

KNOW THY IMPACT!

Making learning visible



* Michael Botelho - Faculty of Dentistry

* 2016

Overview

My educational areas of interest - t, CM and S

8 Mind Frames

Teaching Philosophy

E learning

teaching

Psychomotor skills

Small group
collaborative

Worksheets

Videos on Moodle

Instructional

Presentation

Worksheet
feedback

Communal
Consultation

Key Skills



Fixed Prosthodontics (Conventional Bridge & Resin-bonded Bridge)

(If you cannot view the videos properly, please click [here](#) to enable YouTube HTML5 video player in your browser.)

I would like to sincerely thank all the students who have agreeingly participated in these teaching and learning videos and allowed enriching learning experiences. For those who have been participants, if for any reason or at any time you wish to have your Communal Consultation video or Key Skills evaluation removed please contact Ms Jessica Wong to do so.

With best regards and thanks
Michael Botelho

A1. RBB Simulation Laboratory Course	Video	MCQ
1. Introduction to the RBB course (uploaded on 23 Sep 2014)		
2. Presentation and overview on RBBs		
3. Explanation of different resin bonded bridge designs		
I. Brief overview of the types of resin bonded bridges - Upper and lower stone models (uploaded on 23 Sep 2014)		
4. Tooth Preparation		
a. Principles of preparation for anterior abutment (uploaded on 23 Sep 2014)		
a. Principles of preparation for posterior abutment (uploaded on 23 Sep 2014)		
III Cementation of two FPD-RBBs (Quiz uploaded on 3 Nov 2014)		
5. Framework designs and Snapstone outlines		
I. RBB presentations of design options for missing 24 and 26 (uploaded on 12 May 2015)		
II. RBB discussion of molar Xavo prep		
III. RBB outlining framework on snapstone models		
a. Evaluation of framework extension on oversized stone incisal (uploaded on 26 Sep 2014)		
IV. RBB path of insertion 23		
A2. Worksheet feedback	Video	MCQ
1. Discussion of worksheet for Case 1 (uploaded on 12 May 2015)		

BDS IV Jaw record worksheet 2016 – Please complete page 1-2 before next session

From Dent Today, 2010 Jan;29(1):124, 126-7. Accurate bite records: improving restorative predictability. Scott J.



1) What are the different materials that have been used here in the picture?

Which of these look like poor jaw record registrations and why?

