Best Practice in Screen Use for Education

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Classroom Observation Findings



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Executive summary

This report provides a 'state of play' snapshot of educational screen use in NSW public schools, drawing on in-person observations in **68 classrooms, totalling 57 hours of lesson time,** across **Stages 1–6** and a broad spread of **Key Learning Areas (KLAs)**. Observations featuring a combination of **contextual field notes** and **planned learning activity checking (PLA-check)** with sampling at 5-minute intervals documenting how teachers and students used digital technologies and the extent of student engagement with learning tasks.

Key findings

- **Screens were used purposefully for classroom teaching and learning across stages and KLAs.** Digital devices were widely available and used in diverse ways including to support teacher instruction as well as student practice, inquiry and creation.
- **Screen use was selective and featured in only around half of the lesson time.** At 48% of the sampling points, students were not using screens, instead engaging in non-digital activities, including sustained discussion, handwriting and worksheet exercises.
- **Teacher instruction and use of technology was observed to be developmentally appropriate across the years.** Teachers' discourse shifted from highly scaffolded, teacher-led foundational learning and basic technology skills in the younger year levels towards increasingly independent, discipline-specific learning with technology-integrated practices, digital production and Artificial Intelligence (AI) critical literacy in senior secondary learning.
- **Teachers applied effective strategies to actively manage screen use.** Common approaches included physical positioning of teachers and students, imposing time constraints, timely technical support, and routines such as asking students to close devices when they needed to listen.
- **Student overall engagement during the observed technology-integrated lessons was high.** On average, students were **on-task 90% of the time**, with stage averages ranging from 82% (Stage 5) to 96% (Stages 1 and 6).
- **Off-task behaviour was typically situational rather than device-driven.** When observed, student disengagement often appeared related to the pace of lessons, transitions, waiting time, task clarity, and occasional technical issues, rather than the presence or the absence of screens.

Implications for practice and policy

- **Empower teachers to make purposeful choices regarding how and when screens are used.** Technology use in the classroom is highly context dependent, and teachers as situated professionals are best placed to make good decisions about when and how technology use will benefit their students.
- **School and system support should prioritise reliable technology access.** Delays from logins, updates, and device readiness can disrupt lessons; strengthening

technology infrastructure and procedures can protect instructional time and reduce opportunities for attentional drift.

- **Professional learning and initial teacher education should incorporate technology-management strategies.** Evidence-informed strategies for sustaining attention, reducing waiting time and effectively using new technologies such as AI should be integrated into professional learning and Initial Teacher Education (ITE) preparation.

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1. Introduction

Digital technologies refer to electronic systems and tools that process, store, create, and communicate information digitally, including computers, networks, software, mobile devices, and AI-enabled systems (Johnstone et al., 2022). Information on devices such as desktop computers, laptops, tablets, and mobile phones is typically accessed via screens. We note that in education research and policy, the term 'digital technologies' is commonly used to describe digital devices, whereas in psychology and health literature, similar topics are often discussed in terms of 'screens'. In this report, we have used these terms interchangeably.

Digital technologies and screens are often an integral part of how students learn, communicate, and complete schoolwork, both in classrooms and at home (Halim et al., 2022). When used well, screens can support access to information, practice, collaboration, and creative production (Schleicher, 2023). When used poorly or excessively, they can contribute to distraction, problematic habits and inequitable learning opportunities (Graham & Sahlberg, 2021).

In response to the opportunities and risks related to students' screen use, the *Best Practice in Screen Use for Education – Empowering Students, Teachers and School Communities for Digital Learning* project was designed to build a strong evidence base about educational screen use across NSW schools to inform practical guidance for schools and families. This report provides a 'state of play' snapshot taken from observations of 68 classes, totalling 57 hours of lesson time, conducted in 20 public schools across the state. The observations were designed to capture current teacher and student practices in technology-infused classrooms, focusing on:

- Teacher technology use
- Teacher discourse
- Teacher technology management strategies
- Student technology use
- Student off-task behaviours

This report sits within a broader statewide project involving mixed-methods design combining (i) surveys, (ii) classroom observations, and (iii) focus groups, to capture both the breadth (statewide patterns) and the depth (contextualised experiences and practices) of screen use in NSW schools. The findings will inform the development of practical outputs, including toolkit resources, grounded in the realities of current classroom practice and stakeholder perspectives.

2. Method

2.1 Settings and participants

To provide a contextualised understanding of screen use in schools, **20 NSW public schools** participated as focus schools for classroom observation: 10 primary, 8 secondary, one combined school and one school for specific purposes [SSP]). To select these schools, we first developed an initial list designed to capture diversity across key demographic and contextual characteristics (including school type, school size, metropolitan and regional location, Index of Community Socio-Educational Advantage (ICSEA), Language Background Other Than English (LBOTE) and Indigeneity student enrolment indicators). We included a SSP to further enhance the inclusiveness of the sample. The Centre for Educational Statistics and Evaluation (CESE) reviewed this initial list for coverage and then we refined it in consultation with Directors of Education Leadership (DELs), to confirm its appropriateness and to obtain support for inviting the nominated schools. We then sent invitations to principals, with most schools agreeing to participate. Where a school declined, we invited a replacement school with similar characteristics, to maintain the intended spread across contexts. Although the resulting sample was not intended to be statistically representative, these steps ensured broad coverage of diverse NSW school settings while remaining feasible and minimising burden on schools. Table 1 summarises the characteristics of the focus schools.

We asked School leaders in each focus school to consult with their teachers to nominate one class in each stage that would involve use of digital technologies. Teachers were asked not to make any special preparations for the observation so the classes would be as natural as possible. While every effort was made to ensure equal representation, schools' varying circumstances meant there were discrepancies in the number of classes that were available for observation in each school. Overall, 68 classes were observed across all stages and Key Learning Areas (KLAs). See Appendix A for a complete list of classes observed.

2.2 Data collection

Classroom observations were conducted in focus schools to capture authentic classroom practices involving screen use and related pedagogy. The classroom observations were conducted between September and November 2025. Where possible, full lessons were observed and a typical observation lasted about 45 minutes. Observations were carried out in-person by researchers and not video recorded due to the sensitivity associated with videoing minors. This minimised potential intrusiveness and protected the privacy of children while still enabling the collection of structured, analysis-ready data. At the beginning of each lesson, the teacher introduced the researcher(s) and briefly explained the purpose of the study. The researcher(s) then positioned themselves at the back of the classroom to complete the classroom observation protocol without interacting with students. In some instances, the researcher would move around the classroom to better monitor student activity.

Table 1. Focus school characteristics

School Code	School Type	Location	ICSEA Quartile	Total Enrol (approx.)	Indigenous Enrol (%)	LBOTE (%)
S01	Primary	Major Cities	Q4	700	0	> 75%
S02	Secondary	Major Cities	Q4	1500	1	50-74%
S03	Primary	Major Cities	Q3	600	1	> 75%
S04	Secondary	Major Cities	Q4	800	0	> 75%
S05	Primary	Major Cities	Q4	500	2	50-74%
S06	Secondary	Major Cities	Q2	1600	2	> 75%
S07	Primary	Outer Regional	Q1	200	31	< 25%
S08	Secondary	Outer Regional	Q1	400	22	< 25%
S09	Primary	Inner Regional	Q1	200	46	< 25%
S10	Primary	Inner Regional	Q2	20	23	< 25%
S11	Primary	Major Cities	Q4	400	5	< 25%
S12	Combined	Major Cities	Q4	1100	5	< 25%
S13	Special	Major Cities	Q3	100	4	50-74%
S14	Secondary	Major Cities	Q3	1000	1	> 75%
S15	Primary	Inner Regional	Q2	300	19	< 25%
S16	Secondary	Inner Regional	Q2	900	14	< 25%
S17	Primary	Inner Regional	Q2	400	15	< 25%
S18	Secondary	Inner Regional	Q1	1000	22	< 25%
S19	Primary	Major Cities	Q3	200	5	50-74%
S20	Secondary	Major Cities	Q2	700	6	25-49%

The classroom observation protocol required collecting contextual and activity-based data:

1. **Contextual field notes** capturing demographic and lesson context information (e.g., subject, lesson intent, technologies used, classroom layout), to help with interpretation of observed screen use within the lesson (in accordance with Praetorius et. al., 2025).
2. **A planned learning activity check (PLA-check)** method using momentary time sampling. Observers recorded at 5-minute intervals the ways teachers and students used technologies in class, and the number of students who were off-task, producing percentages that were used in subsequent analyses (see Cataldo & Risley, 1973; Dart et al., 2016; Risley & Cataldo, 1974; McWilliam et al., 1985).

