

Data#3

THE ANYWHERE CLASSROOM

Limitless Learning

K-12 Discussion Paper



Limitless Learning

Introducing The Anywhere Classroom

Today's classrooms are less about traditional focus on learning within school walls. Learning should happen anywhere, and everywhere, regardless of which device a student uses. Technology should be playing a supportive role and almost disappear into the background.

It is a shift in technology and approach that is fundamentally transforming the school IT landscape, along with the student learning experience, teacher behaviour and office staff management of the business of education. Mobility in education is not just about supporting mobile devices.

The mobility vision is enticing, but how will your school get there?

This vision of education mobility requires focus on more than just the device. It is all about people, younger and older, and their ability to engage with the education experience regardless of the device they are using or their location.

Focusing just on security and device management misses the point. The vision needs to be all about people, and interaction with content and other people; technology is just the enabler.

So how will your school get there? Schools that want to go on this journey need a roadmap to make it easier to measure their current position against minimum requirements and pursue a path towards best practice.

The Anywhere Classroom from Data#3 provides a framework for managing mobility in education settings, and a roadmap of how to get there.

There are three stages of maturity on the road to reaching the mobility vision of 'The Anywhere Classroom':

STAGE 1 – **FOUNDATION**

The Challenge

Establish a 1:1 or Bring Your Own Device (BYOD) Program without significantly disrupting or degrading the learning process.

The Outcome

Ensuring the right technology, systems and processes are in place, in particular high-density Wi-Fi.

STAGE 2 – **LEVERAGE**

Transition to a student-centric learning environment where technology gets out of the way.

Using those foundations to implement new learning and teaching practices.

STAGE 3 – **TRANSFORM**

Deliver personalised, transformative learning - anywhere, anytime.

Deploying content and applications across the school, removing the 'walls' of the classroom, and leveraging smart analytics.

Self-assessment

Use these self-assessment pointers to gauge what stage your school is at in relation to three key elements: strategy, learning and technology.

Foundation stage

Is your school at the Foundation stage – starting out on your mobility journey? Most schools find that they are more progressed on some aspects and perhaps slower off the mark than others.

Leverage stage

With a clear vision of where you are and where you are heading as a school, how do you build on early wins to deepen the integration of technology and evolve learning and teaching practices to leverage options made possible through technology?

Transform stage

If your school has established robust high-density Wi-Fi, and teaching and learning practices have evolved to leverage technology, what should your school consider next to maximise content and application availability, harness analytics and move beyond the classroom walls?

Strategy self-assessment

| | Foundation stage | Leverage stage | Transform stage |
|--------------------------|---|---|---|
| ICT Strategy | A simple ICT plan in place, although typically not aligned with broader business and learning objectives. | A detailed ICT plan has been developed with broad stakeholder input and support. Some linkage to business and learning goals. | A comprehensive 2-3 year Strategic ICT Plan clearly linked to business objectives. The plan includes a detailed roadmap of ICT initiatives taking into account the ability of the organisation to absorb change. The plan has been developed with input from all stakeholder groups and a capable ICT partner. The plan is linked to budgeting process. |
| Communication | The School community has been informed of plans well in advance of planned rollout. | The School community has been engaged from the start of the planning process. Key stakeholder groups have contributed and regular communication is scheduled. | A detailed communications plan has been developed with representation from all key stakeholder groups. The plan ensures that all stakeholders have regular contact on progress and outcomes. |
| Change Management | Staff have a basic idea of what's coming but have not been heavily involved. | Staff have been engaged and have had an opportunity to contribute to the strategy process. A Change Plan has been developed and agreed to. | Staff have been engaged from the start and have had input into all aspects of the strategy. Leadership are committed to cultural change and a comprehensive change management plan has been developed and agreed to with clearly defined success criteria. |
| Policy | Basic policies have been developed including an Acceptable Use Policy | The Acceptable Use Policy is presented electronically and agreed to as part of device onboarding. | Advanced policies based on persona, time of day, location, device type and other criteria are automatically enforced. |
| Budgeting | Budgeting does not take into account the impact on technology infrastructure, device support and organisational change. | Infrastructure upgrades, device support considerations, and other key challenges are accounted for. | Budget aligned to 2-3 year ICT strategy, roadmap of ICT initiatives and change management plan. |

