Scholarship of Teaching & Learning (SoTL) in Medical Education: Case Studies

Dong Chaoyan, Chong Yap Seng, Lee Su Mei, Matthew Gwee, Yeo Su Ping, Dujeepa D. Samarasekera

Centre For Medical Education (CenMED)
Yong Loo Lin School of Medicine
National University Health System

7th International Conference
Teaching and Learning in Higher Education
TLHE 2014, Singapore
Background

Understanding and Managing the Complexity of Healthcare

William B. Rouse and Nicoleta Serban

Complexity of healthcare system
<table>
<thead>
<tr>
<th>Good citizenship</th>
<th>Wow! Learning experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) the majority of patients will request for a YLL student (nursing or medical) to be on the healthcare team taking care of them</td>
<td>4) majority of teaching sessions will be case-based and interactive, with greater emphasis on inter-professional education</td>
</tr>
<tr>
<td>2) there will be at least five student-led, long-term sustainable programs that make a significant difference to healthcare outcomes in local or international communities</td>
<td>5) the Centre for Healthcare simulation will be a leader in virtual reality training</td>
</tr>
<tr>
<td></td>
<td>6) more than 90% of students will rate overall learning experience either good or excellent for GEQ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spirit of inquiry and innovation</th>
<th>Thought leader in medical education</th>
</tr>
</thead>
<tbody>
<tr>
<td>3) every student would have presented a poster or paper at a conference before they graduate (spirit of inquiry)</td>
<td>7) scholarship in medical education among top 10 in the world</td>
</tr>
</tbody>
</table>
“There is no such a thing as curriculum development, but only faculty development.”

Prof. Ronald Harden
The 6th Asia Pacific Medical Education Conference (APMEC)
Singapore, 2009
CENTRE FOR MEDICAL EDUCATION (CenMED)

Next Phase of MEU - w.e.f 1st November 2014

Promotes professionalism & excellence in medical Education

Global Outlook – Locally Connected

Provides Leadership & Expertise to stakeholders, nationally & internationally

Partner Innovation & Support Scholarship in MHPE
12th APMEC & 3rd ICFDHP
Asia Pacific Medical Education Conference
& International Conference on Faculty Development in the Health Professions

Enhancing Faculty Development at the Workplace: From Theory to Practice
Trends · Issues · Priorities · Strategies

4th-8th February 2015, Singapore
Research Study

- **Aim:** To investigate impact of CenMED (formerly MEU) faculty development initiatives on teaching and learning in health professional education

- **Methods:**
  - A validated survey to collect participants’ feedback on their teaching practice before & after they have attended CenMED programs
  - 4 case studies to collect in-depth information on impact of CenMED programs on four participants’ teaching
  - 4 focus group discussions with students from each case study faculty
Case Study 1: Physiotherapy Teacher

Prior to ...

- Planning and developing teaching materials for cardiopulmonary physiotherapy
- Didactic lectures: 80-90 students/session, 1-2 hours/lecture
  - Challenge: Trained as a clinician. Used to give small group interactive clinical teaching. Not comfortable to speak in public. How to get students attention in 1-2 hours during lecture? Posed questions during lectures, but very few students would answer the questions.
- Lab: 20-24 students/group, 4 groups, 2 hours/session, 6 lab sessions per semester
  - Psychomotor skills, case discussions
- Assessment was conducted in unstructured manner
Workshops Attended

- Curriculum Design, Evaluation and Continuous Quality Improvement
- Competency Based Medical / Health Professional Education: Skills / Workplace Based Assessment
- Competency Based Medical/Health Professional Education: Mini-CEX
- Scholarship of Teaching and Learning
- Certificate in Teaching & Learning (offered by NYP)
Changes in Teaching Practice

- Assurance that his teaching and assessment methods are appropriate
- Asked students for feedback regarding lectures, which helped him to improve speaking in public
- Classroom observation and feedback by staff from NYP Centre for Teaching & Development
- Self review of the videotaped lecture sessions and self-reflection
- Improved skills in lecturing including speech and body languages
- Pose review questions/quiz during lectures to get students attention
- Use multimedia during lectures such as YouTube videos to break down the monotones
- Lab sessions
  - Broadcast demonstration of the skills
  - Peer evaluation before instructor’s competency assessment
  - Open schedule for instructor assessment
  - Students get second chance if they fail the 1st test
Outcome from Students’ Perspectives

- Students are given opportunities to schedule assessment with instructor only when they are ready
- Students experience reduced stress during the high-stake exam
- Students demonstrate competency in clinical postings based on clinical supervisors’ feedback
Case Study 2: Anatomy Teacher

Prior to ...

