



THE UNIVERSITY OF  
MELBOURNE

# Ensuring Learning Online is not a Second Class University Education

Gregor Kennedy

Pro Vice-Chancellor, Teaching and Learning

The University of Melbourne



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# A Presentation in Five Chapters

Chapter 1: “Going to University” and the Rise of Online

Chapter 2: The Evidence: Face-to-Face Vs. Online

Chapter 3: Designing for Interaction

Chapter 4: First Class Online Delivery

Chapter 5: Finale



# Chapter 1

## “Going to University” and the Rise of Online





# “Going to University”







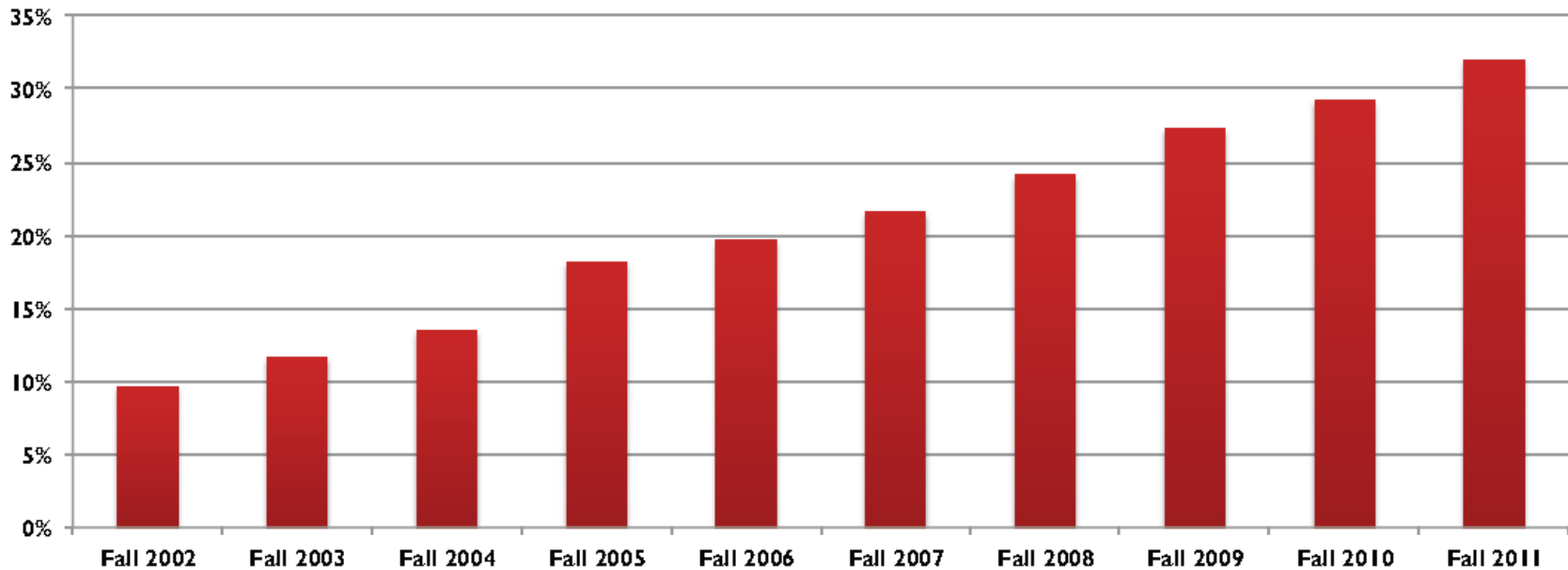
# “Going to University”





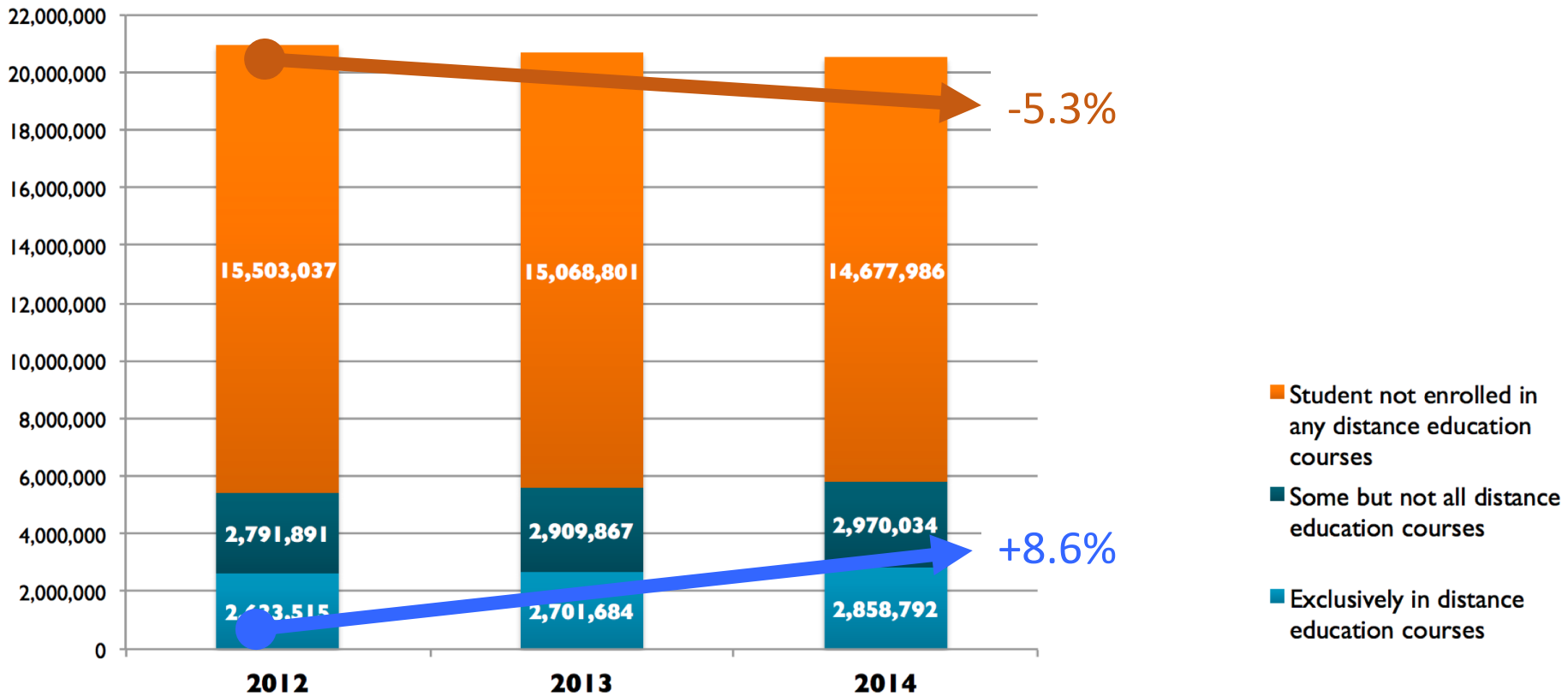
# “Going to University”