Learning self-assessment

| | Foundation stage | Leverage stage | Transform stage |
|----------------------------|---|---|--|
| Access | Students have access to key applications and learning systems/resources. | Students have a consistent experience across devices and have access to all relevant applications and resources and redirected into electronic resources. | Students enjoy anywhere, anytime access to a catalogue of applications and resources based on their persona and immediate task requirements. |
| Teacher Development | Teachers are encouraged to participate in online forums, subscription based professional development and ad-hoc resources. Champions are encouraged to share good practice. A single Learning Management System is available and staff have ongoing training in it use. | Teachers have access to experts and peers, workshops, and professional development opportunities off site to develop IT skills relevant to their teaching domain. The organisation develops a culture of innovation starting with teachers sharing innovative uses of technology in the classroom at any opportunity. Funding of traditional resources are reduced (photocopying, paper resources) and redirected into electronic resources | School leaders include multimodal professional development delivery in the ICT strategy, change plans and budgets. School leaders set expectations of teachers' use of technology across sub-schools, faculties and year levels in terms of a consistent approach to the use of technology by students and teachers across the school. IT tools are in place to unlock more time for teachers to spend on professional development activities. |
| Digital Citizenship | Students are encouraged to practice safe, legal and responsible use of ICT. An Acceptable Use Policy is typically in place with student and/or parents | Classroom disruption is minimised and violation of acceptable use policies are minimised. Tools are in place however to monitor compliance to provide duty of care requirements. | Advanced tools in place to enforce policies in real time, and report and record breach incidents. Audit/privacy policy and agreements in place with parents to ensure serious incidents can be investigated thoroughly. Typically involves legal advice. |
| Collaboration | Students and staff have access to collaboration tools on premise or in the Cloud. | Students and staff have secure real-time access to all collaboration environments. Students are able to continue group or team activities digitally, at school or at home. | Students and staff have seamless, secure access to collaboration environments and teams from anywhere at anytime. Work is automatically synchronised and is available in near real time on any device. When not connected to the network, work is cached and synchronised when next connected. |

Technology self-assessment

| | Foundation stage | Leverage stage | Transform stage |
|------------------------------------|--|---|---|
| Infrastructure | Enterprise (leading vendor) Wi-Fi network deployed in key learning areas. | High-density, enterprise Wi-Fi network are in place across the campus with a high capacity internet link. There is some external access to learning systems and resources. | High-density, enterprise Wi-Fi network across the campus with high capacity, redundant Internet links. Seamless, secure external access to learning systems and resources. |
| Identity and Authentication | Students and staff can use a single set of credentials (username/password) to log onto various school systems and resources (Unified Sign-on). | Staff and students can login once and have access to all school systems and resources without logging in again (Single Sign-on). | Staff, students and parents enjoy a seamless single sign-on experience to all school systems and resources. Identities are linked to the Student Information System (SIS) and are automatically provisioned and de-provisioned in all systems (on premise and Cloud) as the SIS is updated. Users have the ability to self-manage a password reset and can do this from anywhere at any time. |
| Device Selection | Basic consideration of the types and minimum specification of devices under the program. | Devices types, minimum specifications, technical support and suitability for applicable applications are considered for various cohorts. | All key stakeholder groups involved in developing requirements for devices across cohorts considering a range of factors. In addition to learning and technology support, consideration for equity and access to shared or alternative school owned devices. |
| Device Support | Basic first level technical support for student and staff devices. Loan units available for equipment failures. | An adequately resourced service desk facility provides fast first-level support on devices. Tools are in place to quickly personalise a loan device for a student if necessary. | A service desk is in place with ticketing – IT Service Management (ITSM) function and defined service levels. An adequately stocked loan pool with tools in place to automatically provision and personalise a loan device. The student receives a consistent experience and access to all applications and resources on the loan device. |

Technology self-assessment (continued)

| | Foundation stage | Leverage stage | Transform stage |
|------------------------------------|---|---|--|
| Shared Devices | A number of equipment labs available to students for special purpose computing (graphics/CAD). | Equipment labs are available to students for special purpose computing. At login the PC provides a consistent experience and access to relevant applications and resources. | Students and staff can access specialised labs from their personalised devices utilising the benefits of taking the fully enabled learning environment and experience with them where ever they might be. This enables the thought process to embark of creative journeys which enables limitless learning. |
| Security/Student Protection | Basic network and perimeter security in place. Web and email filtering provide a level of protection around inappropriate content. | Certificate-based network security technology is in place. Advanced perimeter security, filtering and threat protection is in place and monitored. There is secure guest enrolment and access. | Simplifying the use of applications, resources and platforms by providing a Single Sign-on (SSO) environment, regardless of location while keeping the current security frameworks and systems in place. This is achieved by having single source of identity, application-level security and flexible web content filtering with real-time classroom control. |
| Service Catalogue | Typically ad-hoc offerings but no self-service or centralised application portal. | Self-service enrolment of Bring Your Own Device (BYOD) and school-owned mobile devices using a MDM tool is in place. Users are able to access pre-provisioned virtual desktops or remote applications via a website or local agent. | Centralised portal providing students and staff with access to all relevant applications and resources. Users are able to self-provision what they need, when they need it, with the boundaries of enforced policies. |
| Data/Content | Data is typically stored on school servers and/or locally on devices. Access is limited dependent on location and network connectivity. | Cloud-based storage or externally published on-premises storage is available. Access to data is possible 24/7, if on a supported device. | Access to data is available any time, on any device with a consistent user experience and security policy applied. Content is no longer just where data is stored, rather a learning tool and information distribution process. |

Two extremes: What is your school vision?

