Learning Innovations in Communities of Practice

Susan Bridges
Assistant Dean (Curriculum Development)

2011 ADEA

Faculty of Dentistry
The University of Hong Kong

Tomorrow’s Dentistry……Today
IPR - Who?

A. UBC Vancouver
B. UC San Francisco, US
C. University of Saskatchewan, Canada
D. University of Birmingham
E. University of Melbourne
F. The University of Hong Kong
G. University of Monterrey, Mexico
IPR - Why?

- Global citizens
  - Building professional networks
  - Intercultural communication
- Dental education
  - Gain confidence in own school’s education
  - Become aware of different approaches to the same problems as well as the rationale behind these approaches
- Evidence-based dentistry
  - Reflect on own operative work
  - Recognize and appreciate differences in dental treatment across countries
  - Defend conclusions in an evidence-based format
- Professionalism
  - Professional introduction
  - Critique peer work in a supportive, professional manner
- E-learning
  - Prepare and upload an assignment (clinical photographs)
  - Participate in a closed BLOG
IPR - When?

2010-11: Semester 1

- September > mid-December 2010
  - Letter of introduction
  - Develop assignments
  - Centre for Applied English (workshops)

- Jan > Feb, 2011
  - BLOG exchanges
    - Minimum requirement 3 substantial postings including references
IPR - What?

- 3 steps
  1. Letter of introduction
  2. Assignment
  3. BLOG
The 2009-10 experience

I was born in Hong Kong at the age of 8. I finished high school in Alberta, and then graduated in Dental school.

My hobbies include working out at the gym, swimming, basketball, and occasionally tennis. Unfortunately, most of the swimming pools here in Hong Kong are outdoors, and it gets too cold to swim during the winter season. Moving back to Hong Kong was quite a big change for me, since I haven’t lived there since I was 8. Currently, my free time has been devoted mainly to a part-time job of tutoring high school kids here.

In regards to the project, I will be recording and blogging on my progress with a Class II cavity.
The 2009-10 experience

Class II MO preparation & restoration on 36

Submitted by Nicholas Yik Tao on Fri, 01/29/2010 - 22:34 Operative

Please find attached my class ii preparation and restoration. Thanks!

Attachment

Submitted by Nicholas Yik Tao on Thu, 03/11/2010 - 02:13.

Hi Nick-
I just viewed your presentation on Class ii amalgam preparation for tooth #19, or 36. I liked the diagrams to demonstrate what you know along with the actual procedure you were doing. I also liked the extensive critique of how you did on your procedure.

How you do amalgams was very similar to how we do amalgams in fundamental ways. But little things here and there are different in the US. For example—the steps of amalgam preparation/condensation are as follows:

1) Begin with a box form in the interproximal area and establish converging walls—approx. a depth of 3mm (break the contact with the opposing tooth, but to always let caries dictate the outline form). Creation of the interproximal mesial box form is done without a matrix bar because this really reduces direct vision—but sometimes if the contact is really tight a pre-operative wooden/plastic wedge is placed. e use a 34D diamond bur followed by a 330D to smooth. Lingual extension is often larger than facial. Retention grooves are placed in facial and lingual walls in the box form.

2) Occlusal extension to a same depth of 1.5-2mm (or as caries dictates)—creating dovetail and other retentive features to hold the amalgam. Smooth converging walls and a flat floor required. This is done by a 34D at first then a 330D to smooth.

3) Pulpolingtival step edge is beveled in order for smooth placement of the amalgam.

4) Matrix band and amalgam placed first on the box form then extended onto occlusal. I found that we are taught to use an explorer to establish smooth convexity at the mesial marginal ridge. I like to use a hollowback to amalgam carve only along with a deoicidiscoid carver. Polishing is done in the same manner as you guys but not with plastic bars—don’t know what those are.

