

# Learning Through Doing

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## Introduction to design thinking

September 2014

Can we give all young people in school the chance to grapple with the complex challenges they will face as 21st century citizens, employees, entrepreneurs?

Are we helping our young people see that learning has value beyond their life at school; that it takes place all the time, everywhere, and is of lasting relevance?

# Introduction

## About this guide

This guide is an introduction to design thinking in action to help those engaged in planning and carrying out disciplined innovation. It describes a methodology that has been developed in the fields of service and interaction design.

We encourage you to use this guide with the companion documents including, **Prototyping: Learning Through Doing**, as practical resources to help you bring design in action to your organisation.

Educators face a number of challenges to prepare their students to excel in a complex and rapidly changing world. Innovative approaches will be required, and teachers, leaders and schools will be leaders in designing these new approaches. It will therefore be imperative that they are able to design, test and improve their innovations effectively.

This is not a new responsibility for educators. Inspirational educators have improved their students learning by coming up with new ideas, turning those ideas into practices, evaluating those practices and then spreading what works to their colleagues (a process is known as prototyping in sectors involving the design of new products). Unfortunately, a lot of great ideas and innovations fail not because of a lack of quality or because of their intended changes are wrong, but because of how they are implemented.

Design Thinking is a process that systemises the prototyping of ideas and practices to solve problems. By taking a structured approach to the creation of ideas and implementation of practices, it maximises the chances of success. Design thinking involves developing new ideas and practices which are based on evidence and other successful ideas. These ideas are refined and converted into practices, which are then rigorously tested to determine their efficacy. When a practice is determined to be effective, it is scaled to enhance its impact.

Schools benefit from design thinking as it facilitates a collaborative approach to solve the complex problems they face. By organising the implementation of new ideas in a disciplined way, it saves time and makes changes more likely to be successful. This ultimately improves teacher practice and student outcomes.



The Australian Institute for Teaching and School Leadership (AITSL) provides national leadership for the Commonwealth, State and Territory Governments in promoting excellence in the profession of teaching and school leadership.



As a not-for-profit social enterprise we're committed to using the power of innovation to solve social challenges.

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# 1. The need for new designs

Across the world, a consensus is emerging. Schooling may have delivered in the past, but for many students and in many contexts it's working at a sub-optimal level today. That's not hugely surprising, since schooling was established in a different age for a different set of purposes.

Too many schools are not giving students the best chance to be successful in today's global and fast-changing economy, or helping them live their adult lives as responsible and productive global citizens. We are not educating for a digital age or a global society.

We know that education must equip all young people with the knowledge, understanding, skills and values they need to achieve and be successful. But it should also instill the desire, skills and capacities to learn continuously, so every young person can take advantage of opportunities and challenges with confidence.

Research on effective learning methods is a fundamentally important tool for teachers to respond to these challenges, but it cannot take us all the way there. While we have a forming evidence base, we nevertheless do require further inputs for some of the pressing questions in education from education practitioners and a range of sources.

New conditions and broader and more complex learning goals, call for a developmental response, drawing on design methods that have been created to develop solutions to urgent problems.

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Are we helping our young people see that learning has value beyond their life at school; that it takes place all the time, everywhere, and is of lasting relevance?



**Find out more:** [Educators as Designers: new systems to scale deep learning](#)

## 2. The discipline of design

Design thinking processes combine empathy for the context of a problem, creativity in the generation of insights and solutions, and rationality in analysing and fitting various solutions to the problem context. They can be powerful ways of creating new possibilities in education.

However, these processes are unlikely to produce the new solutions and opportunities we hope for unless they are carried out with discipline.

It is one thing to have new ideas, but implementing them, growing new organisational cultures and system conditions to support them requires careful work and considerable amounts of energy. It is important that ideas are rigorously tested and challenged at every stage of development to ensure that energy is well spent. And the solutions developed need to be evaluated intelligently to determine their impact and outcomes.

Fortunately, organisations around the world have developed methods to manage these processes of development and change. By working with design thinking, schools and their partners are increasing their capacity to radically improve their practice in the face of new conditions and challenges.