Sometimes examples at the extreme help to illustrate the spectrum and enable you to reflect on where your school sits currently and where it aspires to be in the future.

School 1 made a leadership decision that they wanted no control over the mobile devices being used by students and teachers. They took a completely hands off approach with a philosophy of “we provide access, you bring the device with no input from school IT whatsoever”.

School 2 wanted to maximise control, with tight restrictions on user access, robust user authentication, and strict use policies.

The contrast couldn't be starker. Some people stick their head in the sand and think getting parents to sign acceptable use policies covers all bases. However, if you want “limitless learning” you have to take some control. There are challenges and you cannot circumvent or sidestep them. This is the disconnect that sometimes occurs between IT and the passion of education - one side wants more control, one side wants less.

For your school to thrive, an internal balance between the two needs to be found to enable an optimal education outcome and student experience. The technology approach used to enable that outcome needs to be invisible to the student.

Where does your school sit currently on this continuum?

Where do you want to be?

High-density Wi-Fi to underpin school mobility

Underpinning the success of The Anywhere Classroom is a need for robust high-density Wi-Fi. Schools share many of the characteristics of high-density Wi-Fi environments like sporting venues and hotels:

- Large numbers of Wi-Fi users in the confined geographic area of the school
- Large variability in the density of Wi-Fi users (e.g. dispersed around the campus, or suddenly gathered in tight groups for class discussions)
- Large fluctuations in the number of wireless clients online at the same time
- Large fluctuations in the number of users moving around the school site

The challenge of school Wi-Fi management becomes even more apparent when you consider the need to manage network security and federated identities of different groups of students, teachers and administration staff to enable access to the right information.

In some ways, the challenge appears a paradox. How do you manage two ideologically opposed outcomes?

1. The Anywhere Classroom is about removing barriers, making it easy for students, teachers and staff to access to what they need, whenever they want to
2. Duty of care obligations to protect students are about locking things down; controlling and protecting – ensuring students don't do what you don't want them to do

So how do schools resolve this? How do you deliver on both?

It is possible. The overlap between the two objectives is where successful schools aspire to sit. The Anywhere Classroom isn't just about roaming and mobility, it's about bringing the structure and guidance of the classroom to the concept of limitless learning, or learning anywhere.

So at a practical level, what does a top-performing school Wi-Fi look like? How can you future proof your network? How do you monitor and manage varying user density? And how do you extend that on-site Wi-Fi experience to also provide seamless extension to remote access? E.g. When students and teachers are at home, studying at the library, or accessing the network from a tablet while studying ecology down at the creek?

Checklist for high performing school Wi-Fi

Your school has begun the Wi-Fi journey and had some success. Things to consider to assess what is working well with Wi-Fi and what may require additional focus and investment:

- ☐ Monitoring and restrictions to meet duty of care requirements
- ☐ Designed to minimise interference for clear uninterrupted Wi-Fi sessions
- ☐ Multiple access points for school-wide coverage
- ☐ Dispersed access and high-density access for different groups of students and parents
- ☐ Surge capacity for Wi-Fi performance under peak demand periods
- ☐ Robust authentication for students, teachers and admin staff
- ☐ Defined access for parents and other school guests

Beyond users and devices: Exploring the framework

An education mobility framework is invaluable in guiding your thinking and IT planning discussions. The Anywhere Classroom framework from Data#3 provides a holistic view of the full mobility picture. It's not designed to overwhelm or intimidate. The value of the overarching framework is it makes it easier to focus on an individual component but see it through a broader lens.

The framework begins with users and devices. Once you move beyond users and devices, you need an abstraction layer to help hide the complexity of IT from what users need to access on a day-to-day basis: a Workspace Services layer. Beyond Workspace Services, the Workspace Delivery layer provides a coherent view of the infrastructure 'under the hood', including high-density Wi-Fi which is so critical in an education setting. Underpinning all of this in a modern school environment are the Core Services of Teaching and Learning Systems and Compliance and Business Processes to manage administration of the business of education.

The Anywhere Classroom: **Mobility Framework**



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www.data3.com.au

Brisbane (Head Office)

67 High Street
TOOWONG, QLD
4066, Australia

Melbourne

Level 4,
55 Southbank Boulevard
SOUTHBANK, VIC
3006, Australia

Sydney

107 Mount Street
NORTH SYDNEY, NSW
2060, Australia

Launceston

23A Earl Street
LAUNCESTON, TAS
7250, Australia

Adelaide

84 North Terrace
KENT TOWN, SA
5067, Australia

Canberra

Suite 2, Level 1
220 Northbourne Ave
BRADDON, ACT
2612, Australia

Hobart

16 Collins Street
HOBART, TAS
7000, Australia

Perth

Level 2, 76 Kings Park Road
WEST PERTH, WA
6005, Australia

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