

Schools Digital Strategy

Summary of journey and key hypotheses

To be an education leader in a digital world

July 2019

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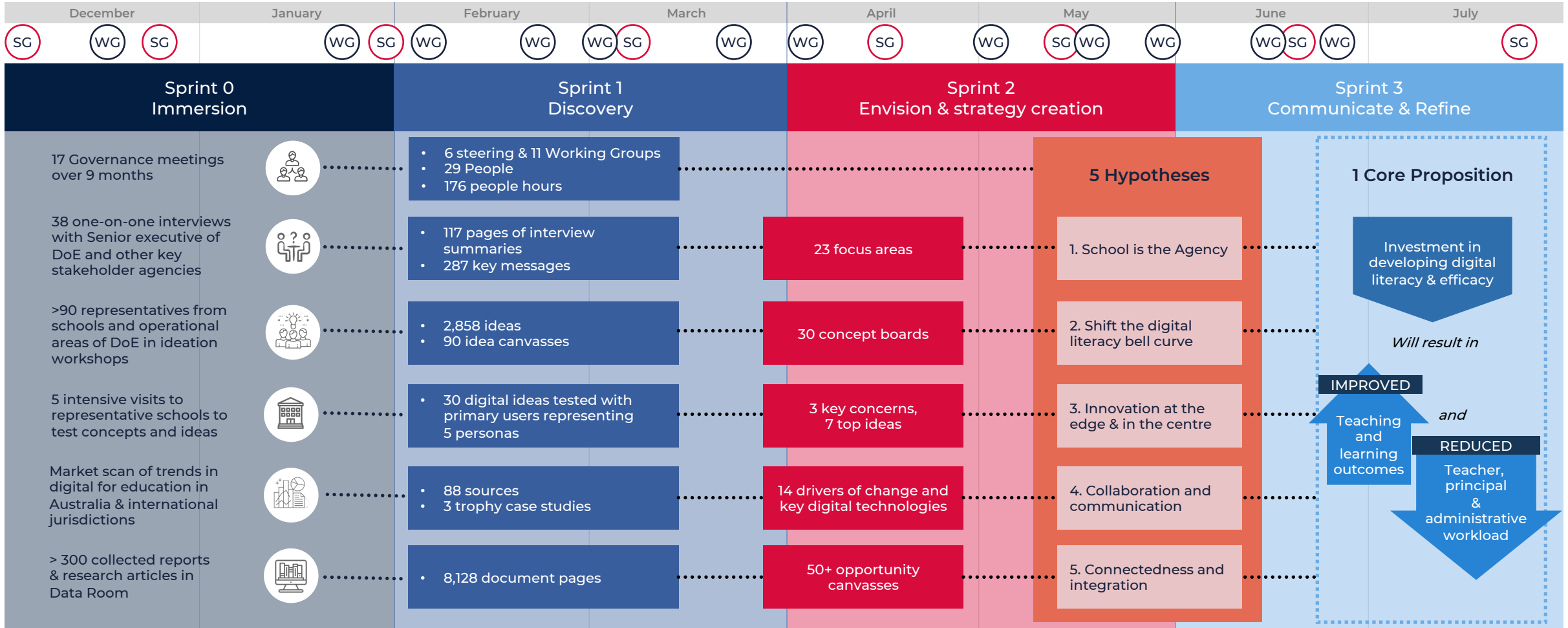
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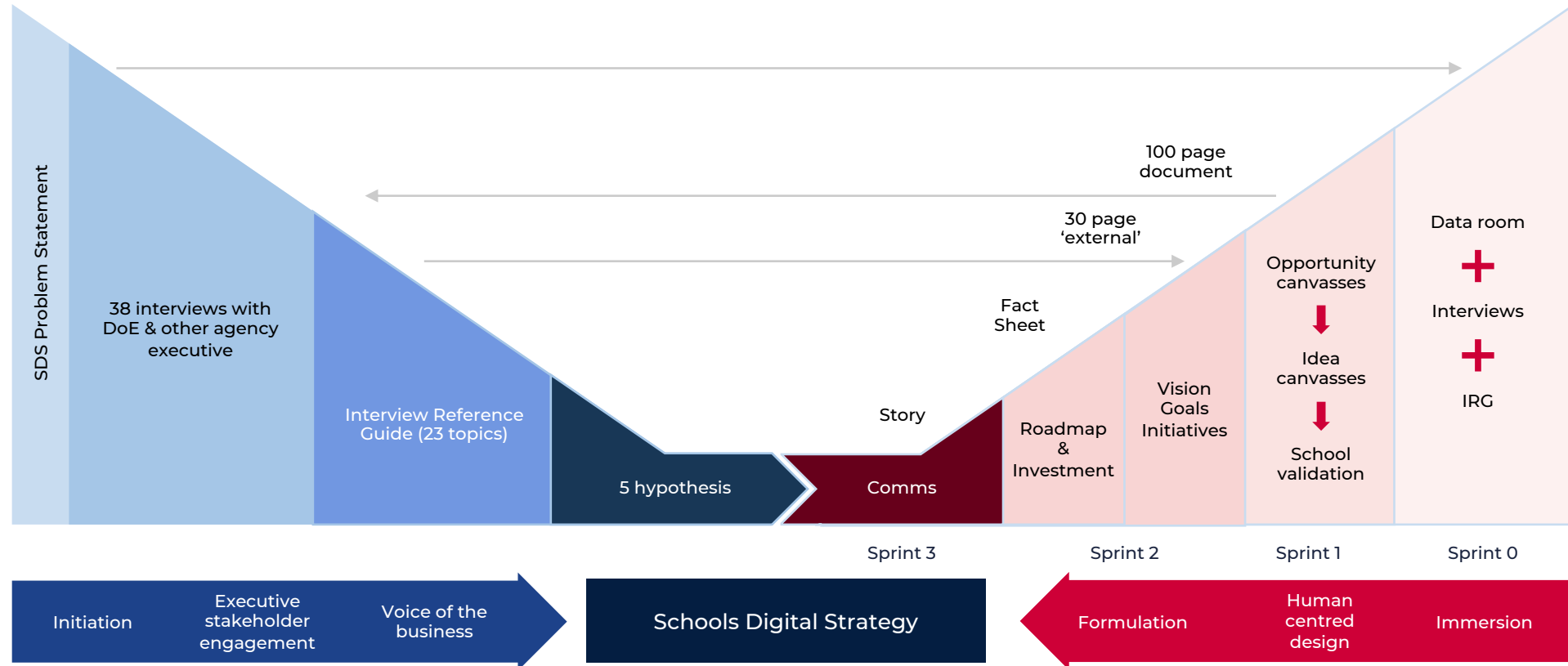
The DoE Schools Digital Strategy Journey