**This guide is an introduction to design thinking in action to help those engaged in learning design to plan and carry out disciplined innovation.**

The guide describes a methodology that has been developed in the fields of service and interaction design. When developers create new products and services for the commercial marketplace, they cannot develop them solely on the basis of pure research or speculation, because they are aiming to develop a new solution that responds to a previously unmet demand or challenge in the marketplace. Previous research is always an important contributor; but it is not the same as generating new approaches, builds or adaptations. Their power and effectiveness arises from a set of **core elements**:



**Find out more:** [A Designer's Mindset](#), [Stanford d.school Bootcamp Bootleg](#) and [IDEO Human-Centred Design Toolkit](#)



### Design processes are:



**FOCUSED ON A PROBLEM:**  
they continually define and refine a focus on a particular challenge or problem



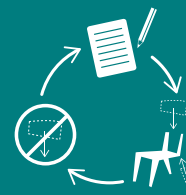
**DRIVEN BY EMPATHY:**  
they employ specific methods to understand the needs of users (learners, families and communities)



**COLLABORATIVE:**  
they create opportunities for participants from different sectors, backgrounds or contexts to work together and contribute, supported by some shared language and goals



**CLEAR AND TANGIBLE:**  
they use tools and processes that are visual and hands-on to support collaborative working and to better investigate ideas and concepts



**FAIL-SAFE-FAIL-FAST:**  
they use prototyping techniques, cheaply and at small scale, testing and refining ideas by trying things out

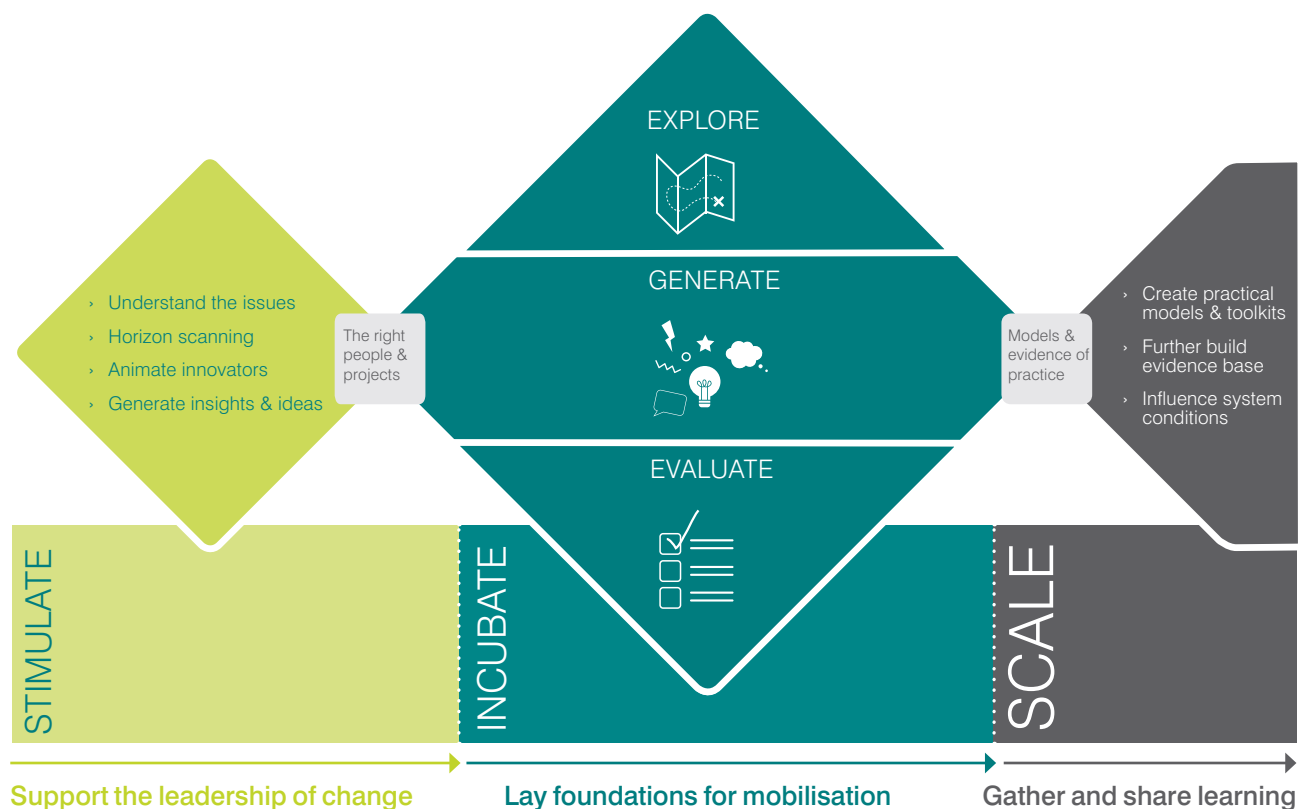


**CAPACITY-BUILDING:**  
they actively build the competencies and capabilities of those involved to continually develop, refine and embed new ways of working

These methods are often collectively referred to as user- or human-centred design, or [service design](#).

# 3. The design methodology

**This guide describes how phases of design methodology fit together**



The 'triple diamond' methodology has been used to create and scale innovation in sectors from manufacturing to mental health. The methodology can be adapted to the design of any product or experience - what it initiates is a structured process of breaking down a problem, seeing it from new perspectives, and building up a solution of constituent tools and practices.

