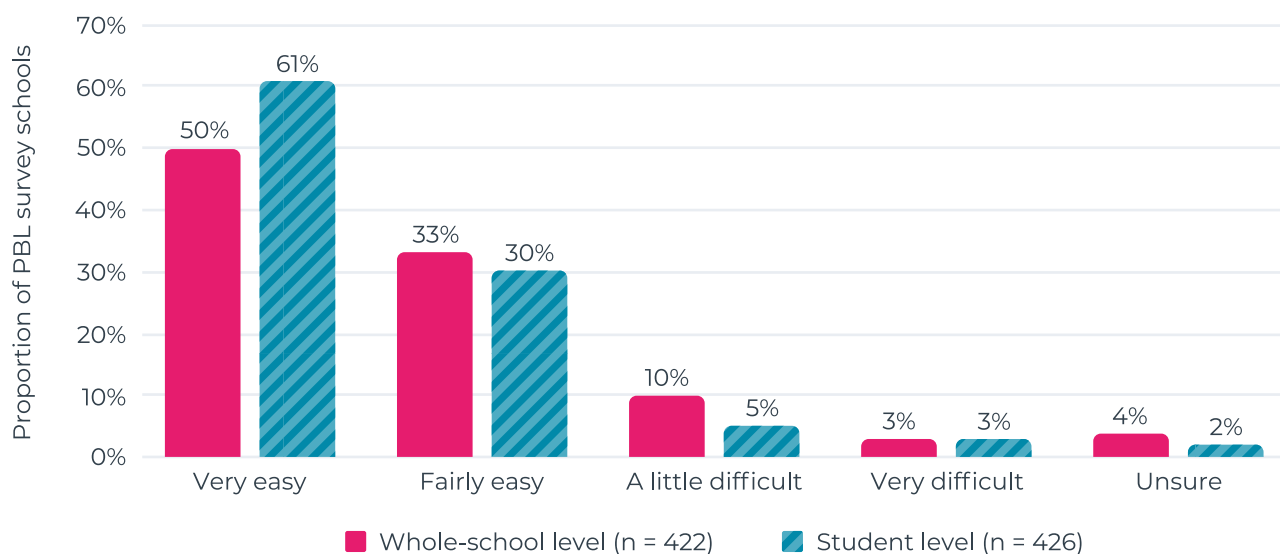
⁴⁶ Amongst schools with multiple respondents, there were 8 additional schools where respondents provided conflicting answers to this question

⁴⁷ Amongst schools with multiple respondents, there were 105 additional schools where respondents provided conflicting answers to this question.

⁴⁸ Amongst schools with multiple respondents, there were 97 additional schools where respondents provided conflicting answers to this question.

Figure E10

Ease of getting data from data management system for analysis

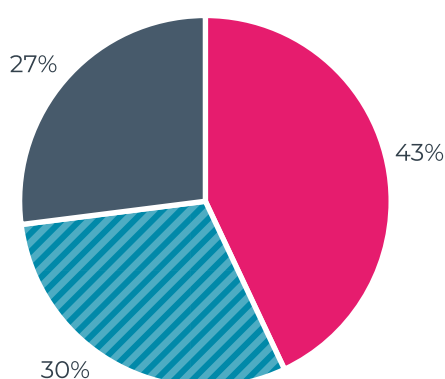


Implementation of tiers 2 and 3

Survey respondents were asked if the school was implementing tier 2 and/or tier 3 interventions. Figures E11 and E12 illustrate the proportion of schools who were implementing and planning to implement these interventions. Just under half of PBL survey schools were implementing tier 2 (43%; n = 200)⁴⁹ and just under a quarter were implementing tier 3 (22%; n = 104).⁵⁰ Almost a third of schools who were not currently implementing tiers 2 and 3, were planning to implement these tiers.

Figure E11

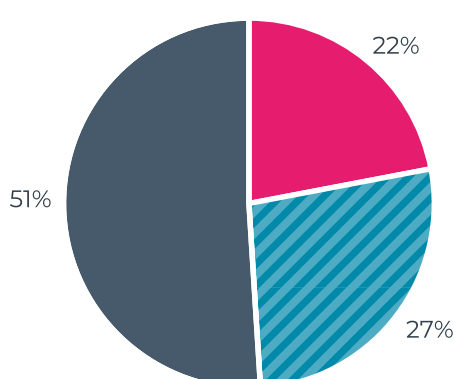
Tier 2 implementation (n = 465)



■ Yes ■ In planning stage ■ No

Figure E12

Tier 3 implementation (n = 479)



■ Yes ■ In planning stage ■ No

⁴⁹ Amongst schools with multiple respondents, there were 82 additional schools where respondents provided conflicting answers to this question.

⁵⁰ Amongst schools with multiple respondents, there were 68 additional schools where respondents provided conflicting answers to this question.

If survey respondents indicated that their school was implementing either tier 2 or 3, they were asked if any students had received tier 2 and/or tier 3 support. For tier 2, of the 205 respondents who answered this question, 92% (n = 189) indicated that students had received tier 2 support⁵¹. For tier 3, of the 195 respondents who answered this question, 64% (n = 124) indicated that students had received tier 3 support.⁵² Some schools indicated their students had received tier 2 and/or 3 supports despite saying that the school was not implementing tier 2 and/or 3. These schools may have delivered tier 2 and/or tier 3-like supports despite not having systems in place to formally implement these tiers.

If survey respondents indicated that the school was implementing tier 2 or 3 they were asked who made the decisions about which students accessed higher tiers. The results are listed below and indicate that in most instances, the senior executive and/or the learning and support team/teacher was involved:⁵³

- senior executive – 154/203 (80%) schools⁵⁴
- learning and support team/teacher – 166/213 (78%) schools⁵⁵
- team leading PBL – 112/219 (51%) schools⁵⁶
- classroom teachers – 61/225 (27%) schools.⁵⁷

Respondents who said the school was implementing tier 2 or 3 were also asked how decisions were made about student access to tier 2 and tier 3 interventions. The most common ways included:⁵⁸

- by monitoring data on behavioural incidents – 189/207 (91%) schools⁵⁹
- teacher referral – 131/198 (66%) schools⁶⁰
- once a certain number of problem behaviours have been reached – 100/220 (45%) schools⁶¹
- parental request – 56/238 (24%) schools.⁶²

51 Amongst schools with multiple respondents, there were 64 additional schools where respondents provided conflicting answers to this question.

52 Amongst schools with multiple respondents, there were 74 additional schools where respondents provided conflicting answers to this question.

53 The base size for these proportions ranges from n = 203 to n = 225, due to the exclusion of schools who provided conflicting information.

54 Amongst schools with multiple respondents, there were 66 additional schools where respondents provided conflicting answers to this question.

55 Amongst schools with multiple respondents, there were 56 additional schools where respondents provided conflicting answers to this question.

56 Amongst schools with multiple respondents, there were 50 additional schools where respondents provided conflicting answers to this question.

57 Amongst schools with multiple respondents, there were 44 additional schools where respondents provided conflicting answers to this question.

58 The base size for these proportions ranges from n = 198 to n = 238, due to the exclusion of schools who provided conflicting information.

59 Amongst schools with multiple respondents, there were 62 additional schools where respondents provided conflicting answers to this question.

60 Amongst schools with multiple respondents, there were 71 additional schools where respondents provided conflicting answers to this question.

61 Amongst schools with multiple respondents, there were 49 additional schools where respondents provided conflicting answers to this question.

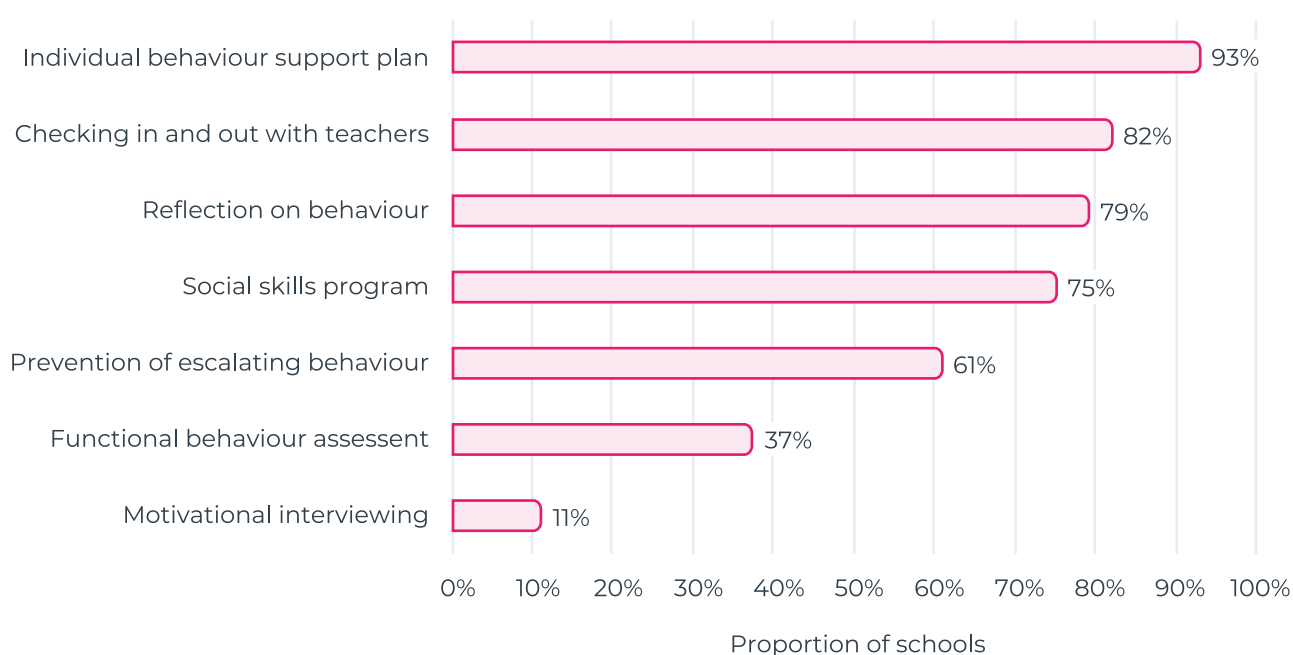
62 Amongst schools with multiple respondents, there were 31 additional schools where respondents provided conflicting answers to this question.

The large majority of schools monitored data on behaviour incidents to decide which students would access higher tiers. This is closely aligned with the PBL approach and suggests that these schools are using their PBL data in meaningful ways to provide additional support to some students.

Finally, respondents were asked what types of targeted or intensive interventions the school provided. As shown in figure E13, the most common intervention involved an individual behaviour support plan (93%; n = 196)⁶³. Other common interventions included regular checking in and out with teachers during the day (82%; n = 172)⁶⁴, regular student reflection on behaviour with the teacher (79%; n = 163)⁶⁵, and social skills programs (75%; n = 158)⁶⁶.

Figure E13

Types of targeted or intensive interventions provided by Positive Behaviour for Learning survey schools



Note. The base size for these proportions ranges from n = 207 to n = 250 due to exclusion of schools with multiple respondents who provided conflicting information.

⁶³ Amongst schools with multiple respondents, there were 59 additional schools where respondents provided conflicting answers to this question.

⁶⁴ Amongst schools with multiple respondents, there were 59 additional schools where respondents provided conflicting answers to this question.

⁶⁵ Amongst schools with multiple respondents, there were 62 additional schools where respondents provided conflicting answers to this question.

⁶⁶ Amongst schools with multiple respondents, there were 59 additional schools where respondents provided conflicting answers to this question.

Behaviour management procedures at other schools

Rules and expectations

Non-Positive Behaviour for Learning survey schools

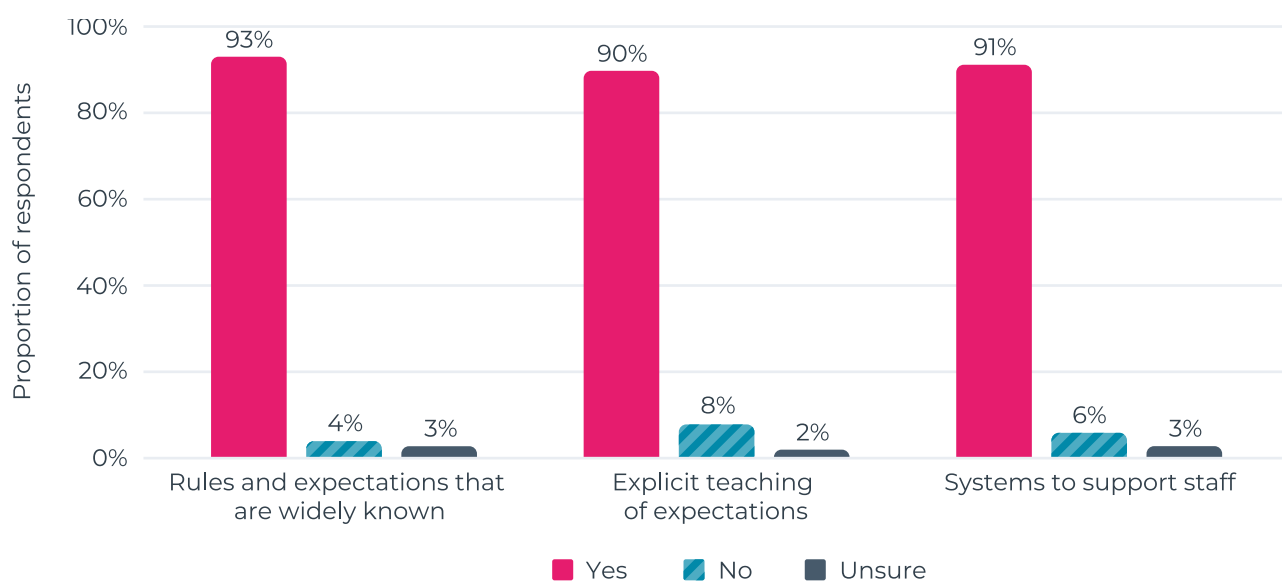
Non-PBL schools we surveyed were asked if the school had a consistent set of rules and expectations regarding behaviour that were widely known by staff and students. As shown in figure E14, of the 194 individuals who answered this question, the majority (93%; n = 181) responded affirmatively.

Figure E14 also illustrates the proportion of schools (from a total of 194 schools) that explicitly taught behavioural expectations. As shown in this figure, the majority (90%; n = 174) indicated that they did this.

Non-PBL survey respondents were also asked if there were systems or procedures in place that supported staff to have a consistent approach to behaviour management. As shown in figure E14, of the 194 individuals who answered this question, the majority (91%; n = 177) indicated that such systems or procedures were in place.

Figure E14

Rules and expectations at non-Positive Behaviour for Learning survey schools (n = 194)



Previous Positive Behaviour for Learning survey schools

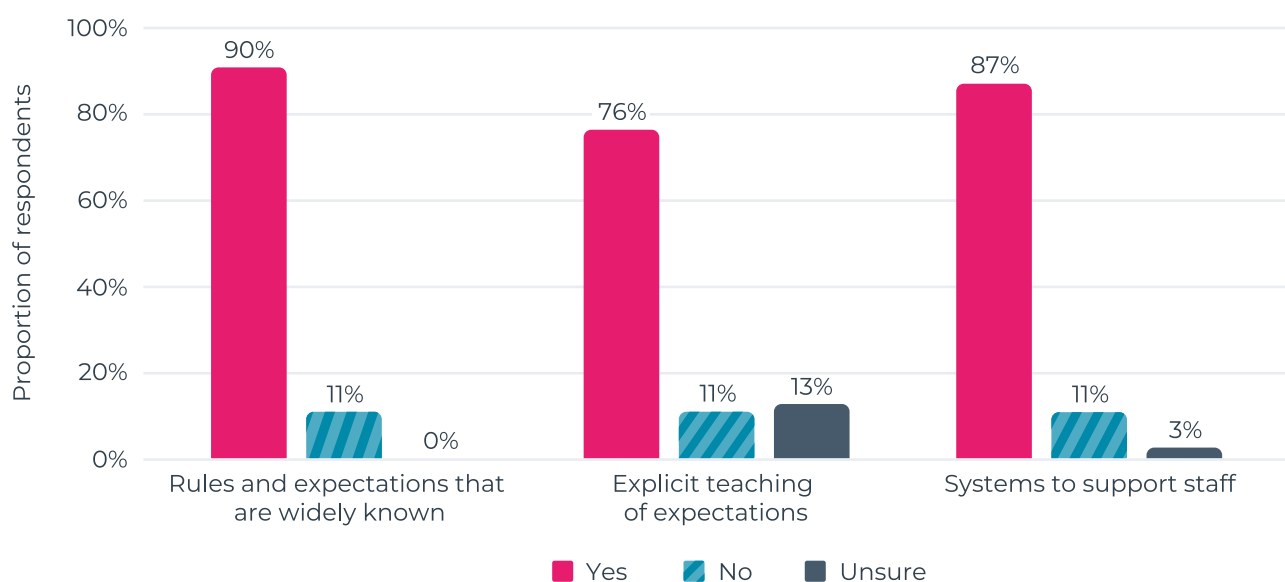
Previous PBL schools we surveyed were also asked if the school had a consistent set of rules and expectations regarding behaviour that were widely known by staff and students. As shown in figure E15, of the 38 individuals who answered this question, the majority (90%; n = 34) responded affirmatively.

Figure E15 also illustrates the proportion of respondents who said that the school explicitly taught behavioural expectations. Of the 38 individuals who answered this question, three quarters (76%; n = 29) responded affirmatively.

Survey respondents were also asked if there were systems or procedures in place that supported staff to have a consistent approach to behaviour management. As shown in figure E15, of the 38 individuals who answered this question, the majority (87%; n = 33) indicated that such systems or procedures were in place.

Figure E15

Rules and expectations at previous Positive Behaviour for Learning survey schools (n = 38)



Data collection and use

Non-Positive Behaviour for Learning survey schools

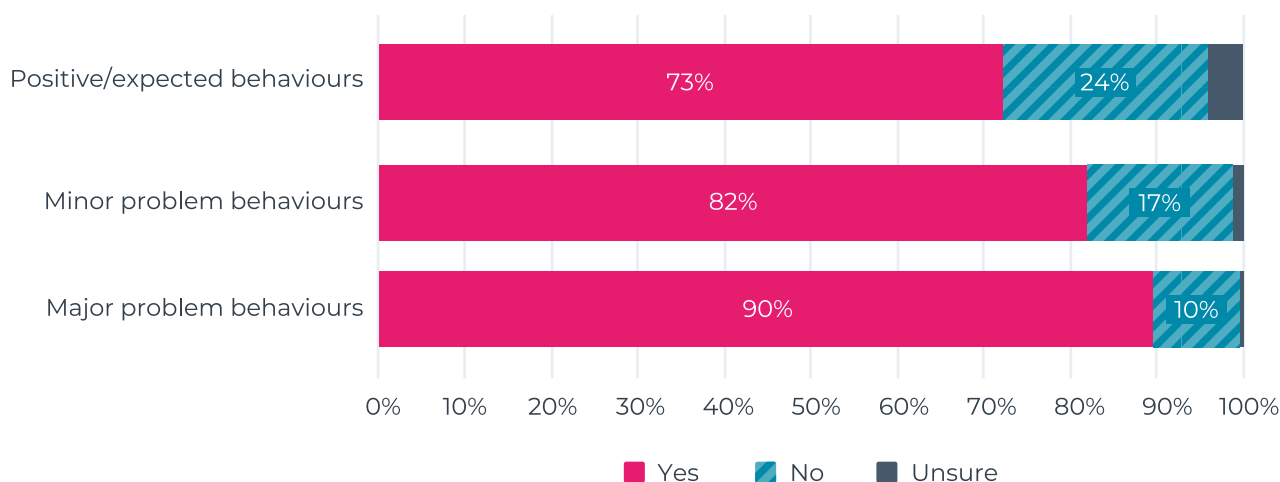
Non-PBL survey schools were asked if the school systematically collected data on:

- major problem behaviours
- minor problem behaviours
- positive or expected behaviours.

As shown in figure E16, of the 193 respondents from non-PBL survey schools who answered this question, the majority (90%; n = 173) collected data on major problem behaviours. Slightly fewer schools (82%; n = 158) collected data on minor problem behaviours, and fewer still on positive or expected behaviours (73%; n = 140).

Figure E16

Data collection at non-Positive Behaviour for Learning survey schools (n = 193)



If respondents indicated that the school collected data, they were asked an open-ended question about how the data was used. Non-PBL survey schools used their data in a variety of ways, with some of the most common being to:

- identify areas of concern and manage emerging issues
- manage and track student behaviour and provide support where required
- inform school planning
- inform individual case management
- evaluate effectiveness of programs and whole-school systems
- celebrate strengths and reward positive behaviour
- inform parents and/or staff
- modify teaching practices and strategies.

Previous Positive Behaviour for Learning survey schools

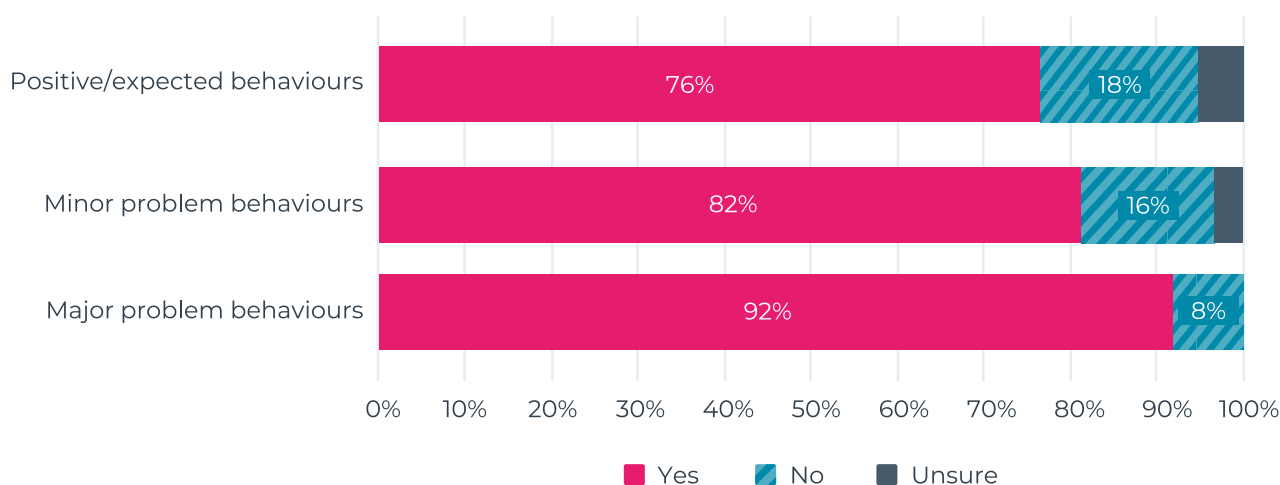
Figure E17 presents the proportion of previous PBL survey schools who collected data on:

- major problem behaviours
- minor problem behaviours
- positive or expected behaviours.