Pic

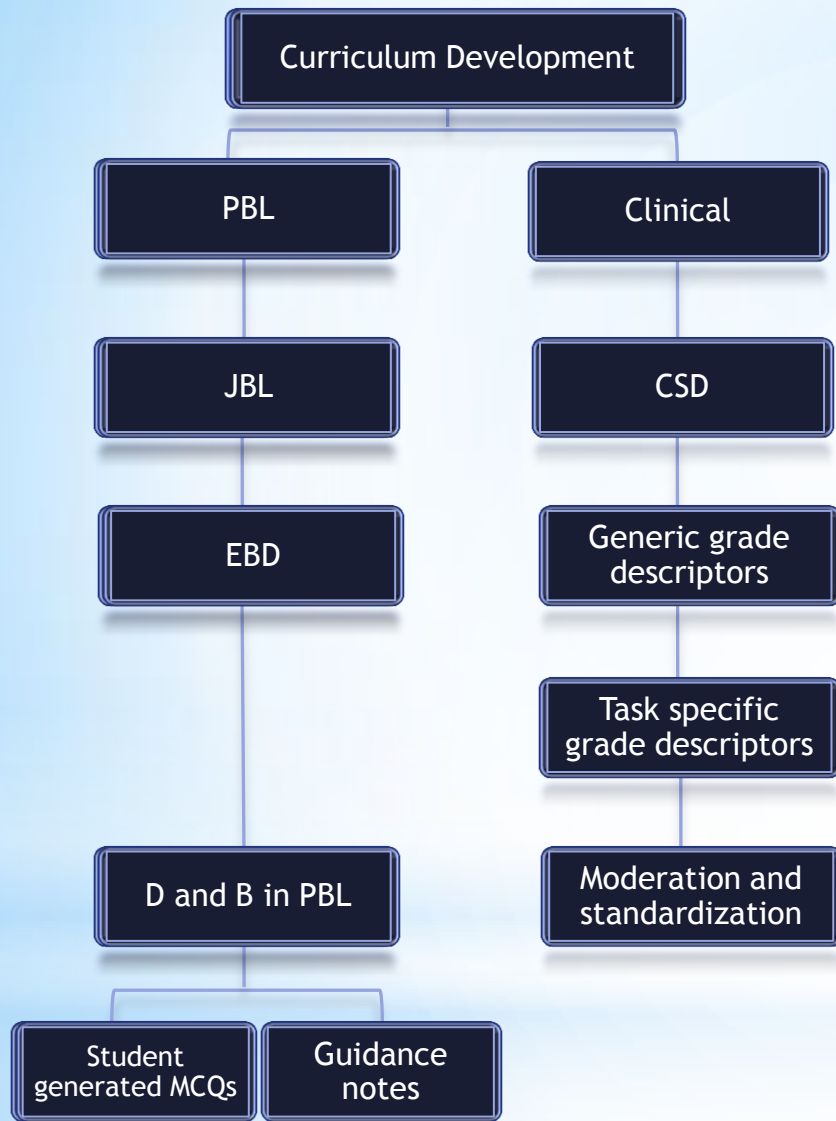


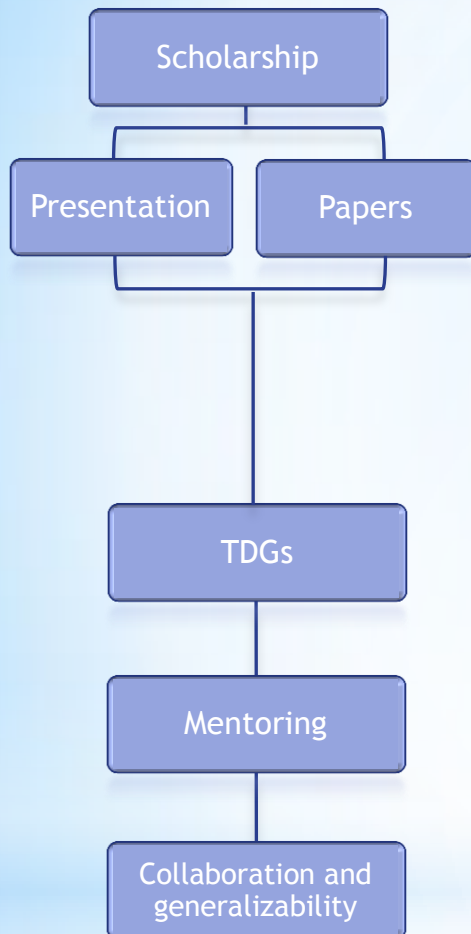
2) What do you think are the good features of this jaw record technique? And what are the poor features?




3) Is this a good/better/ bad jaw registration technique in comparison to the one above in 2?









Evaluation of peer-generated MCQs to assess and support learning in a problem-based learning programme

Botelho MG, Lam OLT, Watt RM, Leung DYP*

Faculty of Dentistry HKU and *The Nethersole School of Nursing, Chinese University of Hong Kong



Introduction: The top stressor reported by students in PBL curricula relates to knowing the depth and breadth of learning in self-directed learning.


Aims: To support students' learning by student generated MCQs and guidance notes on the depth and breadth of learning.

Hypothesis: Students will think deeply about their learning from setting MCQs. Students will test the level of their understanding from answering the MCQs. Guidance notes students will support students learning. Deep approach/Reflective thinking will engage more in the MCQ initiative.

Methods: Introductory workshop for BDS I students (n=53) on the aims and use of a fit for purpose MCQ platform - Peerwise (www.peerwise.co.uk/land.ac.nz). Each problem cycle (n=15) four groups of students (n=36) were asked to write one MCQ on one of two assigned learning issues.

