

Enhancing Learning and Assessment through Peer Teaching

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(With thanks to our peer teachers)

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Outline

- Introduction
- Literature on peer teaching
- Three examples of peer teaching
- Peer teachers' perspective
- Sharing experiences
- Conclusion

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Examples from Health Sciences

- Rotating responsibility among dental students for dissection and explanation in anatomy lab¹
- Peer facilitation of PBL tutorials by medical students^{2,3,4}
- Tutoring by upper level medical students for difficult subjects⁵ and clinical skills exams⁶
- 3rd year nursing students instructing 1st years on drug administration in clinical skills lab⁷
- Development of an elective course in nutrition by a pharmacy student with previous experience as a dietitian⁸
- Elective course in teaching skills for medical students⁹

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Reasons for Using Peer Teachers^{10,11,12}

- Promotion of social contact between students
- Increased active involvement in learning
- Increased cooperation and decreased competitiveness between students
- Small group teaching where faculty resources are limited
- Cognitive congruence
- Acquisition of teaching skills by future health practitioners

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Quality of Teaching?

- Students participating in optional peer-led reviews performed better on exams¹³
- No difference in exam results for students taught by peers vs. faculty^{2,3,14,15}
- Higher ratings for peers vs. faculty on teaching evaluation items related to attention to prior knowledge and congruence between the lesson and the exam¹⁴
- Some distrust of peers and preference for faculty-led teaching^{1,4,15}

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Benefits to Peer Teachers?

- Learning of content plus teaching skills^{4,7,9,14,15}
- Better exam performance than non-teaching classmates^{5,13}
- Anxiety about teaching role and ability^{7,9,15}

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Peer Teaching in Pharmacy Skills I

- 24 second year students volunteer in 1st year Pharmacy Skills lab
- "First come-first served" selection
- Schedule is 2 wks on/2 wks off or every other week
- 4 attend per lab session, working alongside 4 pharmacist instructors, with ~26 first year students
- Main responsibilities are participating in role-plays and giving feedback

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Peer Teaching in Pharmacy Skills II

- 14 third year students taking 3-credit elective course
- Each has a group of 10 to 11 second year students, who they meet individually outside scheduled lab time
- Main responsibilities are developing cases, participating in and assessing role-plays, and giving feedback

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Selection Process

- One page essay on why they would like to be a peer tutor and what they can bring to the program
- Recommendation by peer tutors
- Usually around 40 applicants/year

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Course Structure

- Peer teaching workshop
- Regularly scheduled meetings
- Case development
- Role-playing activities
- Feedback
- Assessment
- Journal entries

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Timeline of Activities

- 3 activities per term
- Sample timeline of one activity
 - ✓Week 1: peer teachers submit case for review
 - ✓Week 2: peer teachers each present their case (=14 case presentations)
 - ✓Weeks 2-3: activity runs
 - ✓Week 4: activity wrap-up/debriefing meeting

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How are Peer Teachers Assessed?

- By students: using a rating scale and short-answer questions. Eg. "What is the most important/useful tip or comment your tutor gave you and why was it helpful?"
- By faculty: journal
- By self: must self-justify mark with a rubric (effort, participation and tutoring)

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Training Workshop

- Organized jointly with colleagues in Biology Dept.
- 3-hour participatory workshop
- Pre-assignment: Kolb's learning styles inventory
- Content includes: learning styles, group dynamics and facilitation skills, questioning skills, assessment and feedback, and professionalism

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Peer Teaching in Cases in Pharmaceutical Sciences (CAPS I)

- 3-credit elective course for 4th year students
- 12 peer teachers recruited per term
- Each facilitates one group of 5 to 7 first year students per week, as they work through cases in 3-hour tutorials

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Selection Process

- Statement of intent: what they hope to gain, previous relevant experience
- Faculty feedback/reference
- Potential for benefit to the individual

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Training

- Workshop
- Weekly seminars – partially didactic, but mainly sharing and brainstorming solutions

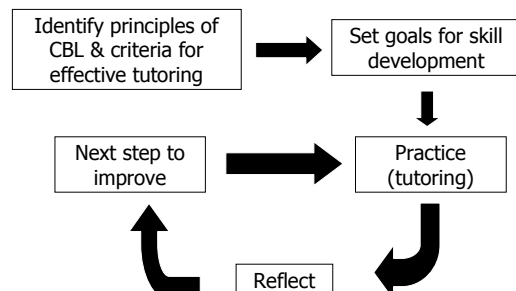
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Course Goal

To provide learning opportunities that will allow peer teachers to develop and practice effective tutoring/facilitation skills in case-based learning tutorials.

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Process of Skill Development



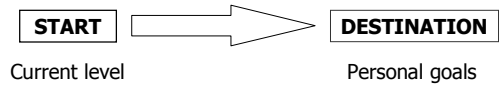
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Assignments

- Goal setting
- Portfolio – includes self-reflection, student feedback, and instructor feedback based on viewing video of tutorial sessions
- Peer assessment
- Written evaluations of 1st year students

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Dynamic Assessment



- Part of the learning process
- Involves the peer teacher (the learner)
- Recognizes individual differences and learning contexts
- Includes group dynamics

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How are Peer Teachers Evaluated?