One challenge, two perspectives

Voice of the executive

Voice of the school



One challenge, two perspectives

Voice of the executive

4 categories

23 topics

What we do	T05. Teachers & Quality of Teaching	T09. Curriculum & Pedagogy	T10. Student Progression	T14. The School & the Community	T16. Connecting with Parents	
How we do it	T03. Data	T07. School Performance & Workload	T11. Whole of Government Single View of Citizen	T12. "Whole of Life" View of the Student	T13. Disadvantage & Special Needs	T15. Remote Education
How we enable it	T01. Digital Literacy	T02. Tools & Technology	T06. Digital Infrastructure	T18. Collaboration	T19. Virtual Reality and its Applications	T21. Support & Shared Services
How we implement it	T22. SDTS Focus, Priorities, etc.	T04. Driving Change / Digital Transformation	T08. Policy	T17. Innovation	T20. Governance	T23. Linking to Corporate & BU

5 hypothesis

1. School is the agency
2. Shift the digital literacy bell curve of the system
3. Innovation at the edge & in the centre
4. Immediate feedback, assessments and collaboration
5. Connectedness and integration

Voice of the school

3 pillars	Empower schools to shape their digital journey	Build our schools digital equity and capability		Align the centre to support schools
4 Themes	Digital Maturity & User Capacity	Digital Content, Experience & Data	Digital Devices, Network & Infrastructure	Digital Support & Innovation
9 Strategic Focus & investment areas	1. Enable digital maturity assessment & benchmarking	3. Deliver digital teaching and learning	7. Strengthen our digital and equity foundations	8. Re-orient the service model to support teaching & learning
	2. Enable schools to plan and implement new capabilities and measure success	4. Improve student administration and school management		9. Scale continuous innovation at the edge
		5. Enhance our data, analytics & reporting capabilities		
		6. Drive collaboration and communication		

Building the hypothesis

The 5 hypothesis and resulting action plan presented in this summary have been developed using the approach proposed by Michael Barber in his Deliverology model

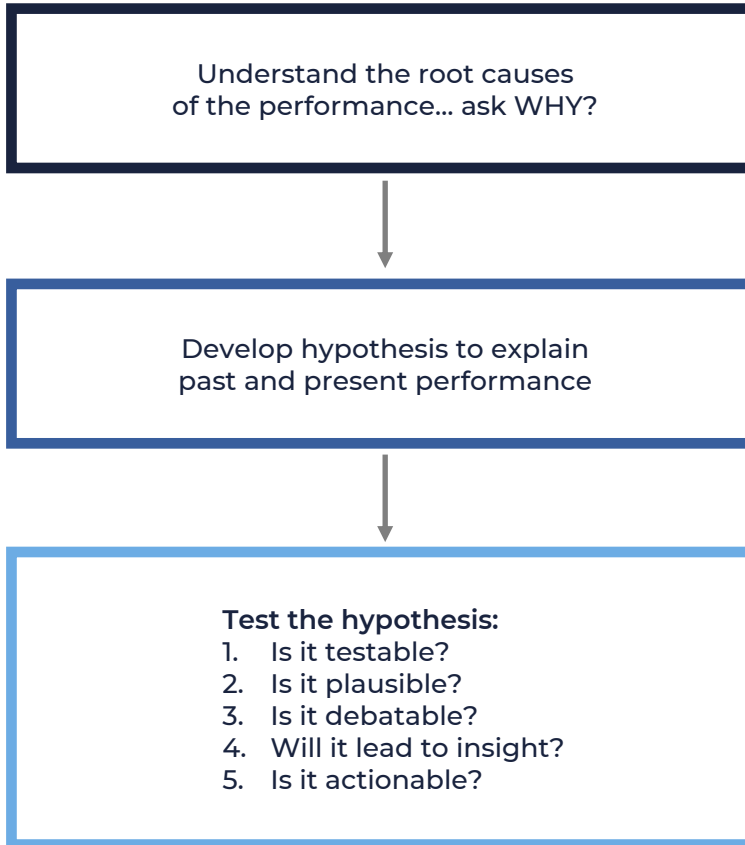
This analysis focuses on the action planning processes of the model

- » Evaluate past and present performance; and
- » Planning for Delivery up to delivery strategy development

The 5 hypothesis presented here are the product of the immersion, discovery, and framing work for the Schools Digital Strategy (SDS) that has taken place from December 2018 through to June 2019

For each of the five performance areas identified, the working hypothesis and the proposed reform strategy is presented

Evaluate past and present performance



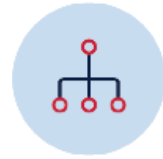
Plan for delivery



Overview of the 5 hypotheses

Each of the 5 hypothesis have been developed to inform a reform agenda and set of strategies to uplift and deliver digital capabilities for teaching and learning outcomes across the system.

While each one has a clear focus and can be driven in its own right, collectively the 5 hypothesis form steps in a continuous improvement loop.