Evaluation and Psychometric Questionnaires: A focus group (n=7) interview was conducted, to create a customized learning experience questionnaire (LEQ) - 30 item - 6 Open ended questions. Data from Peerwise of questions authored and questions answered on each student was extracted for the first module (4 weeks). The 2F-SPQ-RF (Biggs et al 2001) was administered as well as the Learning Experience questionnaire (LEQ).

Statistical Analysis: A mixed methods approach was adopted for the LEQ. A Pearson correlation was performed between 2F-SPQ-RF and questions authored and questions answered on Peerwise (for normality).

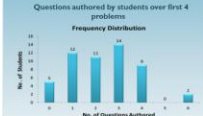


Thematic qualitative analysis

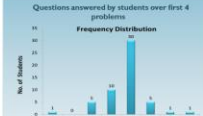
MCQs engaged students to study deeper and facilitated their learning

- "...deepen understanding and allow clarification of concepts"
- "Process knowledge, not only memorize"
- "...how to connect the ideas"
- "Increased learning awareness"
- "...know what I don't know"
- "I could check if I have studied enough on that topic"
- "to test myself if I can retain the knowledge"
- "Recognize my confusion"
- "Setting MCQs was challenging"
- "Knowing the right question to set"
- "Devising appropriate distractors"
- "Setting challenging questions"
- "The guidance notes helped..."
- "It acts like a blue print" "...as a reference"
- "Similar learning issues have similar depth and breadth"
- "It gives an idea towards how I should learn/research"
- "It didn't...It's not possible to determine the depth of the LI from that of the other"

24 questions were created
15.3 MCQs for each LI
Plan of 3.3 per student



230 questions answered
Plan of 41.6 MCQ per student



The two factor Study Process Questionnaire - Deep and Surface approaches

Deep Approach	Surface Approach
Deep Master	Surface Master
Deep Strategy	Surface Strategy

Deep approach and Questions authored
r = .334; p = .018
Deep motive and Question authored
r = .371; p = .008

Reflective thinking inventory

Habitual Action	Understanding	Reflection	Critical Reflection
Habitual action and Question answered r = -.425; p = .002	Understanding and Question authored r = .364; p = .009	Reflection and Question authored r = .331; p = .028	

Conclusion

Student generated MCQs and guidance notes supported and stimulated student learning and self-reflection in PBL.

Students with a deep approach to learning were more likely to engage in the student supported learning activity.

Overall this initiative supported students depth and breadth of learning but further enhancements are planned.

Enhancements... next term

Schedule time into PBL tutorial for facilitators to:

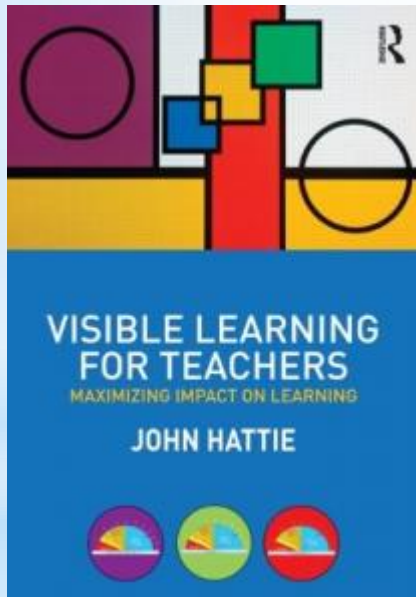
- Support student engagement in writing and answering MCQs
- Give feedback on accuracy of generated MCQs
- Discuss the quality features of question stems and distractors
- Discuss D and B of learning issues in relation to guidance notes and other LIs are planned

