Slide 1

Planning an
action research project
to facilitate implementation of
Digital Technologies

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Slide 2

Aims

This workshop will assist you to:

- identify how to implement Digital Technologies in your school using action research
- shape a project proposal for your school which reflects the curriculum implementation initiatives of your state/territory/jurisdiction
- feel confident about engaging staff in your school with an action research project.

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Slide 3

Agenda

- Digital Technologies in focus project framework
- Your school context
- Reflecting on the challenges
- Developing a focal question for action research
- Planning next steps

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Slide 4

Introductions

3 quick facts about you:

- Name
- School
- State or territory

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Slide 5

PROJECT OVERVIEW

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Slide 6

Background

- October 2015: ACARA published the F–10 Australian Curriculum: Technologies
  - Design and Technologies; Digital Technologies
- 7 December 2015: Australian Government released the National Innovation and Science Agenda (NISA)
  - $64.6 million has been committed to STEM education initiatives, with a particular focus on Digital Technologies
- 11 December 2015: National STEM School Education Strategy was endorsed by Education Council
- 30 June 2016: Digital Technologies Hub published (Coding across the Curriculum funding)

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The project
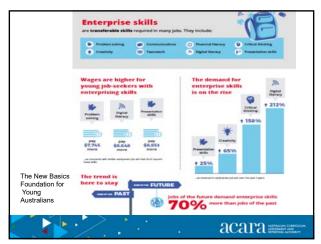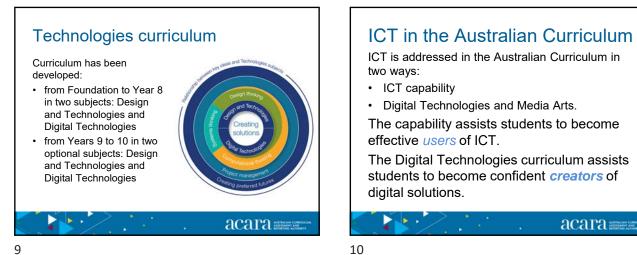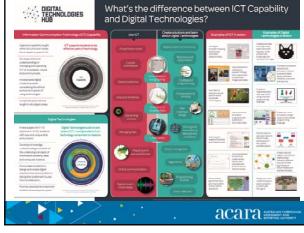
- Digital Technologies in focus: Supporting implementation of Digital Technologies
- 3-year $7.88 million project
- Eight FTE Curriculum Officers
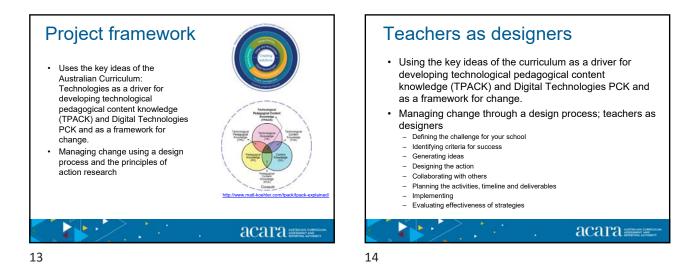- 160 disadvantaged schools nationally
- Sustainable implementation

The New Basics Foundation for Young Australians

Technologies curriculum

Curriculum has been developed:

- from Foundation to Year 8 in two subjects: Design and Technologies and Digital Technologies
- from Years 9 to 10 in two optional subjects: Design and Technologies and Digital Technologies

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ICT in the Australian Curriculum

ICT is addressed in the Australian Curriculum in two ways:

- ICT capability
- Digital Technologies and Media Arts.

The capability assists students to become effective *users* of ICT.

The Digital Technologies curriculum assists students to become confident *creators* of digital solutions.

