Active Learning: Promises, Preferences and Pitfalls

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Deakin University CRICOS Provider Code: 00113B

Overview

Definition
Promises: Evidence
Problem: Expectations of Graduate Performance
Preferences: Team-Based Learning
Pitfalls: Avoiding Burnout, Student Resistance

Active Learning

Anything that involves students in *doing* things and *thinking* about the things that are doing

Active learning

Experiences

Doing: simulated or authentic, role play, case studies, designing, debating

Active Learning

Experiences

Observing: direct, via stories, video, simulation, electronic

Active Learning

Reflection

- On *what* one is learning and *how* one is learning
- Alone or with others

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Active and Collaborative Active Learning Benefits

Safe learning environment where thinking is rewarded

Embeds GLOs

Acquire communication and teamwork skills

Fun and intellectually stimulating for students

Develop collegial and/or social friendships

Improve student learning – grades go up

Improve student retention

Students experience the energy during activities and whole class learning

The Problem

August 2006

Novice academic

Develop 8 speciality courses from 1 GDip for 2007 delivery

February 2008

Recognition & Awards

Learning Styles and Assessment transform students

Educational Developers

But we could do better…

and we had to…

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The student office!

Expectations of Graduates Increased in Competitive Market

Professional, Employer, University, Individual Student, Teacher, Government…

- Decisions are complex
- Information: ambiguous
- Dynamic environment
- Time constraints exist
- Conditions of uncertainty, high stakes
- Both Individual and Team responsible for decision making

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Meanwhile back at the university, our colleagues…

The Flipped Classroom

Flipped Our Student Learning Expectations

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Active Learning – *one method*

A specific educational strategy that sequences individual preparatory learning prior to class, and active team learning and immediate feedback in the class. Within this motivational framework, students hold each other accountable for contributing to each other's learning and develop teamwork, critical thinking and problem solving skills. Individual and team effort is rewarded

Team-Based Learning

Traditional Teaching

During Class	Out of Class
Content to be covered	Group work Application of knowledge Assessment of learning

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Team-Based Learning™

During Class	Out of Class
Content to be covered	Group work Application of knowledge Assessment of learning

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TBL™ Sequences Learning

1 Preparation

Learners **acquire** desired knowledge

Teacher sets the objectives and specifies material to be mastered before coming to class.

2 Readiness Assurance Process (RAP)

Learners show **readiness** to use knowledge

Individual tests promote preparation

Team tests promote effective participation

Performance differences stimulate discussion

3 Application

Learners **apply** their knowledge in novel tasks

Significant problem – complex/challenging

Same problem for all teams

Specific answer/choice required

Simultaneous reporting

4 Peer evaluation

Learners **develop** self and peer assessment skills

Learners critique each other within and between teams.

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The Institute of Teaching and Learning Promotes Innovation in Teaching

BUT HOW?

LEADERSHIP
TEAMWORK
DETERMINATION

Deakin home : Contact Deakin : Directory of staff : Site map : Intranet A-Z : Help All Go

Staff intranet
Teaching and learning

Staff home : Research : Teaching : Admin & governance : Employment : Services : Intranets : Contacts & dates A- A+

> Staff intranet > Teaching and learning > Gra

STALGS 2009 projects

The transformative use of small groups: Using team-based learning to improve learning outcomes

Project team

Judy Currey, Maxine Duke, Michael Considine, Deana Copley, Elizabeth Oldland and Ian Story (HMN&BS)

Summary

Team-based learning (TBL) is a new approach to improving student learning and student engagement which has been adopted in medical and business programs as a way of producing high quality outcomes and adding value to the student experience in terms of life-long learning skills without increased resources.

This project will convert the teaching in several postgraduate nursing programs using team-based learning principles, with the aim of evaluating its effectiveness in enhancing the work-readiness of our graduates. Success in this project will provide expertise in developing and extending TBL in other programs in the School, Faculty and University to improve graduate outcomes.

Report (78 KB)

Please note that this report is restricted to Deakin staff access only

2009

Team-Based learning: Educational innovations to improve student engagement and learning outcome

Project team

Judy Currey, HMNBS, Ian Story, Faculty of Health, Medicine, Nursing and Behavioural Sciences, Elizabeth Oldhand, School of Nursing, Julie Considine, School of Nursing, David Glanville, School of Nursing, S. McGrath-Champ, University of Sydney, H. Clarkeburn, University of Sydney

Summary

Team-Based Learning (TBL) is an educational strategy that improves student engagement and learning aims of this innovative study are to develop and test methods to deliver TBL online and form a strategic alliance wit other TBL experts to enable expansion of TBL across courses and faculties. Significantly, this study positions Deakin internationally as a leader in online TBL; professionally develops academics to deliver improved student learning outcomes; and generates data across different disciplines, levels of study, Universities, and delivery modes to support nationally competitive grant applications. Deliverables include foundations of best practice models for academic professional development and publications.