This graphic illustrates the methodology for designing learning. Schools can move from a general idea of a problem to concrete and robust solutions. The structure allows space for both creativity and rigour.

The diamond shape allows for 'opening' (divergent thinking) and 'closing' (convergent): the program moves through creative, generative parts, and then critical, specifying parts. The opening and closing phases gradually become smaller and more narrowly focused on the development of specific new practices.

The first and third diamonds take place principally at the system level, working with many schools simultaneously. The middle diamond, the most important part of the work, takes place in schools. The next section in this guide describes the work of the three diamonds in more detail.



# Stimulate

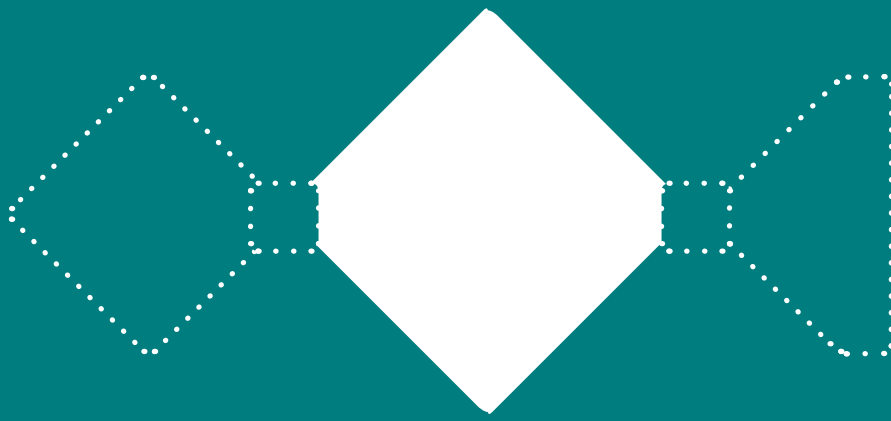
Defining the problem and stimulating innovators to respond

Begin with a process of stimulating awareness of a problem, for example a case for change that set out why schools need to change to enable more engaging learning.

As a team, explore examples of learning sites from around the world and refine a set of design principles for engaging learning. This will help you to contextualise your own design exploration.

Together refine an enquiry questions to home in on a particular response to the challenge of; for example, engaging learning.

Having done all that, it is time for schools to incubate solutions to the challenge.



# Incubate

Incubating solutions

Once you have defined the problem and created the conditions for innovators to respond, the next step is to explore, generate and evaluate solutions to the problem. This is known as the incubate phase. A chicken's egg is only fully formed once it has undergone incubation. Turning ideas into effective practices requires a similar process to occur. The enquiry questions developed in the stimulate phase are further examined and challenged this incubation phase.

An important feature of this phase is that it allows schools to learn by doing. This guide describes a few examples of practical methods for designing new approaches to teaching and learning.



**Try it out:** [IDEO Design Thinking for Educators Toolkit](#). The IDEO toolkit is a comprehensive guide to carrying out a design process. It was written with the help of teachers in the United States and is highly recommended for helpful tips and pieces of advice.





# Incubating Solutions

## Explore

The incubation phase starts by learning more about the background and context of the focus of enquiry, in particular the relevant people involved. The aim of this step is to explore the problem in more detail, generating insights and ideas of opportunities. It will begin with a good understanding of what previous research has to tell us about the issue.

## Methods for understanding the challenge and context

- **Undertake a horizon scan:** Horizon scanning involves seeking out ideas and inspiration from the best innovators around the world. It helps to challenge the sense of what's possible, and uncover new frames on a problem. Cases can be found by searching in databases, journals and publications, and by asking partners, experts, leaders and researchers to source and recommend examples too. It is worth looking both at examples from similar contexts in education and at examples from other places, services and sectors. Rather than asking 'Is this the answer?', you should ask 'What can we learn from this?'. Horizon scanning is often light-touch, seeking to spark inspiring, imaginative conversations. If a particular case is really relevant to the challenge and context at hand, a 'deeper dive' of further research or contacting the practitioners involved is worthwhile to find out about the practicalities behind the solution and the evidence of success.

- **Use ethnography:** Ethnography is the systematic study of people and cultures. It involves researchers observing society from the point of view of the subject of the study. Ethnographic techniques help designers to better understand the lives, behaviours, and aspirations of the people they study. By spending time with users in their homes, communities, and with their friends, family and support networks, innovators find new insights into the problem at hand - and uncover opportunities and ideas for potential solutions. You can use ethnography by allowing teaching professionals to spend extended time with students, staff, parents and partners, using tools to understand their lives and work from their perspective.

