



Computing Education
Research Group

Student engagement in the current teaching and learning environment?

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Three research studies

1. **Perceptions project (2007)**
Investigation of students' experiences of the 1st year of their IT degree and the lecturers' perceptions of their students.
2. **Study Habits project (2009->)**
Investigation of the study habits of 1st year computing students.
3. **Web 2.0 project (2009->)**
Investigation of use of Web 2.0 in higher education – with focus on assessment and academic integrity.

Findings from the Perceptions project

1. Students have unclear expectations of their course.
2. Difficulties with transition to the tertiary teaching and learning environment.
3. Low level of engagement







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Study Habits project



We need to know more about what our students are doing ...

Study Habits project

Aim: To explore the study habits of novice programming students.

More specifically ... to understand what, where, when and how often students study, what resources they use, what resources they value and what activities seem to influence their learning.

Research context

- 1st year programming subject at Monash
- *Mode*: On-campus
- *Format*: 2 hour lecture, 2 hour lab, 1 hour discussion class
- *Assessment*: assignments, mid-semester test, final exam.
- *Resources*: tutorial exercises, text book, online quizzes

Research design

- *Participants*: 1st year programming students at one campus of Monash
- *Data collection*:
 - Survey via a paper questionnaire (n=98)
 - Final semester exam results
 - Interviews (n=17) ... currently being analysed

Lecture attendance

Attendance	Percentage of students
All lectures	30
Most	39
Half	10
A few	15
None	5

Hmm ... attendance observed by the lecturer was somewhat less than this

Time spent on learning activities

Study activity	Mean time (hours)	SD
Use the internet to help with subject material	1.1	1.16
Read the textbook	1.0	0.92
Talk with friends about the subject material	0.9	0.70
Work through problems not finished in class	0.7	0.64
Work through problems from the text book	0.4	0.58
Use the discussion form to discuss class material	0.3	0.54
Work through problems using ViLLE	0.3	0.55
Other activities	0.6	0.61

A total of 5.3 hours per week outside class compared to 7 hours recommended time.

Usefulness of resources

Resource	Very useful (percentage)
Labs and lab solutions	67
Sample exams and solutions	47
Textbook	34
Mid-semester test and feedback	34
Lecture slides	16
Lecture presentation	13
Discussion forum	2

They particularly liked solutions

Extent of working individually or with others

Work style	Number of students
Always by myself	19
Mostly by myself	60
Roughly equal amounts of time by myself and with others	18
Mostly with others	1
Always with others	1

Relationship between study habits and final results

Item correlated with exam result	Correlation coefficient
Programming experience	0.34 **
Lecture attendance	0.33 **
Tendency to work alone	0.34 **
Use the Internet to help with unit material	-0.29
Time spent consulting instructors (other than the lecturer)	-0.27
Rating tutorials and tutorial solutions as useful	-0.25

Summary of findings from Study Habits project

- Less than recommended time spent on study.
- Students spent as much time accessing the Internet as they spend reading the text book.
- Study time did not appear to influence final results.
- What are students doing during the time they spend on study? Next stage of our study... the interview data.