Hypothesis #1
School is the agency

Schools are informed, empowered and resourced to drive their digital journey.



Hypothesis #2
Shift the digital literacy bell curve of the system

Our teachers, principals and staff are equipped for digital literacy, leadership and innovation.



Hypothesis #3
Innovation at the edge & in the centre

Incubation and innovation happens in schools, learning – spaces and coordinated pilot programs.



Hypothesis #4
Immediate feedback, assessments and collaborations

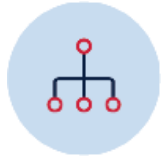
We understand our individual students strengths and needs as they progress through the education system.



Hypothesis #5
Connectedness and integration

Our people and our students are digitally connected to improve equity and access.

The 5 hypothesis form a continuous improvement loop



Hypothesis #1 School is the agency

Current Performance Pattern

Current systems and investment in digital capabilities to date has primarily been driven by Corporate and focused on corporate services, school management, and student administration.

By comparison, investment in developing digital capabilities, literacy and efficacy in teaching and learning and within the classroom, which is the core business of the Department, has not received the attention it deserves, with the result that schools have variable levels of digital maturity and utilization. With Restart NSW there been investment in enabling learning-spaces, starting with Country Schools, that new opportunities are available for teaching.

Hypothesis

The lack of focus on digital capability development and maturity in schools has resulted in an accumulated technology backlog across platforms and property, continuing reliance on manual processes for routine tasks, and insufficient focus on digital efficacy for teachers and principals in our professional development, people & culture and pre-service training.

These factors present a barrier to improving adoption and maturity of digital in schools with flow on impacts on principal and teacher workload and student outcomes.

Proposed Reform Strategy

Digital enablement in schools (the 'edge') will help reduce teacher and principal workload, assist teachers to help their students achieve their potential, and better prepare our students for a future digital workforce.

A 'one size fits all' approach is appropriate for teaching and learning so schools need to be able to plan, select and implement the digital tools and capabilities that best suit their individual needs. School lead and driven digital literacy and empowerment.

This 'School is the agency' must be supported with a persistent effort to understand the needs of schools at an individual and a collective level so that opportunities to realise scale economy can be identified and acted on.

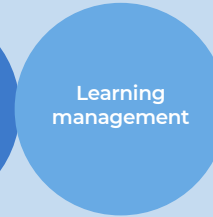
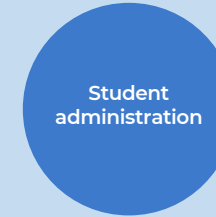
NSW Department of Education

School

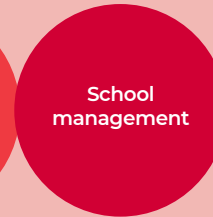
100,000
teaching staff

850,000
students

46,000
learning spaces



Low current investment in digital maturity & capability



High current investment in digital maturity & capability

Corporate

5,000
administration staff

2,210
schools



Hypothesis #2

Shift the digital literacy bell curve of the system

Current Performance Pattern

While there are some areas with high levels of digital literacy across the school network, these are the exception rather than the rule with over 50% of executive stakeholders interviewed identifying the current relatively low level of digital literacy in schools as a major expected barrier to wide scale adoption and use of digital technologies for teaching and learning and school administration.

Hypothesis

While the Department has deployed, and schools have invested in, systems that will assist them with routine tasks, there has not been a focus on developing digital literacy, leadership and efficacy for all staff.

As a result, there are currently only small numbers of teaching or other staff who are digital leaders or early adopters who are pioneering new and innovative pedagogies or processes in schools.

Proposed Reform Strategy

Investing in digital literacy and efficacy in teaching and support staff will shift the curve with the expected result that larger numbers of staff will be in the innovation/early adoption area.

Increased numbers of innovators and early adopters will accelerate use of digital pedagogies, automated processes and data driven decision making across the organisation.