## Case study sample

The Knee High Design Challenge is a project aimed at improving the health and wellbeing of 0-3 year olds in South London, U.K. To start the design process, ethnographers from Innovation Unit spent time embedded in families' lives as they got up, had meals, visited friends and services and got ready for bed. This gave the team a rich understanding of the world from the families' perspective. This was vital material for designing radically new services and offers in South London that could really make an impact.



**Find out more:** [Learning from the Extremes](#) (an inspiration of the kind of things one can learn from diverse examples) and sample horizon scans: [28 cases of innovation in probation](#) and [10 School for the 21st century](#)

**Find out more:** [thekneehighproject.com](http://thekneehighproject.com)



**Try it out:** Stanford d.school [Interview for Empathy](#) and [Extreme Users](#)

- Determine available resources through audits and activities mapping:** Resource audits uncover what money, time and opportunities are available in your community from various government and NGO sources, as well as voluntary parent fundraising. The process can identify where resources could be reallocated to create new relationships, prevent duplication and identify value for money. Mapping activities and key stakeholders help to identify if work related to your challenge is currently underway, and to better understand the relevant players who might play a role in redesigning your practices.

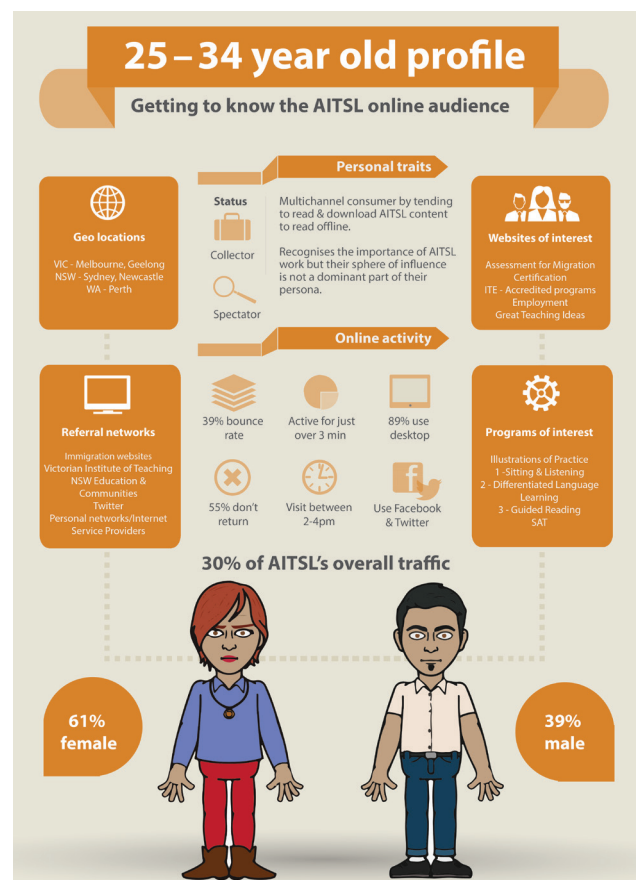
Having gathered many types of data, groups carry out a process to reconsider and reframe their challenge, based on a better understanding of the context, users and the problem itself. The aim of this process is to identify how and where change could make most impact.

## Methods for defining what you have found

- Utilise conceptualising frameworks:** Models and frameworks help designers to take a birds-eye view of a system or organisation and see how different practices and behaviours are related. They try to bring important principles, hunches and data together into visuals (no matter how rough!) that can support understanding and bring everyone onto the same page.
- Create personas:** Personas are profiles of hypothetical people (e.g. students, teachers), usually based on real data, that outline their characteristics, behaviours and attitudes. These help designers to think about the range of needs new approaches should take into account. Personas also enable detailed conversations across mixed groups without resorting to real examples.

## Case study sample

The iZone is an initiative within the New York City Department of Education. They have been engaged in designing an entirely new school experience for high-school age students, **the team** from the **iZone Academy**, a 'school' without a building or timetable. Working with the **Parsons School of Design**, the team carried out interviews and workshops with high school students from around the city, and amalgamated all their insights about student needs into a set of 6 personas. The personas represented typical needs, but also the most extreme needs and interests of all the different real-life students they'd interacted with. These personas then became the basis on which the team designed the school, asking themselves at each turn: would this design fit the needs of 'Yvonne' and 'Jason' as well as 'Jovan' and 'Camilla'?





# Incubating Solutions

## Generate

Once a design team has established a firm, shared understanding of the problem as experienced by users, it is time to begin generating concrete solutions. Designers describe the process of ideas generation and testing as prototyping. Methods of prototyping range in scale, from simulating the experience of a new practice to trying out new protocols and tools. They all involve trying things out, and coming up with new ideas as a result. The aim is to quickly refine new practices through rapid experimentation, evaluation, and adaptation.