Of the 38 respondents from previous PBL survey schools who answered this question, the majority (92%; n = 35) collected data on major problem behaviours. Slightly fewer schools (82%; n = 31) collected data on minor problem behaviours and positive or expected behaviours (76%; n = 29).

Figure E17

Data collection at previous Positive Behaviour for Learning survey schools (n = 38)



Previous-PBL survey schools also used their data in a variety of ways, with some of the most common being to:

- analyse trends and identify areas of concern
- manage and track student behaviour and provide support where required
- report the data to the school and parents
- determine the focus for explicit teaching
- inform school planning
- reflect on current policy
- inform individual case management (for example, set goals with students)
- evaluate behaviour management.

How have Positive Behaviour for Learning coach mentors assisted with Positive Behaviour for Learning start-up and implementation?

PBL schools we surveyed were asked if they had received professional learning or assistance from a state supported PBL coach mentor. Of the 516 schools that responded to this question (and provided consistent information), 439 (85%) had received professional learning or assistance from a state supported PBL coach mentor, 52 (10%) had not received this, and 25 (5%) were unsure. These statistics exclude 42 schools where conflicting information was provided.

Planning-to-implement PBL survey schools were similarly asked if they had received professional learning or assistance from a state supported PBL coach mentor. Of the 29 schools that responded to this question, 14 (48%) had received professional learning or assistance from a state supported PBL coach mentor, nine (31%) had not yet received this but intended to, and six (21%) had not received this support.

Those who indicated that that the school had received assistance from a state supported PBL coach mentor were presented with a list of types of support and were asked:

- which of the supports they had requested
- which of the supports they had received (not necessarily requested).

The results for PBL survey schools and planning-to-implement PBL survey schools are presented below.

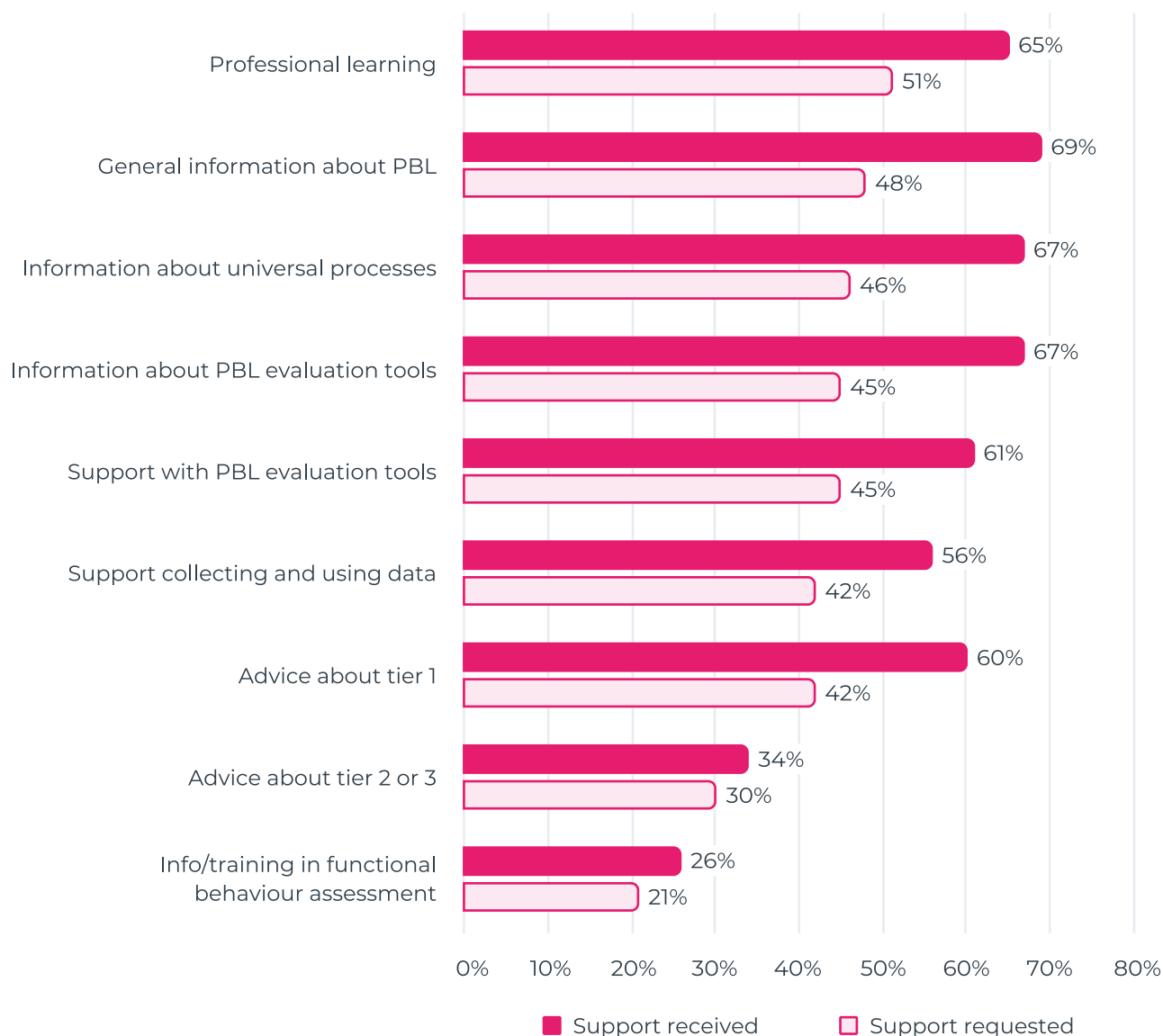
Positive Behaviour for Learning survey schools

Figure E18 shows the areas of support that PBL survey schools had requested and received from coach mentors. A fairly similar proportion of schools requested support in most of these areas although there were fewer requests for advice about tier 2 or 3, and information/training in functional behaviour assessment.⁶⁷ It is not surprising that a smaller proportion of schools requested support in these areas, since the majority of our survey respondents were not yet implementing the higher tiers. Figure E18 also indicates that coach mentors are providing support to schools who had not necessarily requested support. This suggests that coach mentors are being proactive in providing support where they feel it would be most beneficial.

⁶⁷ A similar pattern of results was obtained for support requested and received by planning-to-implement PBL survey schools.

Figure E18

Coach mentor support requested and received by schools



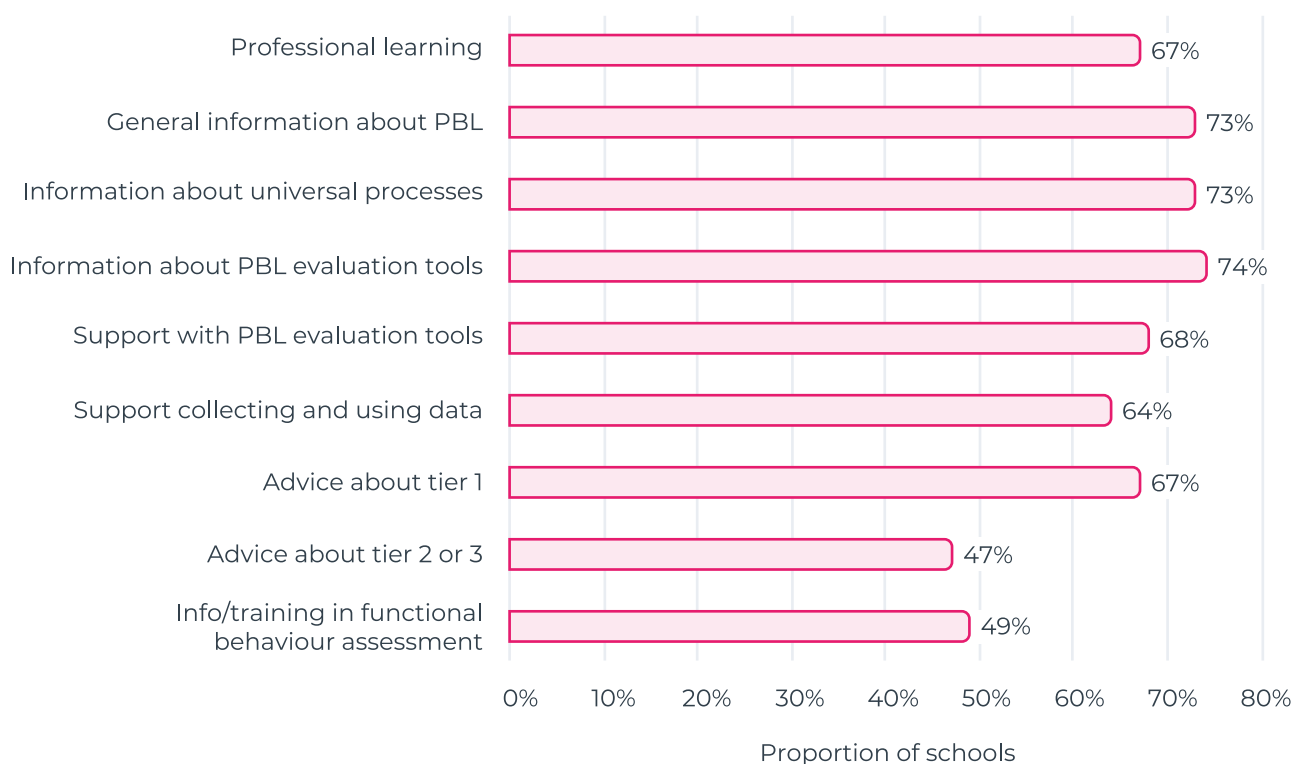
Note. The base size for these proportions ranges from $n = 412$ to $n = 437$ due to exclusion of schools with multiple respondents who provided conflicting information.

The main types of support that coach mentors are providing can be categorised as: 1) professional learning, 2) information about PBL and universal processes, and 3) support with data and PBL evaluation tools. This is consistent with the role of coach mentors who support schools with PBL start-up (where the focus is on universal processes), ongoing implementation, and evaluation.

In addition to looking at support across all schools, we examined the proportion of schools that received support in the areas where they requested support. As shown in figure E19, not all schools are receiving the types of support they requested. However, the types of support that schools think they need may not necessarily align with the types of support that coach mentors think they need. For instance, coach mentors are likely to be using their professional judgement to discern which types of support would be most beneficial for schools. Therefore, in some situations there are good reasons why schools may not always be receiving support in the areas where they requested support.

Figure E19

Proportion of schools that received support in the areas where they requested support



Note. The base size for these proportions ranges from $n = 87$ to $n = 196$ due to the exclusion of schools who did not request support in particular areas, and exclusion of schools with multiple respondents who provided conflicting information.

Planning-to-implement Positive Behaviour for Learning survey schools

Thirteen of the planning-to-implement PBL survey schools that had received support from a coach mentor answered the questions about the types of support the school had requested and/or received. These schools requested and received support in the following areas:

- Professional learning
 - 10 requested support (77%); seven received support (54%).
- General information about PBL
 - 10 requested support (77%); 10 received support (77%).
- Information about universal processes
 - Nine requested support (69%); nine received support (69%).
- Information about PBL evaluation tools
 - Eight requested support (62%); six received support (46%).
- Support with PBL evaluation tools
 - Eight requested support (62%); six received support (46%).
- Support collecting and using data
 - Seven requested support (54%); seven received support (54%).
- Advice about tier 1
 - Six requested support (46%); seven received support (54%).
- Advice about tier 2 or 3
 - Six requested support (46%); three received support (23%).
- Info/training in functional behaviour assessment
 - Three requested support (23%); two received support (15%).

Planning-to-implement PBL survey schools are still in the early stages of requesting and receiving coach mentor support but these findings indicate that they have already started to build productive working relationships.

How important was the support provided by coach mentors?

Positive Behaviour for Learning survey schools

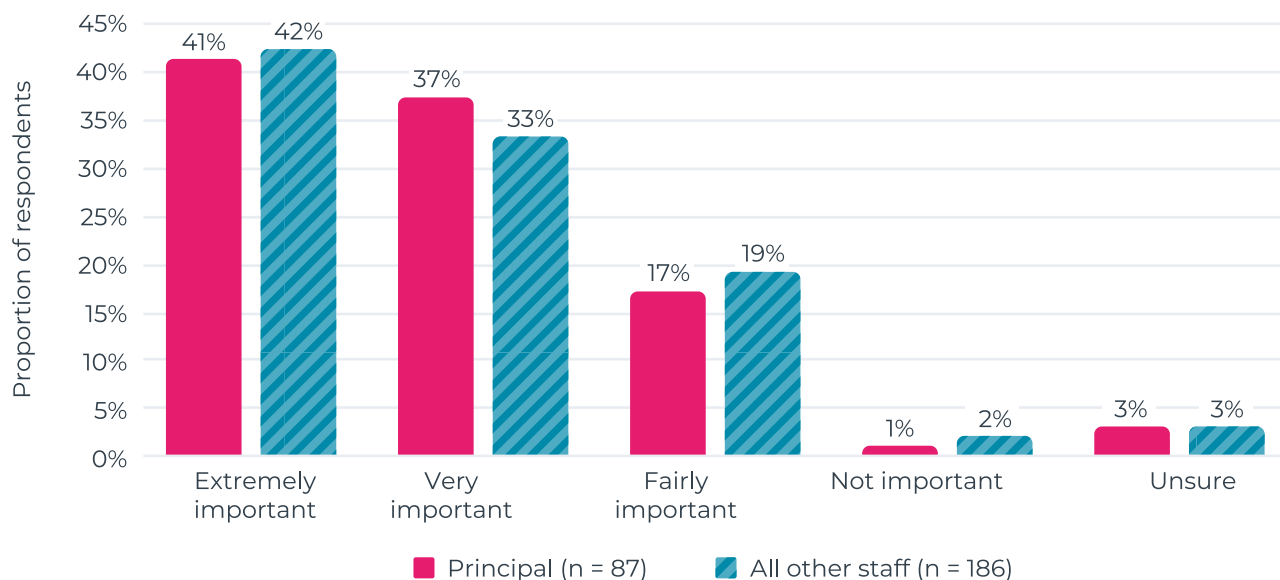
All individuals from PBL survey schools who indicated they had received assistance from a PBL coach mentor were asked how important that support had been. Of the 586 respondents who answered this question (and provided consistent information), importance was rated as follows:

- extremely important – 260 (44%) respondents
- very important – 188 (32%) respondents
- fairly important – 104 (18%) respondents
- not important – 13 (2%) respondents
- unsure – 21 (4%) respondents.

Figure E20 presents these findings for the principal and other staff at schools with multiple respondents.

Figure E20

Importance of support provided by coach mentors (schools with multiple respondents)



Overall, these findings indicate that the majority of respondents from PBL survey schools found the coach mentor support to be highly important. This was the perception regardless of the respondents' role at the school.

Planning-to-implement Positive Behaviour for Learning survey schools

Amongst planning-to-implement PBL survey schools, 13 respondents answered the question about how important the coach mentor's support had been. This support was rated as follows:

- extremely important – 8 (62%) respondents
- very important – 4 (31%) respondents
- fairly important – 1 (8%) respondent.

Thus, all of the respondents from planning-to-implement PBL survey schools, indicated that coach mentors had provided important assistance.

Other coaches

Positive Behaviour for Learning survey schools

PBL schools we surveyed were asked whether there was a staff member who acted as a PBL coach within the school. Of the 504 PBL schools that responded to this question (and provided consistent information), 347 (69%) indicated that they did have this type of staff member, 21 (4%) were unsure, and 136 (27%) said they did not.⁶⁸

⁶⁸ Amongst schools with multiple respondents, there were 55 additional schools where respondents provided conflicting answers to this question.

Respondents were also asked if they had received assistance from an external coach other than a coach mentor. Of the 467 PBL survey schools that responded to this question (and provided consistent information), 134 (29%) had received assistance from this type of external coach, 24 (5%) were unsure, and 309 (66%) said they did not.⁶⁹

All individuals from PBL schools we surveyed who indicated they had received assistance from an external coach other than a coach mentor were asked how important that support had been. Of the 209 individuals who answered this question (and provided consistent information), importance was rated as follows:

- extremely important – 87 (42%) respondents
- very important – 63 (30%) respondents
- fairly important – 50 (24%) respondents
- not important – 6 (3%) respondents
- unsure – 3 (1%) respondents.

Thus, PBL schools we surveyed were less likely to have received support from an external coach compared to a coach mentor but they nevertheless found the support provided by external coaches to be highly important.

Planning-to-implement Positive Behaviour for Learning survey schools

Planning-to-implement PBL survey schools were asked whether there was a staff member who does/will act as a PBL coach within the school. Of the 29 respondents who answered this question, nine (31%) indicated that they did (or would) have this type of staff member, 15 (52%) said this was still to be decided, four (14%) were unsure, and only one (3%) said they did not.

Respondents were also asked if they had received assistance from an external coach other than a coach mentor. Of the 28 respondents who answered this question, 8 (29%) had received assistance from this type of external coach and 20 (71%) had not.

Those who indicated they had received assistance from an external coach other than a coach mentor were asked how important that support had been. Of the eight individuals who answered this question, importance was rated as follows:

- extremely important – 4 respondents
- very important – 1 respondent
- fairly important – 2 respondents
- not important – 1 respondent.

Again, schools that were planning to implement PBL were less likely to have received support from an external coach compared to a coach mentor but those who had received support from an external coach found it quite important.

⁶⁹ Amongst schools with multiple respondents, there were 86 additional schools where respondents provided conflicting answers to this question.

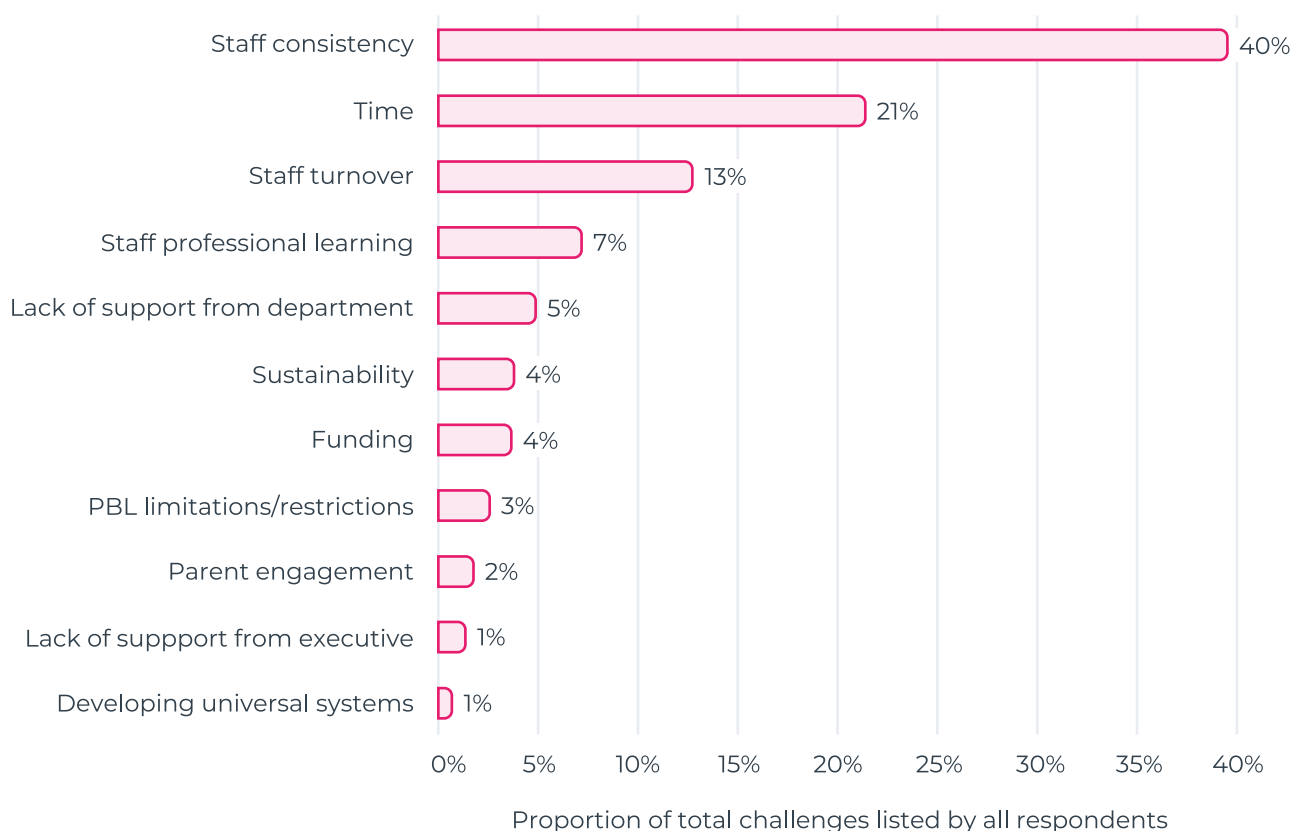
What challenges are faced by schools when implementing Positive Behaviour for Learning?

Challenges for Positive Behaviour for Learning survey schools

PBL survey schools were asked to complete an open-ended question describing any challenges they had encountered when implementing PBL. Responses were received from 517 schools. Some respondents listed multiple challenges, resulting in a total of 675 counted responses which we categorised into 11 themes. As shown in figure E21, of the 675 responses, the two main challenges that emerged were staff consistency and the time required to implement PBL.

Figure E21

Challenges encountered when implementing Positive Behaviour for Learning (n = 675)



Staff consistency

Almost half of the total challenges listed (40%, n = 267) involved difficulty achieving staff consistency when implementing PBL. Respondents made comments such as:

“Teacher buy in has been the biggest challenge...It has taken a couple of years to get momentum going with the new procedures and a common language.”

