Digital Readiness

University students' digital readiness
 for emerging technologies as
cognitive tools

JAMES COOK UNIVERSITY
AUSTRALIA

USM

APEX

Cairns
Singapore
Townsville

Digital Capabilities:

Higher education institutions have a key part to play in supporting graduates to be able to interact with digital technologies in their professional and personal lives (Littlejohn et. al., 2012).
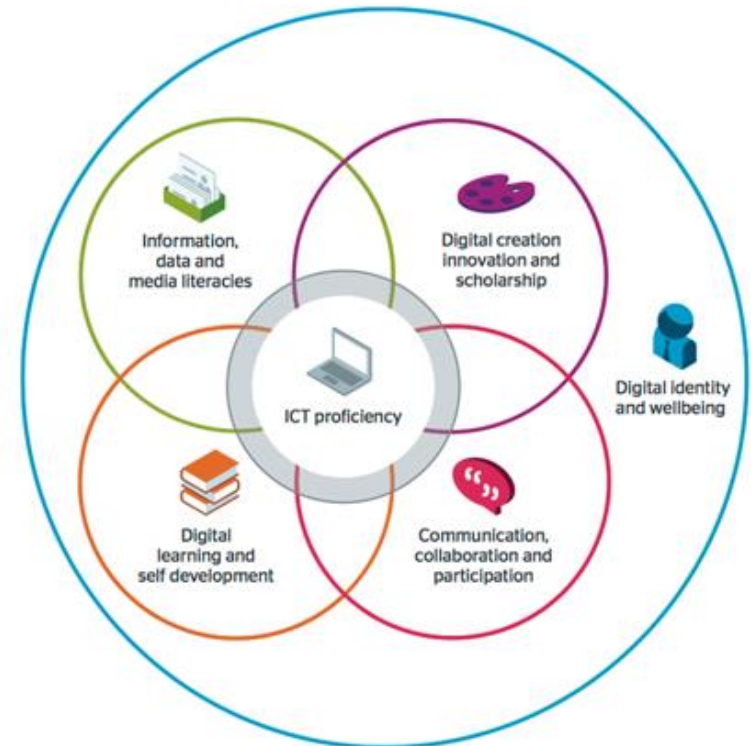
(JISC, 2015)

Objectives

The project has four main objectives:

1. Examine university students' skills and use of Web 2.0 technology in Malaysian and Australian universities;

2. Develop learning objects that can be repurposed and curated by each institution to support the preparedness of diverse students.

3. Design and test a learning environment that integrates Web 2.0 technology as a cognitive tool in learning to enhance student preparedness for learning in a digital environment;

4. Guide students to design and develop applications for use as a cognitive tool in learning.

Method

Phase 1: 2015
- Ethics clearance
- Literature review
- Preparation of survey
- Administration of survey/focus groups

Phase 2: January –June 2016
- Development and implementation of learning environments to enhance digital readiness
- Survey analysis

Phase 3: July to December 2016
- Preparation of comparative case studies
- Publication submission (1)

Phase 4: 2017
- Post implementation survey and review
- Publication submission (2)

Educause Centre for Analysis and Research (ECAR) Survey:

- An established tool for analysing student dispositions towards and usage of technology.

- Used since 2004 to monitor student attitudes to technology in the U.S. and internationally.