2010

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Potential Sources of Resistance

Students

Governance

Academic Colleagues

Facilities

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Potential Sources of Resistance – My thoughts

Students

I'll manage that…

Governance

Who do I know who can help me?

Academic Colleagues

They'll be supportive…

Facilities

There will be another room

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Potential Sources of Resistance – My solutions

Students

I'll manage that…

And I did

Governance

Who do I know who can help me?

Be strategic…

Academic Colleagues

They'll be supportive…

And they were

Facilities

There will be another room

No there wasn't….

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Potential Pitfalls

What if I don't know the answer to their questions?

What if they don't come to classes prepared or at all?

My students are from different cultural backgrounds and won't participate in group work.

We don't have classrooms to do this in!

Our policies don't allow this!

Student Expectations: Proactively Manage

Student Expectations: Proactively Manage

Explain *Why*
Show Data
Practise Run
Teacher forms teams
Reward Effort

Accountability+++

Better Scores on Exam Questions

Performance of Second-Year Medical Students in the Highest Academic Quartile (n = 45) Versus Those in the Lowest Academic Quartile (n = 45) on Pathology-Based Examination Questions (PBQs), Boonshoft School of Medicine, 2003–2005*

Academic quartile and group of PBQ	Score on all exams		Difference in scores†	
	Mean % (SD)	Range %	Mean % (SD)	Range %
Highest quartile				
TR	89.3 (4.0)	80.6 to 96.1	3.8 (5.4)‡	−7.7 to 13.3
TU	85.5 (3.2)	78.8 to 91.3		
Lowest quartile				
TR	77.5 (5.8)	64.0 to 86.8	7.9 (6.0)‡	−5.1 to 20.6
TU	69.6 (4.5)	59.7 to 77.5		

* TBL, team-based learning; TR, TBL-related PBQ; TU, TBL-unrelated PBQ.
† TR versus TU scores.
‡ $P = .001$ for two-way ANOVA interaction comparing the difference in mean scores on TR and TU questions for highest- versus lowest-quartile students.

Koles *et al*.; Academic Medicine 2010

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Better Scores on CBSE and Step 1

MEDICAL SCIENCE EDUCATOR
The Journal of the International Association of Medical Science Educators
Med Sci Educ 2012; 22(2): 57-64

ORIGINAL RESEARCH

21st Century Learning in Medicine: Traditional Teaching versus Team-based Learning

Robert K. Kamei[1], Sandy Cook[2], Janil Puthucheary[2] & C. Frank Starmer[1]
[1]Duke–National University of Singapore Graduate Medical School, Singapore and Duke University School of Medicine, Durham, NC, USA
[2]Duke-National University of Singapore Graduate Medical School, Singapore

Abstract
The learning strategy developed by Duke-NUS educators, called TeamLEAD, incorporates Team-Based Learning principles. Lectures, readings and e-learning on a given topic are completed before class; in-class activity focuses on assuring understanding, applying principles, and solving problems within student teams facilitated by faculty. The study compared Duke-NUS students' results on the National Board of Medical Examiners Comprehensive Basic Science Examination (CBSE) and United States Medical Licensing Examination (USMLE) Step 1 with those of US medical students. The Duke and Duke-NUS curriculum is unique in that the basic science foundation is taught in one year, typically half the time devoted at other US medical schools. At the end of their basic science instruction, the first three student cohorts from Duke-NUS performed comparably to US students on the CBSE At the end of their second year (devoted to clinical work), the Duke-NUS students scored significantly higher than the US students (66.5±7.8 vs. 61.0±11.0) ($p<.0.05$; 95% CI [65.1 to 67.9]). The first two years of Duke-NUS student also scored significantly higher than US students on the USMLE Step 1 (228.4±20.7 vs. 222±24) ($p<.028$; 95% CI [223.5 to 233.3]). In less curricular time, Duke-NUS students achieved the standards of basic science knowledge achieved by US medical students. Duke-NUS students at the end of their second (clinical) year, performed significantly higher than the US students.