Again—GREAT job—really impressive
Workshop Learning Objective 5

Analyze the characteristics of community of practice through highlighting the strategies employed to foster community building
Communities of Practice

- Key theorists: Jean Lave & Etienne Wenger

- Core elements:
  - Domain + Community + Practice = CoP

- For educators, the question is how to develop these elements in parallel to cultivate a community of practice.
Conceptualizing the IPR project as a “Community of Practice”

The domain is the definition of the area of shared inquiry and of the key issues

<table>
<thead>
<tr>
<th>Features of a DOMAIN</th>
<th>IPR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identity</strong> defined by shared domain of interest</td>
<td>Operative Dentistry: Simulated clinical skill development</td>
</tr>
<tr>
<td><strong>Membership</strong> implies commitment</td>
<td>Faculty: Universitas21 Dentistry group members/ grant Students: Goal to meet professional qualifications</td>
</tr>
<tr>
<td><strong>Shared competence</strong> as a distinguishing feature</td>
<td>Operative skills; academic dentistry; global citizenship</td>
</tr>
<tr>
<td><strong>Value</strong> collective competence and learn from each other</td>
<td>Faculty network: Sharing practice Student network: Critical, supportive peer review</td>
</tr>
</tbody>
</table>
Conceptualizing the IPR project as a “Community of Practice”

Community is the relationships among the members and the sense of belonging.

<table>
<thead>
<tr>
<th>Features of a COMMUNITY</th>
<th>IPR</th>
</tr>
</thead>
</table>
| Members engage in joint activities, help each other and share | Faculty: Project development/ website design & ongoing review  
Students: BLOG - share ideas and resources                      |
| Build relationships that enable them to learn from each other | Faculty: Annual f2f & webconference meetings  
Students: Profile and letter of introduction (professionalism)  
BLOG – local contexts and ‘ways of doing’                        |
Conceptualizing the IPR project as a “Community of Practice”

Practice is the body of knowledge, methods and stories, cases, tools and documents.

<table>
<thead>
<tr>
<th>Features of a PRACTICE</th>
<th>IPR</th>
</tr>
</thead>
</table>
| Members are practitioners | Faculty: dentists; curriculum developers  
Students: apprentices in simulated techniques |
| Shared repertoire of resources | Faculty: Course philosophy, structure, learning outcomes,  
Students: Operative techniques; personal experiences; references |
| Sustained interaction | Faculty: 5 years +  
Students: Annual cohorts with 6 weeks of intensive blogging. |
| Development of a shared practice | Faculty: Evaluation, review, ongoing development; funding  
Student: professionalism |
Cultivating communities of practice: a quick start-up guide by Etienne Wenger

What are communities of practice?
Communities of practice are groups of people who share a passion for something that they know how to do and who interact regularly to learn how to do it better.

What elements to develop?
- Domain: the definition of the area of shared inquiry and of the key issues
- Community: the relationships among members and the sense of belonging
- Practice: the body of knowledge, methods, stories, cases, tools, documents

set strategic context
A strategic context lets communities find a legitimate place in the organization
- Articulate a strategic value proposition
- Identify critical business problems
- Articulate need to leverage knowledge

educate
Communities of practice are a familiar experience, but people need to understand how they fit in their work.
- Conduct workshops to educate management and potential members about the approach
- Help people appreciate how communities of practice are inherently self-defined and self-managed
- Establish a language to legitimize communities and establish their place in the organization

support
Communities of practice can use some light-handed guidance and technology infrastructure
- Provide some process support, coaching, and logistic assistance
- Identify needs and define adequate infrastructure without undue emphasis on fancy technology

get going
Starting to cultivate communities of practice as early as possible creates early examples that allow people to learn by doing.
- Have a few pilot communities going as soon as possible
- Find communities to start with by identifying areas where there is potential and readiness
- Interview some prospective members to understand issues, start discussing a community, and identify potential leaders
- Gather a core group to prepare and initiate a launch process
- Help members organize an initial series of value-adding activities
- Encourage them to take increasing responsibility for stewarding their knowledge

Why focus on communities of practice?
short-term value
- help with challenges
- access to expertise
- confidence
- fun with colleagues
- meaningful work

long-term value
- personal development
- reputation
- professional identity
- network
- marketability

support
- problem solving
- time saving
- knowledge sharing
- synergies across units
- reuse of resources