Integrating technologies in schools: The Pencil Metaphor



The Leaders

First to adopt technologies, document and share practice warts and all

The Sharp Ones

They watch the leaders, grab the best bits, learn from mistakes and do great stuff

The Wood

Would use tech if someone else sets it up and shows them how-to and keeps it running

The Ferrules

Hold tightly onto what they know. Tech has no place in their classroom

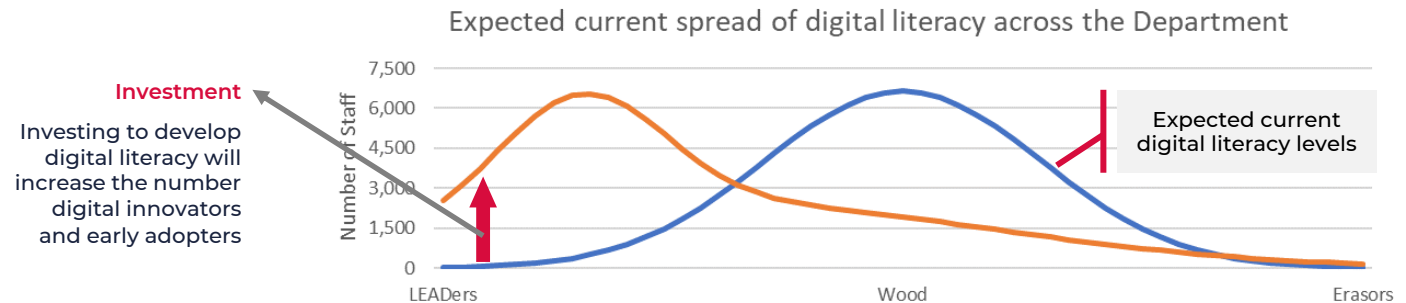
The Erasers

Endeavour to undo much or all the work of the leaders

Hangers-on

Know all the lingo, attend the seminars but don't do anything

The 'pencil model' is a version of the innovation-adoption and has been used to describe how ICT uptake occurs in education - digital innovation will be accelerated if we have more "LEADers" & "SHARP ones"



Based on Self-Efficacy Study of the STEMShare Community Project Pilot Study (Dec 2018) and further empirical study (April 2019) – "To what extent was the STEMshare professional learning effective in upskilling teachers' STEM teaching and learning?"



Hypothesis #3

Innovation at the edge & in the centre

Current Performance Pattern

While there are pockets of digital innovation and excellence in schools, adoption of these innovations by other schools, if it does happen, is slow with many good ideas not shared.

Hypothesis

While digital innovation does happen, it does not scale for a number of reasons

- » There are currently only a small number of school based staff with the digital literacy, competency and motivation to do it
- » Programs to encourage experimentation and innovation around digital (such as STEM.T4L) are resource limited; and
- » Channels for finding and promoting innovations are informal, sparse and learning is localised