**Online Enrollment as a Percent of Total Enrollment: Fall 2002 - Fall 2011**



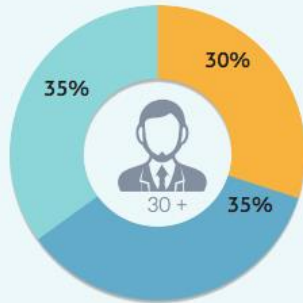
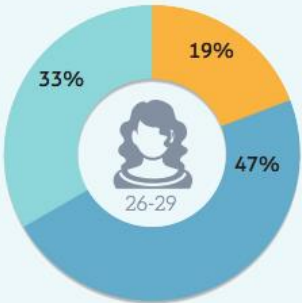
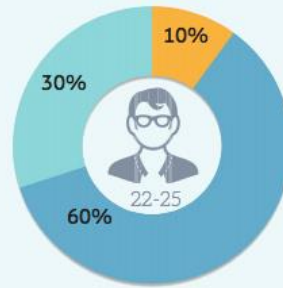
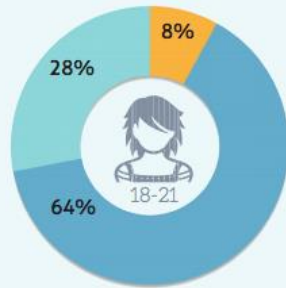
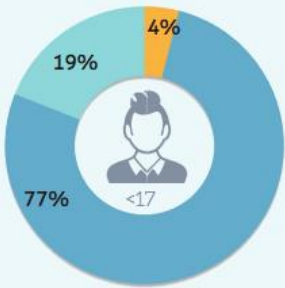
# Global Demand for Online Learning

Degree Enrolment by Course Type



# Global Demand for Online Learning

*“Would you study online?”*



- Yes
- No
- Maybe

50 - 65%  
25+ years  
yes or maybe



## **China's E-Learning Revolution: The 10 Hottest Chinese Online Education Companies of 2016**

- China's online learning market [has] grow from around 500 institutions in 2012 to well over 4200 – and counting – in 2016.
- People studying online in 2014 was estimated at a staggering 77.97 million.
- The market is expected to continue to grow annually by 15%.





# Global Demand for Online Learning

The screenshot shows the XuetangX website. The top navigation bar includes the logo '学堂在线 xuetangx.com' and links for 'About Us', 'XuetangX Cloud', 'Rain Classroom', 'Courses', 'Comments', 'Newsroom', and '中文版'. The main banner features a man in a suit holding a sign with the XuetangX logo, and text stating 'The Users of XuetangX have reached 10,000,000'. Below the banner is a section titled 'About Us' with a text box containing the following information:

XuetangX is the world's first Chinese MOOC platform, authorized to operate edX courses in the Chinese mainland. Founded by Tsinghua University, it also provides a platform for research and application of MOE Research Center for Online Education. XuetangX is operated ...



# Face-to-Face Vs. Online Education

# Prospect

Professors without borders  
*Will online learning spell the end of universities?*

**WIRED**

The Stanford Education Experiment Could  
Change Higher Learning Forever



# Face-to-Face Vs. Online Education



# Face-to-Face Vs. Online Education

## Curriculum Delivery Model

Predominantly 'campus' based, face-to-face learning supplemented with online materials and/or optional online activities.

Predominantly 'campus' based, face-to-face learning, accompanied by mandatory online activities.

Wholly online learning, with intensive face-to-face residential schools or workshops.

Wholly online learning, with no face-to-face contact.





## Chapter 2

### The Evidence: Face-to-Face Vs. Online



# The Evidence

Johnson, S. D., Aragon, S. R., et al. (2000). *Journal of Interactive Learning Research*, 11(1), 29-49.

- Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning environments
  - Small sample (n=38)
- 

- ✓ Modest differences in student satisfaction (↑ F2F)
- ✓ No differences in perceptions of quality
- ✓ Differences in perceptions of interaction and support (↑ F2F)
- ✓ No differences in in learning outcomes

# The Evidence

Summers, J. J., Waigandt, A., & Whittaker, T. A. (2005).  
*Innovative Higher Education*, 29(3), 233-250.

- Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning environments
- Small sample (n=38)

- 
- ✓ 4 of 8 scales showed student satisfaction differences (↑ F2F)
  - ✓ No differences in learning outcomes

---

*No differences in satisfaction may have been seen if the online class was designed so it was amendable to an electronic format.*



# The Evidence

Wu, D. D. (2015). Online learning in postsecondary education: A review of the empirical literature (2013-2014). *Ithaca S+R*.

- A literature review of “comparative” studies of learning outcomes published between 2013-2014
  - 12 studies
- 

“The prior literature generally indicates that online and hybrid course formats produce outcomes that are not significantly different from those in face-to-face”





# The Evidence

Ary, E. J., & Brune, C. W. (2011). A comparison of student learning outcomes in traditional and online personal finance courses. *Journal of Online Learning and Teaching*, 7(4), 465-471.

Wagner, S. C., Garippo, S. J., & Lovaas, P. (2011). A longitudinal comparison of online versus traditional instruction. *Journal of Online Learning and Teaching*, 7(1), 68.

Hauck, W. E. (2000). Online versus traditional face-to-face learning in a large introductory course. *Journal of Family and Consumer Sciences*, 98(4), 27.

# The Evidence

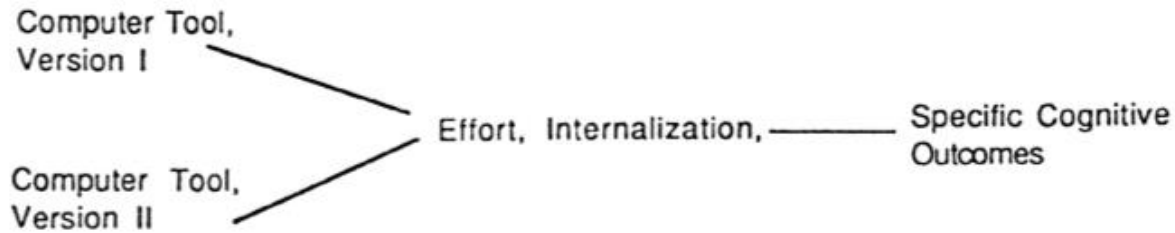
Bettinger, E. & Loeb, S. (2017). Promises and pitfalls of online education. *Evidence Speaks Reports, Vol 2, #15.*

- Data from DeVry University; large for profit institution
  - Comparative analysis of learning outcomes in online and face-to-face learning environments
  - 230,000 students over 750 courses/subjects
- 
- ✓ Significant differences in learning outcomes
  - ✓ Especially apparent for “least well-prepared students”