2.3 Data analysis

Classroom observation notes were analysed both qualitatively and quantitatively. Qualitative analysis involved thematic coding of classroom observation notes using NVivo 15 software. We used Microsoft Excel to conduct quantitative analysis by quantitising the on-task/off-task data collected within each observation.

2.3.1 Qualitative analysis: Thematic coding

Each classroom observation contained two sections of field notes that were coded separately: overall class summaries and notes from each of the 5-minute PLA-checks.

2.3.1.1 Whole lesson summaries

The observation protocol contained overall lesson summary questions pertaining to the context surrounding the lesson, including lesson intent, technologies used and lesson activities. These summaries were coded by question, with common themes identified concerning the overall use, non-use and management of technology in the classroom.

2.3.1.2 PLA-check coding

Observation notes were recorded at each 5-minute PLA-check interval and coded into four broad categories: (i) **Teacher Technology Use (TTU)**, (ii) **Teacher Discourse (TD)**, (iii) **Teacher Technology Management Strategies (TMS)** and (iv) **Student Technology Use (STU)**. TTU and STU were then sub-coded in accordance with Laurillard's (2013) framework to classify the pedagogical purposes of technology use, with additional codes added inductively as new patterns emerged in the data. TD was sub-coded to capture whether discourse focused primarily on **content**, **technology**, or **behaviour**. TMS codes were developed inductively to foreground the teachers' enacted practices for managing technology use during lessons. This abductive coding approach (i.e., analysis moving iteratively between data and theory) supported authentic analysis of both the frequency of observed actions and their pedagogical (and other) functions in relation to classroom screen use. Within each 5-minute interval, category codings were not mutually exclusive; it was possible for more than one coding sub-category to occur within one 5-minute time sampling period.

2.3.2 Quantitative analysis: Student on-task/off-task

Student on-task/off-task behaviour was recorded using PLA-check at 5-minute intervals. At each interval, the observer recorded the number of students who were off-task (among those who consented to be part of the observation). For each lesson, an on-task proportion was calculated by subtracting the number of off-task students from the total number of consenting students across all observation intervals, divided by the total number of consenting student intervals (number of consenting students × number of 5-minute intervals).

$$\text{On-task proportion } (\%) = \left(1 - \frac{\sum_{t=1}^{T} O_t}{N \times T}\right) \times 100$$

where:

- N = number of consenting students in the lesson
- T = number of 5-minute observation intervals
- O_t = number of off-task students observed at interval t
- $\sum O_t$ = total number of off-task observations across all intervals

We converted the numbers to a percentage for easy interpretation. Further, we calculated the stage averages by averaging all the on-task percentages across the observed classes in each stage.

To minimise skews arising from very small observed samples and to reduce the risk that counts reflected non-consenting students, lessons with fewer than three consenting students were excluded from percentage calculations. In addition, lessons were excluded when the recorded off-task counts were not compatible with observation limited to consenting students. Table 2 summarises the number of lessons excluded under these rules and the distribution of consenting-student counts in the retained sample.

Table 2: Number of classes observed and consenting students retained for analysis

Stage	Number of classes observed	Number of classes excluded	Number of classes retained	Number of consenting students per stage	Number of consenting students retained for analysis
1	10	2	**8**	82	**76**
2	11	4	**7**	83	**69**
3	12	1	**11**	123	**120**
4	9	1	**8**	105	**104**
5	14	2	**12**	91	**83**
6	12	3	**9**	49	**45**
Total	**68**	**13**	**55**	**533**	**497**

The quantitative on-task/off-task analysis provided an overall indication of student engagement across the observed lessons, while field notes assisted in interpreting the reasons behind the uses of technology and some of the challenges that can occur when using technology in the classrooms. Both data sources helped provide insights beyond how often students were off-task. They assisted in showing the extent to which off-task behaviour was related to factors like device presence, activity clarity, lesson pacing, technical issues and opportunities for social interaction.

2.3.3 Coding consistency and code refinement

Throughout the coding process, team members discussed the development of codes as they arose from the data. Regular team meetings focused on the coding process, to ensure that perspectives of the researchers were aligned and that data were coded consistently. This approach also aimed to ensure that the coding scheme was refined appropriately and enabled discussion to resolve notes that were difficult to code.

2.3.4 Use of generative AI in analysis and drafting

Generative AI was used in this project as a tightly bounded support tool to help manage the size of the qualitative dataset while keeping researchers responsible for interpretation and final reporting. AI use occurred under close human oversight for discrete support functions, such as assisting with interim synthesis. Researchers reviewed and edited all AI-assisted text, with additional re-checking when issues were identified. Final reporting was grounded researcher interpretation of the coded data, rather than as an end-to-end automated pipeline from raw qualitative data to conclusions.

2.4 Limitations

The project employed purposive rather than random sampling for the classroom observations, with school leaders and teachers nominating classes in which digital technologies would be used. While this approach ensured that the study captured technology-supported learning in practice, it may have introduced selection bias, as the nominated classes may not have been representative of technology use across all classrooms within participating schools and/or the whole State. Variation in school size, timetabling, and teacher availability resulted in uneven representation across stages and Key Learning Areas.

Another potential limitation of this approach is that the presence of the researcher in the classroom and the knowledge that the actions of teachers and students were being observed may have influenced student and teacher practices. Because the researchers did not have recordings of the activity in the classroom or individual screens that they could review, potentially reducing the reliability of observations and consequently the analysis.

The observations therefore provide a contextualised snapshot of practice across the 68 observed classes, rather than an estimate of the prevalence of particular practices across the broader school population. This limitation is especially important for the SSP findings, which were drawn from a single setting and should therefore be interpreted as illustrative rather than representative of SSPs more broadly.

2.5 Ethics

The project received human ethics approval from the Macquarie University Human Research Ethics Committee (Project ID: 18877) and the NSW Department of Education SERAP process (SERAP 3111). Teachers, parents and children were informed that no identifying information would be collected during the observations, and their identity would not be revealed in any reporting. During classroom observation, data was only collected for students who had parental consent and offered their own assent.

3. Findings

This section first reports on the whole lesson summaries, to provide an overview of the 68 NSW public school lessons we observed. This is followed by PLA-Check data, which documented the frequency of various uses of technologies for teaching and learning, as well as teacher discourse and strategies for managing student technology use.

While the observation data were principally qualitative, comprising descriptions of classroom contexts and activities, quantitative data are also reported where appropriate. These are presented in one of two ways: the **number of lessons** in which a particular activity or behaviour was observed **(n)**, and the **number of 5-minute intervals** in which a particular code was recorded **(f)**. For example, if digital creation was observed in one class and occurred across three 5-minute intervals (15 minutes), it would be reported as n = 1 and f = 3. Each item is accompanied by a brief descriptive summary highlighting key features of the observed practice.

For a complete list of the lessons observed, see Appendix A.

3.1 Whole Lesson Summaries

3.1.1 Classroom layout and features

The features of the physical classroom layouts were often similar, with the majority of observations noting the presence of interactive or plain whiteboards (n=28). However, chairs and desks were arranged in various configurations. These arrangements seemed less flexible in secondary classrooms, where putting students in rows facing the front of the room or the whiteboard was more commonplace. Primary school lessons often had a distinctive feature of having space for students to gather at the front of the room, usually on the floor for whole class instruction. There were several observations (n=11) in specialist learning spaces such as a STEAM (Science, Technology, Engineering, Arts and Mathematics) hub, a food technology laboratory and bespoke learning spaces within the SSP. Technology was largely available across schools, with no observations recording the non-availability of technology for teachers and students.