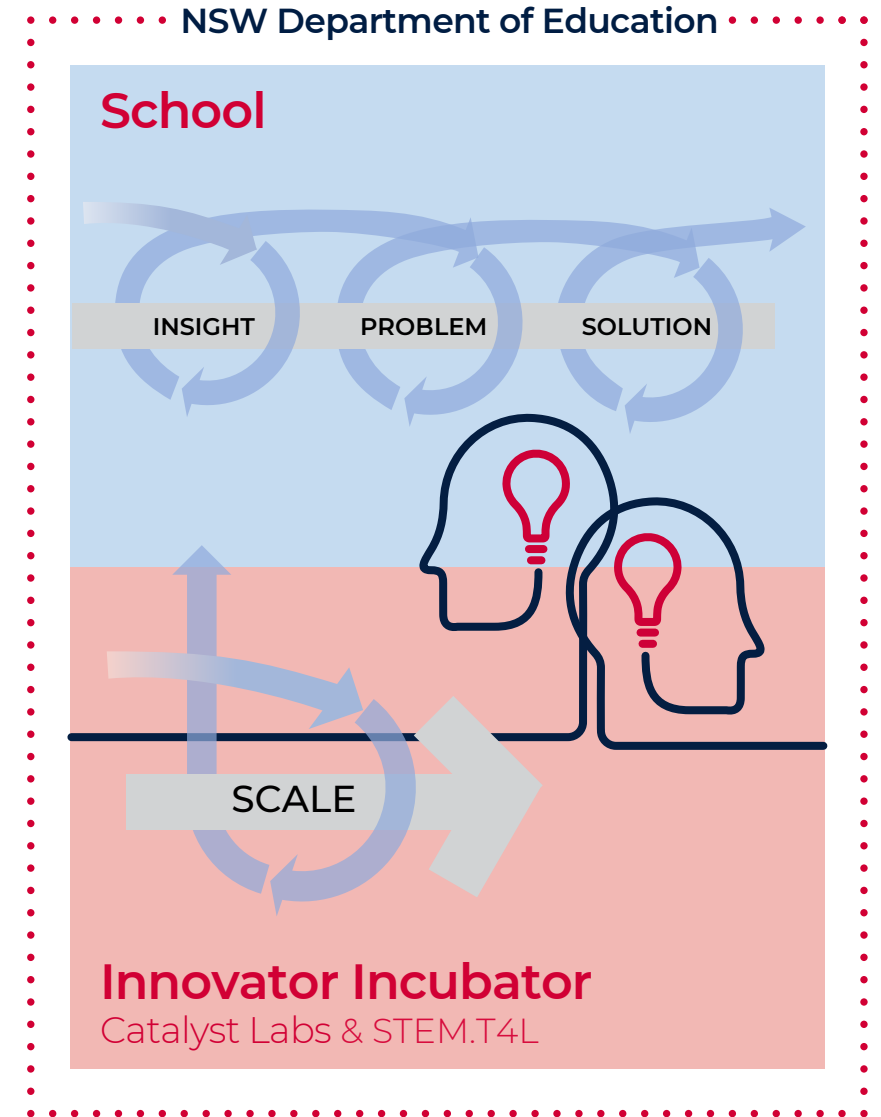
Proposed Reform Strategy

Programs such as STEM.T4L and Catalyst Labs are showing that providing schools the opportunity to experiment with digital technologies encourages adoption, use and innovation around digital capabilities.

Schools based and lead transformational projects, whilst successful at the incubator school, suffers from lack of exposure and adoption support.

Accelerating digital innovation and adoption requires

- » Greater support from the centre, scaling up programs that encourage and incubate innovation (such as Catalyst Lab and STEM.T4L)
- » Investment to develop professional development for digital leadership and literacy, skills, change and other aspects on top of the platform; and
- » A means for schools to learn about how other schools are using digital and decide which ones to adopt and tailor prior to implementation
- » An incubation and innovation platform for publishing, searching and collaborating ideas





Hypothesis #4

Immediate feedback, assessment and collaboration

Current Performance Pattern

The teaching and learning cycle is the core business process of the Department and when well executed will deliver the best student outcomes however student outcomes vary across the system.

Additionally, as students move through the system information about their past performance, personal or family circumstances is not always available for their new teachers.

Feedback and assessment loops are manual with only a few schools using digital learning management solutions.

Hypothesis

Effective management of the teaching and learning cycle requires ongoing evaluation, reporting, planning and assessment by teachers and currently much of that is done manually which places a burden on teacher workload and, as a result, may be incomplete or contain errors

Additionally, student records are often kept as paper records by the school with only key results passed on to their new teacher giving them an incomplete view of the student needs, past performance and wellbeing

Proposed Reform Strategy

Along with increasing digital enablement of learning-spaces, growing use of digital pedagogies, AI based assessment, electronic reporting and storage of student data will reduce reliance on teachers to perform routine assessment tasks and provide 'digital student records' that can be accessed from anywhere

Teaching and Learning Cycle



8 Learning Modes

-  Collaboration
-  Feedback & Reflection
-  Explicit
-  Experiential
-  Discussion
-  Guided
-  Demonstration
-  Independent



Hypothesis #5

Connectedness and integration

Current Performance Pattern

A constant goal of the Department is to provide equity and access for all students, no matter where they are or of any learning challenges that they may have.