PROJECT FRAMEWORK

Project framework

- Uses the key ideas of the Australian Curriculum: Technologies as a driver for developing technological pedagogical content knowledge (TPACK) and Digital Technologies PCK and as a framework for change.
- Managing change using a design process and the principles of action research

http://www.matt-koehler.com/tpack/tpack-explained/

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Teachers as designers

- Using the key ideas of the curriculum as a driver for developing technological pedagogical content knowledge (TPACK) and Digital Technologies PCK and as a framework for change.
- Managing change through a design process; teachers as designers
  – Defining the challenge for your school
  – Identifying criteria for success
  – Generating ideas
  – Designing the action
  – Collaborating with others
  – Planning the activities, timeline and deliverables
  – Implementing
  – Evaluating effectiveness of strategies

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Teachers as designers

Investigating and defining
- Collecting, representing and interpreting school data
- Defining the challenge for your school

Generating and designing
- Generating ideas for the action research question
- Designing the action research proposal

Producing and implementing
- Implementing the action research

Evaluating
- Identifying criteria for success
- Reflecting on actions; reporting on progress
- Evaluating effectiveness of strategies

Collaborating and managing
- Collaborating with others (teachers, students, parents, community, clusters)
- Planning the activities, timeline and deliverables

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An iterative process

Developing a proposal and plan

Reviewing and modifying

Creating a preferred and sustainable future for the school

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Why this approach?

This approach, like action research, has benefits for schools because it:

1. deals with their own situation
2. can start now—or whenever they are ready—providing immediate results
3. provides teachers with opportunities to better understand, and therefore improve, their educational practices
4. promotes the building of stronger relationships among staff
5. provides educators with alternative ways of viewing and approaching educational questions providing a new way of examining their own practices.

Adapted from Mertler, C.A. & Charles, C.M., (2008) *Introduction to education research,* 6th Edition, Allyn & Bacon, Boston, Mass, page 308 and https://www.det.nsw.edu.au/proflearn/docs/pdf/actreguide.pdf

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Getting started

Developing a question
Example (equity in access to resources)

– I care about problems of equity and social justice at my school (general)
– The computer club only attracts male students (specific)
– What action could I take to get more female and special ed students involved with computer technology? (issue)
– If I watch what girls and/or special needs students do when they have free time on the computer (action), how will their work influence the redesign of the curriculum of the computer club? (outcome) (project question)

Adapted from: https://ccar.wikispaces.com/Develop+Questions

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Activity – *back at school*

Listen to the Illustration of practice from the AITSL website on action research

http://www.aitsl.edu.au/australian-professional-standards-for-teachers/illustrations-of-practice/detail?id=IOP00310

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What's the process?

Templates reflect the processes and production skills strand of the curriculum

– Investigating and defining
– Generating and designing
– Producing and implementing
– Evaluating
– Collaborating and managing

- Professional learning ecosystem – customised for each school
- Project proposal template
- Progress report: webinar presentation template
- Progress report: reflection podcast
- Sharing the learning: newsletter; DTiF Community; DTiF Wiki
- Final report template

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YOUR SCHOOL CONTEXT

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Three divides

- access divide (digital technologies and internet – limited access in home is the issue)

- capability divide (research from Netherlands indicates years using technology in schools made the difference)

- participation divide (levels of education influence the use of internet; disadvantaged users tend to use it for social media) (Starkey, 2016 ACCE conference paper - Digital Divides)

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Activity 1: Digital divides

The purpose of this activity is to consider the notion of three digital divides in the context of your school.

- Discuss the three digital divides in the context of your school with your school team.
- Rate access, capability and participation for your school by circling a number on the Likert scale. 1 is for limited (access, capability or participation) and 4 is for excellent. Record a comment for clarification if needed.
- What is the most significant digital divide for your school?

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Asking the right questions

- Start with 'why?' (Damian Bebell; Simon Sinek)
- **Why** are we undertaking this project? What is our project aiming to accomplish?
- **How** do we know when we have succeeded? Include indicators of success.
- **What** measurable, definable outcomes are going to be evaluated?

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Student voice

'It is almost ironic that a chapter has to be devoted to student voice and choice in education, not the least because in other industries, what the customers want and how they want it are the mandate, the beginning place for **designing and delivering products and services**.'