- Statistically significant at the 0.001 level (Dahlstrom & Bichsel, 2014, p.39).
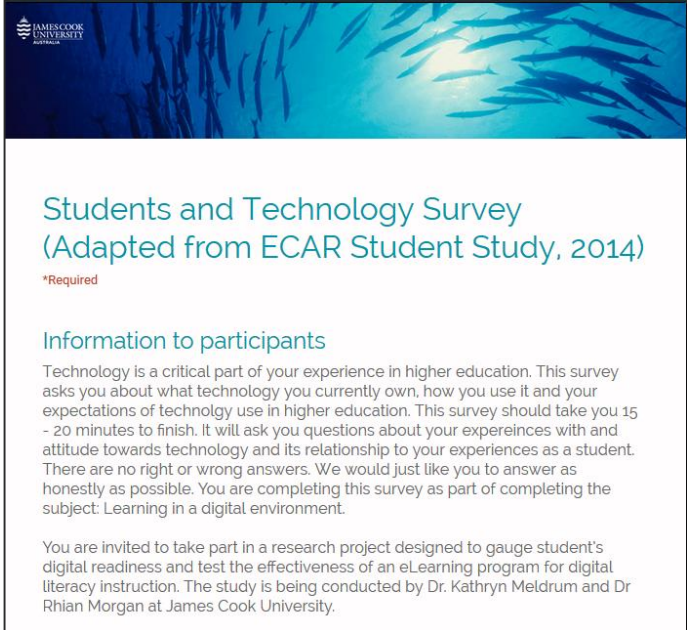
75,306 student respondents | from **213** campuses | in **45** U.S. STATES | and **15** COUNTRIES

Phase 1: Adapted ECAR Survey

- Based on the 2014 iteration of the ECAR survey.

- Adaptations for use at universities:
    - Replacing terminology
    - Simplified language
    - Division into a pre-survey and a post-survey to facilitate baseline measurement among students with no previous university experience.

(JCU students & Technology survey, 2015)

Phase 2: Three adaptive lessons in Australia

Information Literacy (JCU)

- The ability to find, evaluate, manage, organise and share digital information.

Media & Data Literacy (JCU)

- The capacity to interpret and create visual representations of data and the ability to utlise digital media for academic purposes.

Digital Identity & Well-being (LaTrobe)

- The capacity to develop and project a positive online image across a range of platforms and the ability to build and maintain digital profiles.

Adaptive eLearning:
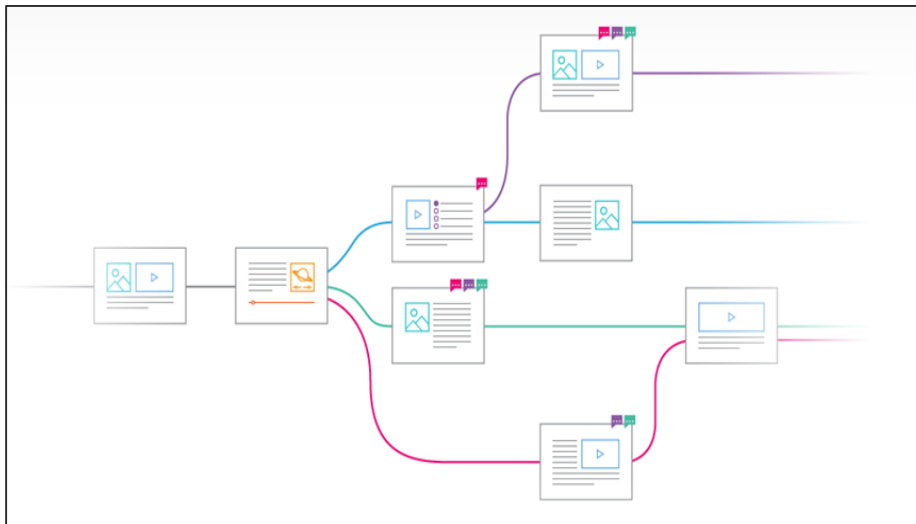
A Smart Sparrow adaptive eLearning pathway

- A responsive, personalised learning experience that responds to students' actions.

- Fast movement through the package where the content is known or targeted remediation where necessary.

- Reduced failure rates & improved engagement & learning outcomes (Prusty, 2011).

Information literacy:

Possible screen name:	Screen type: Question/info	References: No/Yes
Screen 2 – introduction to assignment	**Branching** : No/Yes	**Marks** : No/Yes
	Custom sim: No/Yes	**Max attempts** : No/Yes.