While this is a well recognized and understood goal, it is not consistently achieved across the state.

Digital collaboration platforms reduce these impacts and, in some current situations (e.g. Aurora college) they have been shown to provide access to specialized education for students in remote settings with excellent student outcomes.

Hypothesis

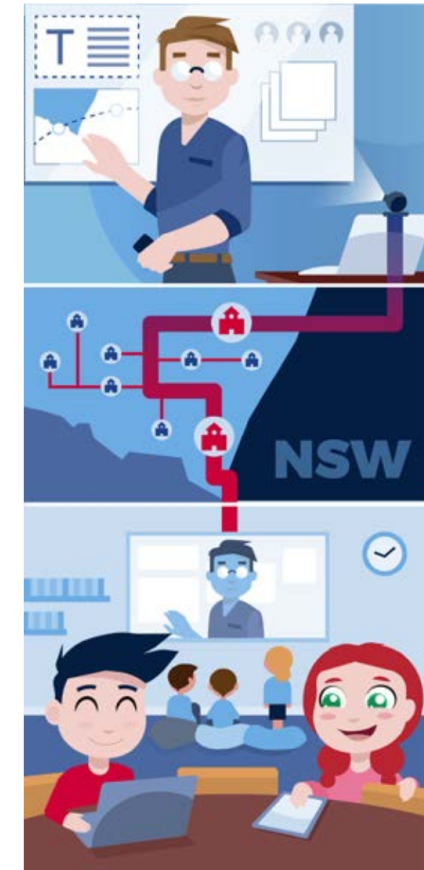
- Achieving equity and access is an ongoing challenge as it must address
 - » Disparities in individual school resources
 - » Different levels of experience and skills of teachers and principals; and
 - » Particular challenges of distance and connectedness in remote locations

While there are exemplary cases demonstrating the viability of these technologies to improve equity and access, they are currently not designed, specified or configured to work at scale and existing school digital infrastructure (e.g. wireless connectivity) is not standardized across all schools.

Increasing focus on digital pedagogies and adoption of collaboration platforms for co-design will continue to put pressure on the existing network, connectedness and integration capacity and will present a tangible barrier to widespread adoption of digital pedagogies, virtual classrooms and distance learning.

Proposed Reform Strategy

Current digital connectedness and integration capabilities need to be scaled to ensure that they support new, digitally enabled ways of teaching and collaborating. Students require equitable access to resources and digital provides a level playing field to students regardless of their location, socio-economic setting and aptitude.