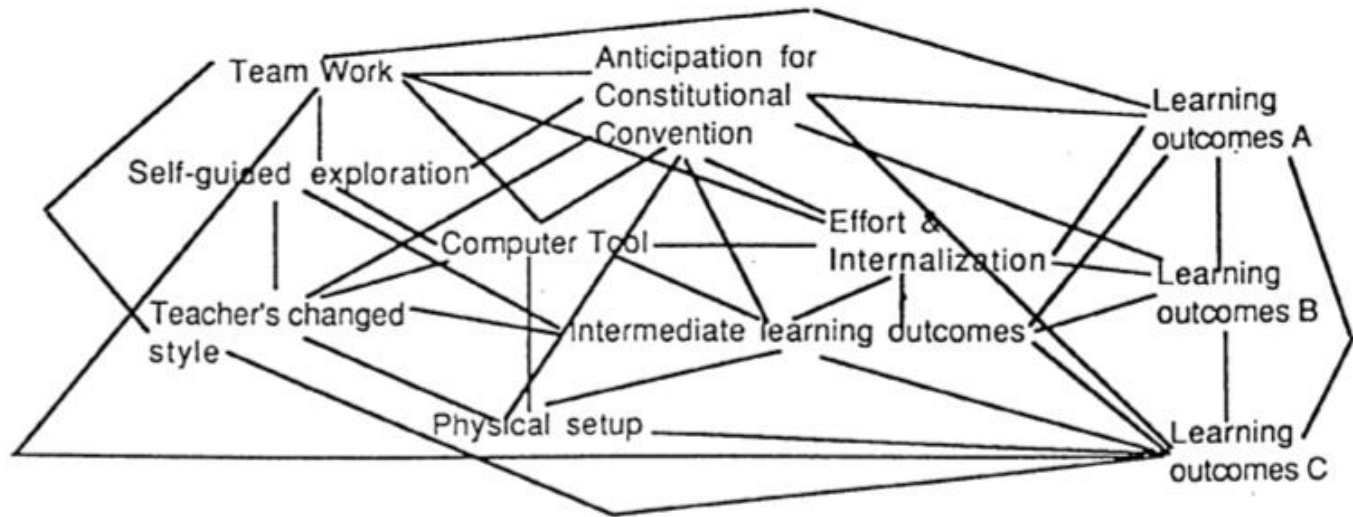


# Evidence: The Flute or the Orchestra

## An Analytic Study



## A Systemic Study





## So ....

- Comparing online and face-to-face delivery modes is not that useful; controlling variables across conditions is untenable.
- Results are equivocal; some studies show differences, but many show no significant differences, particularly in outcomes.
- Effective learning is not about the mode of delivery but the design of the learning environment and its component activities.
- Curriculum and learning design need to be tailored to delivery mode; face-to-face and online will have key differences in design.



So ....

.... what are the important components of design for online delivery?