3.1.2 Lesson content, intentions and outcomes

Observed lessons covered a wide range of subject areas, with English being the most common (n=23), followed by Mathematics (n=12), Science (n=9), Human Society and Its Environment (HSIE; n=9) and Technological and Applied Studies (TAS; n=5). Creative Arts (n=3), Personal Development, Health and Physical Education (PDHPE; n=3), Languages (n=1) and Vocational Education and Training (VET; n=1) were less frequently encountered in this sample. Table 3 summarises the lessons observed by KLA and stages.

Across the **English** lessons, intentions and outcomes commonly centred on literacy development and text creation across stages, from early reading foundations (phonological awareness, decoding and vocabulary development), spelling and sentence construction, to broader composition work such as writing poems (including drafting, revising and publishing), persuasive writing, narrative writing and influential speeches. English in secondary settings also

included literature study, such as lessons on the work of Shakespeare (including *The Merchant of Venice* and *Romeo and Juliet*).

Table 3. Characteristics of the classes observed by KLA and stage

Stage	English	Maths	Science	HSIE	TAS	Creative Arts	PDHPE	Languages	VET	Other	Total
1	7	1	2	-	-	-	-	-	-	-	**10**
2	3	3	-	1	2	1	1	-	-	-	**11**
3	5	3	-	4	-	-	-	-	-	-	**12**
4	4	1	2	-	-	-	-	1	-	1	**9**
5	3	1	3	-	2	2	2	-	-	1	**14**
6	1	3	2	4	1	-	-	-	1	-	**12**
Total	**23**	**12**	**9**	**9**	**5**	**3**	**3**	**1**	**1**	**2**	**68**

Mathematics lessons most often focused on consolidating core concepts through explicit instruction and guided practice, including number and geometry concepts (such as identifying shapes and halves), measurement and spatial reasoning (areas and perimeters), fractions and angles, probability/chance and secondary topics such as angle relationships (parallel lines and transversals), slope and interpreting data and extension content such as the binomial theorem and related problem-solving strategies. **Science** lessons included both conceptual and practical emphases, ranging from primary investigations (for example, learning about lifecycles) to secondary content such as natural selection and geology (including earthquakes and seismic concepts), as well as senior practical work involving microbiology methods and safe laboratory procedures.

HSIE lessons frequently adopted inquiry-oriented intentions, with students identifying and evaluating sources and developing historical or geographical explanations. Examples included historical inquiry tasks focused on colonisation and contact histories, research into Australian icons and change/continuity, modern history content on power and authority in the Nazi regime to support exam preparation and senior geography inquiry lessons designed to build synthesis and extended-response skills aligned with HSC expectations. **TAS** lessons included coding and computational thinking at multiple stages (for example, using LEGO Spike Prime in primary and programming in Python in secondary school), as well as senior software engineering content (open-source software, content management systems and building basic websites) and design-oriented iSTEM (integrated Science, Technology, Engineering and Mathematics) activities that integrated physical prototyping with structured task requirements. Food Technology lessons were also included in this KLA.

The smaller set of **PDHPE** and **Creative Arts** lessons still reflected diverse purposes, including cyber safety learning through interactive video, health-related research tasks, learning about physiological strategies for performance enhancement and creative media production such as filming story adaptations, using stop-motion techniques and planning photography sequences through storyboarding and photo capture. The **Languages** lesson focused on revising, assessing and extending Italian pronunciation and reading, while the **VET** lesson largely involved students using an online platform to log completion of workplace-related tasks rather than teacher-led instruction.

Across KLAs, lesson delivery commonly followed a pattern of explicit instruction and modelling followed by structured practice, independent work, or inquiry/problem-solving tasks, with learning outcomes often framed around both disciplinary knowledge and communication skills such as reasoning, collaboration and effective expression.

3.1.3 Technologies used

The main types of **technology that teachers used** were those intended for **whole-class display**. Interactive whiteboards (IWBs) and large-format displays (including Prowise, Promethean and SMART Boards) were commonly used to present lesson texts and slides, annotate content "on the fly" and run embedded classroom tools such as timers and seating/grouping prompts. In several lessons the interactive functionality was used minimally (for example, the display operated more like a static projector or traditional whiteboard), but the IWB still played a central role in pacing the lesson and keeping shared materials visible for students. Teachers also regularly used laptops connected to projectors (often via HDMI) to drive slideshows and access online resources and in some cases used small personal devices such as phones or watches to manage time and lesson transitions.

Student use of hardware reflected a mix of one-to-one and shared access models. Many classes used **BYOD (Bring Your Own Device) laptops** alongside **school-provided devices**, with some rooms having loan "banks" of laptops for students who had forgotten devices, could not afford one, or whose devices had drained batteries. **School-owned devices** included touch-screen laptops, desktops in computer-lab style settings and sets of iPads that were either issued individually or shared between pairs/groups and sometimes shared across adjacent classes. In Stages 1 and 2, **iPads** were often paired with **headphones** for individualised literacy practice, while in other contexts students used laptops or desktops for substantial writing and research tasks. A smaller set of specialist lessons also incorporated **purpose-built equipment**, including LEGO Spike Prime robotics kits used with iPads and the Spike app and a CNC cutter for iSTEM.

Software use was broader and more varied than hardware. **Learning management systems** such as Google Classroom and Canvas were important for distributing resources, organising lesson sequences and supporting submissions or project work. **Presentation tools** (PowerPoint, Google Slides and slide decks designed for interactive displays) were frequently used with IWBs/projectors, sometimes with additional overlays and interaction layers, such as PearDeck activities that enabled student input and allowed teachers to lock screens at key moments. **Subject-specific platforms and applications** were also prominent: Reading Eggs for early literacy; OneNote for set exercises and note-taking; online mathematics tools such as Mathspace (including exercises and assessment-style activities); and content platforms such as Inquisitive. **Creative and production-oriented tools** included Canva (for design and publishing), Stop Motion apps for capturing frame-by-frame story films and a suite of creative software options in project-based settings (for example, Weebly, Wix, ProCreate, Dream and Premiere Pro). Science lessons occasionally used **simulation** and evidence-capture tools, such as PhET simulations paired with word processing to insert screenshots and graphs into written responses. A small number of lessons referenced **AI-enabled tools** being introduced or available for student support (for example, EduChat and ChatGPT), typically framed as optional supports within broader research or creation tasks.

Across observations, **technology ecosystems** were often layered: a whole-class display for instruction, a learning platform for access and production and student devices running subject- or task-specific tools. At the same time, some lessons deliberately minimised active student device use even when digital systems (such as Google Classroom) functioned in the background as a repository, indicating that "technology used" in the study sometimes referred to access and organisation as much as on-screen activity during the observed segment.

3.1.4 Lesson structures and activities

Many lessons followed a pattern of **explicit instruction/demonstration** followed by **student independent work**. In these lessons, teachers often used IWB to introduce concepts, display worked examples, communicate instructions and provide visual scaffolds for learning. Students then used devices to access learning materials and complete activities, research and written work, often through learning management systems such as Google Classroom and Canvas. Some lessons applied this pattern once, while others used several cycles of instruction then independent work within one lesson.

Other lessons were more **inquiry-based and production-focused**, often involving coding, robotics, multimedia production, digital design and online research. The focus of these lessons was on producing content as opposed to consuming content. While most students demonstrated confidence using digital tools, we observed **occasional challenges**. As needed, **teachers circulated** around the classroom to offer help and troubleshoot technology concerns, suggesting alternative methods, such as substituting devices, accessing via an alternative pathway, or shifting to non-digital alternatives. At times, teachers opted to modify, compress or skip parts of an activity. In rare cases, the lesson's emphasis shifted away from intended learning towards technical support and behaviour management.