[Primary school head teacher]

“Teacher resistance to the idea that their own behaviours are under scrutiny as models... Resistance to idea of explicit teaching of behaviour expectations in the same way as academic expectations. Thinking that the students should already know how to behave.”

[Primary school principal]

Another common challenge, closely related to staff consistency, was staff turnover (13%, n = 86). This was considered challenging because new staff needed to be trained to become familiar with the school's PBL framework and ensure consistency across the whole school.

Time required

The second most commonly listed challenge that schools encountered when implementing PBL (see figure E21) was the time that it took to implement PBL with fidelity (21%, n = 145). Respondents said they found it challenging to find the time for all aspects of PBL including developing an action plan, developing PBL resources, teaching PBL lessons within an already crowded curriculum, time to enter and adequately analyse data, and time to meet with the PBL team and/or external coach to determine next steps. Some respondents noted that PBL is often pushed down the list of priorities as it does not have an impending deadline.

“The team works well but there really isn't any extra time to release a team to work together for the best possible outcomes. We end up just doing the best we can with the resources we have.”

[Primary school principal]

Survey respondents were asked how much time was required to implement PBL effectively compared to other behaviour management approaches. Of the 421 schools who responded to this question (and provided consistent information)⁷⁰, the time required compared to other approaches was:

- much more time – 109 (26%) schools
- a little more time – 115 (27%) schools
- about the same time – 156 (37%) schools
- a little less time – 5 (1%) schools
- much less time – 8 (2%) schools
- unsure – 28 (7%) schools.

⁷⁰ Amongst schools with multiple respondents, there were 126 additional schools where respondents provided conflicting answers to this question.

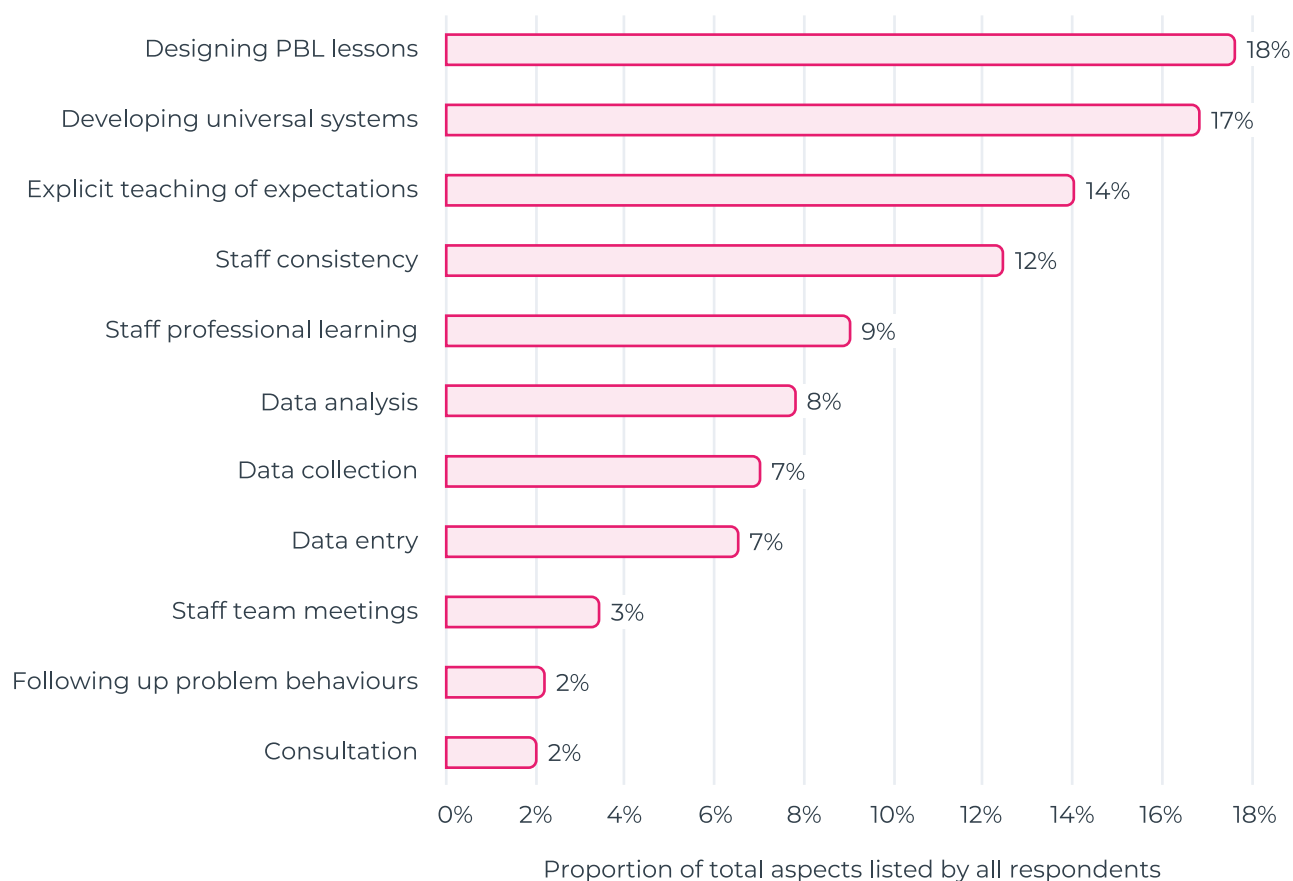
Thus, approximately half of the PBL schools who responded to this question indicated that more time was required to implement PBL compared to other behaviour management approaches. The survey did not ask respondents to specify the alternative approach(es) they were thinking about when answering this question, so we do not know if they were comparing like with like. However, the alternative approaches that are implemented by non-PBL and previous PBL survey schools, give us an indication of the approaches that respondents from PBL schools might have been making comparisons with. They include:

- restorative justice
- 'Positive Choices for Learning'
- 'You Can Do It'
- 'Five Keys to Success' programs.
- explicit, high expectations
- whole of school values system
- positive reinforcement
- negative consequences
- Bounce Back
- Fish philosophy
- Choice theory
- positive psychology inspired programs such as 'Power of Positives'.

All survey respondents received an open-ended question asking which aspects of PBL were the most time consuming to implement. Some respondents listed multiple time consuming aspects, resulting in a total of 642 answers to this question. As shown in figure E22, of the 642 time consuming aspects listed in response to this question, the most time consuming ones were categorised as follows:

- designing PBL lessons or implementing elements of PBL into established lessons (18%; n = 113)
- developing and implementing the universal systems (for example, school-wide matrices, reward systems, signage and communication materials; 17%; n = 108)
- explicit teaching of expectations (14%; n = 90)
- staff consistency (12%; n = 80).

Designing PBL lessons and developing universal systems are two aspects of PBL that are likely to require a substantial time investment when initially implementing PBL. These two aspects are likely to require less time the longer the school implements PBL.

Figure E22**Most time consuming aspects of Positive Behaviour for Learning** (n = 642)

Challenges for planning-to-implement Positive Behaviour for Learning survey schools

Survey respondents from planning-to-implement PBL schools were also asked to describe any challenges they had encountered in planning to implement PBL. Responses were received from 24 individuals who indicated that the main challenges were as follows:

- Time required – 9 respondents.

“The amount of time commitment needed for the training in a small school setting - this is a constant challenge to find time for staff to be out of the school.”
- Need for support to implement PBL – 3 respondents.

“I could not participate in training this year. I would like to have support in 2019 to implement PBL.”
- Using PBL evaluation tools – 2 respondents.

“There are many challenges in working with non-verbal students and students with complex and severe disabilities ... the first is completing the SET tool.”
- Aligning/integrating PBL with other school priorities – 2 respondents.

“Time constraints and aligning with other policies at the school.”

Thus, similar to schools who are already implementing PBL, the time required when planning to implement PBL is the leading challenge.

What aspects of Positive Behaviour for Learning are working well and what aspects are not working well?

Working well

Implementation of the universal features of PBL appears to be working well as evidenced by schools self-reporting that they are implementing most of these features. Although self-report needs to be interpreted cautiously, these findings suggest that schools are implementing PBL with reasonably good fidelity.

The coach mentor role also appears to be working well, with most schools accessing support from a coach mentor. Coach mentors are meeting demand and their support is perceived by schools as valuable.

PBL schools we surveyed were asked how likely they would be to recommend PBL as an approach to behaviour management to a school in similar circumstances. Of the 708 individuals who responded to this question, figure E23 indicates that the majority would be very likely (74%; n = 527) or fairly likely (21%; n = 147) to recommend PBL.

Figure E23

Likelihood of recommending Positive Behaviour for Learning to a similar school (n = 708)

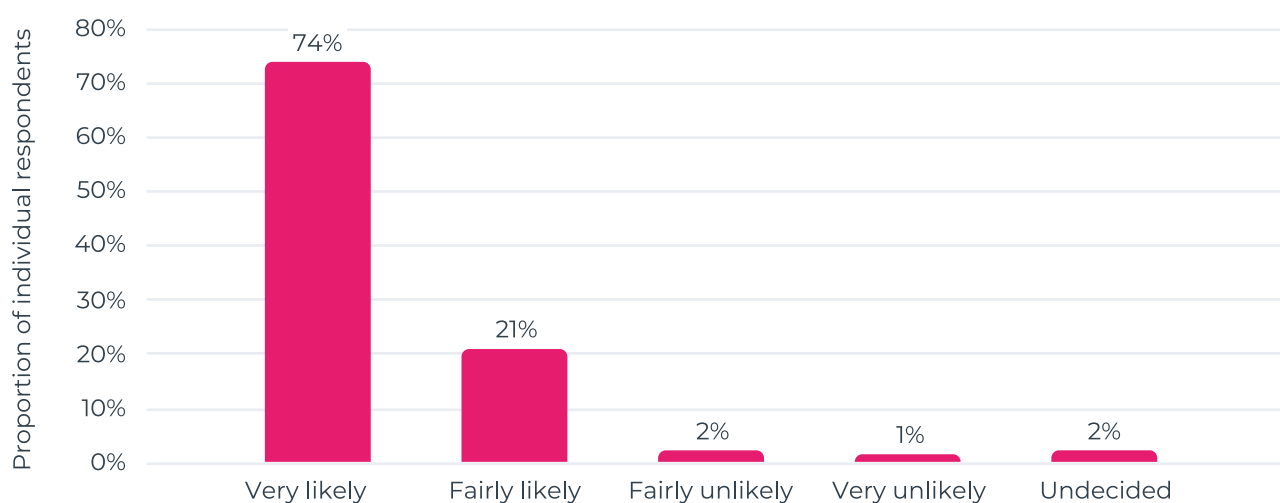
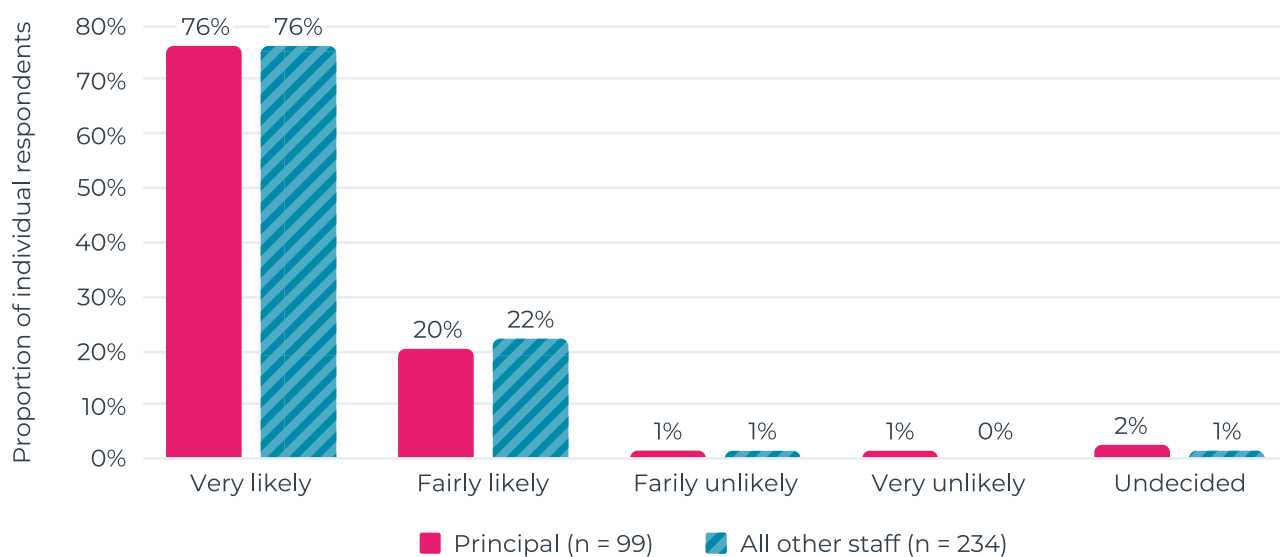


Figure E24 presents responses to this question by comparing principals' views with all other staff at schools with multiple respondents.

Figure E24

Likelihood of recommending Positive Behaviour for Learning to a similar school (schools with multiple respondents)

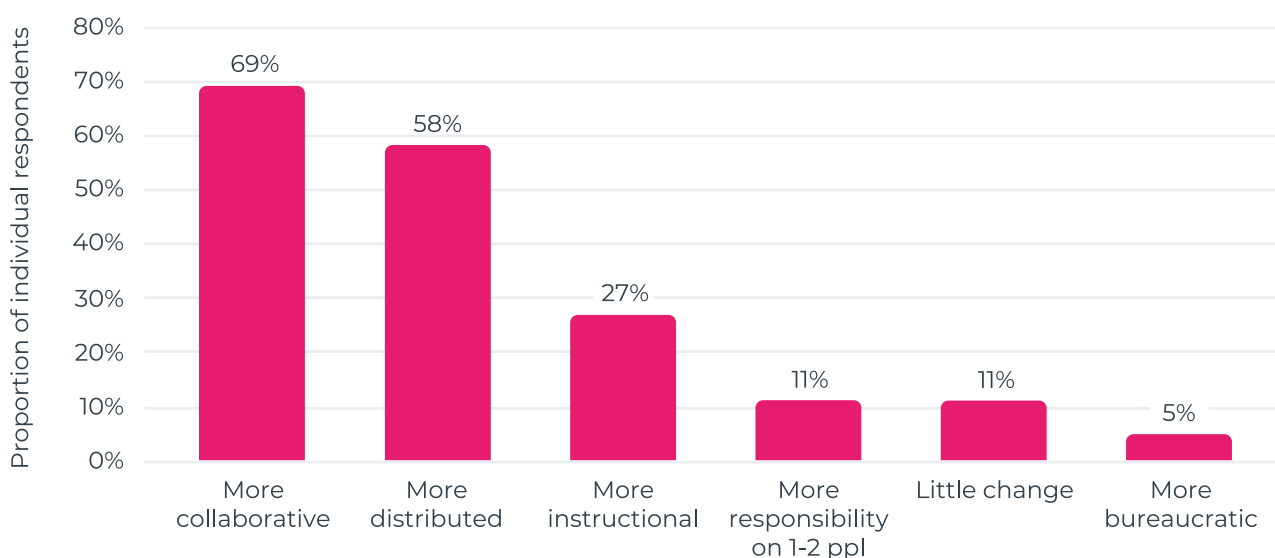


Together, figures E23 and E24 illustrate a high level of recommendation by all staff and suggest that schools who implement PBL view it as an approach that works well for their school.

PBL schools we surveyed were asked how the leadership culture at the school had changed since PBL was introduced. Figure E25 presents the responses of all staff who completed the survey and figure E26 compares the responses of teaching staff with the school executive at schools with multiple respondents.

Figure E25

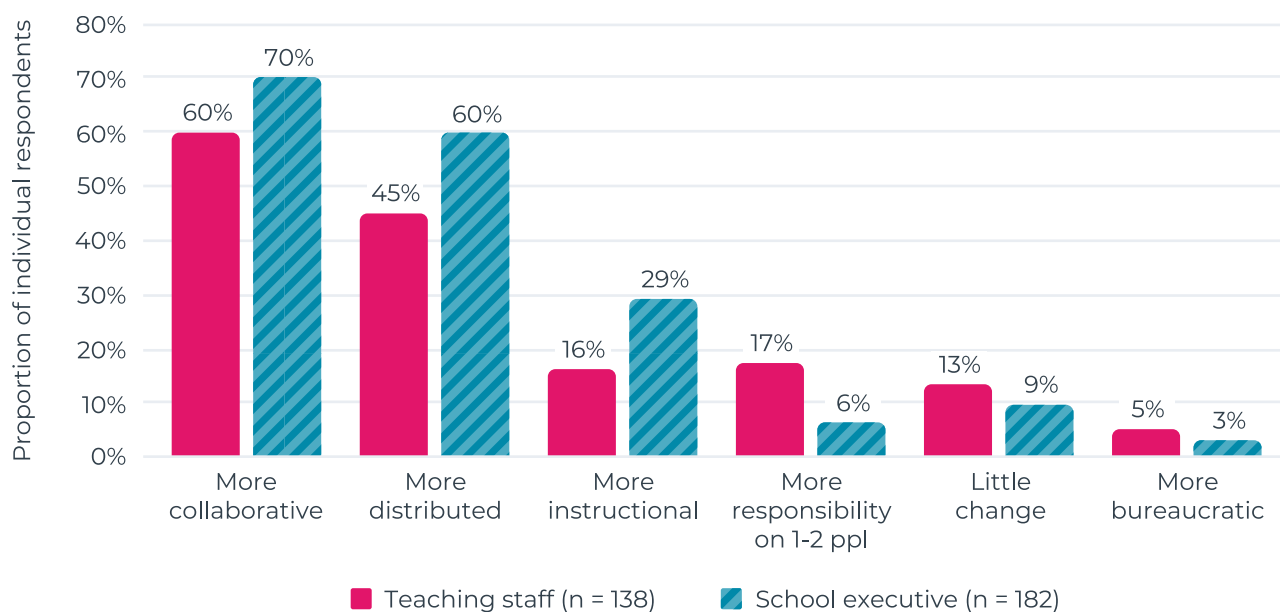
Change in leadership culture since the implementation of Positive Behaviour for Learning (all respondents) (n = 684)



As shown in these figures, the most common ways in which leadership culture had changed was by becoming more collaborative and more distributed. At schools with multiple respondents, a greater proportion of school executive indicated that leadership culture had become more collaborative, more distributed, and more instructional compared to non-executive teaching staff. These patterns are to be expected given the self-report nature of this survey question.

Figure E26

Change in leadership culture since the implementation of Positive Behaviour for Learning (schools with multiple respondents)



Overall, figures E25 and E26 indicate that the introduction of PBL has resulted in promising changes to leadership culture in PBL survey schools.

Not working well

There are very few aspects of PBL that do not appear to be working well. The main challenges for schools appear to be maintaining staff consistency with PBL implementation and the time investment that is required. These two areas may provide useful avenues for the department and/or coach mentors to focus on in the support they provide to PBL schools.

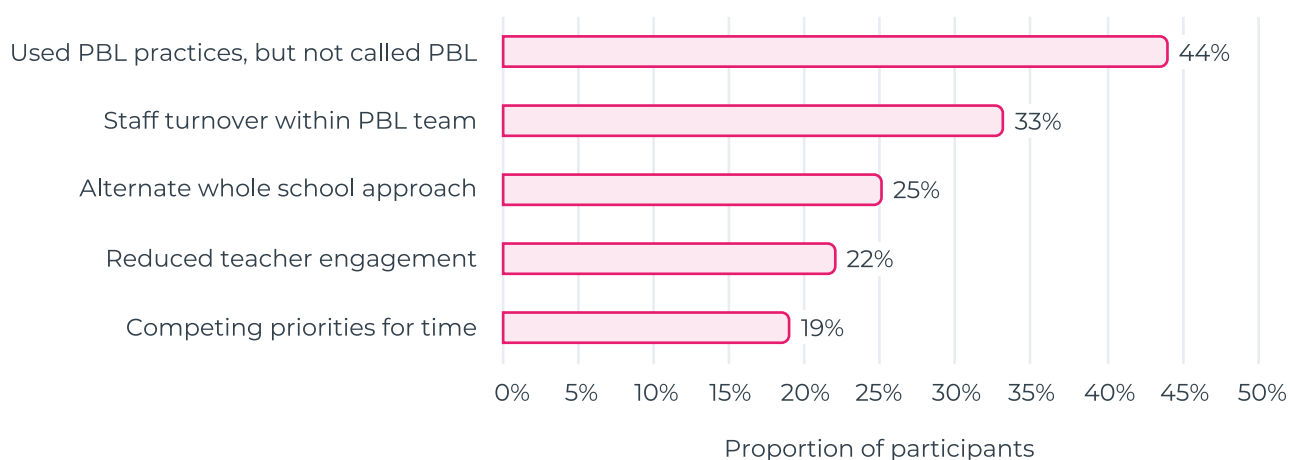
Reasons for stopping Positive Behaviour for Learning

Previous PBL survey schools were asked what factors influenced them to stop implementing PBL at their school. As illustrated in figure E27, of the 36 individuals who answered this question, the most common reasons were:

- The school used PBL principles and practices but it was not called PBL – 16 (44%) schools.
- Change of staff coordinating or leading PBL implementation – 12 (33%) schools.
- An alternative whole-school approach to behaviour management was developed – 9 (25%) schools.