## Methods for prompting ideas

- **Listen to disrupters:** ‘Disrupters’ are practitioners from unrelated sectors who bring different perspectives on motivation, organisations and what matters. Disrupters can be from anywhere - acting, banking, manufacturing, media, policing, public health. While deep expertise in schools and learning is an essential component for successful innovation of practice, it is important that both users and practitioners can hear from voices that describe other ways of doing things. Explaining something to an outsider can be a useful way to work out the fundamentals of an idea.
- **Learn from related worlds:** Like using Disrupters, ‘Related worlds’ asks how other sectors and organisations might tackle similar issues. It can be used with groups in meetings or workshops and is a tool that unlocks creative thinking.



**Try it out:** [Stanford d.school How to Facilitate a Brainstorm + Brainstorm Rules and Point-of-view Madlib.](#)  
Service Design Tools: [LEGO Serious Play](#)

To reiterate, prototyping is a way of both generating ideas and doing early testing of those ideas. These methods of prototyping range in scale, from simulating the experience of a new practice to trying out new protocols and tools. They all involve trying things out, and coming up with new ideas as a result. The aim is to quickly refine new practices through rapid experimentation, evaluation, and adaptation.

## Methods for testing and generating new ideas

- **Role-playing:** When designing a new experience it is important to test out how it feels from the perspective of a user. Role-playing involves creating a situation based on a new approach and seeing how it feels to play the part of a teacher, student or other partner involved. Role-playing often generates new ideas based on unexpected responses that come out in the moment. Getting other participants such as students, parents or employers to engage in playing different roles can also create new insights and increase the ability of a group to create shared solutions.
- **Paper prototyping:** Paper prototyping means trying things out on paper to avoid the time or expense of generating real test products. It is useful when designing any kind of tool or product that others will use as part of a new approach. Maybe a solution involves a new interface for student data and communication with parents. What should it look like to invite use? What aspects could be involved? Paper prototyping allows lots of contributors to submit ideas and make improvements before anyone goes near an expensive process, increasing buy-in and reducing the risk of waste.



**Read more:** [Stanford d.school: prototype to test](#)



**Try it out:** [Service Design Tools: Constructive Interaction](#)

When staff, students and partners engage in these kind of methods, it challenges habitual ways of working and builds confidence in alternative practices. Rapid prototyping also highlights the knock-on effect of a new practice and helps designers to prepare for related changes. The aim is to fail early and often in order to reach a more robust solution. As ideas get more serious, they can be worked out in more detail. What are the implications of this new approach? What is the knock-on effect on other aspects of the school? These methods help to work out the kinks, and further refine an idea into a solution.

## Methods for refining an idea

- **Create a storyboard:** Storyboarding can be used at any stage of a design process as a way of thinking through the experience of a user, but it is particularly useful when refining the details of a new approach. Storyboarding forces designers to think through how one thing leads to the next, and ensure that all of the necessary prior steps are taken to reach the desired end result.



**Find out more:** [Service Design Tools: Storyboard](#)

- **Conduct open behavioural simulation:** Simulations are a particularly extensive type of prototype used to test new systems or policies. By constructing a hypothetical but realistic school or learning environment, with the new frameworks and conditions in place, and then having real users take part, the consequences and implications of new practices can be explored. Simulations allow users who have been outside the design process to get involved and offer feedback. The teacher-designer(s) can observe and make modifications so that the practices that are actually implemented are more robust and effective.



**Try it out:** [Service Design Tools: Experience Prototype](#) and [Tool Blueprint](#)



**Find out more:** [Prototyping Public Services](#): Innovation Unit and Nesta, November 2011. For an introduction to thinking about prototyping as a way of generating and testing ideas, see the [Introduction to Prototyping](#) and [Prototyping Toolkit](#)



# Incubating Solutions

## Evaluate

The generate phase will result in one or more potential solutions that have been developed and refined through a process of rapid prototyping. The prototyping phase will ideally have resulted in some materials and processes that have already been tested with students, teachers or other relevant users, and refined accordingly. It is now the time to try out these new practices full-scale. The aim of the evaluation is to see if the whole approach can come together in practice, how big an impact it has and whether it has the desired impact.