# Chapter 3

## Designing for Interaction





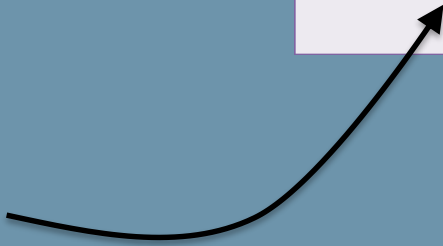


# Designing for Interaction

3

Interactive  
Learning, Teaching  
and Assessment

We need to  
focus more  
on this





# Designing for Interaction

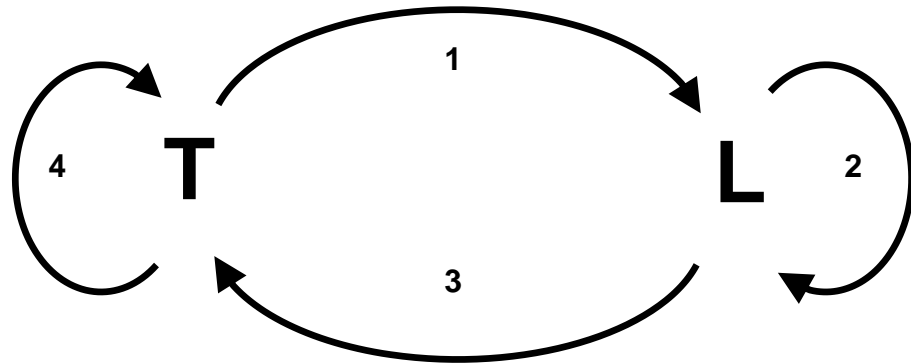
Teacher-Learner

Learner-Learner

Learner-Content

# Teacher-Learner Interaction

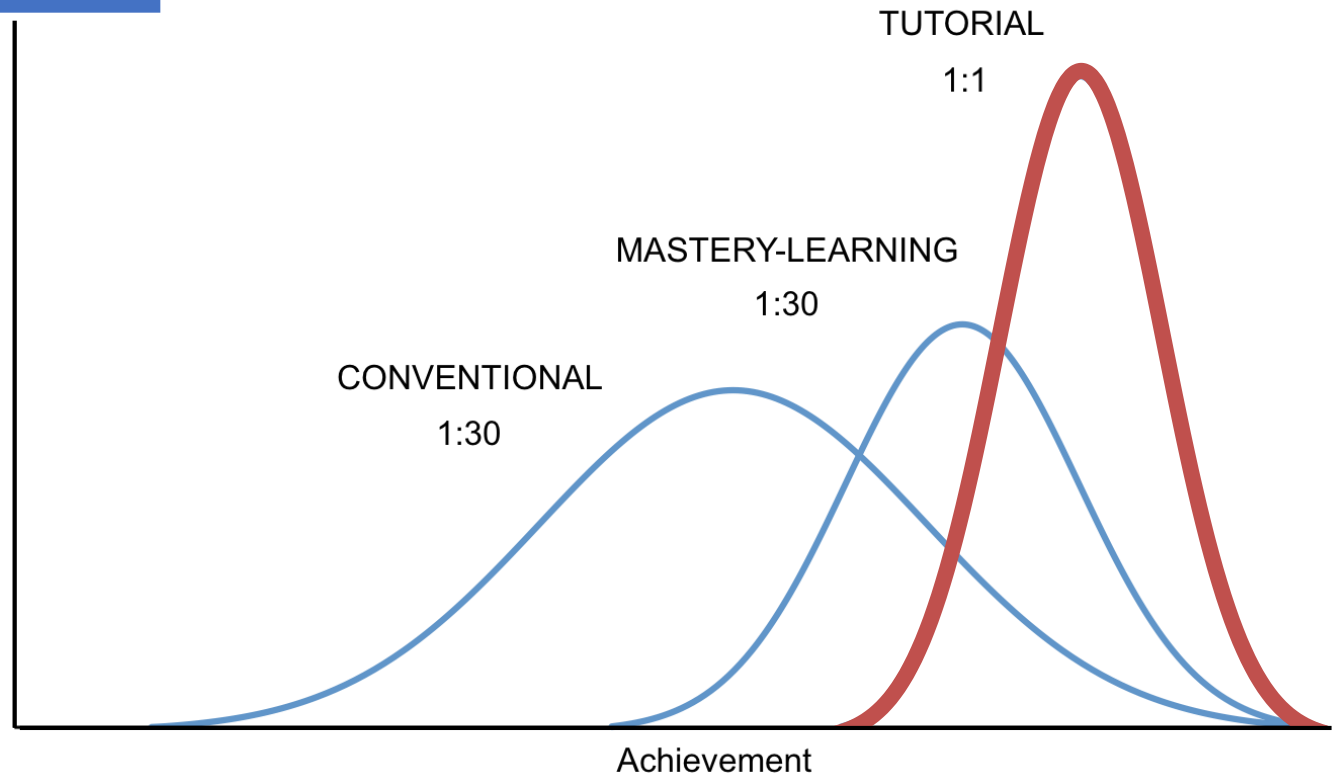
Teacher-Learner



# Teacher-Learner Interaction

Teacher-Learner

## Bloom (1984): The Two-Sigma Effect





# Teacher-Learner Interaction

Teacher-Learner

Hattie (2011)

The impact of teaching on students' outcomes

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## Which Strategies Best Enhance Teaching and Learning in Higher Education?

*John Hattie*

A synthesis of 800 meta-analytic studies makes clear “what works best” in improving student achievement in higher education. From these studies, three key strategies are identified that the best teachers employ for enhancing student achievement: having clear learning intentions and success criteria (goals), having a preference for strategies that emphasize student perspectives in learning particularly in meta-cognitive and student regulated learning, and seeking feedback as to the success of academics as teachers. The major underlying basis of this model is that when student learning becomes “visible” to the teacher this not only enhances the probability of student achievement but increases the quality of teaching. Thus, it is the social psychological constructs of the teacher and student that are both intertwined in making teaching successful.

### The Achievement Continuum and the Appropriate Reference Point

Before extracting a set of recommended strategies for enhancing student achievement, it is necessary to justify what we mean when we say a teaching strategy or intervention “works.” This section outlines the major overviews of what works best in higher education, introduces meta-analyses and effect-sizes, and then the data base used in the remainder of this chapter.

# Teacher-Learner Interaction

Teacher-Learner

Mayer (2004)

Kirschner, Sweller & Clark (2006)

Direct instruction and scaffolding by an expert teacher is important.

Should There Be a Three-Strikes Rule Against Pure  
Discovery Learning?

*The Case for Guided Methods*

Richard E. Mayer  
University of California, Santa Barbara

EDUCATIONAL PSYCHOLOGIST, 41(2), 75-86  
Copyright © 2006, Lawrence Erlbaum Associates, Inc.

Why Minimal Guidance During Instruction Does Not  
Work: An Analysis of the Failure of Constructivist,  
Discovery, Problem-Based, Experiential, and  
Inquiry-Based Teaching

Paul A. Kirschner  
Educational Technology Expertise Center  
Open University of the Netherlands  
Research Centre Learning in Interaction  
Utrecht University, The Netherlands

John Sweller  
School of Education  
University of New South Wales

The author's thesis is that there is sufficient research evidence to make any reasonable person skeptical about the benefits of discovery learning—practiced under the guise of cognitive constructivism or social constructivism—a preferred instructional method. The author recommends a preferred instructional method. The author recommends a preferred instructional method. The author recommends a preferred instructional method.

for promoting creativity rather than rote learning rather than pure discovery rather than unstructured exploration. Scientific research cautions about which instructional methods are most effective for promoting creativity rather than rote learning rather than pure discovery rather than unstructured exploration. Scientific research cautions about which instructional methods are most effective for promoting creativity rather than rote learning rather than pure discovery rather than unstructured exploration.





# Designing for Interaction

Teacher-Learner

Learner-Learner

Learner-Content



# Learner-Learner Interaction

Learner-Learner

## Social Learning Theories

- Vygotsky

Different viewpoints are inherent in collaborative work and this results in the “co-construction of knowledge”. Intra-individual conflict may occur in the process of “reciprocal sense making” which results in cognitive change.





# Learner-Learner Interaction

Learner-Learner

## Social Learning Theories

- Piaget

Different viewpoints are inherent in collaborative work which results in inter-individual conflict. The resolution of this conflict – assimilation and accommodation – results in cognitive change.





# Learner-Learner Interaction

Learner-Learner

- Slavin (1991)

ROBERT E. SLAVIN

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## Synthesis of Research on Cooperative Learning

The use of cooperative learning strategies results in improvements both in the achievement of students and in the quality of their interpersonal relationships.



# Designing for Interaction

Teacher-Learner

Learner-Learner

Learner-Content

# Learner-Content Interaction

Learner-Content

## Taxonomies and Classifications

e.g. Schwier & Misanchuk (1993)

Reactive ↔ Proactive ↔ Mutual





# Learner-Content Interaction

Learner-Content

## Taxonomies and Classifications

e.g. . Sims (1994, 1997)