Figure E27

Factors that influenced schools to stop implementing Positive Behaviour for Learning (n = 36)

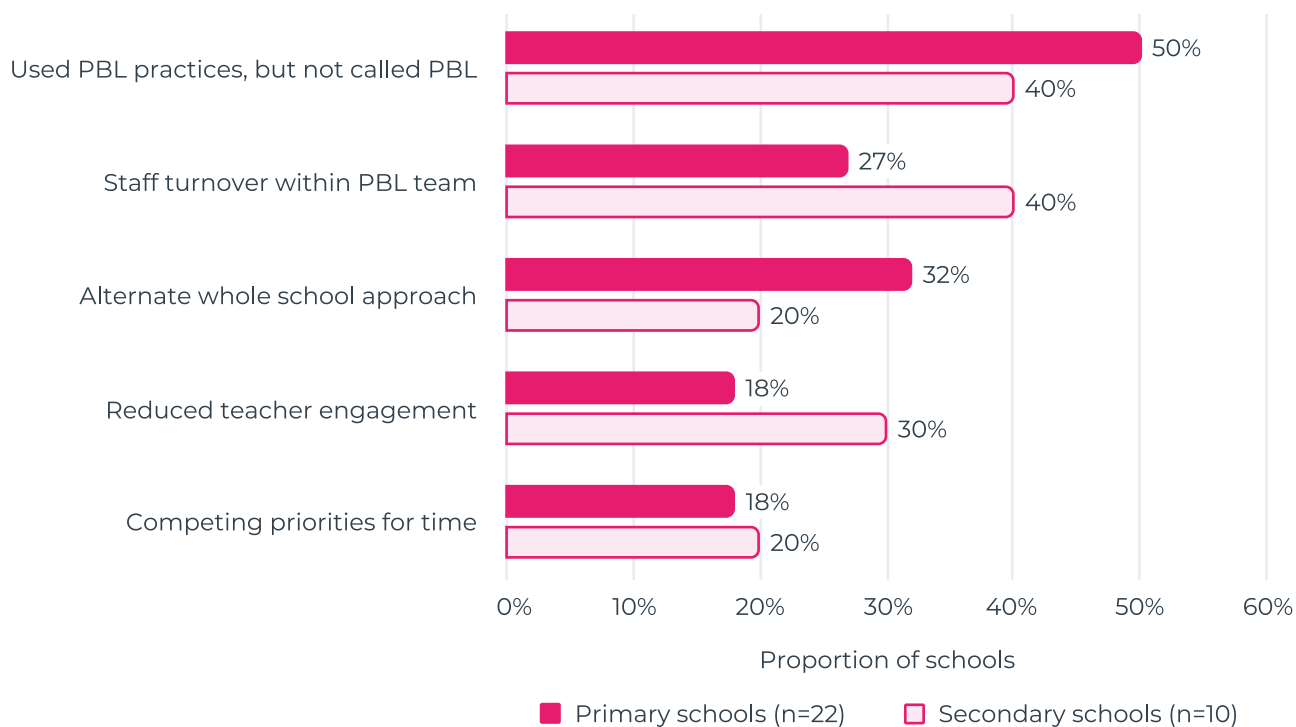


Twelve respondents (29%) selected “other” in response to this question and were asked to provide further information about why the school had stopped using PBL. Two said their school was developing an alternative approach to behaviour management, two said their school had no need for PBL because behaviour was very good, two said their school was working towards using PBL again, and one said staff had lost faith in the approach due to poor implementation.

We also examined whether the same factors influenced primary and secondary schools to stop using PBL, and as shown in figure E28, the main contributing factors were similar.

Figure E28

Factors that influenced primary and secondary schools to stop implementing Positive Behaviour for Learning



These results suggest that many previous PBL survey schools are continuing to implement elements of PBL but do not consider their school a 'PBL school'. Staff turnover and a reduction in staff engagement appear to be important factors that contribute towards schools stopping PBL. This is consistent with other CESE findings that staff buy-in is a critical enabling factor for successful implementation of school-based initiatives.

Likelihood of previous PBL schools recommending current approach

Previous PBL survey respondents were asked how likely they would be to recommend their school's approach to behaviour management to a school in similar circumstances. The 36 individuals who responded to this question rated their likelihood as follows:

- very likely to recommend – 16 (44%) schools
- fairly likely to recommend – 14 (39%) schools
- fairly unlikely to recommend – 1 (3%) school
- very unlikely to recommend – 2 (6%) schools
- undecided – 3 (8%) schools.

Thus, although the majority of schools would recommend their current approach, almost one in ten would not.

Reasons for not using Positive Behaviour for Learning

The non-PBL schools survey asked respondents if the school had ever considered using PBL. Of the 195 respondents who answered this question, 39% (n = 77) said the school had considered using PBL, 47% (n = 91) said the school had not considered it, and 14% (n = 27) did not know if the school had considered it.

The 91 respondents who indicated that their school had not considered using PBL, were asked to indicate the reasons why this was the case (from a list of options). The majority (68%, n = 62) said that they did not have a need to change the school's existing approach to behaviour management. Only one school indicated that they were not aware of PBL as an option. The remaining schools (31%, n = 28) selected the "other" option.

Those who selected the "other" option were asked to provide information about why their school had not considered using PBL. Respondents provided a variety of other reasons such as:

- PBL was not considered to be appropriate for their school context (for example, very small school, a hospital school with short-stay students, a school with ages ranging from 15-80, or a distance education school).
- Their school used many elements of PBL but they did not identify as a PBL school.
- Their school used an alternative whole-school behaviour management strategy.
- Drawbacks associated with PBL (for example, PBL was considered inflexible, outdated, not recommended by other schools).
- Their school did not need PBL as they had very few behaviour issues.

Together, these findings suggest that approximately half of non-PBL survey schools had not considered using PBL, mainly because they did not have a need to change their current behaviour management approach.

Likelihood of non-Positive Behaviour for Learning schools recommending current approach

Non-PBL survey respondents were asked how likely they would be to recommend their school's approach to behaviour management to a school in similar circumstances. The 195 individuals who responded to this question rated their likelihood as follows:

- very likely to recommend – 94 (48%) schools
- fairly likely to recommend – 67 (34%) schools
- fairly unlikely to recommend – 6 (3%) schools
- very unlikely to recommend – 2 (1%) schools
- undecided – 26 (13%) schools.

Thus, over 80% of non-PBL survey schools would recommend their approach to a school in similar circumstances.

What is the perceived impact of Positive Behaviour for Learning on wellbeing?

PBL schools we surveyed were asked to indicate what impact PBL had on student wellbeing, attendance, behaviour incidents, and suspensions.

Wellbeing

In terms of the impact of PBL on student wellbeing, the responses of the 454 PBL survey schools who answered this question (and provided consistent information) were:

- substantially improved wellbeing – 175 (39%) schools
- somewhat improved wellbeing – 217 (48%) schools
- no change to wellbeing – 24 (5%) schools
- somewhat reduced wellbeing – 4 (1%) schools
- substantially reduced wellbeing – 0 (0%) schools
- don't know – 34 (7%) schools.

The vast majority of schools (86%) indicated that since implementing PBL, student wellbeing had either substantially or somewhat improved.⁷¹

Respondents were asked in an open-ended question how they knew that PBL had improved/reduced student wellbeing (depending on their answer to the above question). Some respondents listed multiple reasons and the most prevalent included:⁷²

- examination of data – 449 schools (87%)
- observations – 270 schools (53%)
- feedback from parents – 207 schools (40%).

Thus, that main way that respondents knew that PBL had improved/reduced wellbeing was by examining data. This is encouraging given that PBL is designed to be a data-driven approach where regular examination of data should influence decision-making.

⁷¹ Amongst schools with multiple respondents, there were 92 additional schools where respondents provided conflicting answers to this question.

⁷² 512 PBL survey schools responded to this question.

Attendance

In terms of the impact of PBL on student attendance, the responses of the 439 PBL survey schools who answered this question (and provided consistent information) were:

- substantially improved – 22 (5%) schools
- somewhat improved – 102 (23%) schools
- no change – 216 (49%) schools
- somewhat reduced – 3 (1%) schools
- substantially reduced – 0 (0%) schools
- don't know – 96 (22%) schools.

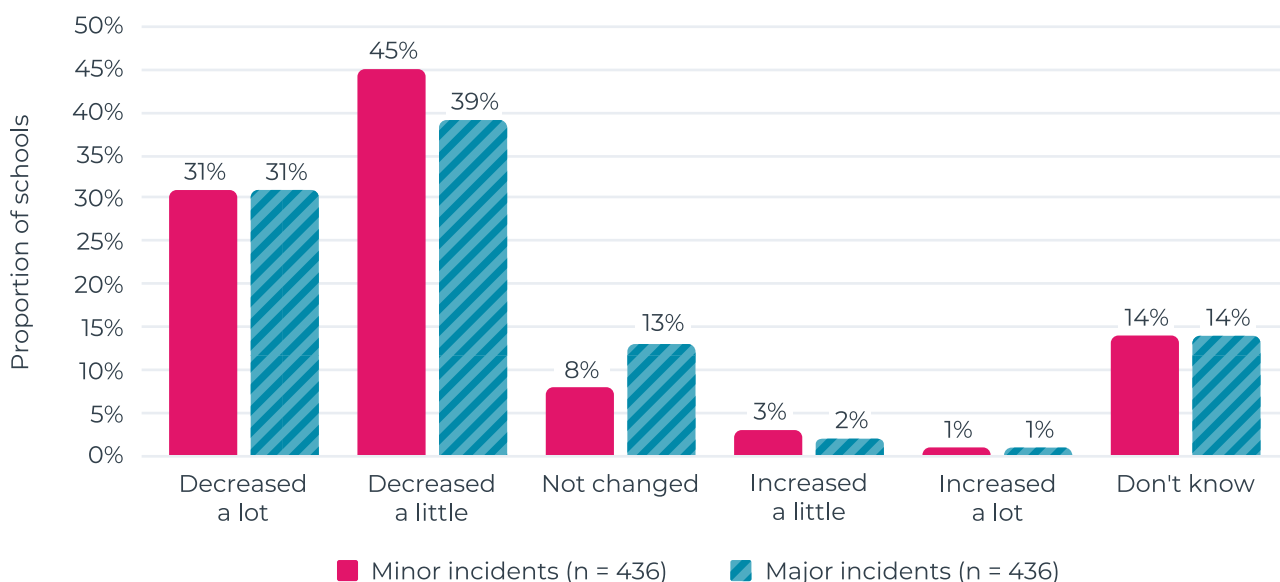
Just over a quarter of schools thought that PBL had improved student attendance although about half indicated that there had been no change to attendance.⁷³

Behaviour

In terms of the impact of PBL on minor and major behaviour incidents, the responses of the 436 PBL survey schools who answered this question (and provided consistent information) are presented in figure E29. These results indicate that the majority of schools thought that PBL had decreased the number of minor and major behaviour incidents.

Figure E29

Impact of Positive Behaviour for Learning on minor and major behaviour incidents



⁷³ Amongst schools with multiple respondents, there were 106 additional schools where respondents provided conflicting answers to this question

We also examined whether the reported decrease in problem behaviour incidents varied according to the length of time that schools had been implementing PBL. As shown in figures E30 and E31, the longer that schools had been implementing PBL, the more likely they were to report that minor and major behaviour incidents had decreased.

Figure E30

Impact of Positive Behaviour for Learning on minor behaviour incidents according to length of time implementing Positive Behaviour for Learning

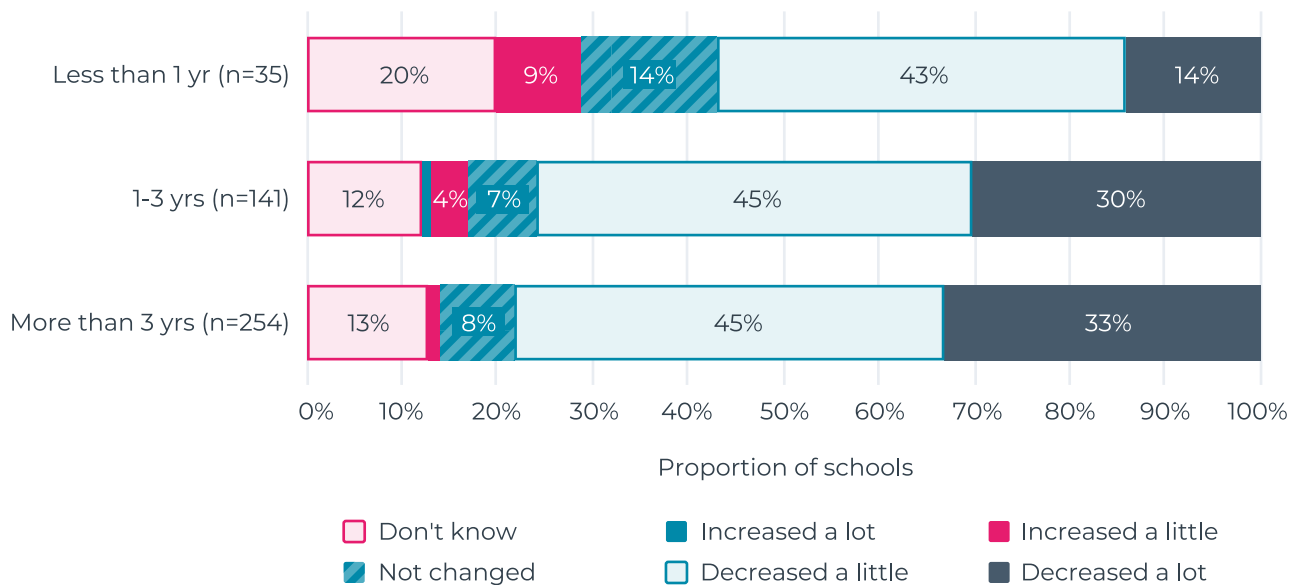
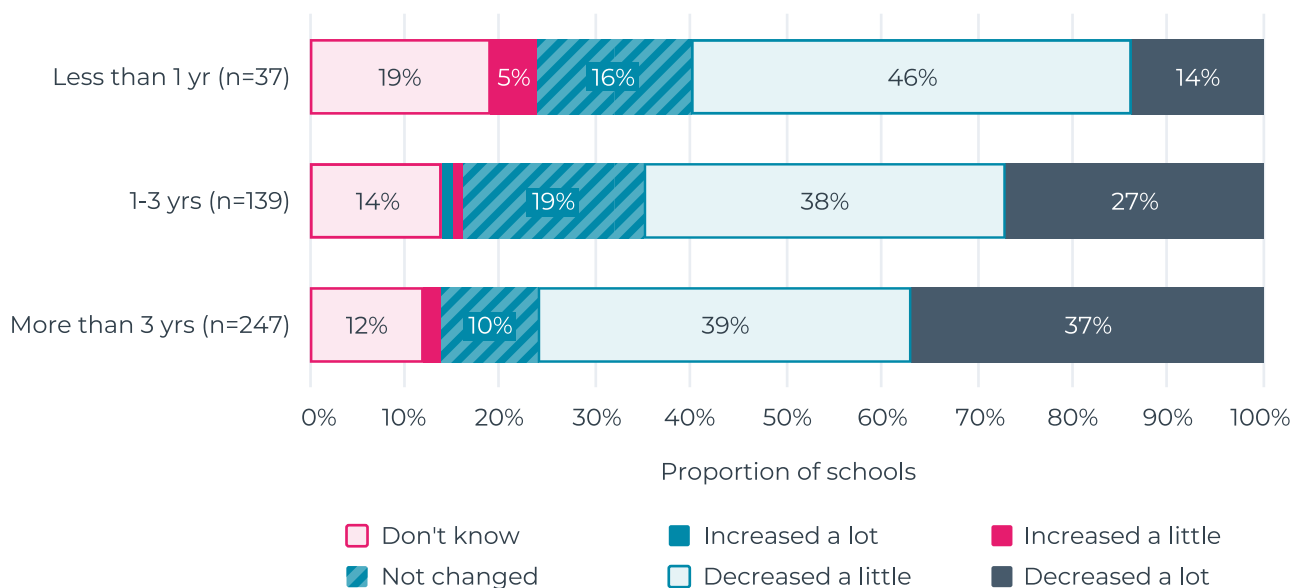
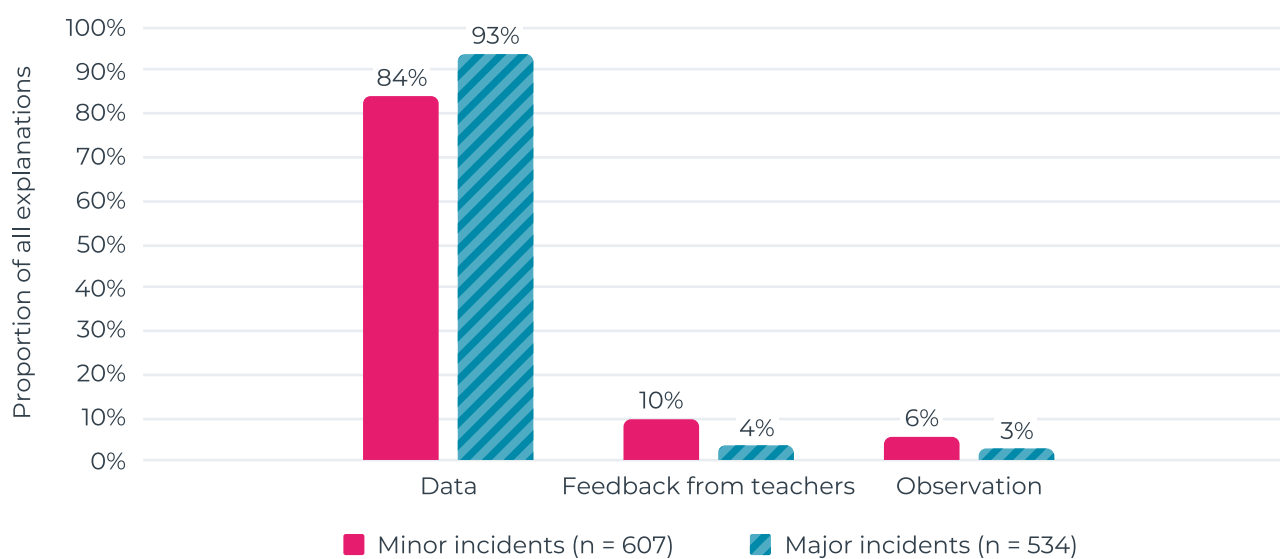


Figure E31

Impact of Positive Behaviour for Learning on major behaviour incidents according to length of time implementing Positive Behaviour for Learning



Respondents were asked in open-ended questions, how they knew that minor and major behaviour incidents had increased/decreased. Some respondents listed multiple reasons, resulting in a total of 607 reasons related to minor behaviour incidents and 534 reasons related to major behaviour incidents. As shown in figure E32, the most common reason provided for both types of incident involved the examination of data. Very few schools relied on feedback from teachers or observation as their only explanation.

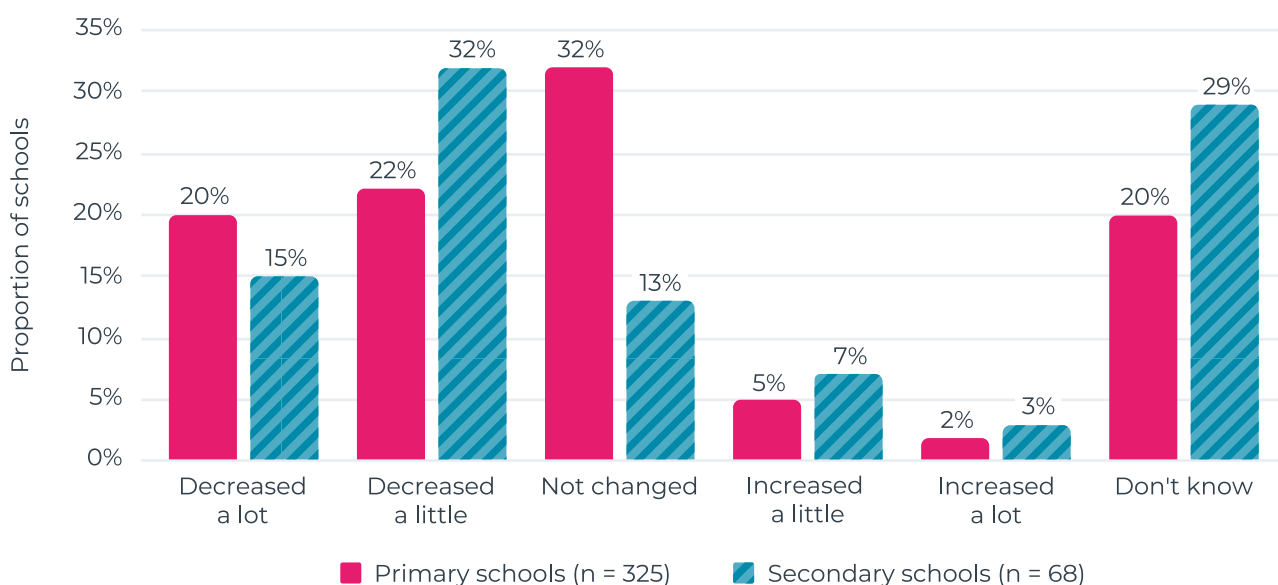
Figure E32**How respondents knew that Positive Behaviour for Learning had influenced behaviour incidents**

Suspensions

PBL wurvey respondents were asked to describe the impact of PBL on short suspensions. As shown in figure E33, 42% of primary schools and 47% of secondary schools thought PBL had led to a decrease in short suspensions.

Figure E33

Impact of Positive Behaviour for Learning on short suspensions in primary and secondary schools



Support needed by other schools

Non-Positive Behaviour for Learning survey schools

Non-PBL survey respondents were asked what school services support would be valuable to implement their behaviour management approach effectively. Suggestions included:

- more expertise to support students with complex, challenging behaviours
- additional funding to support students with complex needs
- more access to school counselling services
- hearing ideas from other schools
- knowledge of alternatives to PBL
- support managing welfare issues
- personnel to work with teachers to support complex behaviours in the classroom.

These suggestions indicate that non-PBL survey schools would like support for complex, challenging behaviour issues that occur at the individual-student level. This includes access to more expertise, more counselling, and support with welfare issues.

Previous Positive Behaviour for Learning survey schools

Previous PBL survey respondents were also asked what school services support would be valuable to implement their behaviour management approach effectively. Suggestions included:

- access to specialist support for complex needs
- consultants for specific behaviour problems
- additional funding to support students with complex needs
- personnel to support data collection and analysis
- personnel to work with teachers to support complex behaviours in the classroom.

These suggestions indicate that previous PBL survey schools would also like support for complex, challenging behaviour issues, rather than support with whole-of-school behaviour management.

Summary

Positive Behaviour for Learning survey schools

Overall, the majority of PBL survey schools indicate that they are implementing most of the universal features of PBL. These schools have accessed implementation support from a state supported coach mentor and have found that support highly valuable. The types of supported provided to schools primarily involved professional learning on PBL and support with data collection and data use. The main challenges faced by PBL survey schools include the time required for PBL implementation, and achieving staff consistency across the school. PBL survey schools also feel that PBL is improving wellbeing and reducing both negative behaviour incidents and short suspensions.