What are some critical success factors?
Communities
- Domain that energizes a core group
- Skillful and reputable coordinator
- Involvement of experts
- Address details of practice
- Right rhythm and mix of activities

Organization
- Strategic relevance of domain
- Visible management sponsorship, but without micro-management
- Dance of formal and informal structures
- Adequate resources
- Consistent attitude
The research agenda
Goals of e-learning research

- Producing theories that explain phenomena with e-learning;
- Producing tools or software for e-learning;
- Producing activities, materials, curricula;
- Producing design models that permit construction of improved e-learning interventions.

(Hoadley, 2009, pp139-140)
HKU Background

- Currently 3rd Year of IPR

1. 2008/2009
   - BDS I (BLOG Observers) > Positive feedback

2. 2009/2010 (Semester 1)
   - BDS II (Full participation, n = 54)
   - Compulsory & assessed (pass/fail)
   - BLOGs monitored & reminder emails sent: min. 3 substantial entries > below 3 then make-up exam: peer review

- Evaluation:
  - Survey
  - Focus group
  - Clinical assessment results
  - BLOG usage reports
IPR BLOG participation, who and when?

Susan BRIDGES
CH CHU
Jeffrey CHANG
Tracking online participation

- Announcement of BLOG start
- Student reports on achievement of target postings
2009-10 Cohort: Ages

- **Young students (n=37)**
  - EAS (13)
  - JUPAS (20)
  - Non-JUPAS (local international school) (1)
  - Non-JUPAS – EAS (overseas school) (1)
  - Non-JUPAS (overseas school) (2)

- **Mature students (n=13)**
  - Non-JUPAS (local university) (2)
  - Non-JUPAS (overseas university) (11)
Cohort: International/ local education

- **Local students** (n=35)
  - EAS (13)
  - JUPAS (20)
  - Non-JUPAS (local university) (2)

- **International students** (n=15)
  - Non-JUPAS (local international school) (1)
  - Non-JUPAS – EAS (overseas school) (1)
  - Non-JUPAS (overseas school) (2)
  - Non-JUPAS (overseas university) (11)
Influence of age on participation

Jan

Mature students N=13

March

Young students N=37

32% 69%

96% 100%
Influence of experience on participation

- Jan: 31% Local students, 67% International students
- March: 96% Local students, 100% International students

Sample sizes: N=35 for Local students, N=15 for International students.
2009-10 Evaluation: Data Sources

- Likert-scale questionnaire
  - Original items (UBC)
  - Replicated items from institutional survey (HKUSLEQ)

- One-hour focus group interview - BDS II (2009/2010)
Evaluation: Analysis

Thematic analysis of interview data based on the HKUSLEQ domains

<table>
<thead>
<tr>
<th>Achievement of Educational outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit of Academic/Professional Excellence</td>
</tr>
<tr>
<td>Critical Intellectual Inquiry</td>
</tr>
<tr>
<td>Lifelong Learning</td>
</tr>
<tr>
<td>Critical Self-reflection</td>
</tr>
<tr>
<td>Greater Understanding of Others</td>
</tr>
<tr>
<td>Intercultural Understanding</td>
</tr>
<tr>
<td>Global Citizenship</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Learning Communities</td>
</tr>
</tbody>
</table>
Focus Group Interview (13/4/2010)

**Achievement of Educational outcomes**

<table>
<thead>
<tr>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit of Academic/Professional Excellence</td>
</tr>
<tr>
<td>Critical Intellectual Inquiry</td>
</tr>
<tr>
<td>Lifelong Learning</td>
</tr>
<tr>
<td>Critical Self-reflection</td>
</tr>
<tr>
<td>Greater Understanding of Others</td>
</tr>
<tr>
<td>Intercultural Understanding</td>
</tr>
<tr>
<td>Global Citizenship</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Learning Communities</td>
</tr>
</tbody>
</table>

‘Different types of questions were being raised, mainly they were conceptual rather than technical questions’