- 7 Levels of Interactivity
- 10 Interactive Concepts



# Learner-Content Interaction

Learner-Content

*Jl. of Interactive Learning Research* (2004) 15(1),43-61

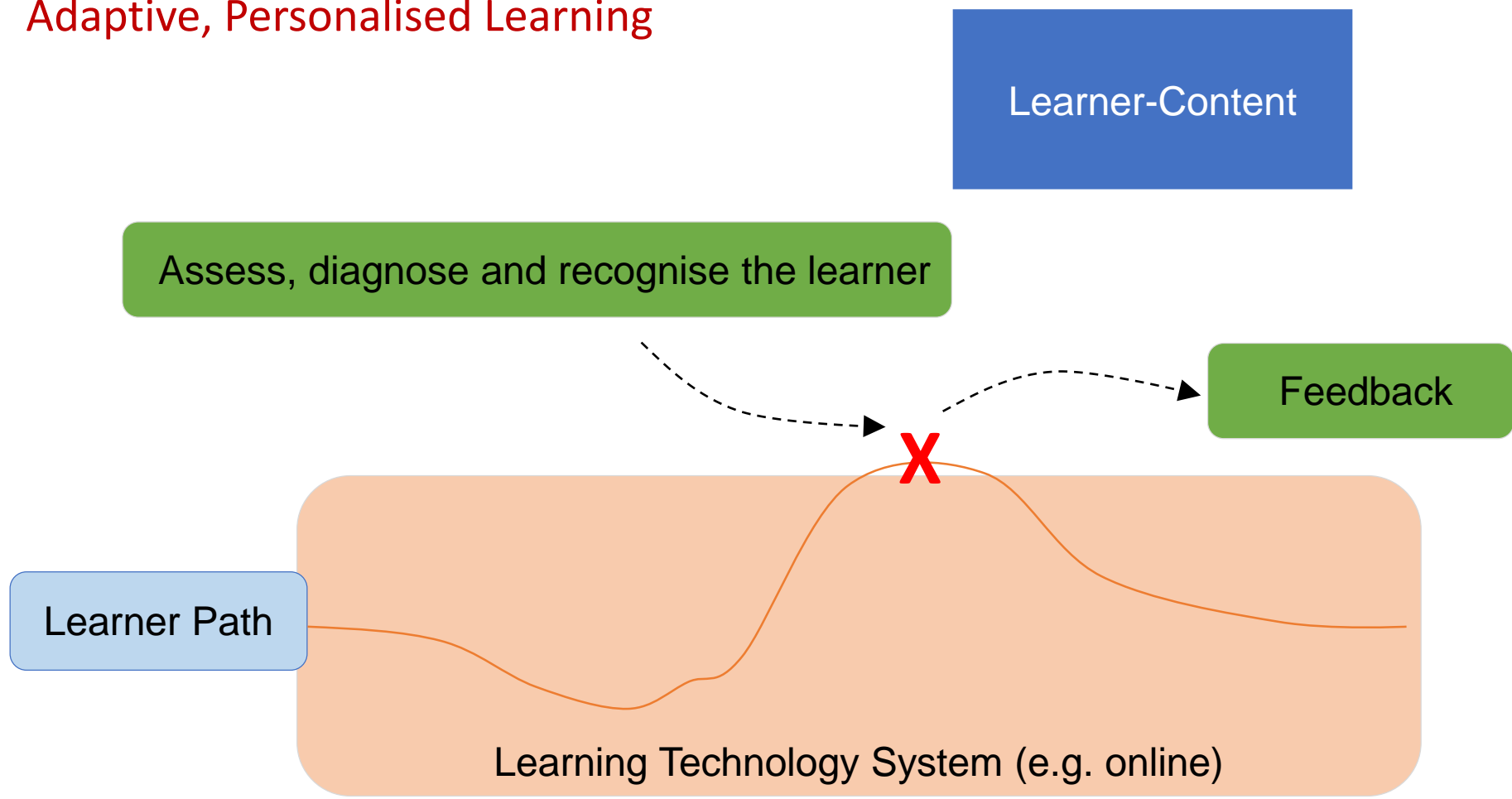
## **Promoting Cognition in Multimedia Interactivity Research**

GREGOR E. KENNEDY  
*The University of Melbourne, Australia*  
gek@unimelb.edu.au

This article suggests that researchers need to reconfigure their conception of multimedia based interactivity. By integrating and extending earlier conceptions of the construct, it is argued that the cognitive processes of users should be central rather than peripheral to interactivity research. A model is presented in which interactivity is described as a continuous dynamic interplay between instructional events, students' actions (functional interactivity) and their cognition (cognitive interactivity). The relationships between these components of the model are discussed, as are two potential benefits of interactivity – increased intrinsic motivation and more favourable learning outcomes. The way in which the model can be used to frame and structure further research on interactivity is discussed and emphasises the need to simultaneously assess functional and cognitive interactivity for specific instructional events.

# Learner-Content Interaction

## Adaptive, Personalised Learning





# Designing for Interaction

Teacher-Learner

Learner-Learner

Learner-Content



# Designing for Interaction

Teacher-Learner

Learner-Learner

Learner-Content

Cooperative

Case-based

Collaborative

Peer based

Communities of Practice

Authentic

Role Play

Simulation-based

Game-based

Situated

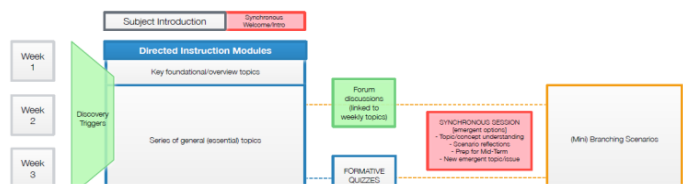
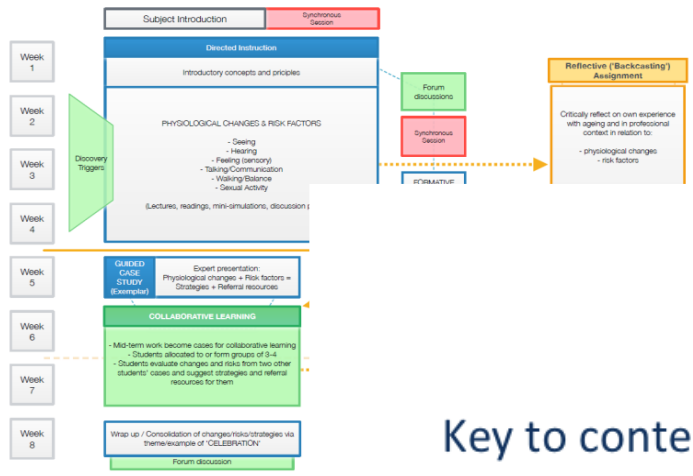
Discovery-based

Problem-based

Apprenticeship Model

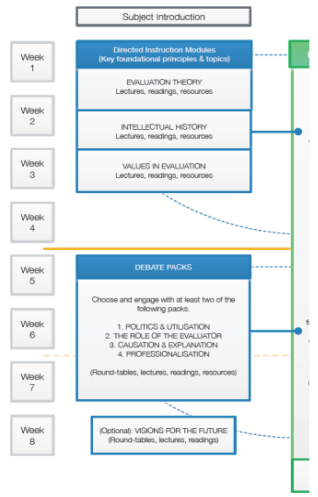


# Designing for Interaction



## Key to content/activity types:

- Inquiry or experiential learning emphasis
- Direct(ed) instructional focus
- Asynchronous interactive engagement
- Synchronous activity







# Chapter 4

## First Class Online Design and Delivery



# Melbourne's Digital Learning Strategy

Melbourne  
Digital  
Curriculum

Melbourne  
MOOCs

Graduate  
Online  
Melbourne

Online &  
Blended  
Professional  
Development



# Melbourne's Digital Learning Strategy

Melbourne  
Digital  
Curriculum

Melbourne  
MOOCs

Graduate  
Online  
Melbourne

Online &  
Blended  
Professional  
Development

Consistent with the broader  
Melbourne strategy  
of providing high quality  
professional graduate education,  
the University will,  
over the next five years,  
develop and deliver  
a suite of  
online graduate programs  
of exceptional quality