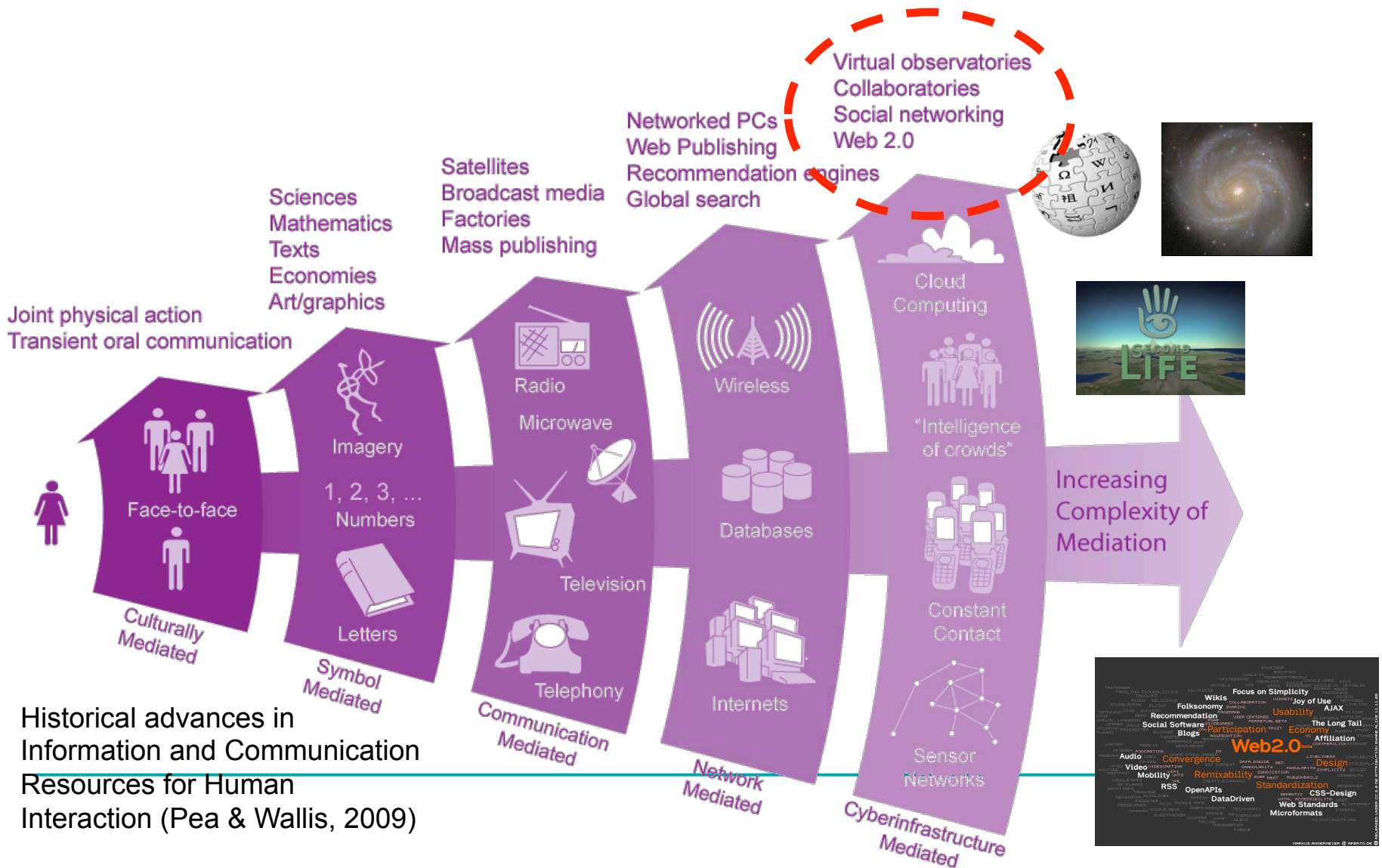
Things are changing ...



Changing student population – the Net Generation
Digital natives – speak an entirely new language cf.
Digital immigrants – speak an outdated language
(Prensky, 2001)

A new learning paradigm?

A new learning paradigm - cyberlearning



Historical advances in Information and Communication Resources for Human Interaction (Pea & Wallis, 2009)

Web 2.0 project

Investigation of Web 2.0 experiences of academics – with focus on assessment and academic integrity.

Some findings:

- Much interest in Web 2.0.
 - Many reports of use, few research studies.
 - Perceived benefits: open publishing, content management, collaboration, communication, co-creation ... engagement?
 - Issues raised: concerns about increased workload, implementation, management.
 - Assessment is very traditional (e.g. marks, comments, rubrics) - not much evidence of creative or new assessment (e.g. peer or self assessment)
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Challenges – we need more understanding of ..

- how our students learn ... and want to learn
- students' needs
 - amount of face-to-face contact
 - level of support
- the influence of the technology on student learning behaviour
 - copy and paste learning
 - plagiarism
 - appropriation of technology
- how students deal with:
 - sharing of ideas
 - ownership of work
 - lack of an authoritative voice

New possibilities for teaching spaces