## Methods

- **Polling:** There are many methods for carrying out full-scale evaluations, but sometimes it is appropriate to get more rapid feedback following an implementation. Tools such as [poll everywhere](#) are a simple way to get a sense check of how a whole group feels.
- **Surveys:** Surveys can canvass a wider array of responses to a new practice, and help ensure that the responses of all relevant stakeholders are recorded, including those who may not be present. Surveys can also form the basis of further enquiry if there are unexpected responses and participants are open to follow up questions.
- **Interviews and focus groups:** Getting feedback through interviews and focus groups avoids the uncertainty that can arise from misinterpretation of survey questions, and provides further analysis and ideas.
- **Analysis of existing data:** Schools continuously accumulate data about their students through attendance records, assessments, and other methods of monitoring that might be in place. If using existing data, the selection of measures is important: what are you trying to improve and

what is your theory of change? Where do you first expect to see the impact of new practices? Talking to participants about what metrics matter to them and which ones they feel are the best measures is an important step. Monitoring the impact of practice through multiple measures helps to capture unexpected outcomes, and understand if and how a practice has the same impact on different groups.

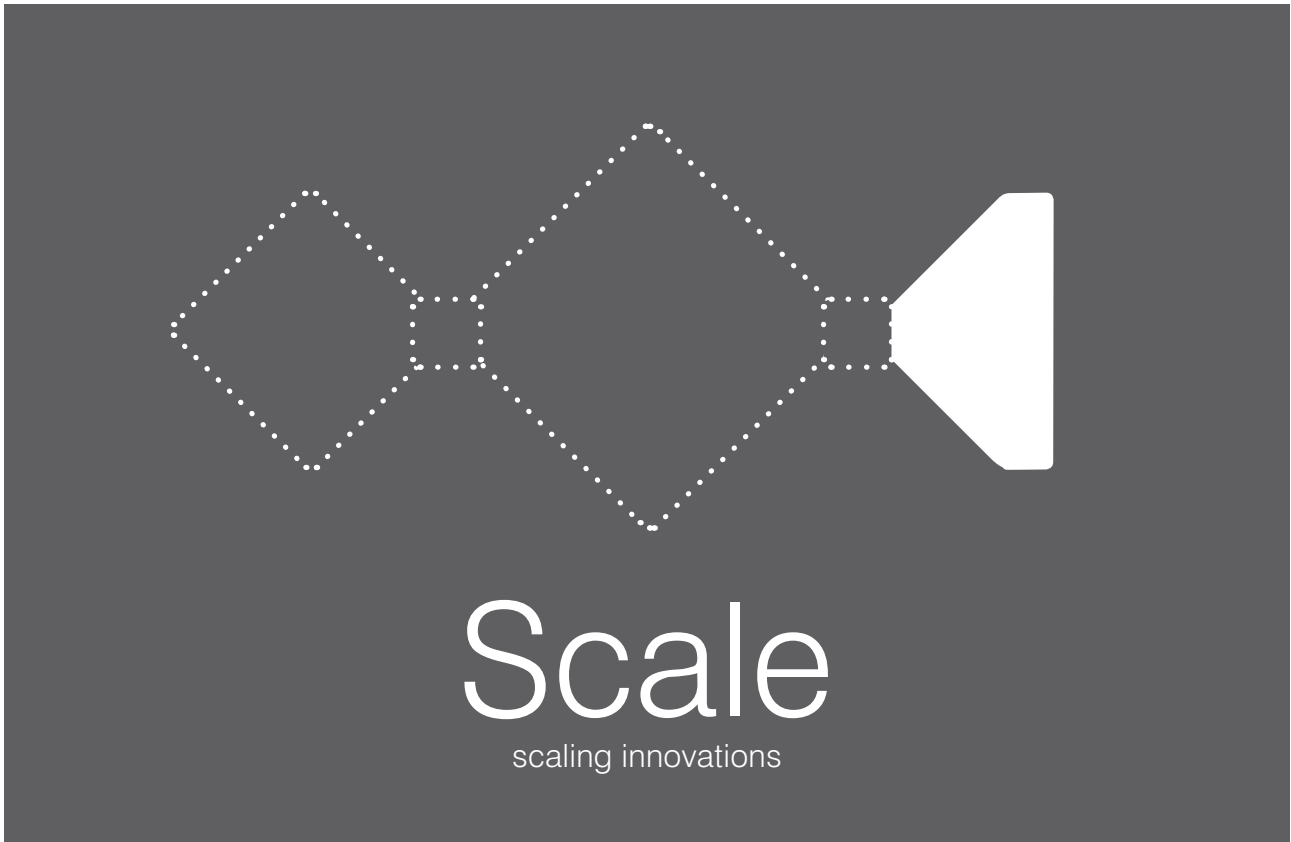
- **Action research** offers a model for carrying out rigorous teacher-led evaluations in schools. Action research involves a practitioner carrying out a study in their organisation or classroom, and going through the steps of refining an answerable question and a set of methods for answering it. It also involves action – that is changing practice based on these insights.