3.2 Planned learning activity check

The PLA-check provided a systematic view of how digital technologies featured in classroom activity over the course of a lesson. Using momentary time sampling, observers recorded (at 5-minute intervals) students' on-task behaviour and active use of digital technologies, alongside brief notes describing what teachers and students were doing with technology in that segment.

In the PLA-check analysis, results are reported using two units. Teacher technology management strategies (TMS) are reported as **n,** which refers to the **number of lessons** in which a strategy was observed where the strategy occurred. For teacher technology use (TTU), teacher discourse (TD) and student technology use (STU), counts are reported as **f**, which refers to the number of PLA-check sampling points (5-minute intervals) in which a code was observed. **F** is the total number of 5-minute blocks observed in all the lessons in that stage. Across the 68 classroom observations, 57 hours of lesson time was broken into 686 x 5-minute intervals.

Table 3 shows the frequency of occurrences of TTU, TD and STU, expressed as percentages of the total number of 5-minute intervals within each stage and over all 68 observations.

Table 3. Percentage of PLA-check 5-minute intervals in which each code was observed, by stage: TTU, TD and STU.

	Stage						Overall
	1 (F=83)	2 (F=127)	3 (F=122)	4 (F=87)	5 (F=139)	6 (F=128)	(F=686)
Teacher Technology Use (TTU)							
Instruction	28%	26%	61%	54%	73%	52%	**50%**
Discussion	4%	4%	4%	9%	19%	5%	**8%**
Practice	10%	5%	2%	1%	0%	10%	**4%**
Administration	4%	1%	3%	7%	3%	0%	**3%**
Tech Issue	1%	1%	3%	3%	4%	0%	**2%**
Inquiry	0%	0%	2%	2%	0%	2%	**1%**
Virtual monitoring	1%	0%	2%	3%	1%	0%	**1%**
Production	0%	0%	0%	0%	0%	0%	**0%**
Other teacher tech use	12%	2%	3%	8%	1%	2%	**4%**
Teacher Discourse (TD)							
Content	41%	57%	72%	75%	85%	45%	**63%**
Technology	41%	31%	24%	31%	29%	10%	**27%**
Behaviour	5%	0%	3%	2%	9%	0%	**3%**
- Reactive Positive	5%	8%	2%	3%	0%	4%	**4%**
- Reactive Negative	7%	3%	13%	21%	16%	1%	**10%**
- Proactive Positive	11%	2%	10%	17%	6%	8%	**8%**
- Proactive Negative	2%	0%	0%	1%	1%	0%	**1%**
Other teacher discourse	5%	9%	1%	2%	1%	2%	**3%**
Student Technology Use (STU)							
Production	13%	35%	29%	17%	27%	32%	**27%**
Practice	17%	9%	15%	34%	6%	9%	**13%**
Administration	18%	2%	18%	20%	12%	2%	**11%**
Inquiry	10%	6%	11%	5%	16%	9%	**10%**
Tech Issue	14%	4%	12%	2%	6%	0%	**6%**
Discussion	4%	0%	7%	7%	6%	0%	**4%**
Instruction	0%	0%	2%	5%	8%	0%	**2%**
Virtual monitoring	0%	0%	0%	0%	0%	0%	**0%**
Other student tech use	4%	7%	2%	6%	4%	26%	**8%**
No tech use	51%	47%	49%	49%	59%	35%	**48%**

3.2.1 Teacher technology use (TTU)

3.2.1.1 Instruction (f=346, 50%)

Instruction (exposition, explanation, etc.) was by far the most common use of digital technologies by teachers in the classes observed (64 out of 68 lessons). IWBs were almost exclusively the technology used for this purpose; laptop computers connected to projectors were also used. Stage 5 classes had the highest level of use at 73%, with Stage 3 following at 61%. Stage 1 and 2 classes had similar levels of technology use for teaching at 28% and 26% of segments, respectively. Stage 4 and Stage 6 classes also had similar but higher percentages of segments where teachers used technologies for teaching (54% and 52%).

For the lessons observed in **Stages 1–2**, teacher instruction commonly used the IWB to **structure whole-class teaching and routines**, especially in literacy and foundational skills. Teachers displayed texts, phonics resources, sentence starters and worked examples and used videos to model concepts or prompt discussion (for example, literacy clips or short modelling videos). Instruction frequently involved **guided questioning and step-by-step explanations**, often paired with non-digital responses (for example, students writing on mini whiteboards) while the teacher maintained the shared visual focus on the board.

In the **Stage 3** lessons, instructional technology use remained strong and was used to **support explicit teaching across subjects**, including English and Mathematics, as well as HSIE and Geography. Teachers commonly annotated displayed material, used slides to scaffold tasks, modelled research and source-handling processes and ran short digital checks (for example, quizzes) to guide lesson pacing and feedback.

In **Stages 4–6**, instruction increasingly involved **slide-based explanations, demonstration videos** and **explicit modelling of disciplinary tools and practices**. Examples included teaching with platforms that enabled live responses (for example, PearDeck), demonstrating simulations or online workbooks and modelling complex senior content using tools such as OneNote with stylus input. In senior classes, projected resources were frequently linked to learning platforms (for example, Google Classroom/Canvas) to manage access, structure tasks and support independent work.

3.2.1.2 Discussion (f=53, 8%)

TTU for supporting discussion was relatively common with 23 of 68 observed classes featuring this activity. This use was observed across all stages, with Stage 5 classes featuring the highest frequency of use for this purpose (19%). Stage 1, 2 and 3 classes were at 4% and Stage 6 at 5%. Stage 4 classes at 9% was the second highest observed. Examples of this use included discussion relating to prompts within a video, question and answer (Q&A) relating to a displayed text, planning for a piece of narrative writing, use of technologies such as software pages, AI tools, etc.

In the lessons observed in **Stages 1 and 2**, technology-supported discussion often centred on **brief stimuli** such as short videos or displayed text, with teachers pausing to ask recall or comprehension questions before resuming the activity. For example, this approach was used in a Stage 2 class to reinforce key messages in a cyber safety lesson, where video prompts generated whole-class discussion and a recap of “take-away” points. In a **Stage 3** class, discussion facilitated **sense-making and planning**, including talk around exemplars and student contributions displayed on the board and Q&A linked to narrative planning components (e.g., theme, setting, conflict). In another Stage 3 class, discussion included **teacher-led**

reasoning talk in mathematics where teachers elicited and refined terminology and representations while recording responses on the board.

In a **Stage 4** English class, discussion was enabled through **interactive response tools**, with teachers reviewing student submissions and using displayed responses as the basis for follow-up questioning and deeper elaboration. In another Stage 4 class, discussion included explicit talk about expectations, including rubrics and restrictions on AI tool use. In **Stage 5** classes, discussion most often **combined display-based prompts with sustained questioning** to build disciplinary language, evaluate ideas and link talk to tasks and assessment expectations. In a **Stage 6** class, discussion was less frequent but included senior **inquiry-focused talk** where, for instance, teachers used on-screen models to discuss research quality and the implications of AI-generated search overviews for academic work.

3.2.1.3 Practice (f=30, 4%)

Digital technologies were used less frequently by teachers to **model or practise processes and skills**. Stage 1 and Stage 6 classes had the highest observed rates of modelling using digital technologies with 10% of segments featuring this application. Stage 2 classes were the next highest at 5% and Stage 3, 4 and 5 classes featured 2%, 1%, and 0% respectively. The highest levels observed of TTU for practice were in maths classes for solving set problems. For example, in a **Stage 2 Mathematics** class, practice was most clearly teacher-led and procedural, with teachers using the IWB to work through a series of problems, impose time limits and provide feedback before students continued independently. In contrast, instances of *practice* reflected senior and differentiated learning demands. In a **Stage 6 Mathematics Extension** class, teachers used a touchscreen device and OneNote to model worked solutions repeatedly in a consistent teacher-centred routine, while in a **Life Skills Mathematics** class, *practice* included structured, game-like IWB tasks with reinforcement and turn-taking. Practice was also common in **English** classes for sentence or paragraph construction, spelling, or similar activities.