# Graduate Online – Melbourne



Learning design



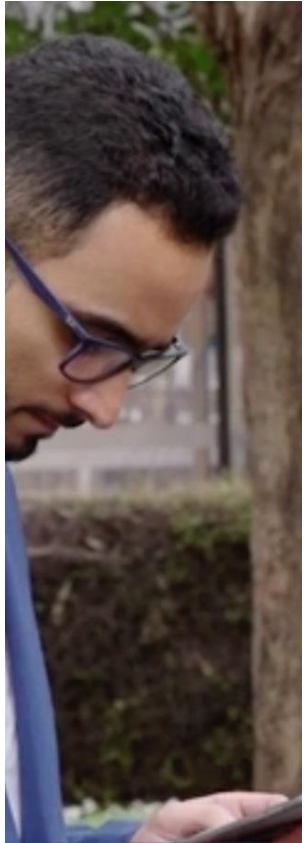
Content production



Project  
management



Marketing



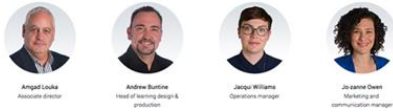
Study advice



Student support

# Graduate Online – Melbourne

## Leadership



Angel Louka  
Associate director

Andrew Barlowe  
Head of learning design & production

Jacqui Williams  
Operations manager

Joanne Owen  
Marketing and communication manager

## Student support



Anna Cameron  
Senior support consultant  
Operations team

Derek Tong  
Student support team leader  
Operations team

Delvita Bini  
Support consultant  
Operations team

Eliza MacDonald  
Support consultant  
Operations team

## Production



Celia Conroy  
Production supervisor  
Production team

Dave Allan  
Production supervisor  
Production team

David Edqvist  
Educational technologist & platform administrator  
Production team

Erika Carter  
Producer  
Production team

## Learning design & Project management



Analise Valencia  
eLearning project manager  
Learning design team

Alberto Gonzalez  
Senior learning designer  
Learning design team

Anabel Orchard  
Senior learning designer  
Learning design team

Aria Colgan  
eLearning project administrator  
Learning design team

## Marketing



Alexandra Brookes  
Marketing campaign specialist  
Operations team

Bree Maxwell  
Marketing coordinator  
Operations team

Claire McInerney  
Marketing campaign specialist  
Operations team

Jess Parker  
Marketing coordinator  
Operations team



Lara Payne  
Support consultant  
Operations team

Purnan Narasim  
Support consultant  
Operations team

Rebecca Norman  
Aiding student transition and business operations  
Operations team