Planning-to-implement Positive Behaviour for Learning survey schools

Planning-to-implement PBL survey schools indicated that they have principal support as well as plans to give students and parents a voice in PBL implementation. Half of these schools had already received assistance from a PBL coach mentor, which mainly consisted of general support and professional learning. A handful of schools had also received support from an external coach other than a coach mentor. Notably, the support provided by coach mentors and external coaches was perceived to be very important. The main challenge faced by these schools involves the time required to implement PBL. This appears to be particularly difficult for small schools who struggle with release time for staff to attend PBL professional development sessions.

Previously implemented Positive Behaviour for Learning survey schools

A number of schools who previously implemented PBL are continuing to use elements of PBL but do not consider themselves PBL schools. Major factors that played a role in stopping PBL were staff turnover and a reduction in staff engagement, which are known to be important for successful implementation. Schools that previously implemented PBL highlighted some similarities between PBL and their current approach to behaviour management. These included consistent consequences for negative behaviour, widely known rules and expectations, systems in place to support staff to have a consistent approach to behaviour, and the collection and use of behavioural data. Together, these findings offer some explanations as to why schools might stop using PBL but suggest that many elements of PBL are being retained.

Non-Positive Behaviour for Learning survey schools

Most non-PBL survey schools have a variety of approaches to behaviour management that they are quite satisfied with and would recommend to a school in similar circumstances. The main reasons why some of these schools had not considered using PBL were because they did not see any need to change their current approach or they felt that PBL was not appropriate for their unique school context. The approaches used by non-PBL survey schools revealed a number of similarities with each other including the explicit teaching of rules and expectations, reinforcement of positive behaviour, and consistent consequences for negative behaviour. The majority of non-PBL survey schools also collected and used data for decision making and planning. Data was not only used to manage problem behaviour, but was often used to recognise and reward positive behaviour. Notably, a fairly large proportion of non-PBL survey schools developed and used individual behaviour management plans. Together, these findings offer some explanations as to why schools might not use PBL and provide insight into behaviour management alternatives.

Supplementary information – implementation of universal features

Expected behaviours and rules

Survey respondents indicated whether their school had developed school-wide rules and expectations specifically for behaviour. Of the 550 PBL survey schools who responded to this question, the vast majority had developed school-wide rules and expectations specifically for behaviour (99%; n = 544). Only two schools (<1%) indicated they had not done so and four (1%) were unsure. Amongst schools with multiple respondents, there was only one additional school where one respondent indicated that the school had developed school wide rules and expectations specifically for behaviour but the other did not.

Procedures for a consistent staff approach to behaviour management

Survey respondents indicated whether there were procedures in place for a consistent staff approach to behaviour management. Of the 542 PBL survey schools who responded to this question, the majority (97%; n = 525) indicated there were systems or procedures in place that support staff to have a consistent approach to behaviour management. Ten (2%) did not have these systems or procedures in place and seven (1%) were unsure. Amongst schools with multiple respondents, there were nine additional schools where respondents provided different answers about whether the school had systems or procedures in place that support staff to have a consistent approach to behaviour management.

Continuum of procedures for responding to problem behaviours

The survey asked whether there were documented procedures for responding to problem behaviours. Of the 539 PBL survey schools who responded to this question, 512 (95%) schools had documented procedures, 19 (4%) schools did not have documented procedures, and eight (1%) schools were unsure. Amongst schools with multiple respondents, there were 12 additional schools where respondents provided different answers to this question.

Procedures for teaching expected behaviours

The survey asked whether there were procedures in place at the school for teaching expected behaviours to students. Of the 532 PBL survey schools who responded to this question, 493 (93%) said that there were such procedures in place, 25 (5%) said there were not and 14 (3%) were unsure. Amongst schools with multiple respondents, there were 19 additional schools where respondents provided different answers to this question.

Procedures for informing parents about expected behaviours

The survey asked whether there were procedures in place at the school for informing parents about expected behaviours. Of the 508 PBL survey schools who responded to this question, 439 schools (86%) said there were such procedures in place, 48 (9%) said there were not and 21 (4%) were unsure. Amongst schools with multiple respondents, there were 43 additional schools where respondents provided different answers to this question.

Common purpose and approach to discipline

A statement of purpose may be developed by PBL schools to illustrate their common purpose and approach to discipline. Of the 515 PBL survey schools who responded to this question, 442 (86%) had developed a statement of purpose, 38 (7%) had not developed a statement of purpose, and 35 (7%) were unsure. Amongst schools with multiple respondents, there were 36 additional schools where respondents provided different answers to this question.

Appendix F

Positive Behaviour for Learning survey population of interest and respondent characteristics

Survey population of interest

Learning and Wellbeing maintains a database of schools implementing Positive Behaviour for Learning (PBL), including those that may have ceased implementing PBL. The database had been updated regularly, but was anticipated to contain some out of date information because schools may elect to start or stop using PBL at any time and are not required to report this to Learning and Wellbeing. To supplement the existing database, we included a question in the 2018 annual Centre for Education Statistics and Evaluation (CESE) principal survey (a survey distributed to roughly 50 per cent of all principals each year) which asked whether the school was currently implementing PBL, had previously implemented PBL, or had never implemented PBL. Although these sources proved to contain some conflicting information, they provided an approximate population database based on the best available information.

Characteristics of survey respondents

Table F1 presents the school type and role of respondents across the four PBL surveys.

Table F1

School type and role respondents

	PBL	Planning	Previous	Non-PBL
School types				
Primary	75% (n = 427)	73% (n = 22)	63% (n = 27)	72% (n = 141)
Secondary	17% (n = 96)	17% (n = 5)	28% (n = 12)	16% (n = 32)
SSP	4% (n = 23)	7% (n = 2)	7% (n = 3)	7% (n = 14)
Central	3% (n = 17)	0% (n = 0)	2% (n = 1)	2% (n = 4)
Infants	< 1% (n = 2)	0% (n = 0)	0% (n = 0)	1% (n = 1)
EEC	< 1% (n = 1)	3% (n = 1)	0% (n = 0)	2% (n = 4)
Roles of respondents				
Principal	48% (n = 354)	87% (n = 26)	93% (n = 40)	93% (n = 182)
Deputy principal	6% (n = 47)	3% (n = 1)	5% (n = 2)	3% (n = 5)
Head teacher	7% (n = 54)	3% (n = 1)	2% (n = 1)	0% (n = 0)
Classroom teacher	25% (n = 183)	7% (n = 2)	0% (n = 0)	0% (n = 0)
Other ⁷⁴	13% (n = 99)	0% (n = 0)	0% (n = 0)	5% (n = 9)

Note: SSP = School for specific purposes; EEC = Environmental education centre

⁷⁴ Respondents who selected "other" were mainly assistant principals, teaching principals, Learning and Support teachers, and PBL co-ordinators.

Appendix G

Analysis of centrally recorded attendance and suspension data

The Centre for Education Statistics and Evaluation (CESE) examined the impact of Positive Behaviour for Learning (PBL) on the following centrally recorded student attendance and suspension data:

1. student attendance
2. short suspension counts (that is, total number of short suspensions)
3. the number of unique (individual) students who receive short suspensions
4. long suspension counts
5. the number of unique students who receive long suspensions

Analysis methodology

Sample

Learning and Wellbeing within the NSW Department of Education has maintained a database of schools who are implementing PBL since it was introduced in NSW public schools in 2005. However, there were some minor inconsistencies and gaps in this database because schools may elect to stop using PBL at any time and are not required to report this to Learning and Wellbeing. To address these gaps, the Centre for Education Statistics, and Evaluation (CESE) supplemented the existing database with data collected in their 2018 annual principal survey and data collected in their 2018 PBL survey about whether schools were implementing PBL. Based on these three sources, we used a conservative approach for categorising schools as PBL schools and non-PBL schools for analysis purposes⁷⁵. We identified:

- 774 schools that consistently indicated that they were implementing PBL and for which we had a start date
- 709 schools that were excluded from analysis (including PBL schools where we did not have a start date, schools where we had conflicting information, and schools that implemented PBL previously but were no longer doing so)
- 727 schools who indicated they had never implemented PBL.

Once a school adopts PBL there is thought to be at least a 3 year transition period where they adjust to the PBL framework and refine their implementation. Thus, we allowed three years in between the “pre” and “post” data collection points. This meant that the PBL schools we included in our analysis, adopted PBL between 2009 and 2014.⁷⁶

75 Our three sources for identifying the PBL status of schools included:

- 1) The PBL survey developed for this evaluation
- 2) The 2018 CESE Principal Survey
- 3) The database of PBL schools maintained by Learning and Wellbeing

The PBL survey developed for this evaluation was the most recent source of information about a school's PBL status, so information in this survey overrode information from any other sources. If there was a conflict between a school's PBL status on the 2018 CESE Principal Survey and the database maintained by Learning and Wellbeing, we excluded them from our analysis. If a school did not respond to the PBL survey or the CESE Principal Survey, we obtained their PBL status from the database maintained by Learning and Wellbeing.

76 In the department's data cube, suspension data dates back to 2012 and attendance data dates back to 2008.

Propensity score matching

Schools that decide to adopt a PBL approach are not simply a random selection of NSW public schools. They are likely to have adopted PBL based on existing issues within the school such as the number and/or intensity of negative behaviour incidents. As such, simple comparisons of attendance rates and suspension counts across PBL and non-PBL schools would not account for these pre-existing differences. To isolate the impact of adopting PBL, propensity score matching was performed to reduce the effects of any pre-existing differences between schools (that is, to reduce the effects of confounding variables).

Propensity score matching is a technique where individuals who were exposed to a variable of interest (for example, PBL) are matched to individuals who were not exposed to the variable but have similar probabilities of exposure at baseline. The expectation is that individuals with similar probabilities of exposure are similar in most other aspects such that any observed differences in their outcomes can be attributed to exposure to the variable of interest.

For schools who adopted PBL in any given year, the potential control schools were the non-PBL schools as well as any schools who had not yet adopted PBL at the “post” time period. For example, if a school adopted PBL in 2011, its “pre” or baseline data collection point would be 2010 and its “post” data collection point would be 2014. Its potential control schools would be all of the non-PBL schools as well as any PBL schools who adopted PBL in 2015 or later. Table G1 shows the start years of PBL schools and the number of non-PBL schools that could be a potential control school.

Table G1

Positive Behaviour for Learning schools and potential non-Positive Behaviour for Learning comparison schools

PBL start year	PBL schools	Potential non-PBL controls
2009	98	913
2010	66	875
2011	74	854
2012	48	787
2013	38	693
2014	32	626

The propensity score matching procedure, attempted to find similar comparison schools based on the following factors measured at “pre” year:

1. Attendance rate;
2. Index of Community Socio-Educational Advantage (ICSEA)⁷⁷;
3. School location with three levels: metropolitan, provincial and rural/rural and remote area;
4. School type with four levels: infants school, primary school, secondary school and central school;
5. School gender type with three levels: girls only, boys only and mixed school;
6. Proportion of language background other than English (LBOTE) students⁷⁸;
7. Proportion of Aboriginal and Torres Strait Islander (ATSI) students;
8. Total number of enrolled students;
9. Total recurrent funding per student including funding from the commonwealth government, state government, community contributions and parent contributions;
10. Short suspension count (suspension data is only available from 2012).

The attendance rate for a year, is defined as:

$$\pi = \frac{\sum_{k=1}^4 \text{number of attended days}_k}{\sum_{k=1}^4 \text{number of school open days}_k}$$

Where k represents each term of the year.

Schools started PBL in different years so the propensity score matching was performed for each year j , where $j = 2009, 2010, \dots, 2014$. To calculate the propensity scores for both PBL and non-PBL schools in each year, we first fitted logistic regression models to the data for each year. The model for year j is below:⁷⁹

$$\begin{aligned} \Pr(\text{PBL}_{ij} = 1) = & \text{logit}(\beta_{0j} + \beta_{1j} \cdot \text{attendance rate}_{ij-1} + \beta_{2j} \cdot \text{ICSEA}_{ij-1} + \\ & \beta_{3j} \cdot \text{School location}_{ij-1} + \beta_{4j} \cdot \text{School type}_{ij-1} + \\ & \beta_{5j} \cdot \text{School gender type}_{ij-1} + \beta_{6j} \cdot \text{LBOTE proportion}_{ij-1} + \\ & \beta_{7j} \cdot \text{ATSI proportion}_{ij-1} + \\ & \beta_{8j} \cdot \text{log of enrolment count}_{ij-1} + \beta_{9j} \cdot \text{school funding per student}_{ij-1} + \\ & \beta_{10j-1} \cdot \text{Short Suspension count}_{ij-1} \end{aligned}$$

⁷⁷ The ICSEA value is the level of a school’s educational advantage. ICSEA provides an indication of the socio-educational background of students. It is calculated based on four factors – two student factors and two school factors. The two student factors are (1) parents’ occupation and (2) parents’ education. The two school factors are (1) geographical location and (2) proportion of Indigenous students. ICSEA is a scaled score. The median score is set at 1,000 with a standard deviation of 100. Schools with lower ICSEA values have lower levels of educational advantage, and schools with higher ICSEA values have higher levels of educational advantage.

⁷⁸ The proportion of LBOTE students is available from 2014 to 2017 in the department’s LBOTE data cube. The proportions before 2014 can be calculated by number of LBOTE students divided by number of enrolments. However, the data comes from a different data source so the calculated rate is not always accurate, that is, some schools were found with a rate greater than 1.

⁷⁹ ICSEA value and school funding data were not available in 2008, but these two variables are very consistent, so in the logistic regression model for 2009 PBL schools, both ICSEA and schools funding were replaced by their 2009 values. In addition, short suspension data was available from 2012, so the variable “short suspension count” only appeared in 2013 and 2014 models and not in other years.

Where i represents a school and j represents the year 2009, ..., 2014.

For each year, we then used the estimated parameters from the logistic regression model to calculate propensity scores for both PBL and non-PBL schools. We used 1:1 nearest neighbour matching with replacement to match non-PBL schools to PBL schools (see Stuart 2010 for more information on different matching methods). The sampling frequencies for the non-PBL schools ranged from one to four. As the aim of the analysis was to investigate the impact of PBL, PBL schools were not matched to non-PBL schools (that is, matching was unidirectional). All the matched non-PBL schools together comprised the comparison schools in our final analysis.

Figures G1 and G2 illustrate baseline data of PBL schools compared to baseline data of non-PBL schools before and after propensity score matching. As shown in this figure, PBL and non-PBL schools differed at baseline on the variables listed above (that is, at baseline they had different probabilities of exposure to PBL). However, after propensity score matching, PBL and matched control schools had similar baseline data (that is, at baseline they had similar probabilities of exposure to PBL).

Figure G1
Before propensity score matching

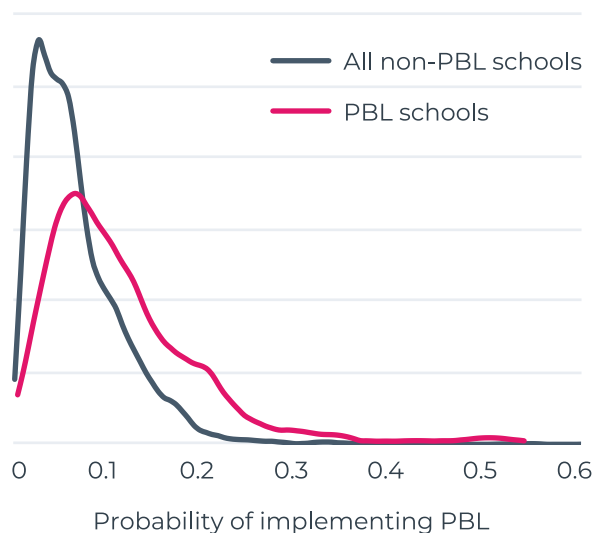
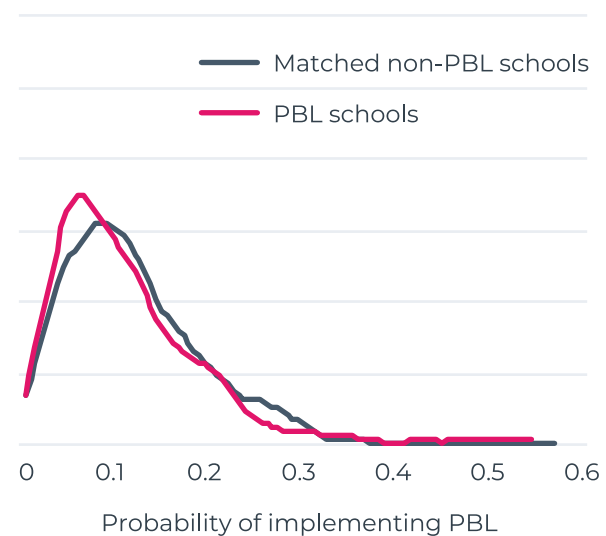


Figure G2
After propensity score matching



Figures G3-G10 present boxplots for each of the covariates. Each boxplot illustrates the distributions for three groups: 1) potential comparison schools before matching, 2) comparison schools after matching, and 3) PBL schools. As shown in these figures, PBL and potential comparison schools differed at baseline before matching, but after matching the comparison schools and PBL schools have similar distributions of each covariate.

Figure G3

Boxplot of attendance rate before Positive Behaviour for Learning implementation

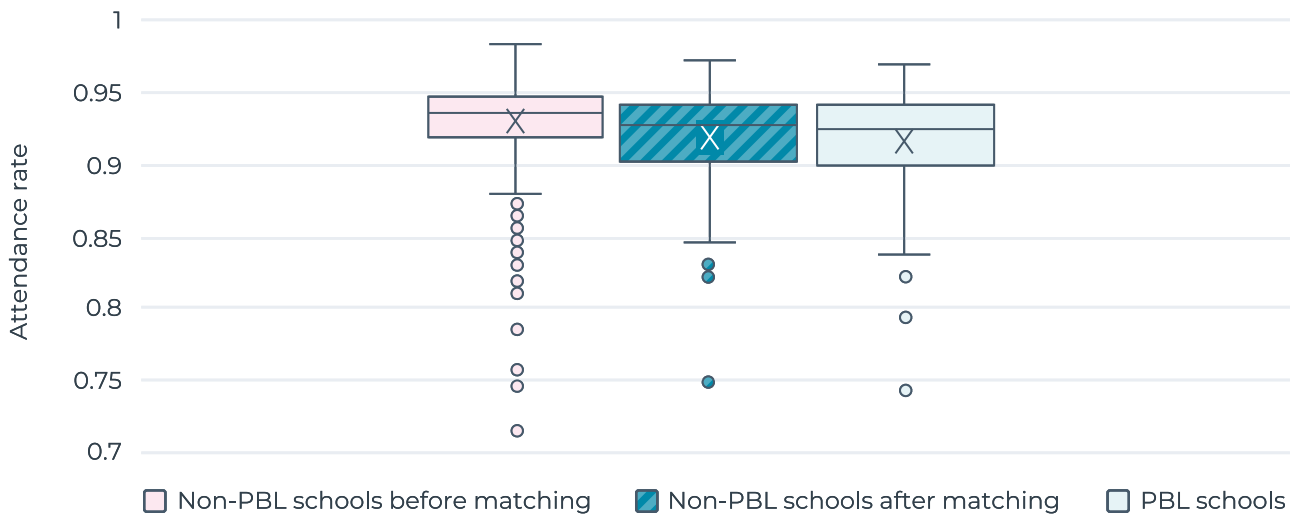


Figure G4

Boxplot of Index of Community Socio-Educational Advantage values before Positive Behaviour for Learning implementation