3.2.1.4 Administration (f=18, 3%)

We observed teachers using digital technologies for administrative purposes in 15 classes. The 18 instances of administrative use were predominantly **roll-marking**. For this use of technologies there was a continuum of complexity. In its simplest form teachers marked a digital roll on their laptop. More involved processes were used to settle, engage and/or build rapport with the students as they entered the classroom, or included teachers displaying a class roll on an IWB (often with photos of the students as well as their names) for students to tap on as they entered class and. One example included having the **students giving themselves a wellbeing rating**. The more complex roll call procedures were observed in primary school classrooms.

3.2.1.5 Technical issue (f=14, 2%)

We recorded technical issues with hardware and/or software in 11 classes across Stages 1 to 5. **Login issues** were the most observed along with software glitches such as non-starts, lagging and freezing. **Large downloads** proved problematic in two of the observed classes and there was an occasional need for restarts of hardware. For the most part, teachers were able to continue their lesson relatively quickly by troubleshooting issues or pivoting to alternate options; however, there were instances of up to 15 minute delays in restarting the lesson caused by a couple of the problems encountered.

3.2.1.6 Inquiry (f=7, 1%)

Inquiry was the least observed type of TTU observed in these classes. Zero segments were recorded for inquiry in the Stage 1, 2 and 5 classes. About 2% of the Stage 3, 4 and 6 class segments featured TTU for inquiry. This equates to one class in each stage. The KLAs where TTU for inquiry featured were HSIE and TAS, suggesting it was most likely to arise in subjects where evaluating sources, locating information, or navigating discipline-specific digital tools formed part of the learning task. For example, in a **Stage 3 History** lesson, inquiry-related TTU involved **explicitly modelling research processes** and reinforcing information literacy. The teacher guided students through a workbook task requiring research, questioned students about identifying safe and reliable sites and demonstrated practical academic skills such as taking a "snip" of a map for inclusion in responses and acknowledging sources appropriately. In a **Stage 4 Technology** class, inquiry was embedded in learning how to work with programming concepts. The teacher used a slide-supported walkthrough to interrogate and refine students' understanding of repetition in code, converting pseudocode into Python while **asking questions to support reasoning** about how loop structures work.

3.2.1.7 Virtual monitoring (f=7, 1%)

There were five lessons where virtual monitoring was observed. The monitoring took place in Stage 3, 4, and 5 classes across a range of disciplines including maths, history, English, geography, and creative arts. The software used included Kahoot, Mathspace, Wayground, and digital workbooks in the Inquisitive learning platform. This use of software enabled teachers to monitor student progress with quizzes and written work. Because the monitoring was performed live in class, this enabled the teachers to help keep students on track with their work, to acknowledge and reward student progress, and to offer and provide timely support where it was needed. None of the observed instances involved teachers using monitoring software that allowed them to view student screens in real time.

3.2.1.8 Other teacher technology use (f=28, 4%)

A range of digital technology uses related to instruction not captured elsewhere were observed in 31 5-minute segments across 14 observations. These included using **music or videos** to calm classes, **behaviour point-scoring** software, IWB tools to **create student pairs**, and **digital rubrics** connected to Canvas for marking student work.

Other uses were more organisational. These included **recording group details** in a shared Google Drive, tracking which iPad each group was using for project continuity, checking student-selected Kahoot usernames, and using Google Classroom features to confirm that students had received assessment task details.

3.2.2 Teacher discourse

3.2.2.1 Content (f=435, 63%)

Across the stages, there were 435 instances of 5-minute segments in 64 lessons where, aided or supported by digital technologies, teacher discourse focussed on discipline content. Discourse related to subject-matter content showed a clear progression from highly scaffolded, teacher-led foundational learning towards increasingly disciplinary, evaluative and research-oriented talk.

In **Stage 1**, content discourse was dominated by **explicit instruction and rehearsal of core literacy and numeracy skills**, with IWBs primarily used to display prompts and pace practice. In **Stage 2**, teachers more frequently **combined explicit teaching with guided inquiry and collaborative talk** (partner sharing, reporting back), including early forms of research guidance (keywords, locating facts) and structured synthesis that moved beyond recall into interpretation. **Stage 3** discourse increasingly emphasised **disciplinary literacy and reasoning**: teachers used metalanguage (e.g., adverbial phrases, subordinate clauses), and modelled strategies (skimming/scanning, paraphrasing), while also making academic integrity expectations explicit.

In **Stage 4**, content discourse was often **mediated through digital platforms and interactive tools** (e.g., PearDeck, Teams, dashboards), with explicit teaching of comprehension and revision strategies and, in some lessons, clearer links between research tasks, source validation and AI literacy. By **Stage 5**, discourse was more consistently **aligned with disciplinary practices**—argumentation with evidence, ethical reasoning, and structured independent inquiry. In **Stage 6,** teachers unpacked complex concepts and texts, linked learning to assessment and exam preparation, and more **explicitly taught research norms** (curated sources, databases, referencing, note-making), with sustained emphasis on **evaluating the trustworthiness of information**.

3.2.2.2 Technology (f=183, 27%)

Across Stages 1–6, teacher discourse and dialogue with a focus on digital technologies was observed in 183 segments across 50 lessons. This focus featured in both planned delivery of instruction relating to technology use and instances where teachers responded to their class's needs when using digital technologies. Teachers' discourse relating to technology shifted from operational talk that enabled access and routines to more strategic guidance about digital production and AI critical literacy.

In **Stages 1 and 2**, technology discourse was largely **procedural and troubleshooting-focused**: teachers walked students through IWB activities, supported logins and device sharing, modelled **basic problem-solving** (e.g., "looking for clues" when a function would not work); where technology supported composition, talk centred on basic features and functions (fonts, undo, spellcheck), and step-by-step guidance for **multimedia production** (text alignment, inserting wrapping images, camera angle, zoom), alongside **early research guidance** about navigating websites and what to do when links fail. By **Stages 3 and 4**, technology discourse became more explicitly tied to **digital research practices and work habits**, including teaching practical efficiencies (split-screen, copying and pasting URLs, screenshots/snipping maps), **tech etiquette** and making **explicit links between technology use and academic integrity**, including warnings about copying from AI overviews and plagiarism. In **Stages 5 and 6**, teachers' technology talk extended to **purposeful integration of AI and digital tools for disciplinary tasks** (e.g., guided use of EduChat for drafting and checking ideas; quizzes and selection apps; Photoshop/camera skills; research modelling that rejected AI overviews in favour of credible sites), while also, in other lessons, **framing AI primarily through prohibition and compliance language**.

3.2.2.3 Behaviour

3.2.2.3.1 Reactive positive (f=25, 4%)

We observed positive reactive discourse regarding student behaviour in 26 segments across 17 lessons. Examples include **praise** and/or acknowledgment to the class or individuals for keeping noise at an acceptable level, working well in terms of effort or application, finishing work quickly, and creating a minibreak to help maintain engagement.

3.2.2.3.2 Reactive negative (f=68, 10%)

We observed reactive discourse focussed on negative behaviour in 67 segments across 30 lessons. This discourse was typically **responding to students off task, distracted,** or **being overly noisy** or **unresponsive.**

3.2.2.3.3 Proactive positive (f=63, 8%)

We observed proactive discourse focussed on positive behaviours in 57 segments across 31 lessons. Examples include provision of **advice about desired behaviours** and specific actions such as how to work safely together when students needed to move around the classroom. Anticipating when students might become unsettled and **providing an intervention** or distraction (e.g., **offering points to reward desired behaviours**) was another strategy. Other features of this discourse were the use of a **calm and assuring tone** of voice when prompting.

3.2.2.3.4 Proactive negative (f=5, 1%)

We observed proactive negative discourse was in five segments across three lessons. In most cases this took the form of **reminders about the rules** regarding the use of digital technologies and what would happen if they were not followed.