(Yong Zhao in Sharrat and Harild, 2015: 181) (Sharratt, Harild and Coutts, 2015: 21)

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Guiding questions

Consider:	Response:
What knowledge, understanding, skills and capabilities do you want students to develop?	Skills for a digital world, for personal interest, employment
What are the 'hooks' for your students?	School garden project. Incorporate technologies into their garden project – a smart garden
What is working in your school? What are your school's strengths?	Community engagement in the 24 carrot garden already established. Will have enthusiasm to add to the work they are doing by engaging with smart garden technologies!
Where are you in terms of integrating ICT? What are the ICT capabilities of teachers? Students? What resources do you have? What do you need?	Our school has committed to embracing and completing the CSER MOOC. A date has been made for full staff PL and registration.
What are the challenges for your school in implementing Digital Technologies?	Supporting our staff and parents to assist the students to explore their potential and interests as they develop.
How could the community be involved?	The community are already involved in our 24 carrot garden so expect them to embrace any opportunities to further our work here.
How can implementation be sustained?	DoE, MONA, CSER, CSIRO

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Activity 2: Identify it

The purpose of this activity is to identify the focus for your school when developing implementation plans for the Digital Technologies curriculum.
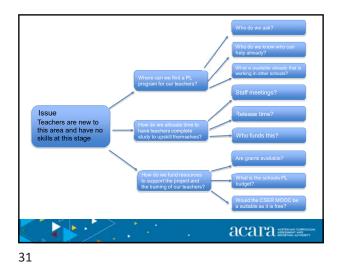
- Reflect on your school strategic plan and the data from your school.
- Consider the guiding questions in relation to your school context.
- Identify some possible issues needs or opportunities that will lead to a project focus using a table or by creating a mind map.

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Activity 3: Explore it

The purpose of this activity is to generate ideas for a question for your school to focus on that reflects your school plan and supports implementation of the Digital Technologies curriculum.

- Consider the issues (needs or opportunities) that you have identified in the previous activity.
- Select one issue. Now ask three questions to explore that issue, then branch out from each question with three more questions.
- Record the issue as a focal question for the project.
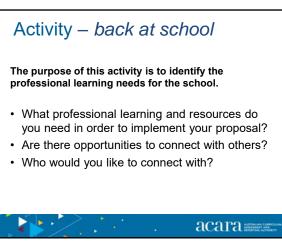- Prepare a two-minute pitch to present to other participants for feedback.

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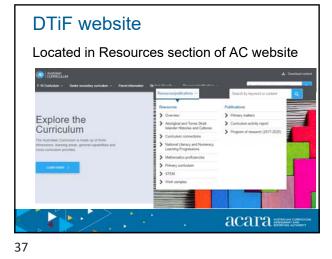**PLANNING**

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Activity 4: Pitch it

The purpose of this activity is to clarify your ideas for a project question for your school that reflects your school plan and supports implementation of the Digital Technologies curriculum.

- Take turns to pitch the preliminary ideas for a project question (2 minutes).
- Listeners contribute to the SWOT analysis page.
- Repeat once.

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Activity 5: Review it

The purpose of this activity is to plan how to develop a project question and proposal for your school that focuses on the school plan and on implementation of the Digital Technologies curriculum.

- Consider the feedback you received from other workshop participants on your draft project question.
- Review the project proposal template.
- Consider the following questions:
  - Why are we undertaking this project? What is our project aiming to accomplish?
  - How do we know when we have succeeded? Include indicators of success.
  - What measurable, definable outcomes are going to be evaluated?
- Identify three to five actions for when you return to school.

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PL opportunities

- Teach meets
- Techy brekky
- CSIRO STEM Professionals in Schools
- School observations
- PL for school leaders, teachers, support staff, parents and community
- Video team teaching

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Activity – *back at school*

The purpose of this activity is to identify the professional learning needs for the school.

- What professional learning and resources do you need in order to implement your proposal?
- Are there opportunities to connect with others?
- Who would you like to connect with?

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DTiF website

Located in Resources section of AC website

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Resources

https://csermoocs.adelaide.edu.au/

https://www.digitaltechnologieshub.edu.au/

https://aca.edu.au/

http://www.bebras.edu.au/

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Contact

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