The use of LI guidance notes will be extended to BDS II

Thanks for the Class of 2020 for their participation and support in this project

This poster was presented at the SEAADE 2015

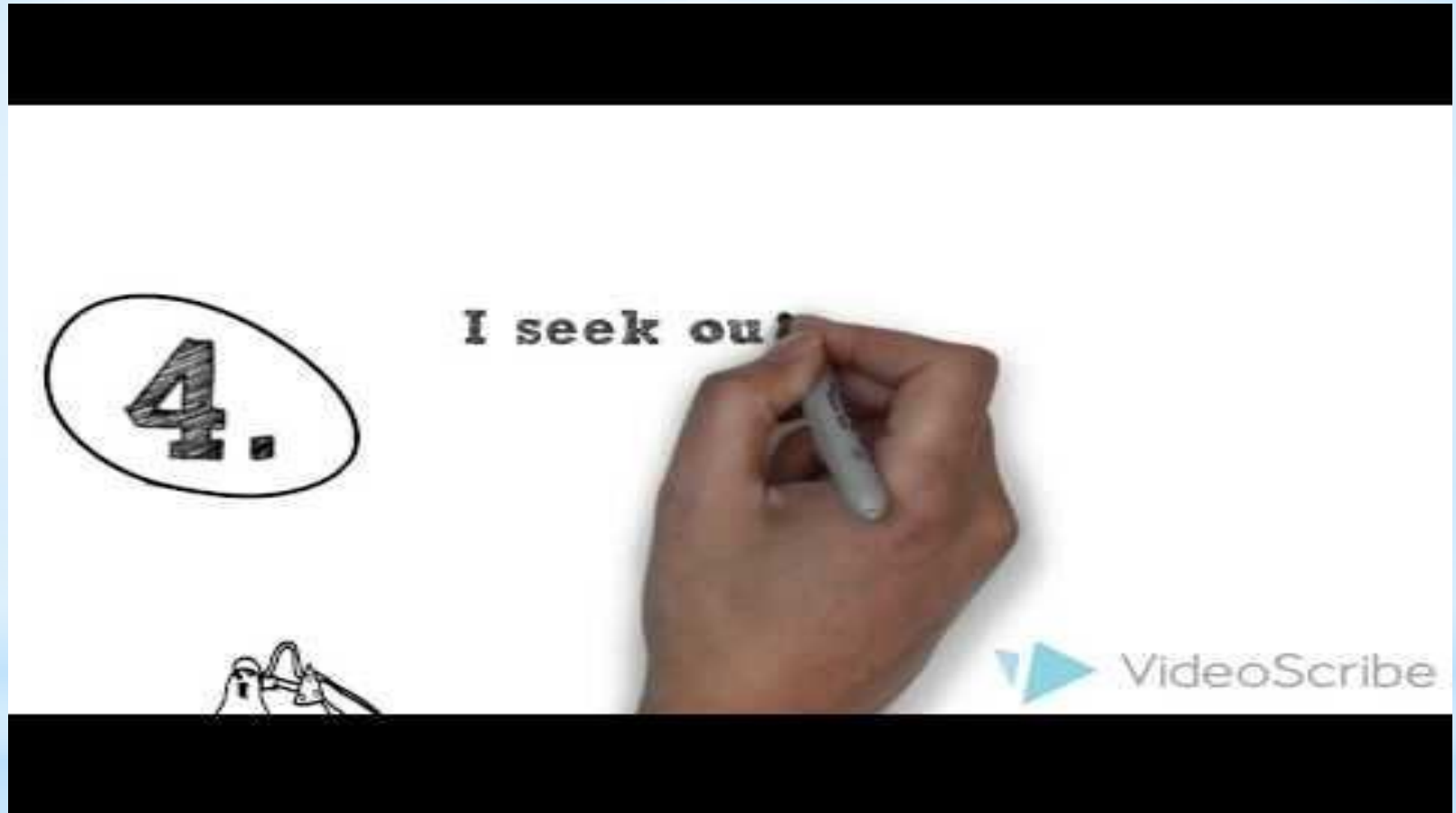
Contact e-mail: botelho@hku.hk



* John Hattie's 8 Mind frames

*“teachers seeing learning through the eyes of their
Students, and student seeing themselves as their own teachers”*

*The 8 Mindframes



*<https://www.youtube.com/watch?v=5WSTcVDwH3s>

1.

**My fundamental task is to evaluate
the effect of my teaching on my
students' learning and achievement.**



SETL? and in-house evaluation questionnaires

Self-administered questionnaires

Speak to students

Watch students

Ask Co-teacher feedback

Ask recent graduates

Review and reflect on assessments

2.

The success and failure of
my students' learning is about
what I do or don't do.
I am the change agent.