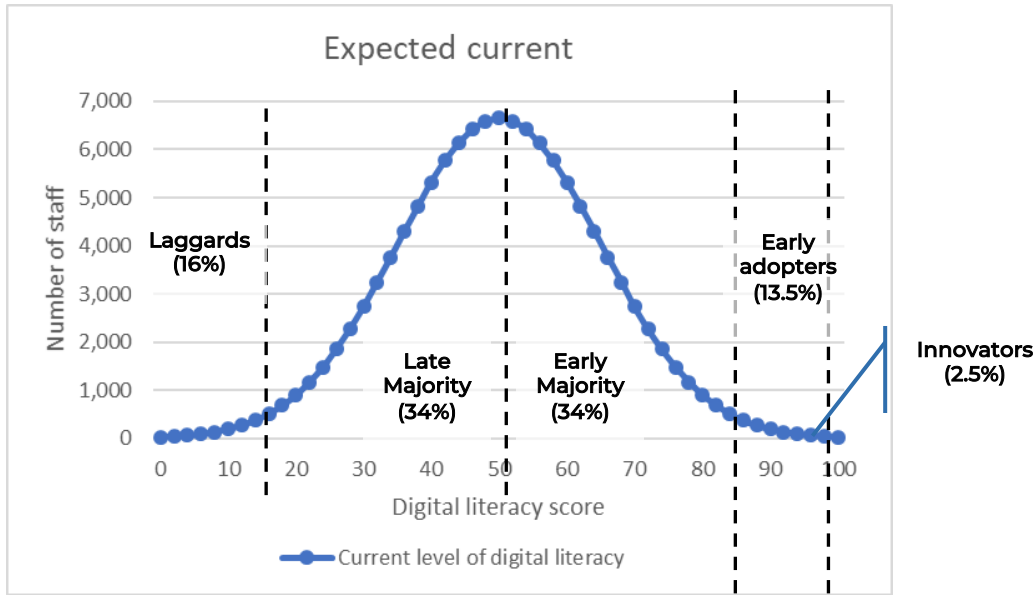


Summary – the collective effort will see a life in performance across the system

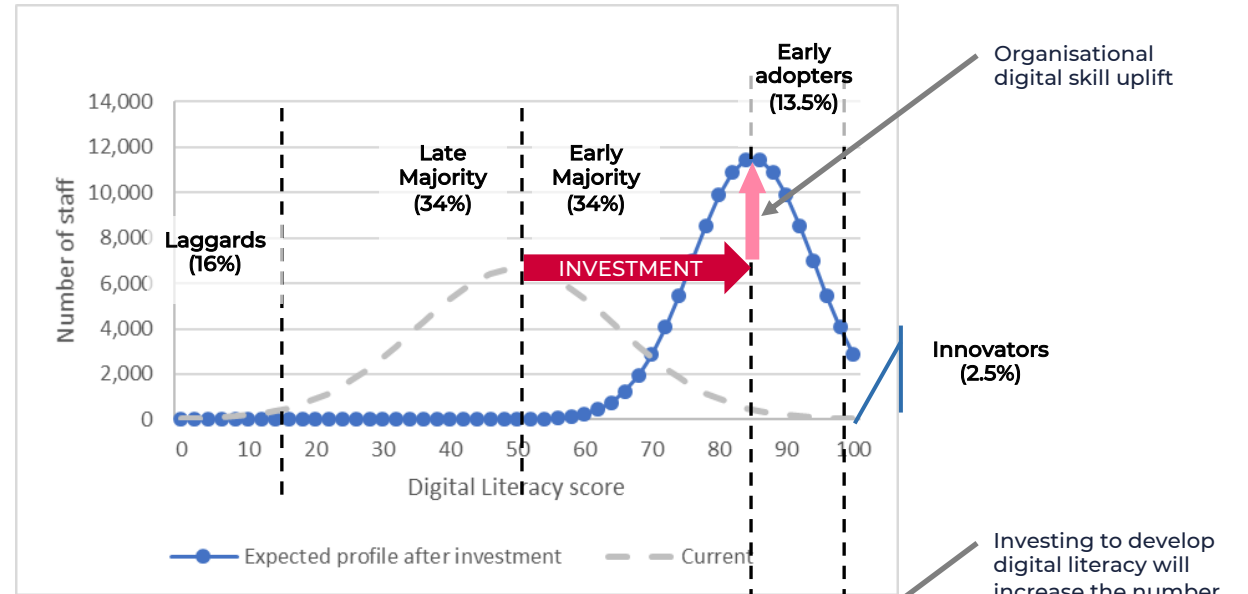
Shifting the curve will increase digital innovation

Conclusion

Investing in development of digital literacy and efficacy across the organisation will shift the bell curve to the right and this will result in more digital innovators and early adopters across the organization, and above all increase the digital-literacy and digital-efficacy of the profession and contribute to lifting the performance of student outcomes



Currently only a few people are LEADers or SHARP ones



Organisational digital skill uplift

Investing to develop digital literacy will increase the number digital innovators and early adopters

End