The Small Group Teacher: Center Stage or Centered Sage?

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“If we could renounce our sagesness and discard our wisdom, it would be better for the people a hundredfold.”
— Lao Tzu, Tao Te Ching
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Overview

• Small group characteristics
• Evidence for effectiveness and acceptability
• Facilitator roles
• Need for content expertise?
• Improving facilitator skill
I have just three things to teach: simplicity, patience, compassion. These three are your greatest treasures.

Lao Tzu
Small-Groups in Medical Education

- PBL/CBL
- Labs
- Sections
- Doctoring skills
- Reflection/support
- Ward team
- Clinic team
- Faculty group
Small Group Learning—What’s All the Fuss About?

• Doing something (talking) increases involvement in learning
  – increases motivation to learn
  – effectiveness of learning
• Allows practice of skills and rehearsal of newly learned material.
• Fosters thinking on your feet, problem solving in response to questions
• Interaction helps thinking process itself—learner connects the material with thoughts meaningful to learner.

Small Group Learning—What’s All the Fuss About?

- Small group learning supports
  - understanding
  - long-term retention of information
  - problem-solving skills
  - clinical-reasoning skills
  - communication skills
  - interpersonal skills
  - improved reflective practice

Small Group Learning—What’s All the Fuss About?

• Students enjoy small-groups
  – active participation
  – group atmosphere
  – clinical relevance
  – problem solving

Small Group Learning—What’s All the Fuss About?

• Students can
  – compare their views with others,
  – make inferences about their strengths and weaknesses when watching others struggle,
  – observe others’ response to them,
  – learn from information provided by others,
  – broaden understanding by seeing information through eyes of others,
  – learn interpersonal skills
  – learn teamwork
Small Group Learning—What’s All the Fuss About?

• Teachers can
  – understand how and how well students understand subject matter
  – understand how they can integrate and apply it
  – personalize feedback
What? Does this mean no more lectures?

- Lectures more effective/efficient for communicating facts
- Small groups better for higher order processes, analysis, evaluation, synthesis, application

Small Group Structure
Group Round
Circular Questioning

Buzz Groups and Snowball Groups

Fishbowl
Crossover Groups

Horseshoe Group

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Evidence for Small-group Effectiveness

- Meta-analysis
- greater academic achievement
- more favorable attitudes toward learning
- increased persistence through STEM courses and programs

Evidence for Small-group Effectiveness

• Comparison of test scores: individual, competitive, or cooperative learning

• cooperative learning promotes higher individual achievement than do competitive approaches (effect size = 0.49) or individualistic ones (effect size = 0.53).

Evidence for Small-group Effectiveness

• Meta-analysis comparing PBL with traditional med ed
• PBL significantly superior:
  – students' program evaluations
  – attitudes and opinions about PBL programs
  – measures of students' clinical performance
  – faculty attitudes, student mood, class attendance, academic process variables, and measures of humanism
• methods did not differ on miscellaneous tests of factual knowledge
• traditional students scored higher on NBME I
  – Heterogeneity and differences among programs cast doubt

Student perceptions of effective small groups

What makes for an effective small group?

Small groups should include:
Effective small group tutors
A positive group atmosphere
Active student participation and group interaction
Adherence to small group goals
Clinical relevance and integration
Pedagogical materials (e.g., cases that promote thinking and problem solving)

Steinert Y Medical Education 2004; 38: 286–293.
What are the goals of small group teaching?

- to be able to ask questions and think things through
- to check out their understanding of the material
- to work as a team and to learn from each other
- to apply content to clinical or real life situations
- to learn to problem solve

Steinert Y. Medical Education 2004; 38: 286–293.
What makes for an effective small group tutor?

• an individual who
  – promoted thinking and problem solving
  – was not threatening
  – encouraged interaction
  – did not lecture
  – highlighted clinical relevance
  – wanted to be there

Steinert Y. Medical Education 2004; 38: 286–293.
What message would you like to give your tutors?

- relax
- be excited to be there
- we are there to learn, not to be drilled
- remember that we are only students
- we all come from very different backgrounds
- tell us when you don’t know
- please don’t lecture in the small group

Steinert Y. Medical Education 2004; 38: 286–293.
What message do you think your tutors would like to give you?

- relax
- give each other a chance
- prepare
- don’t be afraid to be wrong
- don’t worry so much
- don’t appear as if you know everything
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Mastering others is strength.
Mastering yourself is true power.

Lao Tzu
Facilitator Roles

• Instructor
• Consultant
• Neutral-Chairperson
• Participant
• Facilitator
• Commentator
• Devil’s Advocate

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“The first is gentleness; the second is economy; and the third is shrinking from taking precedence of others.”
— Lao Tzu, Tao Te Ching
Content expertise?

• Teaching—a knowledge-based skill
  – Requires content knowledge (what to teach)
  – Also process knowledge (how to teach)
• Students taught in small-groups by content experts
  – Generate more learning issues
  – Participate in additional self-directed studying
• Content experts more likely to direct learning
  – Non-experts facilitate learning

Content expertise?

• Does expertise affect outcomes?
  – Content expert PBL leaders rated as better teachers
  – Students have better learning outcomes
  – benefit of content expertise disappears when highly structured cases are used
    • reduce the knowledge gap between expert and non-expert preceptor
    • and/or reduce the dependency of students’ learning on their preceptors’ knowledge

Content expertise?

- University if Calgary Medical School
- MS1 Cardiopulmonary course
- 11-13 students per small group, met 21 times
- Received cases and questions beforehand
- Worked through cases and questions during session
- Facilitator helped lead discussion and provided context
- Facilitator guide contained suggested answers to Q’s

Content expertise?

- 5 groups led by content experts
- 3 groups led by process experts
- 3 groups led by process experts for half the sessions and content experts for other half
- No group had same leader >3 times

Content expertise?

• Outcome measures
  – Student rating of teacher skill (Stanford Faculty Development Program form)
Stanford Faculty Development Program, 1

- Listened to learners
- Encouraged learners to participate actively in discussion
- Expressed respect for learners
- Encouraged learners to bring up problems
- Called attention to time
- Avoided digressions
- Effectively dealt with disruptive students
Stanford Faculty Development Program, 2

- Stated goals/objectives of session clearly, concisely
- Stated relevance of goals/objectives to learners
- Repeated goals and objectives periodically
- Used whiteboard or other visual aids
- Referred to relevant schemes for clinical presentations
- Provided ample opportunity for students to ask Q’s
- Helped students draw connections between clinical presentation and relevant science/physiology/anatomy
- Overall, this preceptor was an effective small group facilitator
Content expertise?

• Outcome measures
  – Student rating of teacher skill (Stanford Faculty Development Program form)
  – Student score on end of course MCQ exam

• Results
  – Process experts rated more highly by students than content experts
  – No difference in exam scores among 3 groups

Content expertise?

How can content expertise hinder learning?

- Lack of cognitive congruence: ability to express oneself in the language of the students
- Content experts function with unconscious competence
- Content experts tend to direct learning more than non-experts
  - Students can be more passive
  - Students identified more learning issues when preceptor was a content expert. Extra information introduced by content experts may result in a larger cognitive load and less effective learning.

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Improving Facilitator Skill

- Mid course anonymous formative feedback of small-group faculty by students
- 92% response rate
- 84% wrote in comments
- Many facilitators spoke with course coordinators, small-group members
- 4 groups with lowest scores had 21 negative comments at mid-course; at end, 5 negative comments.

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“To teach without speaking, to benefit without doing—rarely is this achieved in our world.”
— Lao Tzu, Tao Te Ching