Lecturer profile pic

Meet your lecturer

Hi [student name], you are in the right place! You are just going to LOVE this subject - everyone does.

This main assessment piece for this subject is a group assignment you will do in groups of 5. I am choosing your groups for you and assigning a Project Manager for each group.

How do you feel about that?

○ 1. Grrr....I hate group assignments!
○ 2.Sweet! Group assignments are great for making new friends!
○ 3.Group assignment ey? This means I can bludge my way through the subject.
○ 4.Meh. Whatever.

NEXT

Note for instructional designer:

ADAPTIVITY

CORRECT STATE:
Rule: option 1 selected
Feedback: Well you may hate group assignments but the bad news for you is that life is full of group work! So you better start liking is soon. For that attitude I am appointing you Team Project Manager.
Proceed to screen: next

CORRECT STATES:
Rule: Option 2 selected
Feedback: That's the attitude! However remember that group assignments are about producing quality work and learning from it. But with that attitude I'm appointing you the Team Project Manager!
Proceed to screen: next

CORRECT STATES:
Rule: Option 3 selected
Feedback: Hmmm....not quite. Everyone in a group assignment is required to participate. To ensure you do your fair share, I'm going to appoint you as Team Project Manager!
Proceed to screen: next

CORRECT STATES:
Rule: Option 4 selected
Feedback: Hmmm....you don't seem very bothered. This is a great opportunity to produce some great work as a team. I am going to appoint you as Team Project Manager so you get the most out of the project!
Proceed to screen: next

The students choices result in adaptive feedback.

These states can be used to provide feedback and responses to input or to remediate common misconceptions.

- Development of co-generated tools
  - Student led adaptions
  - Focus on 'digital learning'
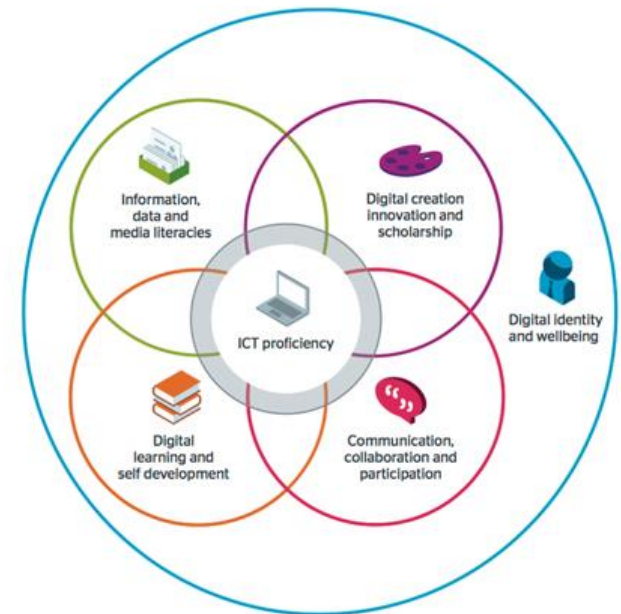
Project outcomes:

- A dataset on the incoming digital literacies of the participating student cohorts in various institutions.

- eLearning objects (reusable).

- Qualitative and quantitative data on the efficacy of adaptive eLearning objects for digital literacy instruction.

- Publications disseminating the findings

- Conference presentation.

References

Dahlstrom, E., Bichsel, J. (2014), ECAR Study of Undergraduate   students and Information Technology, 2014. Retrieved from
   https://net.educause.edu/ir/library/pdf/ss14/ERS1406.pdf

JISC (2015). Digital capabilities: The 6 elements defined. Retrieved 31 June, 2015 from   http://digitalcapability.jiscinvolve.org/wp/files/2015/06/1.-Digital-capabilities-6-elements.pdf

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Prusty, B., G. (2011). Teaching and assessing threshold concepts in solid mechanics using adaptive tutorials. MecSol, 2011, Conference Publication http://www.mecsol2011.ufsc.br/