I am responsible for *architecting*
the learning experience -

*

Plan - what is the scope and depth?
what is important?

Evaluate - reflective practitioner
problematize? -

Re-plan - evolution or revolution?



* "Awareness is the greatest agent
for change"

- Eckhart Tolle

2.

The success and failure of
my students' learning is about
what I do or don't do.
I am the change agent.

In my course and “lectures”..

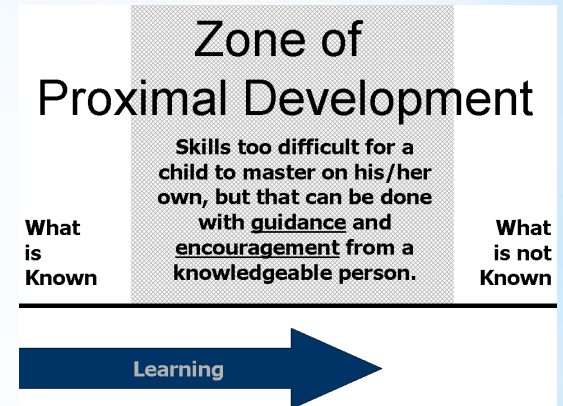
Small-group,

Collaborative/interactive,

Challenging problem/scenario driven,

Prior knowledge applied to context,

E-Learning



2.

The success and failure of
my students' learning is about
what I do or don't do.
I am the change agent.

Manage the learning environment

Communicate the objectives
Set the Tone

Structure the activity
Engage interactions

Temporary fixed prosthodontics

Q1. What are the functions of a diagnostic wax-up

Q2. What are the functions of a temporary FPD?

Problem: You tell your partner that after finishing trimming your temporary bridge it is difficult to seat and remove from the abutments.

Q3. Your smarty pants partner tells you that there are four main reasons for this....

Problem: A colleague is examining your temporary bridge and when they remove it from your **kay** tooth preparation abutments the temporary breaks!! They apologise but tell you that the temporary would have broken in the mouth during function as it was probably weak because of:

Problem: Your colleague shows you their bridge preparation for assessment. You notice that the **individual** abutments have limited taper and no undercut but that they have different paths of insertion to each other.

Q4. You try on their temporary restoration and it fits well and comes off easily. Why is this?

Q5. You tell your partner that they will have to make the final **ceramometal** bridge _____ to overcome the different paths of insertion.

2.

The success and failure of
my students' learning is about
what I do or don't do.
I am the change agent.

Please switch phones to “education mode”

Ask not to engage in use of social media
etc. during L and T time

Be in-the-moment of learning



Avoiding social media etc?




Computers & Education

Volume 62, March 2013, Pages 24–31



Laptop multitasking hinders classroom learning for both users and nearby peers

Faria Sana^a , Tina Weston^{b, c} , Nicholas J. Cepeda^{b, c}  

 [Show more](#)

doi:10.1016/j.compedu.2012.10.003 [Get rights and content](#)

Under a Creative Commons license

[Open Access](#)

multitasking on a laptop poses a significant distraction to both users and fellow students and can be detrimental to comprehension of lecture content.

3.



It's not really T and L...

Student centered, small group, peer-to-peer

Interactive, dialogic - make the understanding and learning visible

Authentic, *in context*

4.

I seek out feedback.
Assessment is about
my **impact** on
student learning.



ASK! ASK!
Ask! ASK!
ASK! ASK!

students
co-teachers
recent graduates



Examine
Faculty course evaluation,
Personal course evaluation,

5.

teach through
dialogue, not monologue.

Student to student
Student to teacher
Teacher to student

“student seeing themselves as their own teachers”

Make the understanding and learning visible

The best teachers are neophytes!



6.

I enjoy change and never
retreat into "doing my best".

IDEAS

+ ACTION

= CHANGE

What's wrong? What can be improved on? ... problematize

In-the-moment note taking

CETL seminars/workshops


TDGs

E-learning - videos, MCQs and case based learning



7.

It is my role to develop
positive relationships in the
classrooms and staffrooms.