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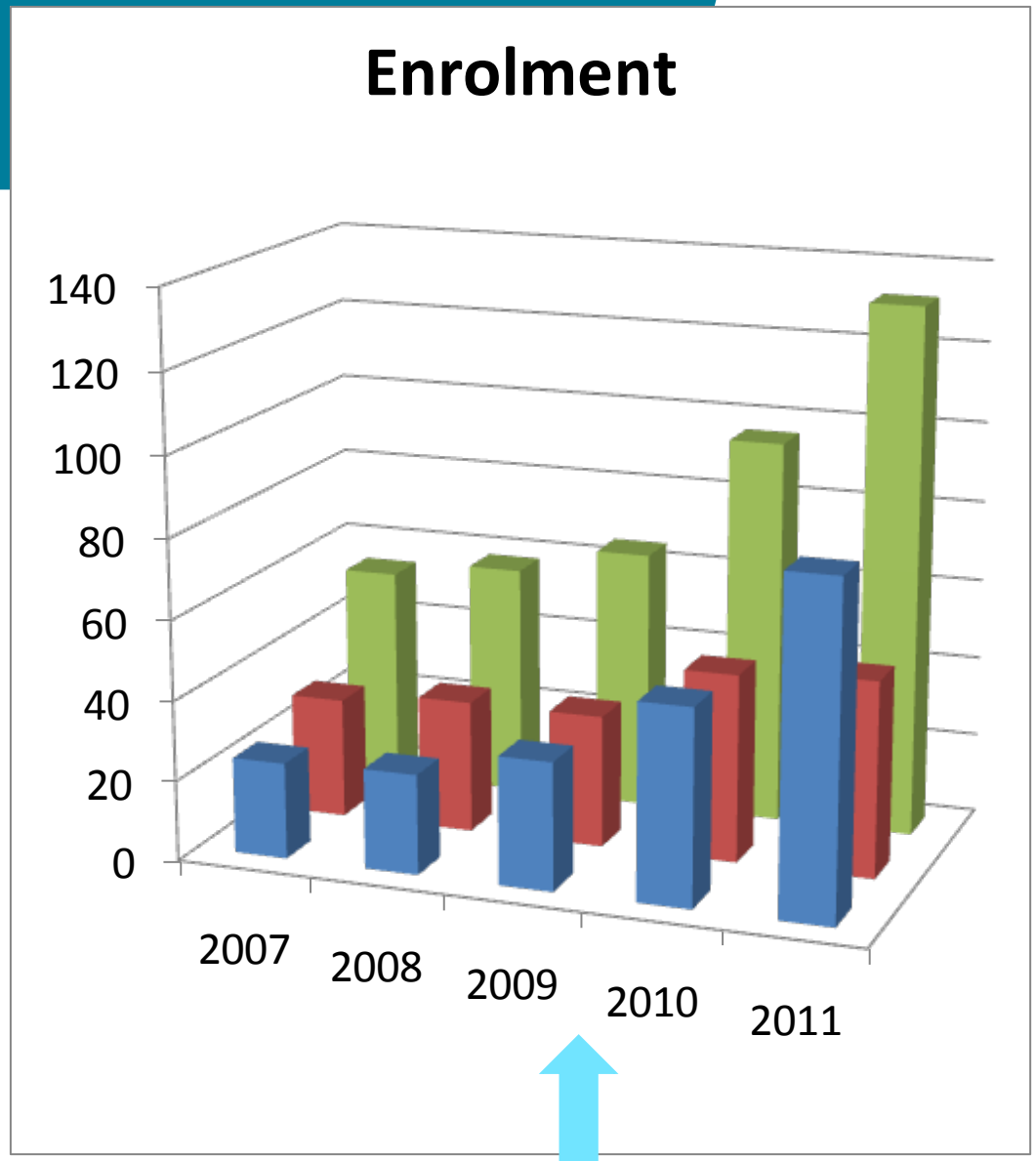
Student to Student Learning and Engagement

PG Critical Care Nursing

Growth in student enrolment 2007 -2011



Certificate

Diploma

Total

Introduction TBL™

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Research Results: Experiences

1. Learning Effectiveness

"it was a more natural way to learn"

"team members helped me gain more knowledge"

"you learn a lot when you have to put the learning into action"

"participating in team discussions maximises your understanding"

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Results: Experiences

2. Critical Thinking

"you need to justify your answer just like in clinical practice"

"TBL reinforces concepts and you have to think about them in relation to practice"

"you express your rationale…and verbalise difficult concepts"

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Results: Experiences

3. Motivation to Learn

"TBL makes you study harder because you don't want to let the team down"

"TBL provides motivation to achieve a good understanding of topic before class"

"TBL gives instant reward for hard work"

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Results: Experiences

4. Engagement

"TBL is awesome! Helps build my knowledge base in a fun way"

"everyone gets very engaged and involved … I found TBL more engaging and far better learning experiences than lectures"

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Research Program in TBL

Student Attitudes, Engagement and Experiences

Industry Educator Perceptions – Faster Acquisition of KSA

Student Learning Style

Deakin GLOs

Digital Capture of TBL

Benefits for Academics: Scholarship in Teaching and Learning

Job Satisfaction
Sustainability
Promotion

Governance

Policies are Adaptive to Active Learning

Exam Conditions – Summative Class Grades

Online Students – currently no teamwork component

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Learning Space Design

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Classrooms are not ideal…and it doesn't matter

Think – Pair – Share

Pick the best answer : Why are lectures still used so frequently in higher education?