HR, FINANCE AND ADMINISTRATION



Gary Lee  
Graphic designer  
Production team

Graydon Hewes  
Digital media production technician  
Production team

Jesse Shrock  
Education technologist  
Production team

Leuchan Poon  
Video post-production officer  
Production team



Bethina Dony  
Senior learning designer  
Learning design team

Ben Mass  
eLearning project manager  
Learning design team

Bethina Przytylak  
Senior learning designer  
Learning design team

David Bergner  
Learning designer  
Learning design team

## HR, Finance



Kapila Dharmasena  
Business analyst  
Operations team

Tracy White  
Human resources & administration officer  
Operations team



Nathan Kiloh  
Graphic designer  
Production team

Nick Hapcock  
Producer  
Production team

Richard James  
Producer  
Production team

Shanay Santhosh  
Education technologist  
Production team



Tim Falk  
Video post-production officer  
Production team



# Guiding Design Principles



Deep  
engagement  
and learning



Interaction  
and feedback



Specialisation  
and career  
advancement



Flexibility and  
choice



Student  
support



Virtual  
scholarly  
community



Connection  
with world  
experts

# Learning Design Approach



Inquiry-based learning approaches



Small group, peer-based learning



Direct instruction



Assessment and Feedback



Rich media resources and communications

# Design and Development Process

Faculty

Graduate Online

Content  
Expertise

CDC



Project  
Management

Learning  
Design

Video  
Production

Teaching &  
Assessment

Discipline  
Context

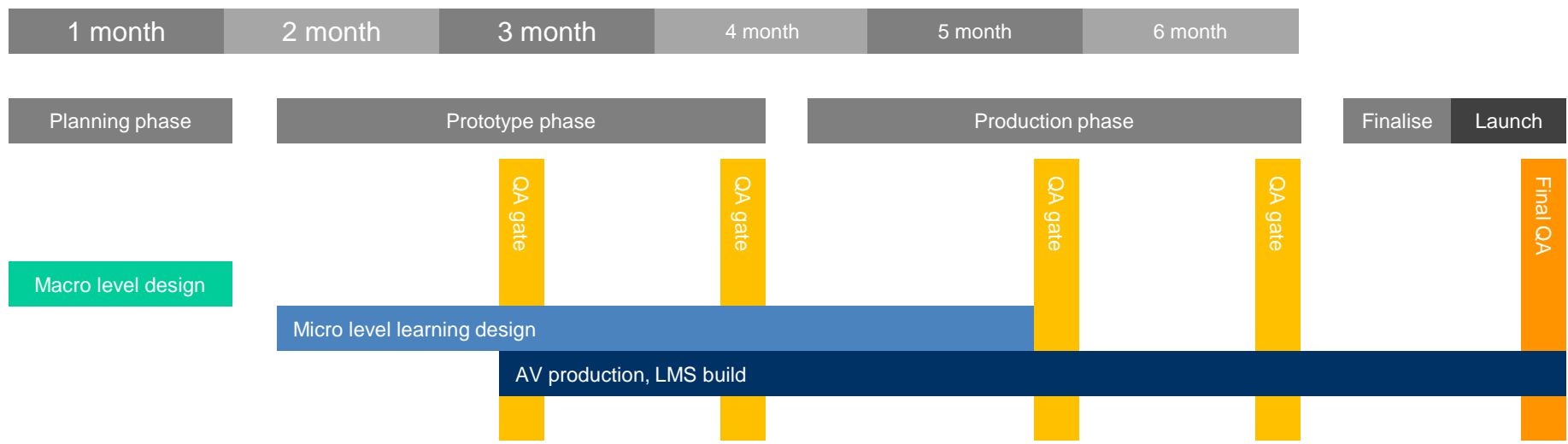
Graphic  
Design

Technology  
Integration

Programmin  
g

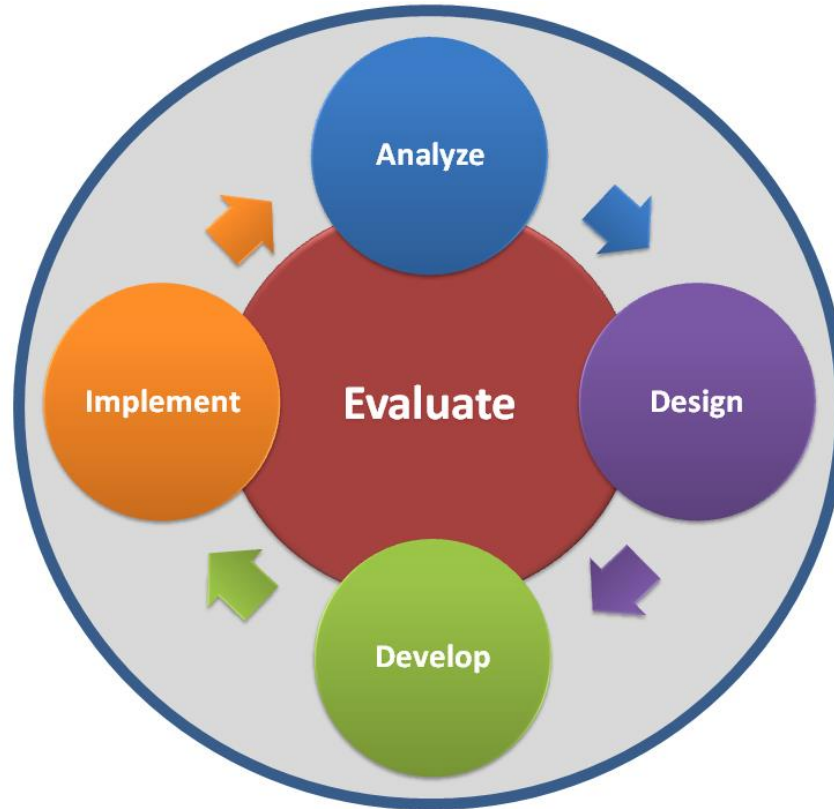


# Design and Development Process





# Design and Development Process





# Program Launches

125

Subjects  
delivered

122

Subjects scheduled  
for development

28

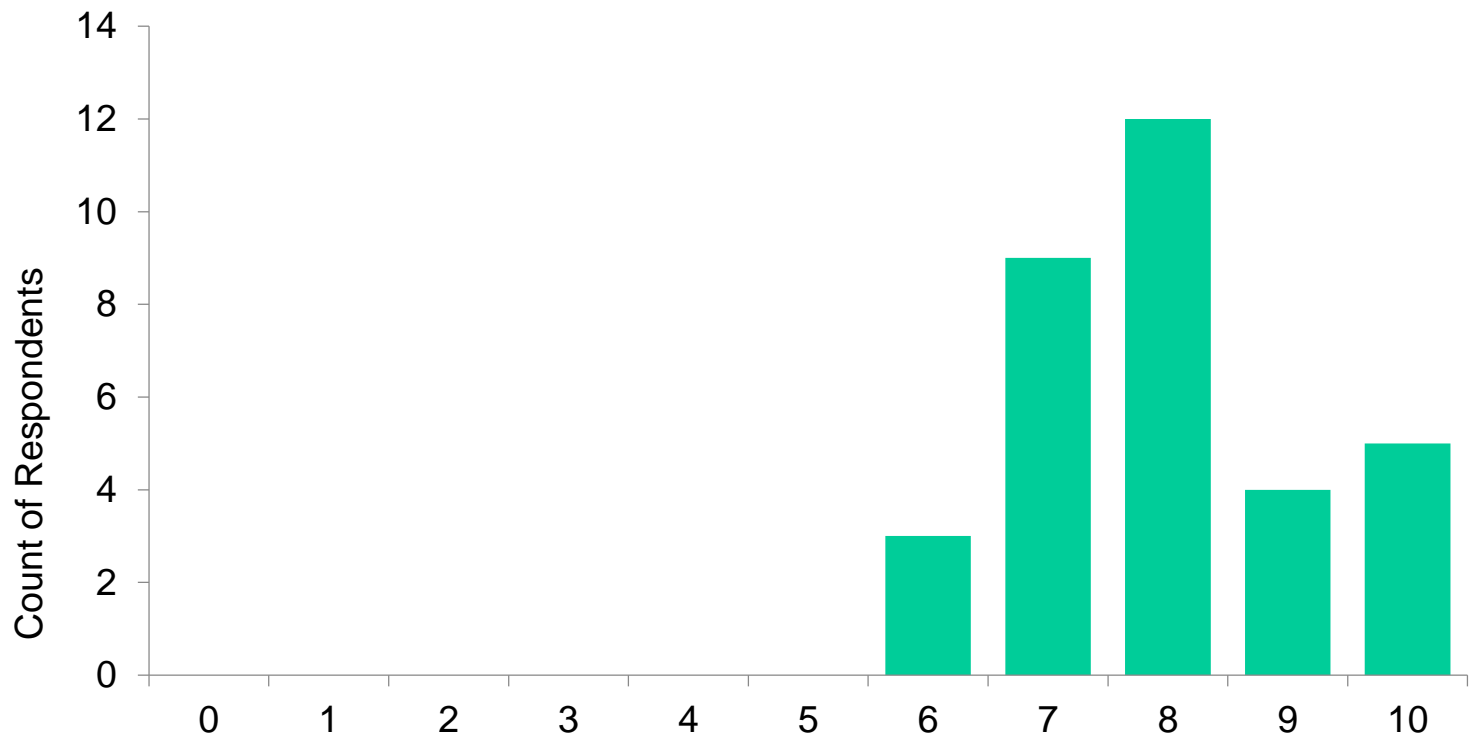
Subjects in  
development

# Program Launch Projections

	2017	2018	2019	2020	2021
Program Areas	13	19	24	30	30
Nested Courses	40-45	45-55	55-60	70-80	70-80
Headcount	920	2150	3400	4600	5700
EFTSL	310	785	1250	1715	2160