‘I used it as a proof to back up the design of a treatment’

‘I used it as a form of reference for the assignments’

‘We would go back to the forum to justify our knowledge from time to time’
# Focus Group Interview

- ‘Feeling on track and confident in my own dental education’
- ‘We should do our own work so we can improve our own hand skills and get critics from others’

<table>
<thead>
<tr>
<th>Achievement of Educational outcomes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit of Academic/Professional Excellence</td>
<td></td>
</tr>
<tr>
<td>Critical Intellectual Inquiry</td>
<td></td>
</tr>
<tr>
<td>Lifelong Learning</td>
<td></td>
</tr>
<tr>
<td>Critical Self-reflection</td>
<td></td>
</tr>
<tr>
<td>Greater Understanding of Others</td>
<td></td>
</tr>
<tr>
<td>Intercultural Understanding</td>
<td></td>
</tr>
<tr>
<td>Global Citizenship</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>Collaboration</td>
<td></td>
</tr>
<tr>
<td>Learning Communities</td>
<td></td>
</tr>
</tbody>
</table>
**Focus Group Interview**

<table>
<thead>
<tr>
<th>Achievement of Educational outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit of Academic/Professional Excellence</td>
</tr>
<tr>
<td>Critical Intellectual Inquiry</td>
</tr>
<tr>
<td>Lifelong Learning</td>
</tr>
<tr>
<td>Critical Self-reflection</td>
</tr>
<tr>
<td>Greater Understanding of Others</td>
</tr>
<tr>
<td>Intercultural Understanding</td>
</tr>
<tr>
<td>Global Citizenship</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Learning Communities</td>
</tr>
</tbody>
</table>

- ‘Formal (BLOG communication) at first, then becoming more informal as it proceeded, but still related to the project’
- ‘Most of other groups’ discussion were in rather formal style’
- ‘Stayed formal all the time’
- ‘Informal beginning helped formal discussion later on’
# Focus Group Interview

## Achievement of Educational outcomes

<table>
<thead>
<tr>
<th>Pursuit of Academic/Professional Excellence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Intellectual Inquiry</td>
</tr>
<tr>
<td>Lifelong Learning</td>
</tr>
<tr>
<td>Critical Self-reflection</td>
</tr>
<tr>
<td>Greater Understanding of Others</td>
</tr>
<tr>
<td>Intercultural Understanding</td>
</tr>
<tr>
<td>Global Citizenship</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Learning Communities</td>
</tr>
</tbody>
</table>

*‘The focus by UBC on composite restoration was helpful’*

*‘UBC shared their journal articles with us’*
### Focus Group Interview

- It’s useful because I can get more views from the group.
- I was convinced by other peer students that polishing is not always necessary, depending on the situation.
- ‘Only two members (HKU & UCFS) from the group had ever posted something’
- The members of the group were very supportive to each other.
- ‘We had pretty quick responses and lots of questions & comments’

---

**Achievement of Educational outcomes**

<table>
<thead>
<tr>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit of Academic/Professional Excellence</td>
</tr>
<tr>
<td>Critical Intellectual Inquiry</td>
</tr>
<tr>
<td>Lifelong Learning</td>
</tr>
<tr>
<td>Critical Self-reflection</td>
</tr>
<tr>
<td>Greater Understanding of Others</td>
</tr>
<tr>
<td>Intercultural Understanding</td>
</tr>
<tr>
<td>Global Citizenship</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Learning Communities</td>
</tr>
</tbody>
</table>
Forward planning

- Repeat – 100% participation
- HKU Teaching Development Grant awarded (2010-11) (Bridges, Chu & Chang) (approx HKD120,000)
  - Teaching sessions
  - Assignment & BLOG writing workshops
  - RA – evaluation
- ↑ flexibility for assignment - 3 procedures per clinical group > learn from peers
- Clinical photography
Thank you!

HKU Faculty of Dentistry
34 Hospital Road, Hong Kong, China

http://facdent.hku.hk

Tomorrow’s Dentistry......Today