Classroom - relations

Introductions - “Good morning” “I am Dr Michael Botelho from Oral Rehabilitation”

Scene setting - Course/lecture objectives, my expectations on behavior, thank those for being on time, do not to disturb others by multitasking

L and T - “*are we on task?*” At the end review achievements/outcomes give feedback on how they have done

Thank students for their attention



I **inform** everyone about the
language of learning.
I am **passionate** and
promote **growth**.



Co-PI junior staff for TDG applications

What about senior staff?!

Support colleagues - peer observation


Interfaculty support, collaboration and research

Opening the black box of assessment

Talk the walk of pedagogy

Student centred

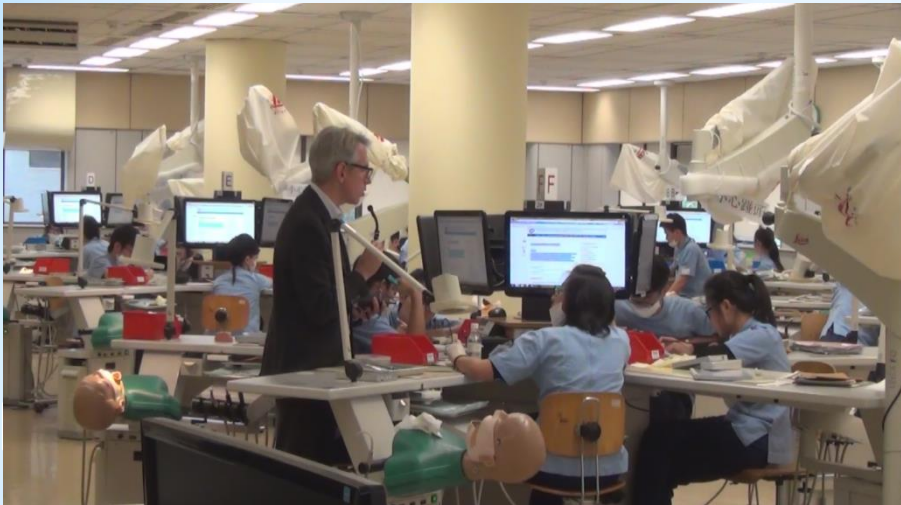
- Dialogue
not
monologue



Question /problem based

Change to meet change challenges

- **Ne(x)t Generation/technology**
- **Personalized education**



...You say you are a "control-freak" but I DO think tutors should be like that....It's just that we are just so used to tutors not really caring about our attitudes in class....

*Classroom management



*Classroom management

Most important of all, you lecture us all about professionalism!! I think that's a really important aspect that many students are missing because as I said before, most tutors won't pick on it so students get used to adopting "unprofessional" behavior in class..



professionals are
professionalism /p
professionalism in w
skill and high standa
produced with increa

as a student

*Think, ink, pair, share, feedback

Aaron 2015

Personally, I find that I was learning a lot and very actively in his FPD course. The course is designed to incorporate interactive learning with lots of Q & A opportunities such that students have plenty of chances to clarify their doubts. Inside the classroom, we had weekly worksheets that had to be first discussed among small groups of five before being clarified together with the whole class. This stimulated me to think more critically using my current knowledge and not



Instead of simply giving the answer right away, he would often raise related questions to guide the students to the right track, to enable them to reach the answers to their own questions. It may not fit students who are so used to the spoon-feeding type of learning, but indeed inspires many who are willing to learn.

* **Effortful knowledge
construction**

clarified together with the whole class. This stimulated me to think more critically using my current knowledge and not to be simply spoon-fed with answers right from the beginning. Upon the whole-class discussion, I learnt to point out my own weaknesses or misconceptions and rectify them. I believe that the teaching method employed by him greatly helps me to retain the knowledge for a significantly longer period of time.

* **Deeper thinking**



First of all, I think your "interactive" SimLab class in which you walk around the SimLab asking questions to random students really enhances our attention span and really forces us to pay attention in class.....thus it is very hard to fall asleep during your class!! ☺

Active, social, interactive

* Active
learning

E-learning - Videos and MCQs

100+ clips
120 MCQs

2015 [2011]

Rehabilitation ► Fixed Prosthodontics (Conventional Bridge & Re...