3.2.2.4 Other teacher discourse (f=23, 5%)

Other discourse was observed in 23 segments across 14 lessons. This category captured verbal and non-verbal communication that was neither positive nor negative in tone, and was largely procedural. Examples included **clap** techniques (such as when the teacher begins a clapping pattern and students stop what they are doing to join in, bringing the class together and focusing their attention), asking students for a **thumbs up** if they understood an explanation, issuing **reminders** about process and **providing forward /advanced organisers** (e.g. overview of goals for the lesson, or reminders to connect what students already know with what they are to learn or do).

3.2.3 Teacher technology management strategies

3.2.3.1 Positioning (n=61, 90%)

Positioning was the most frequently observed technology management strategy. In 61 of the 68 classes, teachers adjusted their own and/or students' physical positioning to support instruction, monitoring and guidance, including questioning, providing feedback and offering technical or task-related assistance. Strategies for **positioning students** included bringing all students to the front of the class to sit in front of the IWB (usually in primary schools), having individual students come to the front of the class to work on the IWB, arranging students in groups, to space out, form a circle or line up, having students do work adjacent to the teacher's

desk and randomising their seating positions. **Teacher positioning** included working at the front of the class with the IWB, monitoring students' work and/or behaviour from the side or back of the class and circulating throughout to assist, ask questions and provide feedback.

3.2.3.2 Imposing time constraints (n=27, 40%)

The second most common strategy was imposing time constraints and it was observed in 27 lessons. Setting time limits for completing portions of student work was often used and seemed to encourage engagement. Time limits were often set using a **timer on an IWB** or using **teachers' smartphones**. For instance, a Stage 2 teacher opted to have a **visible but silent timer** on the IWB when her students were completing a set Maths activity, so everyone was aware of the time without the timer necessarily interrupting the class. The teacher circulated to help individual students and played a harmonica to alert the class when she finished helping the last student. This approach allowed the teacher to have more flexibility over when to end the activity and the harmonica brought a sense of calm in the transition.

3.2.3.3 Tech support (n=21, 31%)

We observed teachers providing technical support for students in 21 classes. This technical support included help with logging in, use of software, dealing with flat batteries in laptops and tablets and locating and submitting digital files. In the case of the latter, support was provided to navigate through the school's learning management system, software package, or app, to use particular features to control/format presentation, edit and record. In programming classes, technical support also extended to discipline-specific processes, such as helping students plan their programs, identify errors and work through the steps required to develop or refine their code.

3.2.3.4 Closing laptop to listen (n=19, 28%)

We observed teachers ask students to close laptop lids, place iPads face down, or turn off desktop computer screens in 19 lessons. This was seen to be an effective and somewhat essential strategy to gain student attention when moving to another topic or activity, or just to provide further instruction when needed. Some variations involved turning the laptop around to face the teacher, or half-closing the lid (instead of fully closing) to avoid needing to restart the laptop.

3.2.3.5 Providing feedback (n=17, 25%)

We observed feedback using or supported by digital technologies in 17 lessons, including both teacher and peer feedback. Teachers used a range of strategies, most commonly **displaying student work or responses** on the IWB and providing whole-class feedback. This included anonymised responses, selected student examples, Mentimeter responses, quiz feedback and student work shared from laptops or tablets. In several lessons, **while students worked digitally**, **teachers circulated to** offer individual feedback and refer students back to task requirements or content displayed on the IWB.

Feedback was also provided through more traditional classroom routines supported by technology. In primary classes, teachers often **displayed tasks on the IWB while students responded on mini-whiteboard**s and held them up for checking. IWBs were also used to **display questions, correct answers,** and **student responses for discussion**. **Peer feedback** was less common but was observed when students shared story plans with "reflective

partners" or discussed proverbial phrases and provided positive feedback. In one further case, peer feedback was foreshadowed as part of a later writing refinement activity.

3.2.3.6 Other strategies (n=15, 22%)

Fifteen strategies other than those specifically identified above were observed in eleven lessons where digital technologies were used. These included **alternative task arrangements** when devices were unavailable or unreliable, such as paper-based copies or switching to another available device, as well as **attention and behaviour management strategies** including brief games, bells, music, mindfulness, screen locking, seating adjustments and fidget tools. Teachers also used strategies to support **equitable participation in group digital work**, such as discouraging students from being "hogs" (i.e. dominating use of digital tech) or "logs" (i.e. doing nothing with digital tech). When present, SLSOs and pre-service teachers provided additional technical and behavioural support.

3.2.4 SLSO, student teachers, teacher's aides (n=8, 12%)

Additional adults in the classroom most often functioned as **instructional support**. Individual or small-group assistance was observed most often, with the teacher and SLSO roaming around the room providing individual support. A second theme was **technology and task support**, particularly where students needed help with laptops, typing, formatting or software, such as when the SLSO shows a student how to use the spell check and dictionary. Less frequently, student teachers or aides took more **visible instructional roles**, including when a student teacher led a Q and A session.

3.2.5 Student technology use

3.2.5.1 Production (f=185, 27%)

The most prominent student use of technology in class was for production, where students used their devices as a workspace for creating, revising and presenting **textual and multimedia work**. Students used apps like Google Docs on their laptops or school desktops to develop plans, letters and stories. Production also involved more multimodal forms of work, where students used iPads to photograph or record videos. Students were observed using the internet to find images and for inspiration, as well as using Canva to edit multimedia projects and create podcasts. In several lessons, production was collaborative and iterative, with students sharing documents, testing approaches, rehearsing, filming, playing back/reviewing work, correcting and editing.

3.2.5.2 Practice (f=92, 13%)

The second most prominent student use of technology was for practice, where students used digital tools to **rehearse and consolidate skills** through structured activities. For example, Stage 1 students were observed to use their iPads for Reading Eggs and a class of Stage 2 students completed Area Builder on individual laptops. Whole-class activities using an IWB interactive board and quiz-based practice were also common, with students taking turns to respond publicly, such as individual students writing solutions to the mathematical problem on the IWB, or completing competitive literacy quizzes on Kahoot where students cheer for their team. In one Stage 4 science lesson, students were introduced to a PhET simulator, which they used to explore newly taught concepts and recorded their learning on a related worksheet.

3.2.5.3 Organisation and management (f=75, 11%)

Organisation and management of student technology was frequently observed. The most common examples of use involved students **accessing, opening or preparing devices** and platforms at the beginning of activities, such as when students collected laptops or were asked to open their BYOD laptops or turn on monitors of school desktop computers. A second recurring pattern was the **movement and storage of devices**, with students collecting iPads, moving laptops from trolleys, or returning devices. Also included was managing access to digital learning spaces, such as students being directed to log into Google Classroom and find their allocated task.

3.2.5.4 Inquiry (f=67, 10%)

Student use of technology for inquiry was most often associated with **independent online research**, with students using Google web searches, Google Classroom and digital workbooks to locate information. This was evident in a Stage 2 HSIE lesson on Indigenous history, where students used iPads to research in response to teacher instructions, and in a Stage 5 Food Technology lesson, where students investigated the effects of food insecurity for a selected country. Inquiry was also frequently connected to production, with research informing posters, slide decks, podcasts or design tasks; for example, in a Stage 5 English lesson students used digital tools effectively to support the creation of a Canva poster. **Collaborative inquiry** appeared less often but was still present, including a Stage 3 HSIE history lesson where students helped each other locate information, and a Stage 4 English lesson where students researched and compiled references together. Notably, inquiry involving AI-supported searching was reported relatively infrequently.