# Preliminary Evaluation

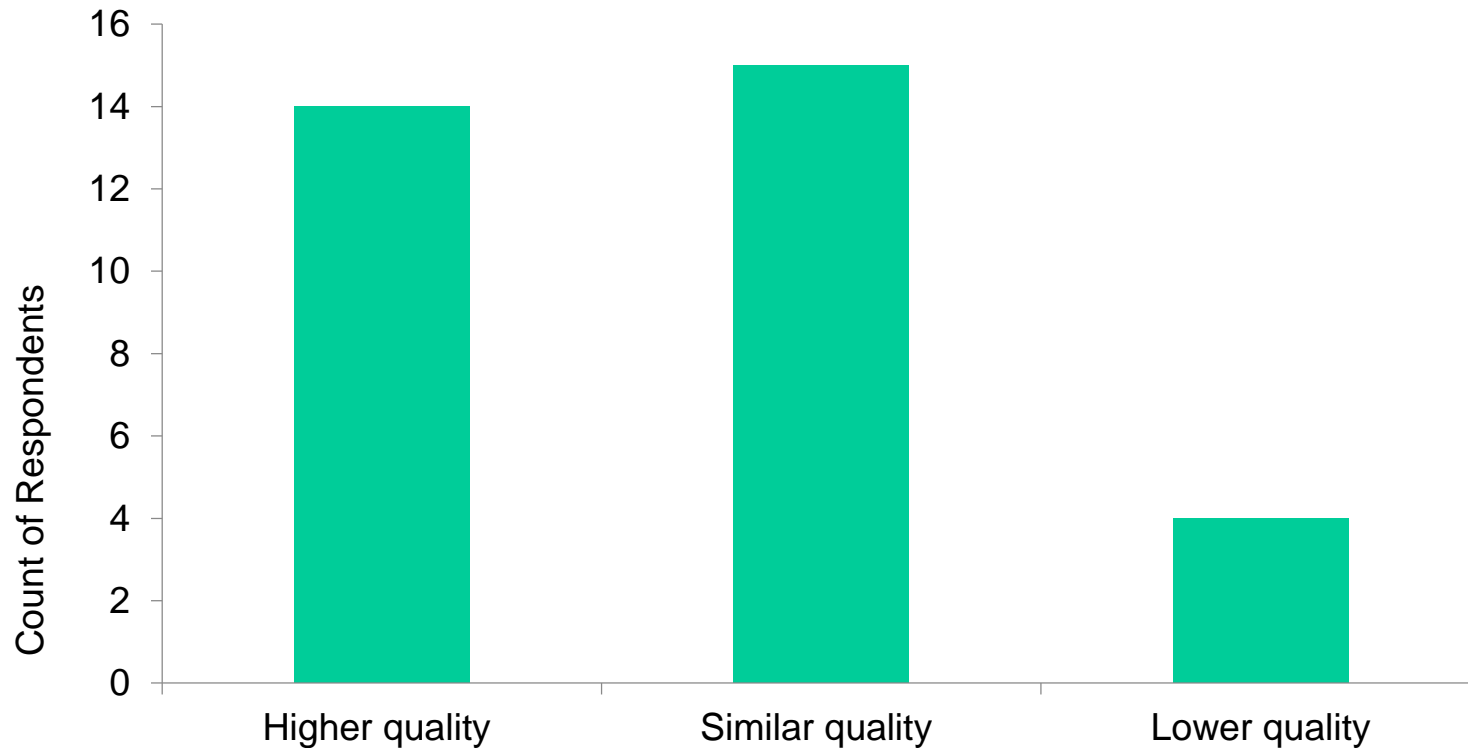
To what extent has your experience met your expectations?



n=33

# Preliminary Evaluation

How does your online study compare to your undergraduate experience?

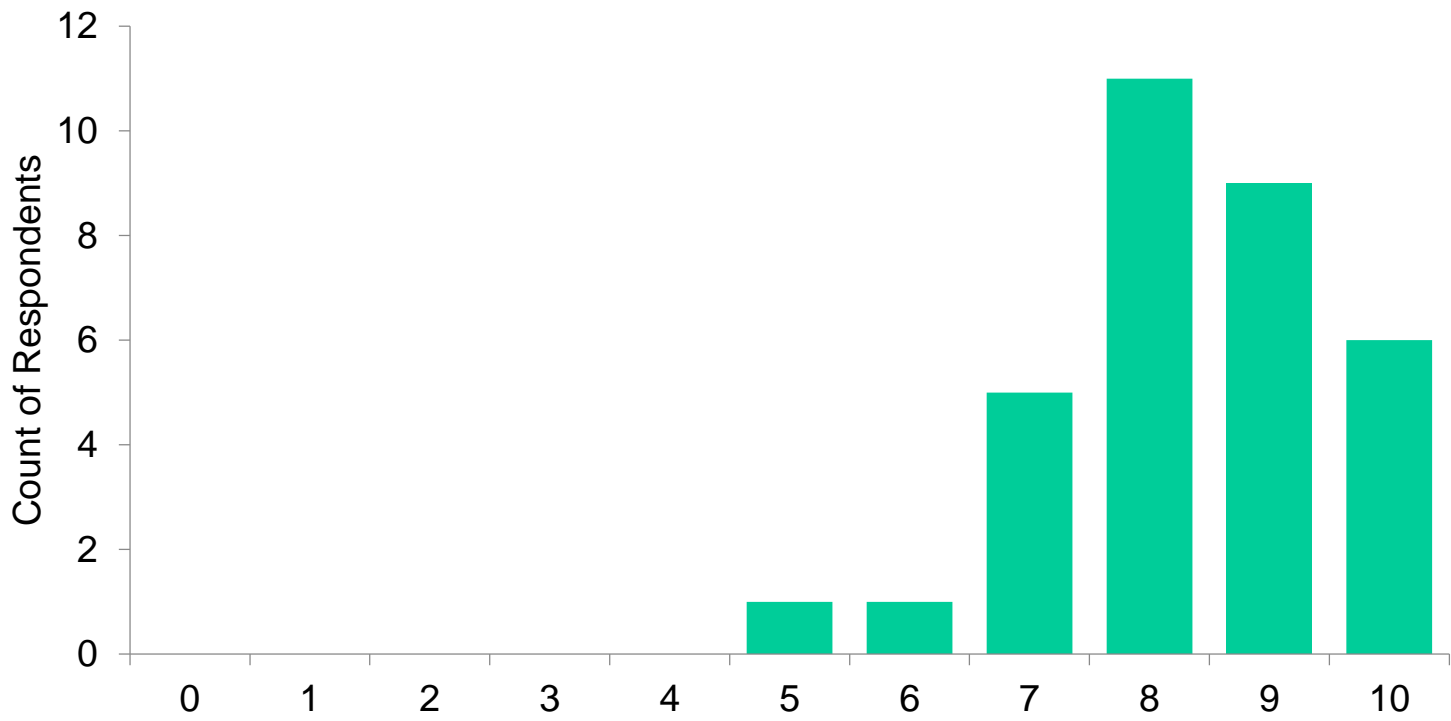


n=33



# Preliminary Evaluation

How likely are you to recommend online study at UoM to others?



n=33



# Award Winning



**UPCEA**  
Leaders in Professional, Continuing  
and Online Education

UPCEA Award for  
Strategic Innovation  
In Online Education

presented to  
**Graduate Online-Melbourne**  
University of Melbourne

2018





# Chapter 5

## Finale



# Finale



Both face-to-face and online learning are now a reality in the international higher education landscape.



The evidence is equivocal; but it does point to no differences by mode of delivery ... but nuances exist.



Deliberate design of learning *online* is essential; designing for interaction is a key ingredient.



There are clear examples of how this can be done; deliberately, at scale and with success.



# Finale



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## Ensuring Learning Online is not a Second Class University Education

Gregor Kennedy  
Pro Vice-Chancellor, Teaching and Learning  
The University of Melbourne



# Finale

- Interaction is essential for a first class University education.
- Ensuring learning online is not second class will only occur if we explicitly design with interaction in mind ....





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# Thank you

Gregor Kennedy

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