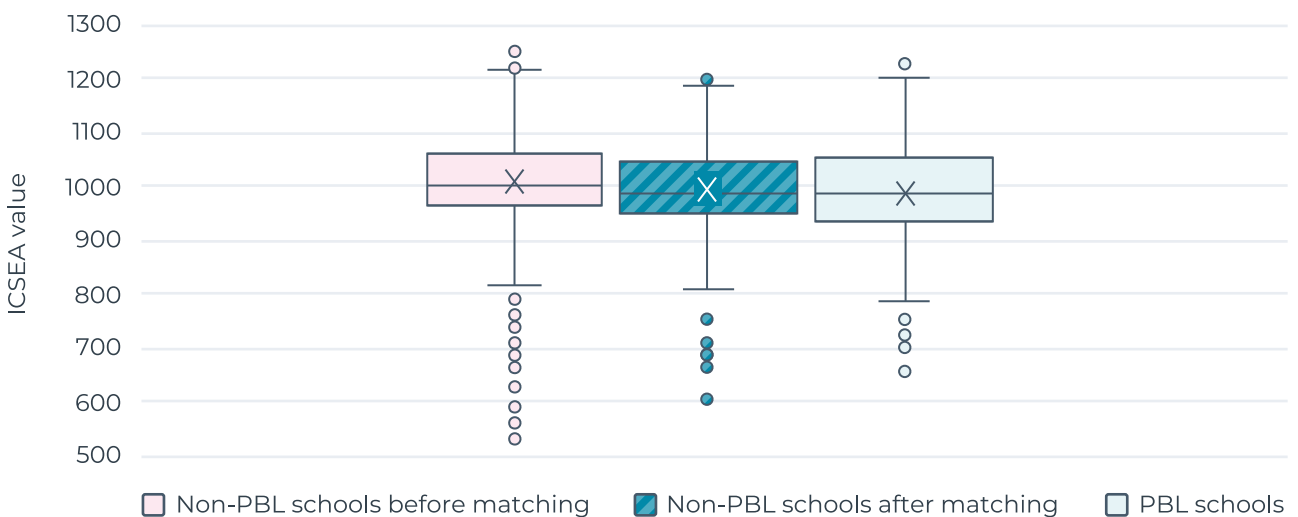


Figure G5

Boxplot of school location

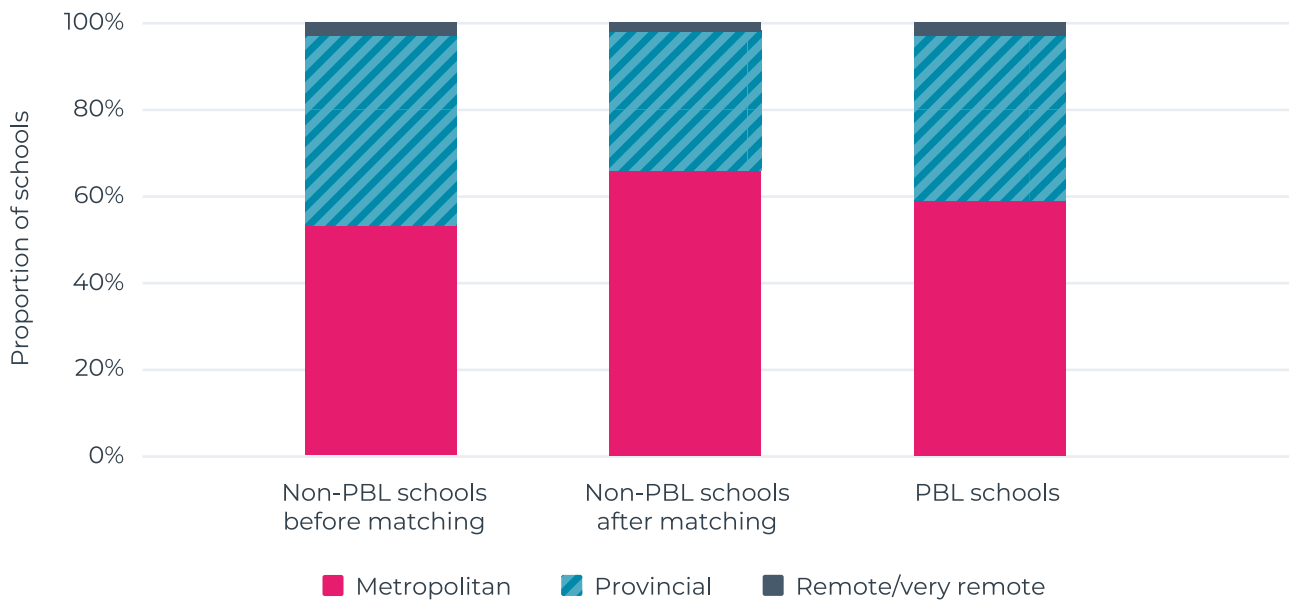


Figure G6

Boxplot of school type

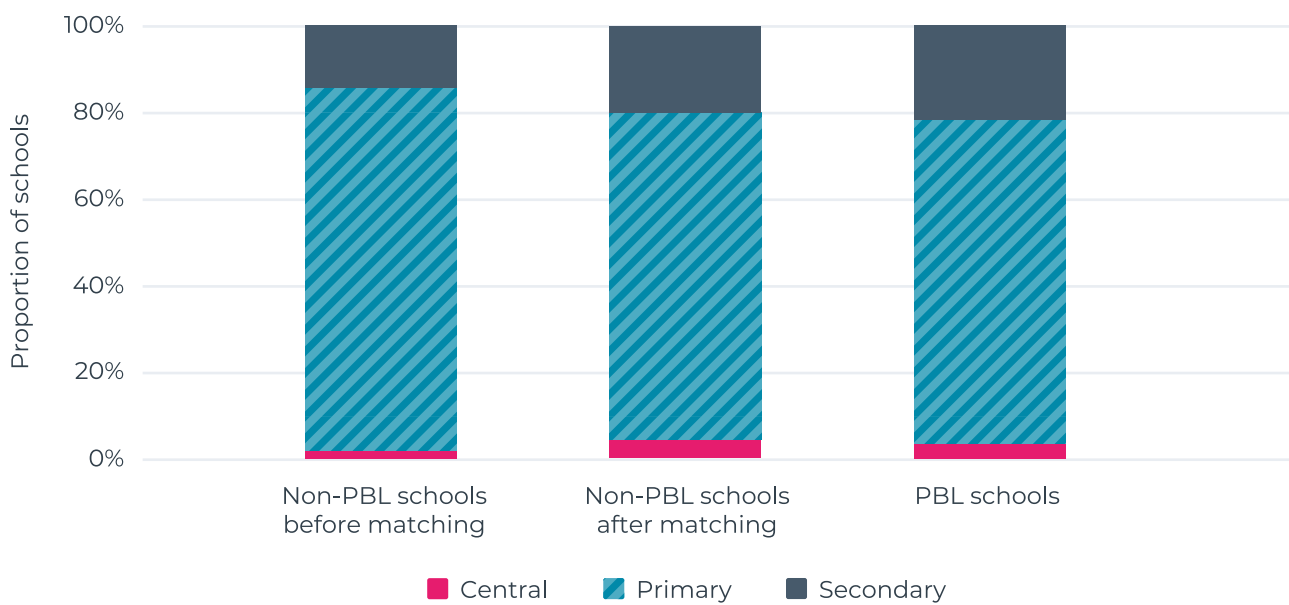


Figure G7

Boxplot of Language Background Other Than English proportion

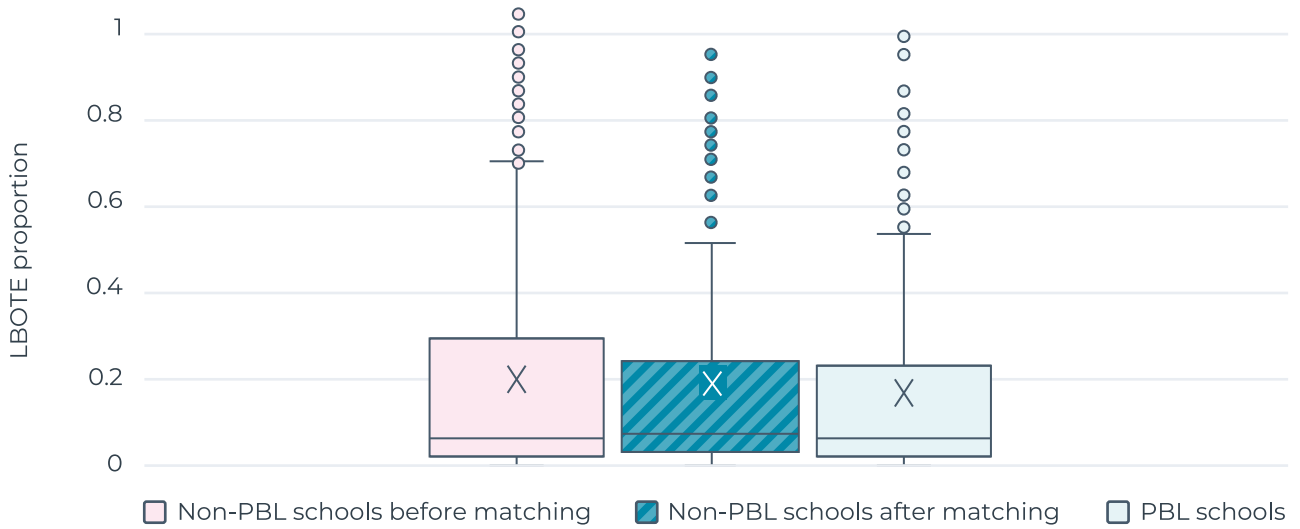


Figure G8

Boxplot of Aboriginal and Torres Strait Islander proportion

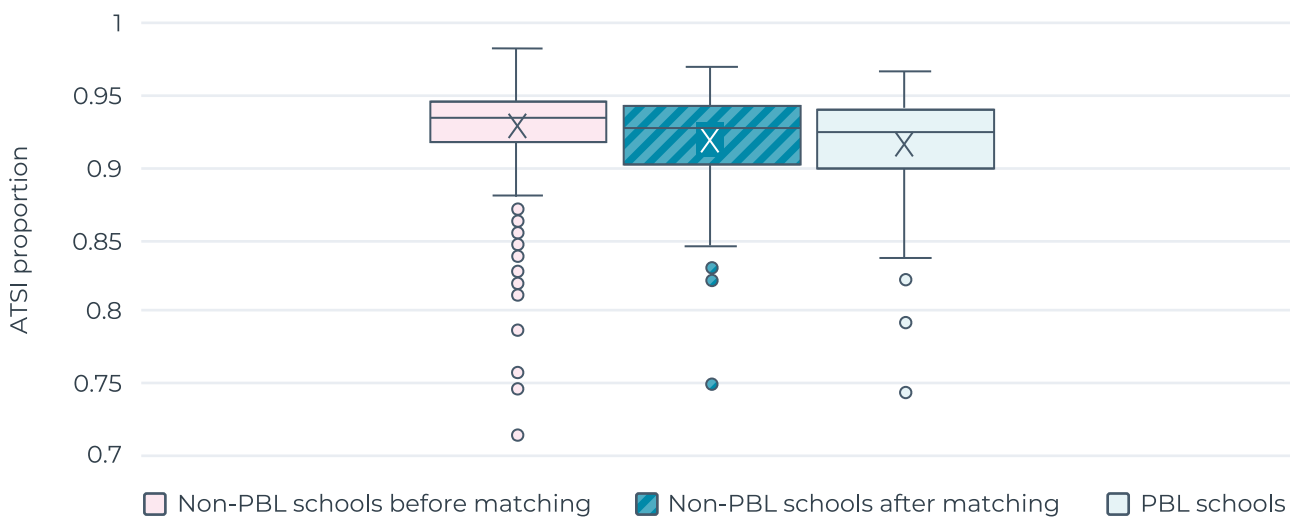


Figure G9

Boxplot of log of enrolment count

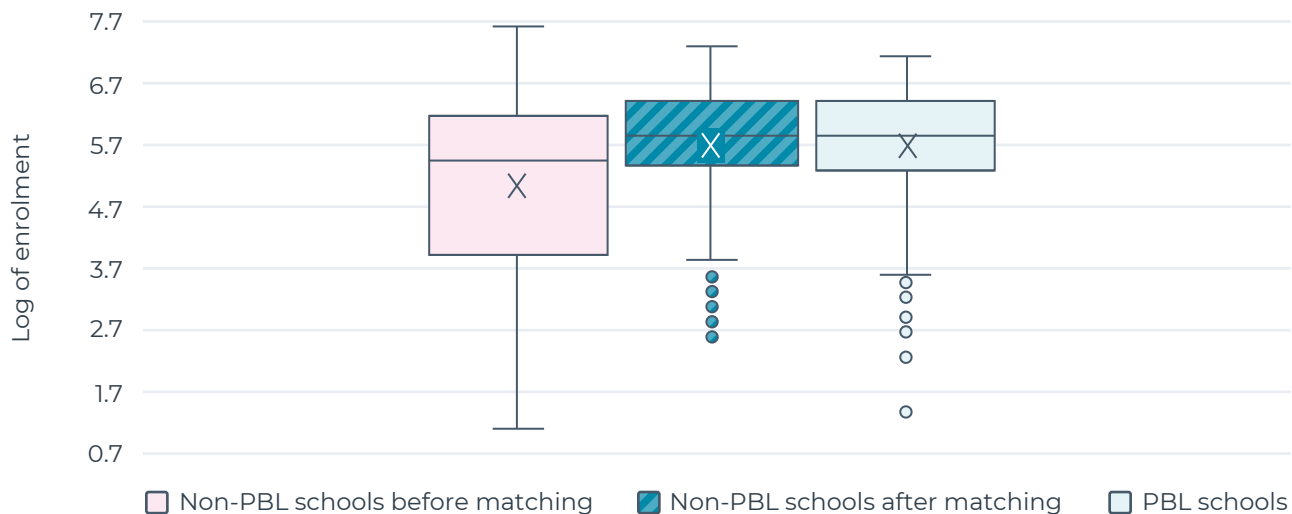
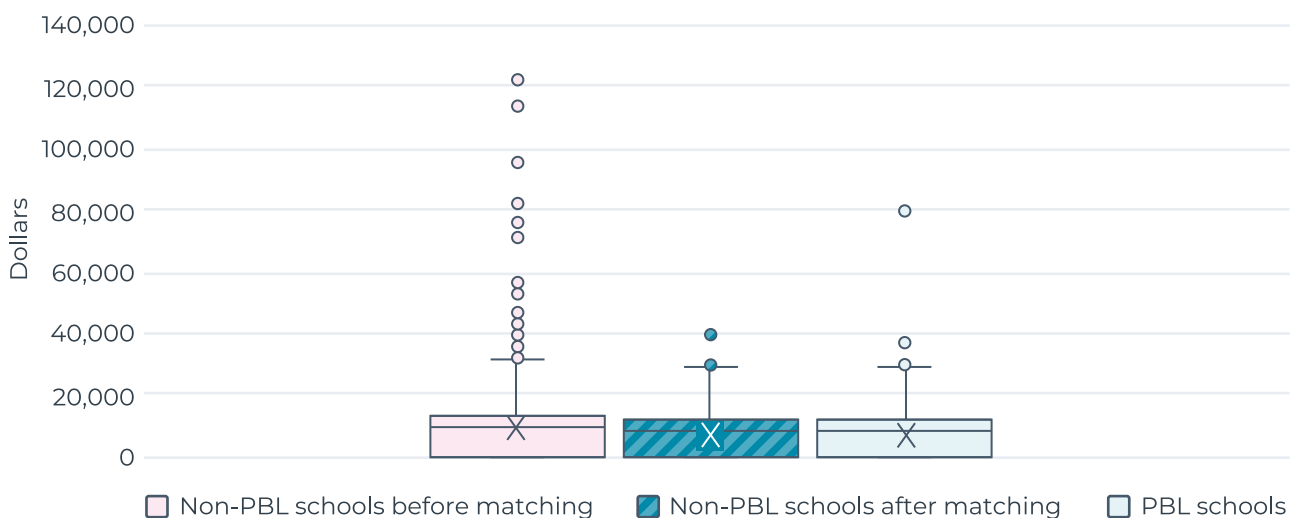


Figure G10

Boxplot of amount of funding per student



Robustness checks

Since suspension data only exists from 2012 onwards, schools that started PBL in 2013 and 2014 are the only schools that have both pre and post suspension data. A series of regression analyses were performed to compare schools that started PBL in 2013 and 2014 with schools that started PBL in any year (that is, from 2009 – 2014). This robustness check revealed no differences for schools who started in 2013 and 2014, so it is assumed that pre suspension data is naturally similar across PBL and matched control schools.

Generalised linear models

To examine the impact of PBL on attendance rates, we fitted a generalised linear model to compare attendance rate at PBL and comparison schools, three years post PBL implementation. The model is:

$$\log\left(\frac{\pi_i}{1 - \pi_i}\right) = \alpha + \gamma \text{ Indicator of PBL}_i$$

Where π_i is the “post” year attendance rate for school i , γ is the regression coefficient and indicates the difference of the logit scaled attendance rate between PBL schools and comparison schools.

To examine the impact of PBL on short and long suspension count, we used a series of Poisson regression models to compare suspensions at PBL and comparison schools, three years post implementation. The model is below:

$$\log(N_i) = \alpha + \gamma \text{ Indicator of PBL}_i$$

Where N_i represents the “post” year suspension count for school i , and γ is the regression coefficient and indicates the difference of log scaled suspension count between PBL schools and comparison schools.

To examine the impact of PBL on the number of unique students who received short and long suspensions, we used a series of Poisson regression models to compare the number of students who received these suspensions at PBL and comparison schools, three years post implementation. The model is below:

$$\log(N_i) = \alpha + \gamma \text{ Indicator of PBL}_i$$

Where N_i represents the “post” year number of unique students suspended for school i , and γ is the regression coefficient and indicates the difference of log scaled number of unique students suspended between PBL schools and comparison schools.

In above models, using the estimated parameters we calculated the interval estimations of attendance rate, suspension count, and number of unique students suspended for both PBL and comparison schools. We also calculated the interval estimation of the difference between PBL schools and comparison schools.

Results

The propensity score matching procedure meant that PBL schools and matched comparison schools had similar attendance and suspension data at baseline (that is, at the “pre” data collection point). Therefore, our analyses examined differences between PBL and non-PBL schools three years post PBL adoption.

Table G2 shows the estimated difference between PBL schools and comparison schools across each model. This table shows that the difference in attendance rate between PBL and comparison schools is less than one per cent. Similarly, the difference in short and long suspension counts is one to two suspensions, and the difference in the number of unique students who received short and long suspensions is approximately one student.

Table G2**Parameter estimates for regression models**

Model	Estimated difference between PBL and comparison schools	95% confidence interval lower limit	95% confidence interval upper limit
Attendance rate	-0.335%	- 0.933%	0.264%
Short suspension count	1.680 short suspensions	-7.960	11.320
Short suspension unique students	1.065 unique students	-5.025	7.154
Long suspension count	2.301 long suspensions	- 1.763	6.364
Long suspension unique students	1.211 unique students	-1.713	4.134

Attendance

Figure G11 presents the average attendance rate at schools that implemented PBL and at comparison schools. As shown in figure G11, we estimate that the average attendance rate at schools that implemented PBL was about 91.6 per cent three years after implementation (95% CI [91.3 per cent, 92.0 per cent]). This is about 0.34 percentage points lower than what we would expect to see had these schools not implemented PBL. Our estimate of the effect of PBL on school attendance was fairly precise, and indicates that PBL is unlikely to have a meaningful impact on attendance rates.

Figure G11**Attendance rates at Positive Behaviour for Learning and matched non-Positive Behaviour for Learning schools**

Short suspensions

A Poisson regression model compared short suspension counts and the number of unique students who received short suspensions at PBL and comparison schools. These results are shown in figures G12 and G13.

Figure G12

Short suspensions – total count

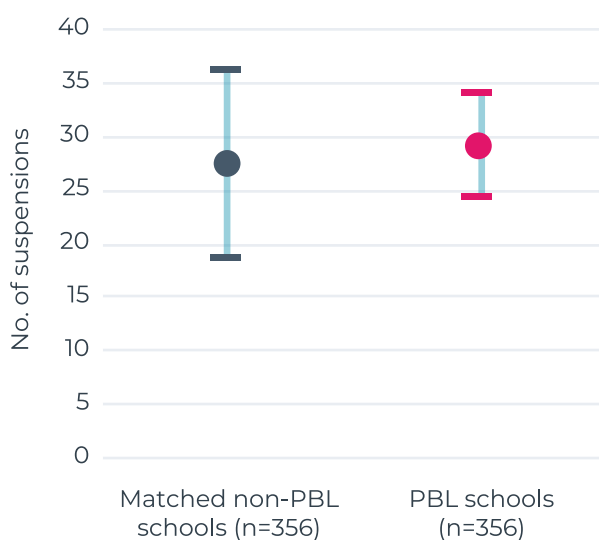
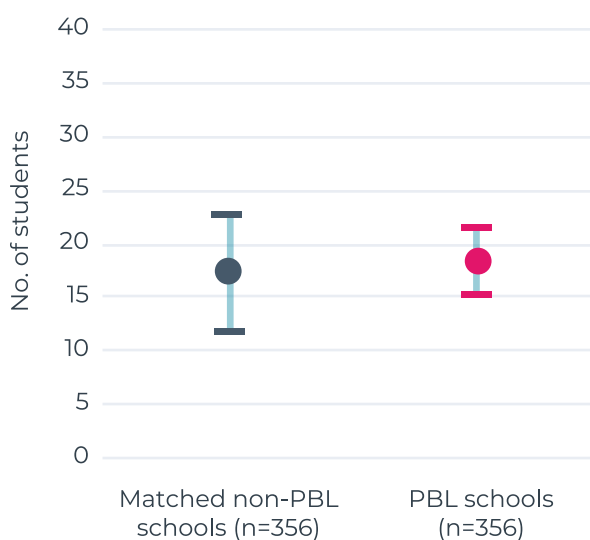


Figure G13

Short suspensions – unique students



As shown in figure G12, we estimated the average number of short suspensions at schools that implemented PBL was 29.1 three years after implementation (95% CI [24.14, 34.10]). This is about 1.7 cases more than what we would expect to see has these schools not implemented PBL. Our estimate of the effect of PBL on short suspension was somewhat imprecise. However, PBL is probably not having a meaningful impact on the total number of short suspensions.

Similarly, as shown in figure G13, we estimated the average number of students who received short suspension in schools that implemented PBL was 18.6 three years after implementation (95% CI [15.53, 21.74]). This is about 1.1 students more than what we would expect to see has these schools not implemented PBL. Our estimate of the effect of PBL on number of students who received short suspension was somewhat imprecise. However, PBL is probably not having a meaningful impact on the number of unique students who receive short suspensions.

We also examined students who received short suspensions for continued disobedience. This is a reason for a short suspension that is closely linked to the behavioural outcomes of PBL. We used the same analysis procedure to compare the number of suspensions for continued disobedience and the number of unique students who were suspended for this reason. Results indicate that PBL schools had 0.68 fewer suspensions for continued disobedience than comparison schools (95% CI [-5.82, 4.45]). PBL schools also suspended 0.33 fewer students for continued disobedience than comparison schools (95% CI [-3.94, 3.27]). These small differences indicate that PBL is probably not having a meaningful impact on suspensions for continued disobedience.

Long suspensions

A Poisson regression model compared long suspension counts and the number of unique students who received long suspensions at PBL and comparison schools. These results are shown in figures G14 and G15.