3.2.5.5 Technology Issues (f=43, 6%)

The technology issues most often observed related to **access and entry routines.** When these occurred, they absorbed lesson time, with students delayed by logins, updates and difficulties accessing required platforms. Observers noted that logging in could be “exceptionally hard”. A second, recurring concern related to **device readiness and availability**, including flat batteries, missing devices and faulty equipment. This was evident in a Stage 2 Mathematics lesson where a student’s laptop was not charged (though a spare device was available), and in a Stage 3 Mathematics lesson where multiple laptops were undercharged due to ineffective chargers, requiring the teacher to locate spare laptops so students could proceed. A connected issue was the way **troubleshooting** for students’ technology issues redirected teacher attention away from the learning goals of the lesson, particularly in technology-rich subjects; for example, in a Stage 5 iSTEM lesson the teacher’s focus repeatedly shifted between progressing the task and resolving technical problems.

3.2.5.6 Instruction (f=17, 2%)

Student use of technology for instruction was rare and only occurred in classes in Stage 3 and above. In those instances, students were **accessing lesson materials** and completing teacher-directed tasks through digital platforms. Across lessons, students used Google Classroom, Canvas, online workbooks and presentation slides to find instructions or continue set work, including cases where Stage 4 Mathematics students were directed to review slides on Canvas and where another class of Stage 4 Technology students worked through PowerPoint slides on their own computers before beginning Python activities. A second pattern was instructional technology use **embedded within guided practice and production**, where students worked at their own pace through demonstrations, videos or step-by-step online instructions while

completing practical work, including Stage 5 Photography and Digital Media activities and iSTEM tasks that combined on-screen instructions with physical materials.

3.2.5.7 Other technology use (f=57, 8%)

Across the dataset, "Other Tech Use" captured technology activity that sat alongside the intended learning task: small, practical actions that supported participation but were not the main instructional focus. these entries were comparatively infrequent in the earlier stages (around 2–7% of student uses) and tended to cluster around short, situational behaviours such as **basic device handling and transitions** (locating a QR code for a peer, returning to iPads, closing laptops when moving), **peer assistance** with specific tools (helping a classmate use Canva), and **platform navigation** tied to discrete activities (typing into cloze text boxes, reopening devices to find a Canvas quiz, checking answers). Other examples included **occasional media and engagement uses** (moving to Spotify; using a wheel/spinner activity), brief **web-search** actions that sat outside the main inquiry code (including copying and pasting from an AI overview into slides), and **noticing** small software affordances that improved writing mechanics (for example, Word auto-capitalisation, or checking spelling against a model on the board).

By contrast, Stage 6 stood out, with "Other Tech Use" comprising 26% of student technology entries. This suggests a different profile, in which supporting technology use was more sustained and more embedded in students' independent work routines. The dominant Stage 6 use was **student-initiated productivity**, particularly extended notetaking and typing on laptops (sometimes across mixed devices such as laptops and touchscreens). A second prominent pattern was students managing their **work processes** in online systems: completing forms, updating tables, copying and pasting completion data, taking screenshots, converting files to PDF and uploading artefacts, often with **peers providing just-in-time technical support**. Stage 6 students were also observed organising files in Google Drive and Google Classroom, and using software features to work more efficiently, such as viewing the task and their work side by side in split-screen or applying spreadsheet formulas (with teacher guidance) to automate calculations rather than doing them manually. Overall, while "Other Tech Use" in earlier stages often reflected brief add-on actions around set tasks, in Stage 6 it more consistently reflected self-directed digital study practices and management of work processes, which may sit outside more teacher-directed codes such as Instruction or structured Practice.

3.2.5.8 No technology use (f=332, 48%)

Entries coded as **no technology use** were more frequent than any other student technology category, indicating that non-digital activity remained a substantial feature of lessons even in classrooms where digital tools were available and routinely used. The most common pattern was **teacher-led instruction**, where students listened, watched, responded verbally, or followed modelling from the front of the room. This included Stage 1 English (Reading) lessons where students sat on the floor to listen, a Stage 3 Mathematics lesson where students watched a demonstration and responded by raising their hands and a Stage 4 Mathematics lesson where students watched, took notes and participated in a brief Q and A.

A second prominent theme was **paper-based practice and handwriting**, with students working in books, on worksheets or mini-whiteboards, or using other physical materials. For example, in a Stage 4 Science lesson students copied notes into their workbooks as part of lesson activity. **Discussion and verbal participation** were also commonly observed within non-digital segments, including a Stage 2 English lesson where students shared their paragraph

verbally with the group. Overall, non-digital activity was characterised by structured listening, writing, discussion and familiar classroom routines that did not require screens.

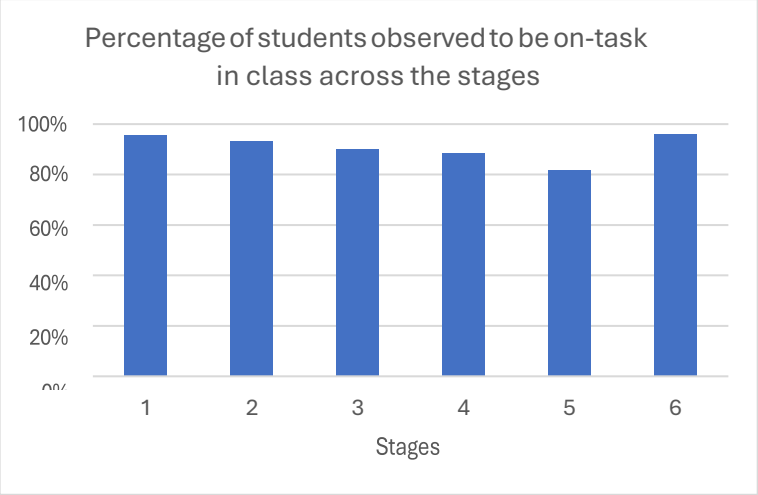
3.2.6 Student on- and off-task behaviour

Student on- and off-task behaviour was also recorded using the PLA-Check. Unlike the other observation measures, which focused on the whole class, the PLA-Check recorded the behaviour of individual students who had consented to take part. Stricter criteria were therefore applied to these data, and some classroom observations were excluded from this part of the analysis (see Methods section). Of the 55 lessons where on- and off-task percentages were recorded and retained, students were found to be on-task 90% of the time. Table 4 reports the average percentage of consenting students in each class per stage and the average percentage of those students observed to be on-task. Figure 1 shows the graphical representation of the average percentage of students observed to be on-task across stages.

Table 4. Average percentage of students providing consent in the class and average percentage of time consenting students (n=497) were on-task.

Stage	Number of classes retained	Average percentage of students consenting in the stage	Average percentage of consenting students on task
1	8	48%	96%
2	7	38%	93%
3	11	47%	90%
4	8	53%	88%
5	12	40%	82%
6	9	47%	96%
Overall	**55**	**45%**	**90%**

Figure 1. Percentage of students observed to be on-task in class across stages.



Observation notes suggested that technology-related disengagement most often arose from a combination of task design, access problems, and the easy availability of alternative digital activities. The most common pattern involved **social talk and gradual drift during independent work**, particularly when teacher was occupied, students were waiting for assistance, or some students had finished earlier than others. This included Stage 5 English contexts where students talked across the room or loudly about off-task topics, and a Stage 5 Mathematics lesson where some students continued working while others socialised and chatted. A second pattern involved **unrelated device use**, including entertainment, shopping, messaging, email and games; for example, during a Stage 3 English lesson students were observed using YouTube Shorts and attempting online shopping/social media logins, and in a Stage 4 English lesson a teacher explicitly reminded students not to check emails. A further theme was off-task behaviour linked to **waiting and technical issues**, such as a Stage 2 HSIE lesson where students waited for a partner to log on, and a Stage 1 English (Reading) lesson where students were delayed because software would not load. Less frequently, disengagement appeared to reflect **uncertainty, boredom, or attention limits**, including a Stage 5 iSTEM lesson where students were somewhat unclear about task requirements.

Overall, these descriptions add nuance to the broader off-task code by indicating that technology-related disengagement was typically social, situational and task-dependent, rather than attributable to devices alone. It was more likely to occur where access, pacing, task clarity or monitoring created opportunities for students to disengage. When instances of distraction were observed, teachers frequently used active management strategies to minimise or prevent distraction. Example strategies included teachers positioning themself near distracted students and prompting students to return their attention to the task.Consequently, most observed periods of off-task behaviour were brief.