A. Because they are a very efficient means of transmitting information to large numbers of students.

B. Because they provide a common space where students can be enthused by a lecturer exploring key concepts of their subject.

C. Because students expect them as part of university (rather than school) education and prefer listening to having to contribute themselves.

D. Because lectures are easier to prepare than more interactive resource-intensive techniques such as case study discussions, problem-based tutorials or Team-Based Learning™.

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Transition Strategy Considerations

- Curriculum: Unit and Year, Academic Capacity, Stakeholders
- Resources: Impact on Budget, Classroom Use, Organisational Support

- Backwards Design: CLOs, GLOs ILOs
- Constructive Alignment, Authentic Assessments, Formative Feedback

- Map Learning Activities: Apply Visible Learning, Immediate Feedback, Learner Accountability, Grades

- Initial & Ongoing Skill Development for Academics
- Guide Students and Support Implementation
- Evaluate Course, Student Learning and Teaching

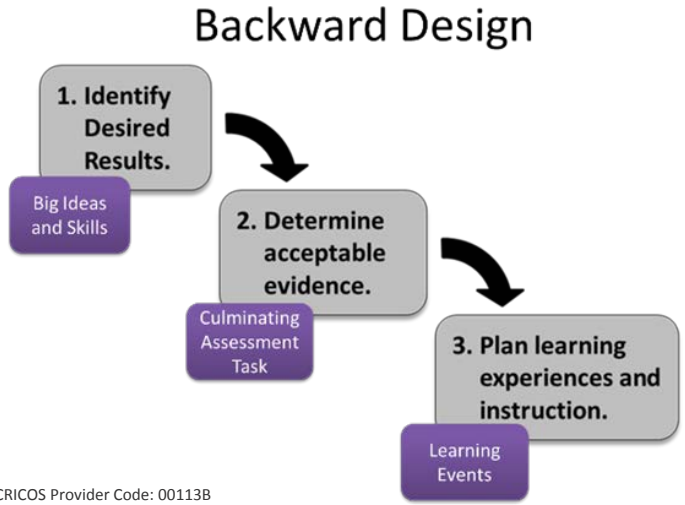
Academic Professional Development

Learning Materials: pre class

Learning Materials: in class– 4S

Conceptual thinking

Constructive Alignment



Content and/or facilitation skills

Provide inspiring and motivational feedback

Prepare to learn from/with students

Skill yourself in chosen method(s)

Prepare for a noisy classroom

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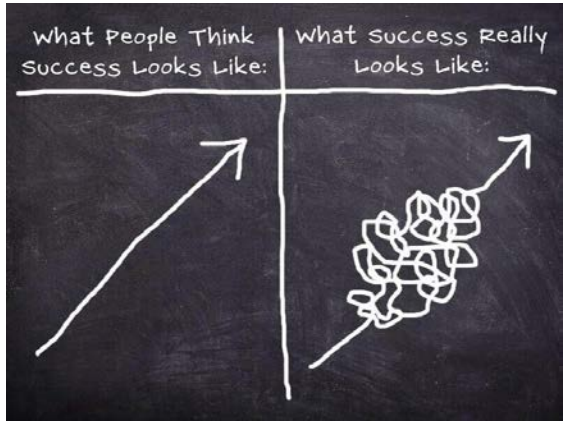
Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. Association for Supervision & Curriculum Development.

Academic Preparation For Active Learning

Willingness

- Motivators
- Remove barriers
- Add enablers



Write Learning Materials

- Content expertise
- Pre and in class
- Colleagues Educational developers

Facilitation

- Workshops
- Conference
- Peer Review
- Video Self
- Self Reflection

Nothing and no-one was perfect…especially the facilitator

Strategic Management of Pitfalls to Achieve the Promises

Students:
Manage Expectations

Governance:
University Policies
Pedagogical best practice

Academic Colleagues:
Professional Development
- **4S and Facilitation Skills**
Mentoring and Support
Leadership

Facilities:
Create new classrooms
Fun overcomes room constraints

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Learning has always been the key to student retention

set high Expectations

provide frequent and early Feedback

frequent and high quality student Involvement with peers & teachers

more time on Learning tasks with others

provide social, personal and academic Support

Tinto, V. (2003) *Promoting Student Retention Through Classroom Practice* Presented at Enhancing Student Retention: Using International Policy and Practice. An international
conference sponsored by the European Access Network and the Institute for Access Studies at Staffordshire University. Amsterdam
https://www.researchgate.net/profile/Vincent_Tinto2/publication/255589128_Promoting_Student_Retention_Through_Classroom_Practice/links/5759719008ae414b8e43bfa4.pdf Retrieved 8/6/2017.

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The Secrets to Success

Thank you
Comments Welcome

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