Figure G14

Long suspensions – total count

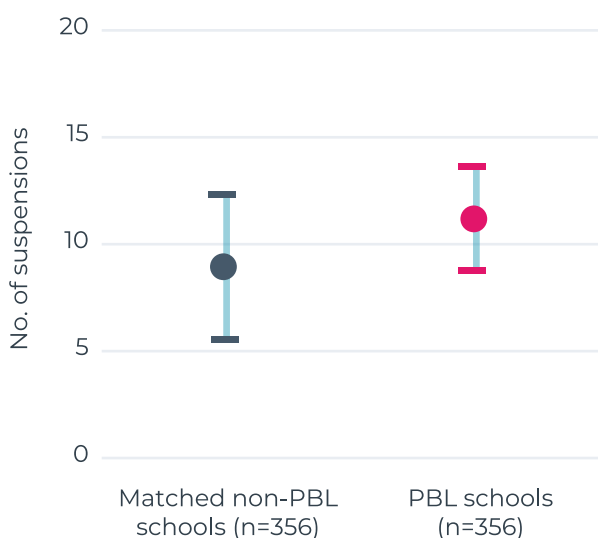
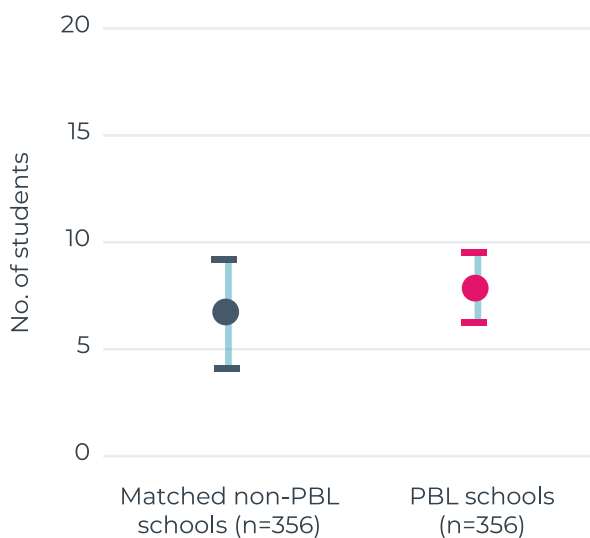


Figure G15

Long suspensions – unique students



As shown in figure G14, we estimate the average number of long suspensions at schools that implemented PBL was 11.2 three years after implementation (95% CI [8.8, 13.64]). This is about 2.3 cases more than what we would expect to see had these schools not implemented PBL. Our estimate of the effect of PBL on long suspension counts was somewhat imprecise, however it indicates that PBL is probably not having a meaningful impact on the total number of long suspensions.

Similarly, as shown in figure G15, we estimate the average number of students who received long suspensions at schools that implemented PBL was 7.9 three years after implementation (95% CI [6.23, 9.48]). This is about 1.2 students more than what we would expect to see had these schools not implemented PBL. Our estimate of the effect of PBL on the number of students who received long suspension was somewhat imprecise, however it indicates that PBL is probably not having a meaningful impact on the number of unique students who received long suspensions.

We also examined students who received long suspensions for persistent misbehaviour. This is a reason for a long suspension that is closely linked to the behavioural outcomes of PBL. We used the same analysis procedure to compare the number of suspensions for persistent misbehaviour and the number of unique students who were suspended for this reason. Results indicate that PBL schools had 0.77 more suspensions for persistent misbehaviour than comparison schools (95% CI [-1.51, 3.05]). PBL schools also suspended 0.37 more students for persistent misbehaviour than comparison schools (95% CI [-1.34, 2.08]). These small differences indicate that PBL is probably not having a meaningful impact on suspensions for persistent misbehaviour.

Summary

Together, these findings indicate that PBL is probably not having a meaningful impact on student attendance or suspensions. However, this is not surprising given the limitations associated with the data available. Further, the start year for some PBL schools is merely an indicator of when the school attended PBL training. It does not necessarily imply that the school took practical steps to begin implementation in the same year. It is also worth noting that when schools start implementing PBL they can experience a spike in suspensions as staff and students adjust to the new framework. Initially, suspensions can increase because the suspension policy is applied with greater consistency across the entire school. Given these concerns, it is important to take into account other sources of evidence from interviews and survey data about the impact of PBL on attendance and suspensions.

Appendix H

The impact of the Positive Behaviour for Learning approach on student wellbeing

We examined the impact of Positive Behaviour for Learning (PBL) on student wellbeing, as measured by the Tell Them From Me (TTFM) student survey. We compared changes in several measures of student wellbeing for schools that adopted the approach in 2015 or 2016 to changes for similar schools that never adopted the approach. We compared changes in student wellbeing over three years.

Sample properties

With the introduction of the Supported Students, Successful Students initiative in 2015, which included funding for 36 PBL executive positions, it is reasonable to assume that there have been changes to the way PBL has been implemented over the years. Furthermore, as the TTFM student survey data is only available from 2015 onwards, we needed to limit our analysis to those schools that started implementing PBL from 2015 onwards. It is important to acknowledge that our results may not generalise to those schools who started implementing PBL in earlier years.

In addition, we also wanted to give schools a chance to adjust to the PBL framework and refine their implementation. We decided that three years was sufficient for schools to refine their implementation and (potentially) influence the wellbeing of their students using the PBL approach. This meant that we needed to exclude those schools that started implementing PBL after 2016, given that they had not yet had sufficient time to refine their implementation.

Using the available data⁸⁰, we categorised the 2,184 NSW public schools that were open in 2015 or 2016 into 4 groups:

1. Included fully exposed PBL schools ($N = 169$) – those schools where the data consistently indicated that they started implementing PBL in 2015 or 2016;
2. Excluded fully exposed PBL schools ($N = 605$) – those schools where the data consistently indicated that they started implementing PBL before 2015 or after 2016;
3. Partially exposed PBL schools ($N = 704$) – those where the data was inconsistent or incomplete with regard to PBL implementation; or
4. Never exposed schools ($N = 706$) – those where the data consistently indicated that they never implemented PBL.

.....
80 We used three sources of information as the PBL database maintained by Learning and Wellbeing consisted of a missing and inconsistent data due to the fact that PBL schools may stop using PBL at any time and are not required to report this to Learning and Wellbeing. The PBL survey developed for this evaluation was the most recent source of information about a school's PBL status, so information in this survey overrode information from any other sources. If there was a conflict between a school's PBL status on the 2018 CESE Principal Survey and the database maintained by Learning and Wellbeing, we excluded them from our analysis. If a school did not respond to the PBL survey or the CESE Principal Survey, we obtained their PBL status from the database maintained by Learning and Wellbeing.

As the data for the partially exposed PBL schools was considered to be unreliable, we excluded these schools from our analysis. Furthermore, when we inspected the characteristics of the included PBL schools, we found that only 9 secondary schools, 5 schools for special purposes, 2 central schools and 1 infant school met our inclusion criteria. Given the limited amount of information for these types of schools, we decided to further restrict our analysis to include only primary schools.

In addition to limiting our analysis to certain types of schools, we also needed to limit our analysis to certain types of students. Namely, as the TTFM student survey is only available to primary students in years 4, 5 and 6, the results from our analysis may not generalise to students in lower years. Furthermore, to ensure that students had adequate exposure to their school environment, we limited our analysis to those students who had attended their primary school for at least one year prior to responding to the TTFM survey.

Once we applied the exclusion criteria described above, we used a logistic regression model to investigate whether the characteristics of the fully exposed students who participated in the TTFM survey in the relevant base year (9,103 students from 79 primary schools) were similar to those of the broader population of interest (17,432 students from 149 primary schools). We included the following information in our model:

1. Student Reading and Numeracy scaled scores from the National Assessment Program – Literacy and Numeracy (NAPLAN);
2. Student Socio-Educational Advantage (SEA);
3. Student scholastic year (year 4 vs. year 5 vs. year 6);
4. School Index of Community Socio-Educational Advantage (ICSEA) values⁸¹;
5. School location (metropolitan vs. non-metropolitan);
6. School attendance;
7. School proportion of Language Background Other Than English (LBOTE) students; and
8. School size (total number of enrolled students).

As shown in table H1, while there were some minor differences between the sample and the broader population of interest, the results indicated that the sample was generally representative⁸². While it is important to recognise that these results are based on student and school data from 2015/16, it is reasonable to assume that the types of students who participate in the TTFM student survey would not change meaningfully over the assessed time periods⁸³.

81 The ICSEA value is the level of a school's educational advantage. ICSEA provides an indication of the socio-educational background of students. It is calculated based on four factors - two student factors and two school factors. The two student factors are (1) parents' occupation and (2) parents' education. The two school factors are (1) geographical location and (2) proportion of Indigenous students. ICSEA is a scaled score. The median score is set at 1000 with a standard deviation of 100. Schools with lower ICSEA values have lower levels of educational advantage, and schools with higher ICSEA values have higher levels of educational advantage.

82 The area under the receiver operating characteristic curve for the logistic model was .54, indicating that the model did not meaningfully discriminate between those students in the population and those in the sample based on the modelled covariates.

83 This assumption can only be assessed when the student and school data for 2018/19 becomes available.

Table H1**Results from logistic regression model**

Variable	Estimate (OR)
NAPLAN Numeracy scaled scores	0.97
NAPLAN Reading scaled scores	1.00
Missing either NAPLAN scaled score	1.32
Student SEA	0.97
Missing student SEA	0.87
Student scholastic year 5	0.95
Student scholastic year 6	0.99
School ICSEA	1.09
School non-metropolitan location	1.52
School attendance	1.00
School proportion LBOTE	1.01
School size	1.00
Constant	1.82

Note: All interval measures were standardised beforehand. The predictors for school attendance and the proportion of LBOTE students were mean centered and rescaled such that a 1-point increase represented an increase of 10 percentage points. The predictor for school size was mean centered and rescaled such that a 1-point increase represented an increase of 100 students.

Outcome measures

The Tell Them From Me (TTFM) student survey provides information about student engagement, wellbeing and effective teaching practices in NSW public schools. The student survey was first piloted in NSW in 2013 and 2014 and became available for all schools to opt-in from 2015 onwards. Student participation in the survey is voluntary (managed via an opt-out process) and principals can select which year groups and classes are invited to participate.

Most of the TTFM measures of student wellbeing are derived from Likert scale type questions where students are presented with a series of statements and asked to rate their agreement with each statement on a 5-point scale⁸⁴. For each relevant aspect of wellbeing, student responses are first numerically coded and then averaged. These average scores are then used to classify students as either having positive wellbeing or not for each area⁸⁵. We used the following TTFM measures of student wellbeing in our analysis:

⁸⁴ The 5 response options are (1) strongly disagree, (2) disagree, (3) neither disagree nor agree, (4) agree, and (5) strongly agree. Students use a 2-point scale (yes or no) to respond to statements about bullying.

⁸⁵ For the measures of positive sense of belonging, positive teacher-student relationships and positive learning climate, students with average scores greater than or equal to 3 (the numeric value that represents a response halfway between neutral and agree) are considered to have positive wellbeing in the respective area. For the measure of positive learning climate, students with average scores greater than or equal to 3.3 are considered to have positive wellbeing in this area.

- **Positive sense of belonging** is a 4-item measure that represents whether students feel included and accepted at school and by their peers;
- **Positive behaviour at school** is a 5-item measure that represents how often students are not disruptive or do not break school rules;
- **Bullying** is a 4-item measure that represents whether students have experienced moderate to severe physical, verbal, social, or cyber bullying;
- **Positive teacher-student relationships** is a 5-item measure that represents whether students feel that teachers respond to student needs and encourage independence within a democratic environment; and
- **Positive learning climate** is a 5-item measure that represents the extent to which students feel that there are rules and expectations for classroom behaviour in place.

Propensity score matching

It is possible that the schools that decide to adopt a PBL approach may have different properties and/or characteristics than those that do not adopt the approach. For example, schools may decide to adopt a PBL approach due to a high number of negative behaviour incidents. Due to these potential differences, simple comparisons between students who attend PBL schools and those who attend schools that never adopt the approach may produce misleading results. To better isolate the effect of the PBL approach, we used propensity score matching to reduce some of the differences between the two school types.

Propensity score matching is a technique where individuals who were exposed to a variable of interest (e.g. PBL) are matched to individuals who were not exposed to the variable but have similar probabilities of exposure. The expectation is that individuals with similar probabilities of exposure are similar in most other aspects such that any observed differences in their outcomes can be attributed to exposure to the variable of interest.

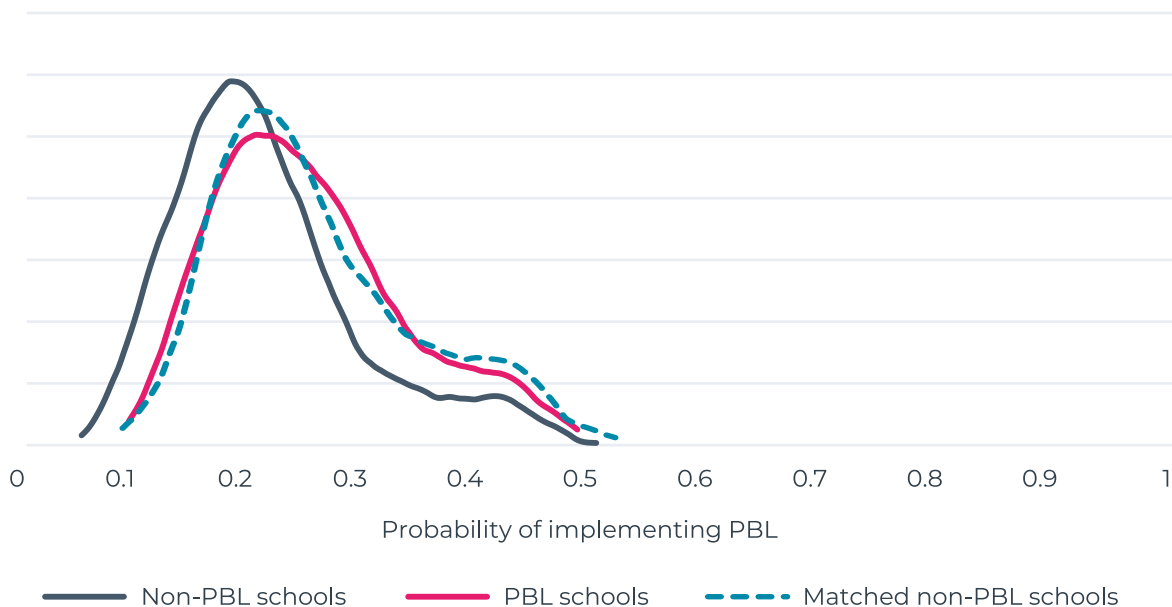
For the 28 primary schools that started implementing PBL in 2015, the pool of potential control schools included the 143 schools that never implemented the approach and had valid TTFM data for 2015 and 2018. For the 51 primary schools that started implementing PBL in 2016, the pool of potential control schools included the 217 schools that never implemented the approach and had valid TTFM data for 2016 and 2019.

To estimate propensity scores for each school in our sample, we first fit separate logistic regression models to the school data for each year (2015 or 2016). These propensity score models included the same school information described earlier in this report. We then used the estimated parameters from these models to calculate propensity scores for each school. We used 1:1 nearest neighbour matching without replacement to match the schools that had never implemented the PBL approach to the fully exposed PBL schools.

Figure H1 presents the distributions of the estimated propensity scores before and after matching. As shown in this figure, the two types of schools had different distributions before matching but much more similar distributions after matching. This means that the comparison schools in the matched sample are likely to be more similar to the PBL schools than the comparison schools in the broader sample.

Figure H1

Propensity score distributions before and after matching



Figures H2 through H6 present boxplots for each modelled covariate. Each boxplot illustrates the distributions for (1) the potential comparison schools before matching, (2) the selected comparison schools after matching, and (3) the PBL schools. These figures show that the selected comparison schools were more similar to the PBL schools than the comparison schools in the broader sample.

Figure H2

Boxplot of attendance rates before and after matching

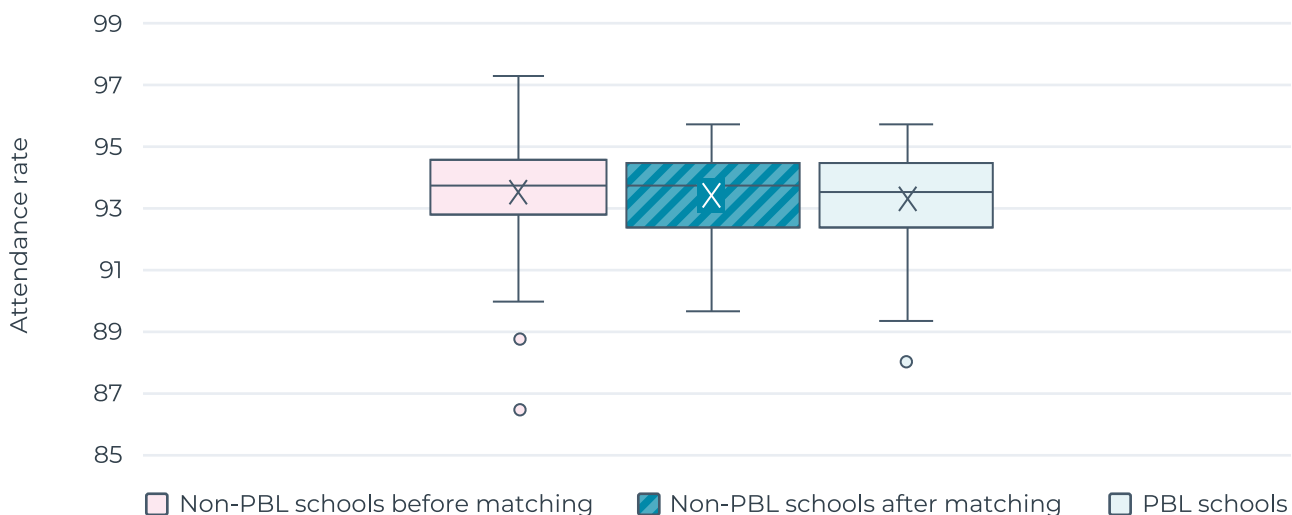


Figure H3

Boxplot of Index of Community Socio-Educational Advantage values before PBL implementation