- Instructor marks the peer teachers on effort, participation and tutoring using a grading rubric
- Marks based on the **effort** they put into their portfolio, weekly meetings, and achievement of goals in tutoring

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Peer Teachers' Perspective

- "New insight on my strengths and weaknesses in a leadership capacity"
- "I learned how to give critical feedback in a positive manner"
- "Helped me further develop the skills to deal with people in groups and how to adjust to different personality types and group dynamics"
- "Great learning opportunity for both the students and me to advance our problem solving and group working skills"

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Peer Teachers' Perspective

- "Reinforced knowledge previously learned"
- "Great way to meet with pharmacy students in a different year"
- "Listening to someone else counsel helped me with my own counselling"
- "It was fun"
- "It was great to do a nontraditional course....out of the lecture halls"
- "Watching how [the students] learn and become future pharmacists made me think about how much I've learned academically and mentally"

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Student Perspective

- Increased exposure to counselling (practice, practice and practice!)
- Increased individualized feedback (with large # of students and limited resources, individual performance is often replaced with group work)
- Positive, safe learning environment with peer teachers
- Some distrust of peer teachers' feedback

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Faculty Perspective

- Peer teachers = increased # of instructors
- Peer teachers = colleagues
- Peer teachers keep faculty informed on the course and issues students have
- Peer teachers take their role very seriously and are a great sounding board for ideas

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Advantages

- More opportunities for practice and formative assessment in communication skills than could otherwise be provided
- Extra personnel available for oral exams
- Cost savings for Faculty
- Working with committed, interested group of students

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Disadvantages

- Volunteers sometimes do not show up as scheduled
- Students may be less responsible with peer teachers than with faculty
- Workload organizing peer teachers
- Scheduling conflicts between years are problematic

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Future Possibilities

- Elective course in teaching skills, with practical component
- Informal peer tutoring for academically challenging subjects
- Peer teaching experience for all students
- Peer teaching at experiential learning sites

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References

1. Brueckner, J. K., & MacPherson, B. R. (2004). Benefits from peer teaching in the dental gross anatomy laboratory. *European Journal of Dental Education*, 8(2), 72-77.
2. Steele, D. J., Medder, J., & Turner, P. (2000). A comparison of learning outcomes and attitudes in student- versus faculty-led problem-based learning: An experimental study. *Medical Education*, 34(1), 23-29.
3. Kassab, S., Abu-Hijleh, M. F., Al-Shboul, Q., & Hamdy, H. (2005). Student-led tutorials in problem-based learning: Educational outcomes and students' perceptions. *Medical Teacher*, 27(6), 521-526.
4. Bulte, C., Betts, A., Garner, K., & Durning, S. (2007). Student teaching: Views of student near-peer teachers and learners. *Medical Teacher*, 29(6), 283-590.
5. Wong, J. G., Waldrep, T. D., & Smith, T. G. (2007). Formal peer-teaching in medical school improves academic performance: The MUSC supplemental instructor program. *Teaching and Learning in Medicine*, 19(3), 216-220.
6. Colaco, S. M., Chou, C. L., & Hauer, K. E. (2006). Near-peer teaching in a formative clinical skills examination. *Medical Education*, 40(11), 1129-1130.
7. Godson, N. R., Wilson, A., & Goodman, M. (2007). Evaluating student nurse learning in the clinical skills laboratory. *British Journal of Nursing*, 16(15), 942-945.
8. Machen, R. R., Hammer, D., & Odegard, P. (2007). Elective course in nutrition taught by a pharmacy student. *American Journal of Pharmaceutical Education*, 71(4), Article 65.
9. MacKinnon, R., Haque, A., & Stark, P. (2009). Peer teaching: By students for students. A student-led initiative. *The Clinical Teacher*, 6, 245-248.
10. Goldschmid, B., & Goldschmid, M. L. (1976). Peer teaching in higher education: A review. *Higher Education*, 5(1), 9-33.
11. Ten Cate, O., & Durning, S. (2007). Peer teaching in medical education: Twelve reasons to move from theory to practice. *Medical Teacher*, 29(6), 591-599.
12. Lockspeiser, T. M., O'Sullivan, P., Teherani, A., & Muller, J. (2008). Understanding the experience of being taught by peers: The value of social and cognitive congruence. *Advances in Health Sciences Education*, 13, 361-372.
13. Burke, J., Fayaz, S., Graham, K., Matthew, R., & Field, M. (2007). Peer-assisted learning in the acquisition of clinical skills: a supplementary approach to musculoskeletal system training. *Medical Teacher*, 29(6), 577-582.
14. Tolsgaard, M. G., Gustafsson, A., Rasmussen, M. B., Høiby, P., Müller, C. G., & Ringsted, C. (2007). Student teachers can be as good as associate professors in teaching clinical skills. *Medical Teacher*, 29(6).
15. Knobe, M., et al. (2010). Peer teaching: A randomized controlled trial using student-teachers to teach musculoskeletal ultrasound. *Medical Education*, 44, 148-155.
16. Solomon, P., & Crowe, J. (2001). Perceptions of student peer tutors in a problem-based learning program. *Medical Teacher*, 23(2), 181-186.

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