Fixed Prosthodontics (Conventional Bridge & Resin-bonded Bridge)

OSCA	Normal Speed	The speedistener version	
Exam Feedback	5/5	5/5	
A1. RBB Simulation Laboratory Course	Normal Speed	The speedistener version	MCQ
1. Introduction to Course and Manual	5/5	5/5	4/5
2. Presentation and overview on RBBs	5/5	5/5	4/5
3. Explanation of different resin bonded bridge designs	5/5	5/5	4/5
4. Tooth Preparation			
i. Tooth preparation for anterior RBBs	5/5	5/5	4/5
ii. Demonstration of tooth preparation for teeth 24 and 26	5/5	5/5	4/5
iii. Cementation of two FM3-RBBs (Quiz uploaded on 3.11.2014) Quiz	5/5	5/5	4/5
5. Framework designs and Snapstone outlines			
i. RBB presentations of design options for missing 24 and 26 Quiz (unlocked on 25.8.2014)	5/5	5/5	
ii. RBB discussion of molar Kavo prep	5/5	5/5	
iii. RBB outlining framework on snapstone models	5/5	5/5	4/5

Fixed Prosthodontics (Conventional Bridge & Resin-bonded Bridge)

548 views in Class of 2015
14% watched in 4th year
86% in 5th year
69% before competency test

Instructional
and
problematized

- Skills based
- Problem stimulated

The
Communal
Consultation

Student stimulated
clinically authentic

Key Skills

- Opening the black box of assessment
- In-the-moment summative competency test

Worksheet
debriefing

Recorded exploration of students
Worksheet feedback and
understanding

you upload videos for us to prepare for the lesson beforehand. This definitely helps students catch up with the lesson easier, and by recording and uploading how you answer some of the student's questions you help all other students to be aware of what was asked and help us all be in the same level of knowledge...

2015 [2011]

Rehabilitation ► Fixed Prosthodontics (Conventional Bridge & Re...

Fixed Prosthodontics (Conventional Bridge & Resin-bonded Bridge)

Fixed Prosthodontics (Conventional Bridge & Resin-bonded Bridge)

OSCA	Normal Speed	The speedlistener version	
Exam Feedback	100%	100%	
A1. RBB Simulation Laboratory Course	Normal Speed	The speedlistener version	MCQ
1. Introduction to Course and Manual	100%	100%	
2. Presentation and overview on RBBs	100%	100%	100%
3. Explanation of different resin bonded bridge designs	100%	100%	100%
4. Tooth Preparation			
i. Tooth preparation for anterior RBBs	100%	100%	100%
ii. Demonstration of tooth preparation for teeth 24 and 26	100%	100%	100%
iii. Cementation of two FM3-RBBs (Quiz uploaded on 3.11.2014)	100%	100%	100%
5. Framework designs and Snapstone outlines			
i. RBB presentations of design options for missing 24 and 26 (unlocked on 25.8.2014)	100%	100%	
ii. RBB discussion of molar Kavo prep	100%	100%	
iii. RBB outlining framework on snapstone models	100%	100%	100%

Fixed Prosthodontics (Conventional Bridge & Resin-bonded Bridge)

Asynchronous,
outside class learning,
preparation,
revision,
rehearsal

* Multimedia
Library

Multimedia Video Library

the Communal
Consultation -

Speedlistner version - 1.5X

*Multimedia
Library

Final thoughts

- * Supporting staff - TDGs, teaching
- * Interfaculty collaboration and research
- * Analyzing the Communal Consultation/Key Skills video
- * Making pedagogy more transparent
- * New E learning - MCQs and case based



* **Going forwards**

*Thank you!

For staying in-the-moment!

Feedback Please!

<http://odont.hku.hk/feedback.html>

botelho@hku.hk



Key Skills -

Speedlistner version - 1.5X

*Multimedia
Library

E-learning - taking the next step?

MCQ type platform to evaluate students recognition and diagnosis skills

Preload students with knowledge and assess before they are permitted to proceed to the next part of the course

Spaced repetition

Tag questions to: clinical discipline, subject content and question type. ie. Oral rehabilitation, dentures, facts/understanding