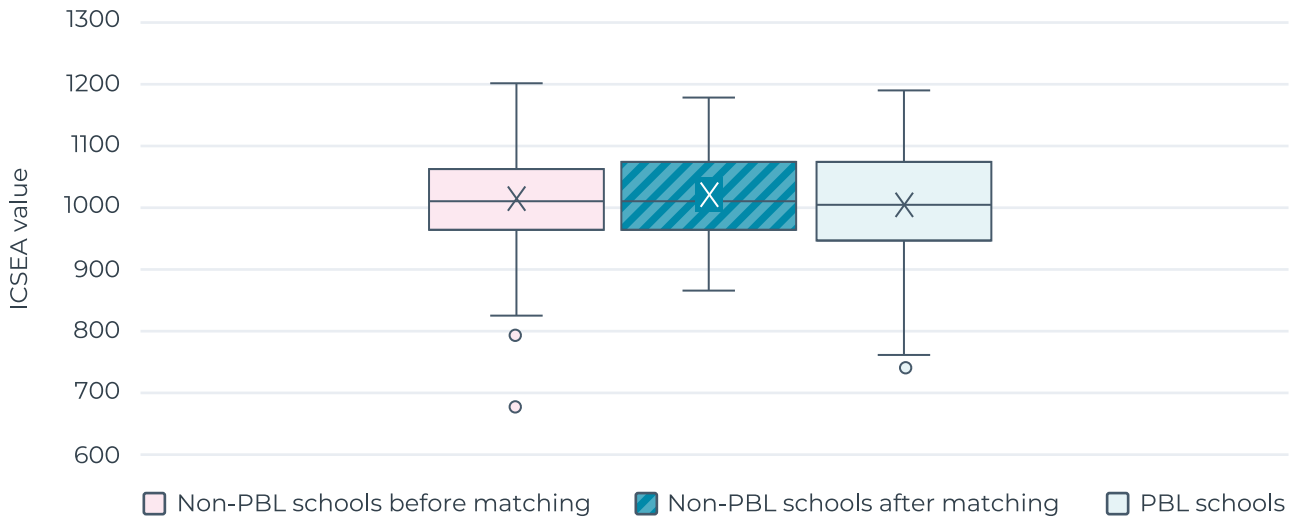


Figure H4

Boxplot of school location

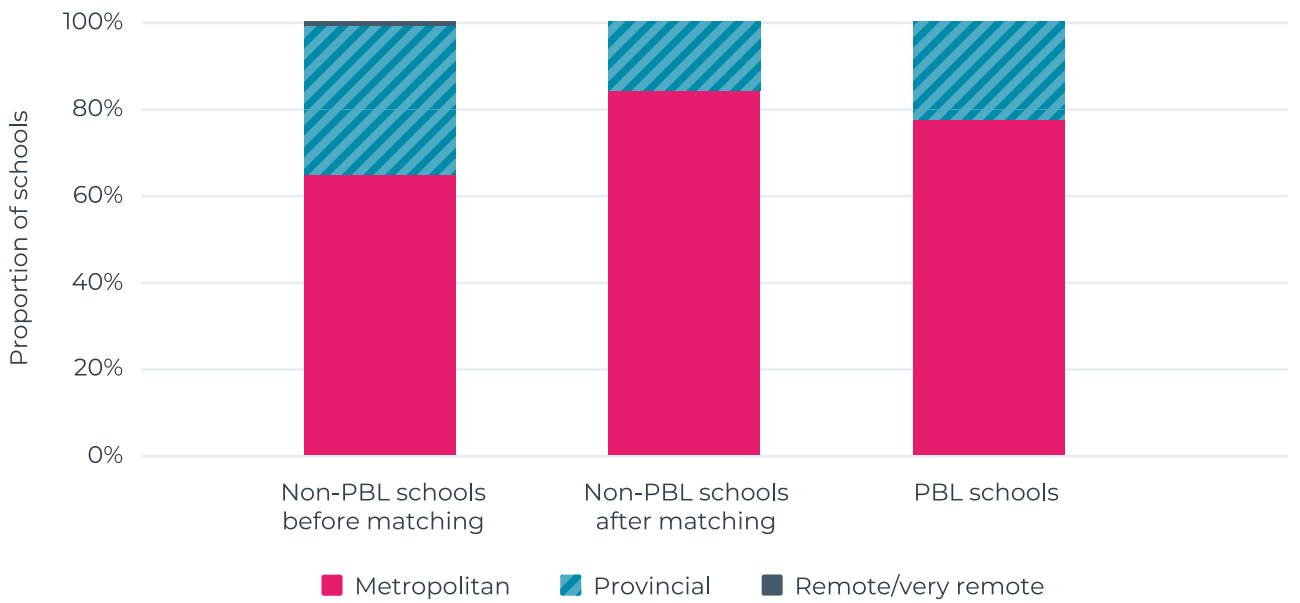


Figure H5

Boxplot of Language Background Other Than English proportion

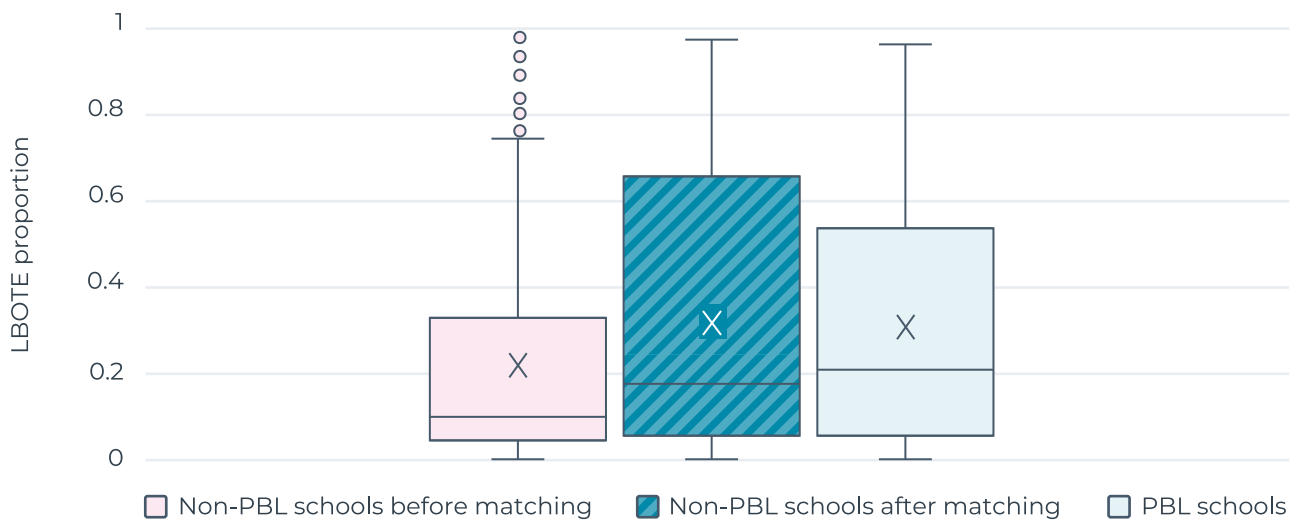
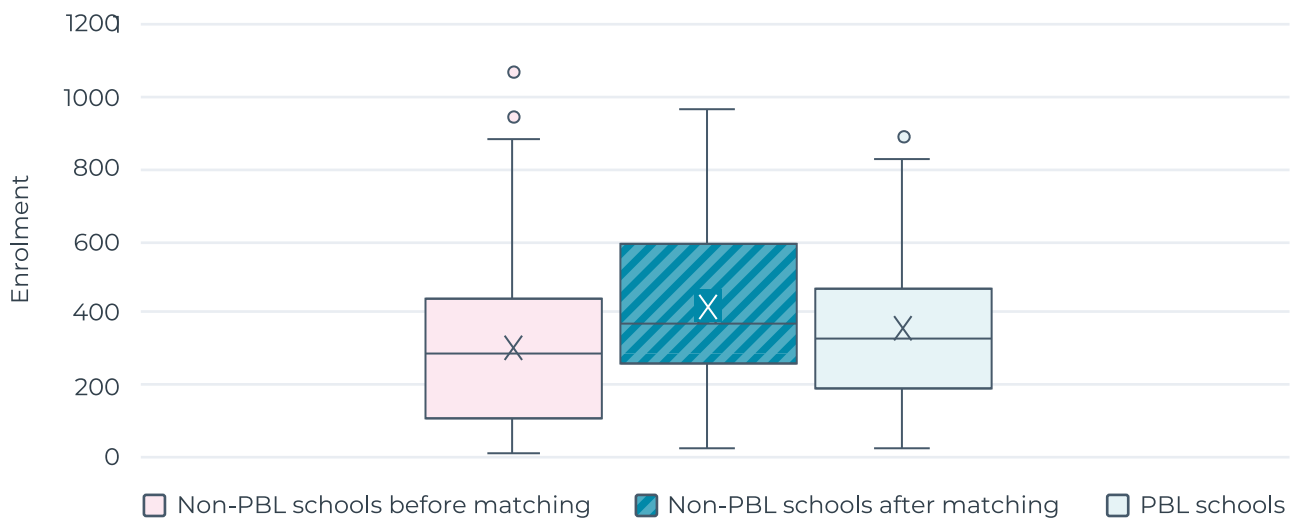


Figure H6

Boxplot of enrolment count



Statistical analysis

We used a series of student-level regression models to estimate the effect of the PBL approach on student wellbeing. These models can be written as:

$$TTFM\ outcome_{ijt} = \beta_0 + \beta_1 \cdot (PBL_{ijt}) + \theta_t + \gamma_j + \varepsilon_{ijt}$$

where *TTFM outcome_{ijt}* represents the binary outcome for student *i* who attended school *j* in calendar year *t*; *PBL_{ijt}* is a dummy coded variable taking the value 1 when student *i* attended a PBL school in 2018/19 and 0 otherwise; θ_t are calendar year effects; γ_j are school effects; and ε_{ijt} are student-level residuals⁸⁶. This specification is commonly known as a two-way linear fixed effects model⁸⁷.

In the above equation, β_1 is the coefficient of interest and represents the expected change in a student's wellbeing score with exposure to the PBL approach, which is assumed to be constant across all schools.

Results

Our results indicate that the PBL approach probably has little to no effect on the TTFM measures of positive sense of belonging, positive behaviour at school (self-report), reported bullying, positive teacher-student relationships and positive learning climate, at least for primary students in years 4, 5 and 6.

We note that the rates of positive teacher-student relationships and positive (self-report) behaviour at school were already high in PBL schools before implementing the PBL approach, at around 92 per cent and 88 per cent respectively.

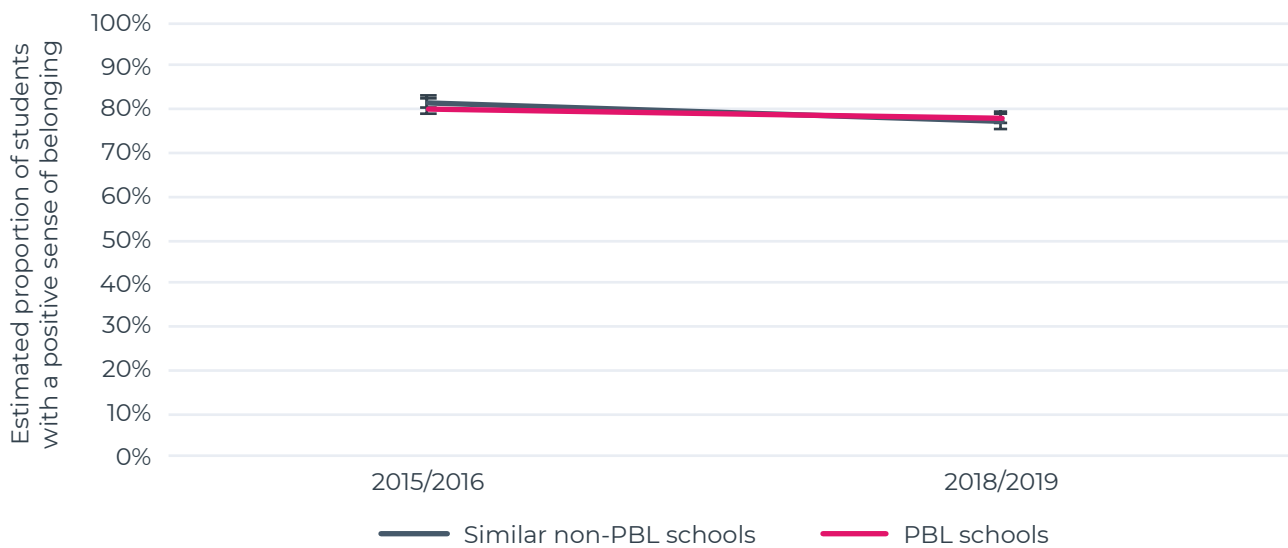
The full results from our analysis are presented below.

Positive sense of belonging

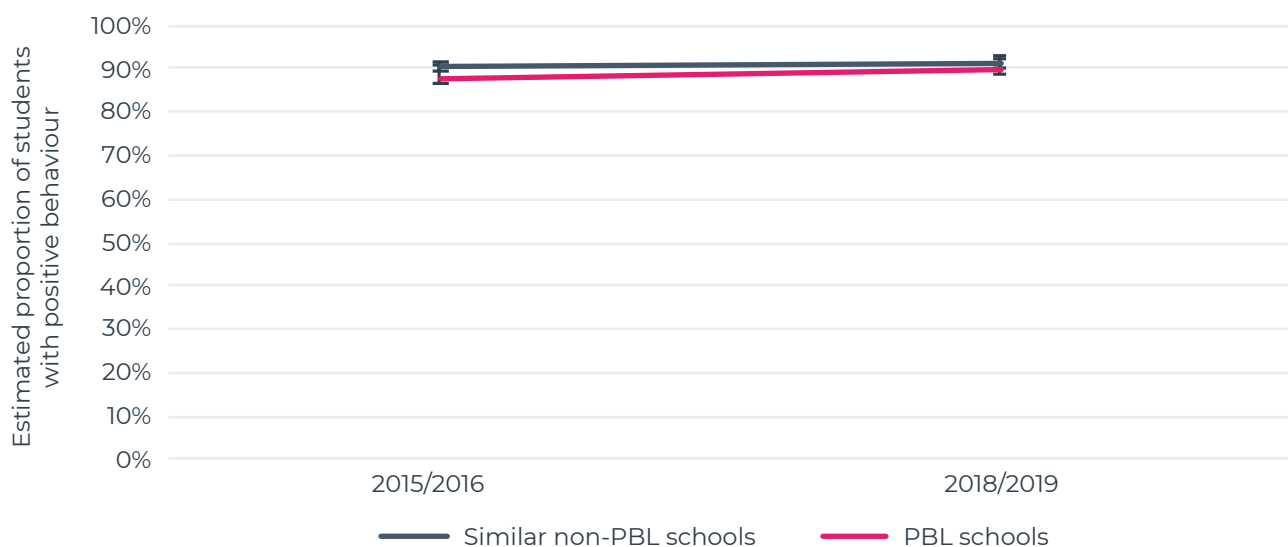
We present the estimated proportions of students (grades 4 to 6) who had a positive sense of belonging in figure H7. These results show that about 80 per cent (95% CI [79, 82]) of students in PBL schools and about 82 per cent (95% CI [81, 83]) of students in similar non-PBL schools were expected to have a positive sense of belonging in 2015/16. By 2018/19, the rate for PBL schools had decreased by about 3 percentage points (95% CI [-4, -2]) while the rate for similar non-PBL schools had decreased by about 4 percentage points (95% CI [-6, -3]). These results are consistent with those from our statistical model, which indicated that the probability of having a positive sense of belonging increased by about 1 percentage point (95% CI [0, 2]) with exposure to the PBL approach. This means that the PBL approach probably had little effect on a student's positive sense of belonging, as measured by TTFM.

⁸⁶ The errors ε_{ijt} are not assumed to follow a normal distribution. To account for this non-normality (caused by the binary outcomes), we used cluster bootstrapping to obtain percentile-based 95% confidence intervals for our estimates.

⁸⁷ We used a series of dummy indicators to estimate the school and year fixed effects.

Figure H7**Proportion of students with a positive sense of belonging in primary schools****Positive behaviour at school**

We present the estimated proportions of students (grades 4 to 6) who self-reported positive behaviour at school in figure H8. These results show that about 88 per cent (95% CI [86, 89]) of students in PBL schools and about 90 per cent (95% CI [89, 91]) of students in similar non-PBL schools were expected to self-report positive behaviour in 2015/2016. By 2018/2019, the rate for PBL schools had increased by about 2 percentage points (95% CI [1, 3]) while the rate for similar non-PBL schools had increased by about 1 percentage point (95% CI [0, 2]). These results are consistent with those from our statistical model, which indicated that the probability of self-reporting positive behaviour increased by about 1 percentage point (95% CI [1, 2]) with exposure to the PBL approach. This means that the PBL approach probably has little effect on a student's self-reported behaviour, as measured by TTFM.

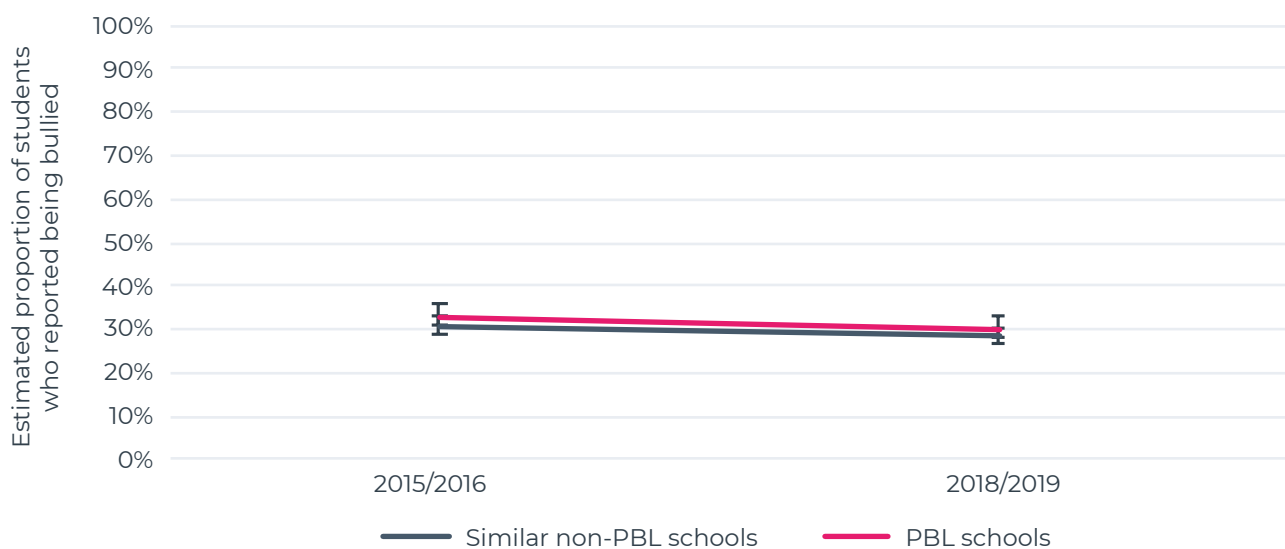
Figure H8**Proportion of students self-reporting positive behaviour in primary schools**

Bullying

We present the estimated proportions of students (grades 4 to 6) who reported being bullied in figure H9. These results show that about 33 per cent (95% CI [31, 34]) of students in PBL schools and about 31 per cent (95% CI [29, 33]) of students in similar non-PBL schools were expected to self-report being bullied in 2015/2016. By 2018/2019, the rate for PBL schools had decreased by about 3 percentage points (95% CI [-4,-1]) while the rate for similar non-PBL schools also decreased by about 2 percentage points (95% CI [-5, 0]). These results are consistent with those from our statistical model, which indicated that the probability of reporting being bullied does not change (95% CI [-1, 2]) with exposure to the PBL approach. This means that the PBL approach probably has little effect on a student's experience of being bullied, as measured by TTFM.

Figure H9

Proportion of students who reported being bullied in primary schools

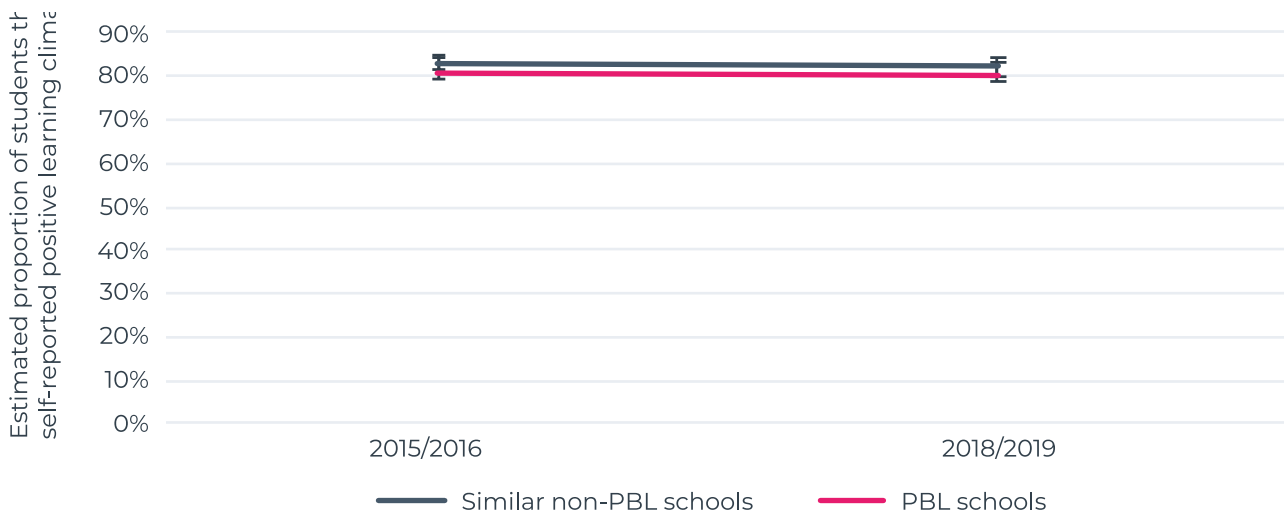


Positive learning climate

We present the estimated proportions of students (grades 4 to 6) who reported a positive learning climate in figure H10. These results show that about 81 per cent (95% CI [79, 83]) of students in PBL schools and about 83 per cent (95% CI [81, 85]) of students in similar non-PBL schools were expected to report a positive learning climate. By 2018/2019, the rate for PBL schools had decreased by about 1 percentage point (95% CI [-2, 1]) while the rate for similar non-PBL schools also decreased by about 1 percentage point (95% CI [-3, 1]). These results are consistent with those from our statistical model, which indicated that the probability of reporting a positive learning climate did not change (95% CI [-2, 2]) with exposure to the PBL approach. This means that the PBL approach probably has little effect on a student's reported experience of positive learning climate, as measured by TTFM.

Figure H10

Proportion of students that scored high on self-reported positive learning climate

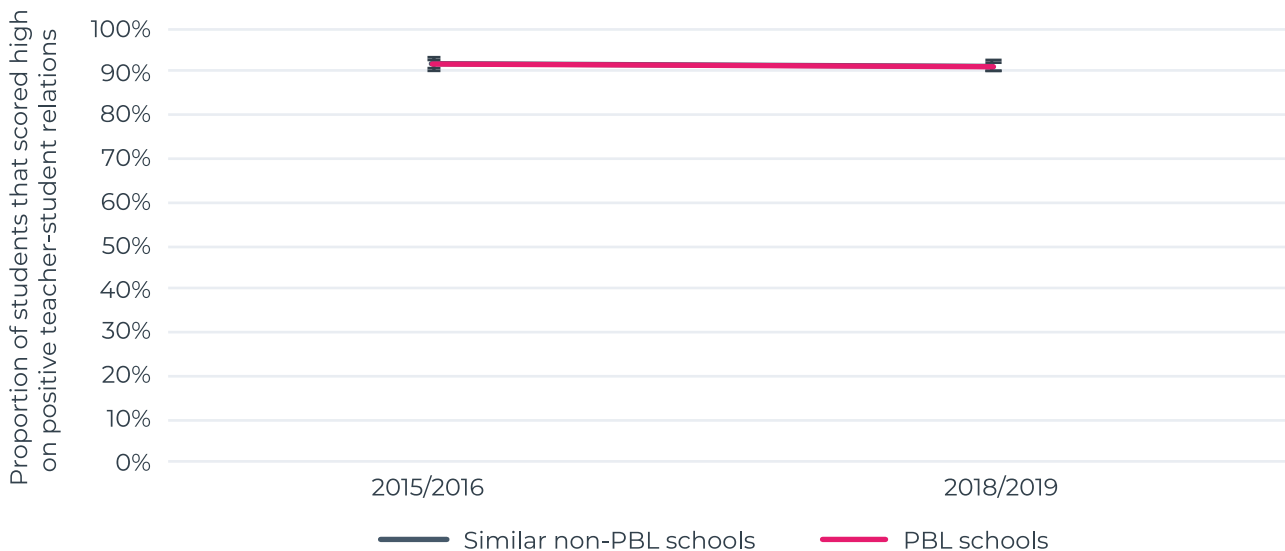


Positive teacher-student relations

We present the estimated proportions of students (grades 4 to 6) who reported positive teacher-student relations in figure H11. These results show that about 92 per cent (95% CI [91, 93]) of students in PBL schools and about 92 per cent (95% CI [91, 93]) of students in similar non-PBL schools were expected to report positive teacher-student relations. By 2018/2019, the rate for PBL schools had decreased by about 1 percentage point (95% CI [-2, 0]) while the rate for similar non-PBL schools remained about the same (95% CI [-2, 1]). These results are consistent with those from our statistical model, which indicated that the probability of reporting positive teacher-student relations decreased by about 1 (95% CI [-2, 0]) percentage point with exposure to the PBL approach. This means that the PBL approach probably has little effect on a student's experience of positive teacher-student relations, as measured by TTFM.

Figure H11

Proportion of students that scored high on positive teacher-student relations



Limitations

It is possible that some of the students in the matched non-PBL schools transitioned to their TTFM school from a school that begun implementing PBL prior to 2015. That is, some of the students in the matched non-PBL schools may have been exposed to the PBL approach at a different school in the years prior to the TTFM survey. However, as the TTFM responses we examined are intended to reflect current school environments, combined with the exclusion of those students who had been at their TTFM school for less than one year, we do not think that controlling for complete student histories would change the results.

We excluded some schools from our analysis because we had missing or conflicting PBL information about these schools. It is possible that these schools were different than those we included in our analysis. While we do not think this is the case, we cannot rule out this possibility without further information.

The key identifying assumption of our analysis is that PBL schools would have had the same change over time as the matched non-PBL schools had they not adopted the PBL approach. This assumption is commonly known as the common trends assumption. While this assumption is inherently untestable, we investigated the possibility of providing some evidence for this assumption by using data from schools that adopted the PBL approach in later years but found that there was insufficient data for this analysis.

Finally, the representativeness checks presented in this report only included population and sample data from 2015/16. While it would be ideal to also include data from 2018/19, the data was not readily available. When this data becomes available, it would be possible to directly examine the representativeness of the 2018/19 sample data.

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