- Teaching methods mostly didactic (less interactive)
Workshops Attended

- Teaching For Effective Learning: Large Group Teaching
- Teaching for Effective Learning: Small Group Teaching
- Competency Based Medical/Health Professional Education: Written Assessment
Changes in Teaching Practice

- Developed question-based tutorials ranging from specific to general to stimulate students’ thinking
- Implemented pre- & post-tests during tutorials to assess students’ progress, identify gaps, and clarify misconceptions
- Incorporated more clinical elements into the tutorials to enhance clinical relevance
- Achieved better learning outcomes
Outcomes from Students’ Perspectives

- Active student engagement in teaching-learning sessions
- Tutorials filled knowledge gaps between lectures and clinical practice
- Improved attendance at tutorials
Case Study 3: Respiratory Medicine Teacher

Prior to ...

- Small group bedside teaching
- Unclear whether his teaching was aligned with clinical posting outcomes
Workshops Attended

- Teaching for Effective Learning: E-Learning
- Providing Effective Feedback to Enhance Learning
- Competency Based Medical / Health Professional Education: Skills / Workplace Based Assessment
Changes in Teaching Practice

- Revised teaching methods
  - Year 3s: More hands-on experience
  - Year 5s: Focus on lectures to help students prepare for exit exams
- Identified more relevant Mini-CEX cases for student
- Provided effective feedback to improve student learning
Students’ Responses
Case Study 4: Ophthalmology Teacher

Prior to ...

- No structured methodology on teaching
- Time constraint: A 2-week long posting to cover Ophthalmology curriculum
Workshops Attended

- Competency Based Medical/Health Professional Education: Mini-CEX
- Curriculum Design, Evaluation and Continuous Quality Improvement
- Scholarship of Teaching & Learning
Changes in Teaching

- Adopted various teaching methods such as simulated patient and micro-CEX
- Developed online modules - Simulated Pathological Eye Case Scenarios (SPECS)
- Served as simulated patient for students to practice history-taking
- Adopted Pendelton’s model & trained the department in providing effective feedback
Students’ Responses

- Micro-CEX as assessment tool is less subjective and more targeted, and great for students to learn clinical skills
- Online modules covered a wide spectrum of pictures and clinical scenarios, which helped students prepare for exams
- Tutor served as the simulated patient for students to practice, which helped them to see a real patient in clinical setting
- “What he managed to do was to strike a good balance between preparing us in the skills we need to be good doctors as well as the skills that we need for our exams”
- Encouraging and friendly teacher, taking time to give students targeted feedback
Preliminary Summary

- **Acquired new enabling competencies**
  - Teaching-learning: interactivity, online learning modules, simulations, small group teaching, content relevance
  - Assessment approaches
  - Feedback

- **Faculty development workshops have been instrumental in helping our medical teachers progress from being a novice in teaching to a skillful educator.**
Challenges & Limitations

- Data analysis – ongoing
- Threats to validity and reliability of case studies
- Difficulty in recruiting students for focus groups
Interview Questions

1. What major challenges did you have in your teaching prior to attending the MEU programs?
2. What made you attend the MEU programs?
3. What other similar programs did you attend before?
4. Which MEU programs have you attended?
5. What changes have you made in your teaching practice after attending the MEU programs?
6. What changes have you observed in students’ preparedness in your teaching after attending the MEU programs?
7. What changes have you observed in students’ participation in your teaching after attending the MEU?
8. What changes have you observed in your students’ learning after attending the MEU programs?
9. Have the MEU programs helped you in any other ways? Please explain.
10. Identify areas of our programs that need improvement.
11. In next 5 years, anything new you would like to see MEU offers?
Focus Group Discussion

1. What do you think about the readings that the instructor assigned for you to complete before the lectures?
2. What do you think about the instructor’s teaching activities, e.g., group discussion?
3. What do you think about the assignments?
4. What do you think about your performance during the semester?
5. What do you think about your engagement in the class?
6. Overall how satisfied are you with the instructor’s teaching?
We are grateful to all the participants for the case studies.