When choosing methods, it helps to strike a balance between collecting **quantitative data** and **qualitative data**. Quantitative data, generated through whole-group surveys, assessments, or monitoring existing data sets, tries to capture the impact of a practice across a whole group. Qualitative data can get richer responses, as there is opportunity for interaction and building mutual understanding. Qualitative data typically represents the experience of a smaller range of participants, however, so should always be balanced with broader forms of analysis.



**Find out more:** [What is Action Research? and Teacher Action Research](#)

Evaluating whether a practice ‘works’ is also about evaluating where, how, why and to what extent it works. This is an important part of working out how it can best be replicated. There are many cases of schools once or twice following through with new approaches, but never finding the means to repeat them or induct new teachers into the approach. This is where the next diamond comes in, but it is important to remember that ‘scaling innovations’ is not foremost about spreading to dozens, hundreds or thousands of schools- the first thing to ensure is that when a really great practice has been developed, it can reach all the children in a particular school.



Design thinking is about finding more powerful ways to learning improve teaching practice in all Australian schools. Just as the problems you experience in school are often shared by many other schools, similarly the solutions you generate will be relevant to others. It is important that other schools can learn from the innovations developed as part of your experience.

Scaling has typically been seen as a simple problem of knowledge transfer: if a solution is 'good', others just need to hear about it and they will want and be able to adopt it. But we know now that spreading practice between schools is much more difficult than that. It involves mutual learning, co-operation, and behaviour change. Moreover, no two contexts are exactly the same, and schools and teachers must be able to understand a new practice sufficiently to be able to adapt it to their purposes. Supporting tools also need to be open to adaptation.



**Find out more:** Innovation Unit: [Diffusion of Innovation: Myths and Realities](#) and Nesta: [Making it Big](#)

This guide has been designed to support the scaling of high impact teacher practice. The different layers of the education environment - the schools, networks and system-level support - all carry out different actions that are crucial to scaling.

A core part of this will be creating practical models and tools. Schools within networks can work together as a community of practice to build shared knowledge. Schools together can test the adaptation between sites, developing the supports, explanations and tools need to transfer practice from one context to another - as well as the necessary evidence as to whether this practice is worthwhile.

Further building an evidence base is a key part of any scaling strategy. It is important for schools to start collecting data and feedback on their work, and for schools and the community to work together to gather and aggregate evidence in a systematic way. This will allow us to identify the practices that are most impactful on learning and so improve the outcomes of more of our students.

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Finally, achieving real scale with new practice is often not possible without changing the systems in which practice exists. Students, teachers and schools operate within many-layered systems, and all of these layers have an impact on behaviour. Parent and employer expectations, system metrics, school regulations and government policies are all important parts of these systems. As schools develop new findings about which practices are most beneficial for engagement and achievement of their students, they can work together to influence their system conditions, creating better conditions for other schools to be able to develop similar practices.

It is important to see that the design process as a whole is part of a bigger picture: what is being 'scaled' from your practice is as much about the processes you undertake, as it is the changes in teacher practice that are the ultimate result of the design process.

“It is never a bad time to design. Perhaps it is a bad time NOT to design. But it is always worth beginning, continuing, sustaining the conversation about design.

Design is a delicious idea that is forward thinking, has a focus, but humbly admits the best answer, and perhaps the best question, isn't known yet. BUT, rather than that being a resistor to change, it is the compelling, interest creating professional curiosity to ask questions.”