3.3 Screen use in schools for specific purposes (SSPs)

Unlike the classroom observations conducted in mainstream government schools, the lessons in the SSP (S13) were shaped by students' complex communication, behavioural, sensory and mobility needs. Lessons took place in bright, highly visual classrooms arranged to support safety, accessibility, movement and individual regulation, with clear sightlines to the IWB and additional space for students requiring behavioural or physical support. Technology was embedded within highly individualised, multimodal teaching, with IWBs, mirrored iPads, Smart Notebook resources, Twinkl activities, personalised slide decks and Proloquo2Go used alongside tactile materials. Teachers and support staff provided sustained one-to-one prompting, physical guidance, positive reinforcement and sensory breaks, flexibly shifting between IWBs, iPads and printed resources to maintain participation and respond to students' changing needs.

The PLA-Check revealed a distinctive pattern of technology use in the SSP compared with what was observed in mainstream schools. Although TTU remained predominantly instructional and practice-oriented, digital tools also performed a more fundamental assistive and mediating role, facilitating communication, supporting behaviour and emotional regulation and fostering agency, inclusion and belonging for neurodiverse learners. IWBs, iPads, personalised slide decks, Augmentative and Alternative Communication (AAC) applications, digital games and drag-and-drop activities were used to present content, model tasks and provide guided practice, while also enabling students to express emotions, communicate choices, anticipate transitions and participate in shared classroom experiences that might otherwise have been

inaccessible. **Teacher discourse** integrated curriculum content and explicit technology instructions with proactive behaviour support, including praise, redirection, reinforcement of expectations and highly individualised prompts. **Technology management strategies** were correspondingly intensive and adaptive, involving careful positioning, short turn-taking structures, one-to-one physical and technical assistance, immediate feedback and movement between IWBs, iPads and printed resources in response to technical, sensory or accessibility needs. **Student technology use** centred on supported communication, emotional expression and guided task completion rather than independent production, organisation or inquiry. No sustained virtual monitoring, administrative use or independent inquiry-based technology activity was observed, while deliberate periods without screens incorporated tactile materials, sensory breaks and direct interaction. In this setting, technology was therefore not simply a vehicle for curriculum delivery but a critical means of enabling meaningful access, participation and connection.

As these observations were drawn from a single SSP setting, the patterns described here should be interpreted as illustrative of this particular context rather than representative of technology use across SSPs more broadly.

4. Conclusion

Across 68 classroom observations in NSW public schools, classroom engagement was generally high and digital technologies were a routine feature of teaching and learning. Screens were generally used intentionally to support the learning purpose. Lessons commonly combined technology-rich phases with non-digital activity and observers frequently noted that effective use was **less about the sheer amount of screen time** and **more about clarity of purpose, lesson pacing, and the strength of classroom routines and teacher presence.** Where technology was well integrated, it supported access to materials, explanation and modelling, organisation of learning, and student production (including written and multimodal work). Learning management systems and interactive displays were prominent in structuring lessons, while student devices were typically used in task-focused ways such as accessing instructions, researching, composing and creating.

At the same time, the observations highlighted recurring practical constraints of technology-rich classrooms. Login delays, device readiness, software glitches and troubleshooting absorbed 6% of class time and could disrupt lesson momentum, requiring teachers to adapt tasks or provide additional technical support. When off-task behaviour occurred, it was most often brief and situational, emerging during transitions, periods of waiting, or when monitoring was necessarily distributed during independent work, rather than being attributable to devices alone. This pattern reinforces the importance of **designing learning activities that minimise "dead time", make expectations explicit,** and **enable active teacher timely intervention.**

Taken together, the classroom observation findings suggest that digital technologies can be a productive part of classroom learning across stages when aligned with **clear learning goals** and supported by **appropriate management strategies**. The observations also indicate that **strengthening everyday implementation conditions –** reliable access, efficient start-up routines, and task designs that sustain momentum – may be as important as decisions about particular platforms or tools. Overall, these classroom snapshots provide practical insights into the realities of screen use in NSW classrooms and help identify the conditions under which technology is most likely to support learning, engagement and equitable participation.

As a result, the project team suggests the following implications for practice and policy:

1. **Empower teachers to make purposeful choices regarding how and when screens are used.** Effective use of technology in the classroom is highly context dependent and teachers as situated professionals are best placed to make good decisions about when and how technology use will benefit their students.

2. **School and system support should prioritise reliable technology access.** Delays from logins, updates and device readiness can disrupt lessons; strengthening infrastructure and procedures can protect instructional time and reduce opportunities for attentional drift.

3. **Professional learning and initial teacher education should incorporate technology-management strategies.** Evidence-informed strategies for sustaining attention, reducing waiting time and effectively using new technologies such as AI should be integrated into professional learning and ITE preparation.

Teachers are the situated experts who are best placed to decide whether and how technology will add to or detract from a lesson. Observations indicated that overall, teachers were making strong technology integration decisions to benefit student learning outcomes and experiences. Prioritising ongoing maintenance and upgrading of technology infrastructure, devices and training on how to use the technologies will enable teachers and students to maximise time spent on developing curriculum-based knowledge and skills. Professional learning that specifically targets strategies for effectively managing technology-enabled classes will promote more equitable and optimised classroom learning environments.

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Appendix A. List of observed classes and lessons

Stage	School	KLA	Subject/Topic
1	S01	Mathematics	Shapes and halves
	S03	English	Reading
	S05	English	Writing
	S07	Science	Science
	S09	English	Literacy
	S10	English	Literacy
	S11	Science	Science & Technology
	S15	English	English
	S17	English	Reading
	S19	English	Literacy
2	S01	Mathematics	Calculate areas
	S03	English	Topic sentences
	S05	English	Writing a poem
	S07	Creative Arts	Filming own puppet show - adaptation of a storybook
	S07	PDHPE	Cyber safety
	S09	Mathematics	Areas and perimeters of shapes
	S11	TAS	Algorithms and coding
	S12	Mathematics	Fractions
	S15	TAS	Stop motion story
	S17	HSIE	Aboriginal history
	S19	English	Publishing narrative writing using MS Word
3	S01	English	English
	S03	English	English novel study/Podcast recording
	S05	English	Writing
	S07	English	English
	S09	Mathematics	Fractions
	S10	HSIE	History
	S11	English	Vocabulary - parts of speech
	S12	HSIE	Geography
	S12	Mathematics	Mathematics
	S15	HSIE	Narrative writing
	S17	HSIE	History
	S19	Mathematics	Mathematics
4	S02	English	English
	S04	Science	Science
	S04	Science	Technology
	S06	English	Literacy
	S12	Mathematics	Mathematics
	S13	Other	Morning Circle – Communication
	S14	English	English
	S16	Languages	Italian
	S18	English	English

5	S02	English	English
	S02	Creative Arts	Photography and Digital Media
	S04	Science	iSTEM
	S04	Science	iSTEM
	S06	English	English
	S08	PDHPE	Child and Family Studies
	S12	Other	Future Focus Inquiry
	S14	TAS	Food Technology
	S16	TAS	Food Technology
	S16	PDHPE	Physical Activity and Sports Studies
	S18	English	English
	S18	Mathematics	Mathematics
	S18	Science	Science
	S20	Creative Arts	Creative Arts
6	S02	English	Merchant of Venice
	S04	Science	Meiosis in cells
	S04	Mathematics	Binomial theorem
	S04	TAS	Open source, CMS, website projects
	S06	HSIE	Modern history - Nazi regime
	S08	HSIE	Culture and Society
	S12	Science	Microbial contamination
	S13	Mathematics	Life skills content - Data
	S14	HSIE	Geography - HSC extended responses prep
	S18	VET	VET Hospitality
	S20	HSIE	Ancient History
	S20	Mathematics	Calculating percentages