- Quote from a blog by Carl Heise, teacher, NSW

## 4. Links

- > **Educators as Designers: new systems to scale deep learning:**  
<http://www.cse.edu.au/content/educators-designers-new-systems-scale-deep-learning>
- > **A Designer's Mindset:**  
<http://www.openlawlab.com/wp-content/uploads/2014/07/A-Designers-Mindsets-design-process-sketchnote-by-Margaret-Hagan.png>
- > **Stanford d.school Bootcamp Bootleg:**  
<http://dschool.stanford.edu/wp-content/uploads/2013/10/METHODCARDS-v3-slim.pdf>
- > **IDEO Human-Centred Design Toolkit:**  
<http://www.ideo.com/work/human-centered-design-toolkit/%20>
- > **sectors from manufacturing:**  
<http://www.managementexchange.com/story/whirlpools-innovation-journey-to-mental-health>:  
<http://www.innovationunit.org/our-projects/projects/connect-do-supportive-movement-isolated-people-lambeth>
- > **case for change:**  
[http://www.aitsl.edu.au/docs/default-source/learning-frontiers-resources/case\\_for\\_change\\_learning\\_frontiers.pdf](http://www.aitsl.edu.au/docs/default-source/learning-frontiers-resources/case_for_change_learning_frontiers.pdf)
- > **insights and ideas:**  
[http://www.aitsl.edu.au/docs/default-source/default-document-library/professional\\_practices\\_increase\\_student\\_engagement\\_learning.pdf?sfvrsn=0](http://www.aitsl.edu.au/docs/default-source/default-document-library/professional_practices_increase_student_engagement_learning.pdf?sfvrsn=0)
- > **IDEO Design Thinking for Educators Toolkit**  
<http://www.ideo.com/work/toolkit-for-educators>
- > **Learning from the Extremes**  
[http://www.cisco.com/web/about/citizenship/socio-economic/docs/LearningfromExtremes\\_WhitePaper.pdf](http://www.cisco.com/web/about/citizenship/socio-economic/docs/LearningfromExtremes_WhitePaper.pdf)
- > **28 cases of innovation in probation**  
<http://www.innovationunit.org/sites/default/files/PF%20horizon%20scan%20for%20website.pdf>
- > **10 School for the 21st century**  
[http://www.innovationunit.org/sites/default/files/10%20Schools%20for%20the%2021st%20Century\\_0.pdf](http://www.innovationunit.org/sites/default/files/10%20Schools%20for%20the%2021st%20Century_0.pdf)
- > **Interview for Empathy**  
<http://dschool.stanford.edu/wp-content/themes/dschool/method-cards/interview-for-empathy.pdf>
- > **Extreme Users**  
<http://dschool.stanford.edu/wp-content/themes/dschool/method-cards/extreme-users.pdf>
- > **thekneehighproject.com**  
<http://thekneehighproject.com/>
- > **iZone**  
<http://izonenyc.org/>
- > **Parsons School of Design**  
[http://www.newschool.edu/parsons/?\\_\\_rmid=may-5-2014-design-at-the-edge--560180576.html](http://www.newschool.edu/parsons/?__rmid=may-5-2014-design-at-the-edge--560180576.html)
- > **iZone Academy**  
<http://izonenyc.org/?project=izone-academy>
- > **example personas**  
[http://gelponline.org/sites/default/files/members-documents/personalization\\_-\\_personas.pdf](http://gelponline.org/sites/default/files/members-documents/personalization_-_personas.pdf)
- > **How to Facilitate a Brainstorm**  
<http://dschool.stanford.edu/wp-content/themes/dschool/method-cards/facilitate-a-brainstorm.pdf>
- > **Brainstorm Rules**  
<http://dschool.stanford.edu/wp-content/themes/dschool/method-cards/facilitate-a-brainstorm.pdf>
- > **Point-of-view Madlib**  
<http://dschool.stanford.edu/wp-content/themes/dschool/method-cards/point-of-view-madlib.pdf>
- > **LEGO Serious Play**  
<http://www.servicedesigntools.org/tools/46>
- > **Stanford d.school: prototype to test**  
<http://dschool.stanford.edu/wp-content/themes/dschool/method-cards/prototype-to-test.pdf>
- > **Constructive Interaction**  
<http://www.servicedesigntools.org/tools/31>
- > **Service Design Tools: Storyboard**  
<http://www.servicedesigntools.org/tools/13>
- > **Experience Prototype**  
<http://www.servicedesigntools.org/tools/21>
- > **Tool Blueprint**  
<http://www.servicedesigntools.org/tools/35>
- > **Prototyping Public Services**  
<http://www.nesta.org.uk/library/documents/PrototypingLearning.pdf>
- > **Learning Frontiers Introduction to Prototyping**  
<https://drive.google.com/file/d/0BwYrKlqUKSi-dTJIY2FWbEZGOTg/edit?usp=sharing>
- > **poll everywhere**  
<http://www.polleverywhere.com/classroom-response-system>
- > **What is Action Research?**  
[http://www.sagepub.com/upm-data/36584\\_01\\_Koshy\\_et\\_al\\_Ch\\_01.pdf](http://www.sagepub.com/upm-data/36584_01_Koshy_et_al_Ch_01.pdf)
- > **Teacher Action Research**  
[http://www.sagepub.com/upm-data/27030\\_2.pdf](http://www.sagepub.com/upm-data/27030_2.pdf)
- > **Diffusion of Innovation: Myths and Realities**  
<http://innovationunit.org/sites/default/files/Diffusion%20myths%20and%20realities.pdf>
- > **Making it Big**  
<http://www.nesta.org.uk/8-social-innovations-making-it-big>





# Notes

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AITSL is funded by the Australian Government

ISBN 978-1-925192-14-8

Updated September 2014

The logo for AITSL (Australian Institute for Teaching and School Leadership) features the lowercase letters 'aitsl' in a sans-serif font. The letters are colored with a gradient from light green to dark teal. The 'i' has a dot above it.

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