Learning to teach and teaching for learning: Important concepts in clinical education

Aki Thomas, PhD candidate, M.Ed., OT (c), M.F.A.
Department of Educational and Counselling Psychology
Faculty of Education
And
School of Physical and Occupational Therapy
April 23, 2009

Why is it important to reflect on our teaching methods?

- Move from intuition to intention
- Focus on thinking about teaching and learning
- Place to begin learning about teaching

A conceptual framework for learning about teaching

Conceptions of teaching

- Understand our beliefs about teaching
- Help us examine our assumptions about teaching

Relational model of teaching and learning in higher education (Prosser and Trigwell, 1999)

*teacher
Conceptions of Teaching
Approaches to teaching

*learner
Conceptions of Learning
Approaches to teaching

McGill
Teaching models prescribe tested steps and procedures to effectively generate desired outcomes. They can be classified along a continuum from instructor-directed, to student-instructor negotiated, to student-directed.

---

McGill

Learner-centered teaching

- Help learners build knowledge
- Facilitate thinking processes and problem solving (not just remembering)
- Help learners move towards independence and expertise

---

McGill

Questions we pose in clinical practice increase in complexity

Knowledge level:
- What are the clinical signs of a stroke?
- What is dementia?

Comprehension level:
- Why do we use the MMSE?
- Why is Mr. X at risk for falls?

Evaluation level:
- How would you assess the patient's readiness to go home?
- How would you proceed if Mrs. V. does not wish to wear her splint?

---

McGill

Instructional models

- Cognitive apprenticeship
- Collaborative learning
- Supervision models
- Self-directed learning

---

McGill

from teacher-centered to learner-centered

TEACHER CENTERED
- Focus: Content
- Teacher: Sage on the stage
  - Transmits structured knowledge
  - Imparts information
- Learner:
  - Passive, receives
  - Learns information
- Strategies: Lecture

LEARNER CENTERED
- Focus: Learning
- Teacher: Guide on the side
  - Guides understanding
  - Facilitating understanding
- Learner:
  - Active, constructs
  - Learns to think
- Strategies: Interaction, PBL
Cognitive apprenticeship

What is cognitive apprenticeship and does it work?

- learning is embedded in activities that make deliberate use of the social context (Collins et al., 1989)
- through social interaction and collaboration with peers and with the teacher, conceptual understanding and problem-solving skills are developed
- students are given ill-defined tasks and real-world problems representing authentic activities.
- initially tasks are slightly more difficult than students can manage independently, requiring the aid of their peers and instructor to succeed.
- successful not only in promoting students' higher-order thinking skills but...
- in shaping the learning interaction from teacher-oriented to joint goal-oriented problem solving between teacher and student (Jarvela, 1995).

Cognitive apprenticeship

1. Help students think at higher levels
2. Help students think and perform like expert clinicians


Cognitive apprenticeship methods

1. Modeling
2. Getting students to verbalize
3. Coaching
4. Scaffolding
5. Fading
6. Exploration

1. Modeling

- to assist students in integrating a set of cognitive and metacognitive skills through processes of observation and guided practice
- essential in clinical teaching because it provides students with models of expert performance.
- student needs to get 'into' the expert's internal cognitive processes and understand the thinking involved behind the problem solving tasks.
- study of student teachers access to experts' thinking via stimulated recall; illustrate the effect of modeling (Ethol & McMeniman, 2000)
- expert knowledge must be made explicit if it is to contribute to the development of knowledge and practice of novices (Bereiter & Scardamalia, 1982; Mayer, 1987).

Modeling: action

- Expert/teacher/clinician carries out task so learner can observe

Example: Therapist talking to patients on a ward or in the rehabilitation department and student observes
Modeling: thinking

- Expert thinks aloud/explains thinking during action (or soon after)
  - Clinician: "I am verifying if there is any edema in his leg because..."
  - Clinician: "The question to me is what methods we can use to reduce the edema so that...?"

Doing without thinking aloud and/or explaining WHY is insufficient

Why should we ask students to verbalize?

Advantages:

- Speaking out loud helps learners construct/integrate new knowledge
- Provides information for teachers about what learners understand

3. coaching

- Observe learners while they carry out a task
- Offer hints, cues, feedback, reminders, new tasks to bring learner performance closer to expert performance

Coaching: thinking

Example: Pain management

Patient complains of severe low back pain
  - Student: "What should I do?"
  - Clinician: "What do you think you should do?"
  - Student: "Use TENS."
  - Clinician: "Yes, that's an option. Are there any other alternatives?"

Coaching: action

Performing an AROM assessment of the shoulder.

- Student: Positions patient, prepares the goniometer
- Student: "How is the position of the goniometer?"
- Clinician: "It's fine."
- During the assessment:
  - Clinician: "Angle the goniometer a little closer to the head of the humerus. Stabilize the stationary arm with your left hand and move the other arm of the goniometer with the patient's movement."

2. Getting students to verbalize

- Articulation helps learners focus their observations of expert problem solving and gain access to their own problem-solving strategies.
- Any method of getting learners to articulate their knowledge, reasoning, or problem-solving processes

Clinician to student:
  - "How did you plan out this manipulation?"
  - "Why do we ask the patient questions about his medical history?"
  - "How are we going to work on his memory/balance?"
  - "Tell me why you are doing PROM exercises?"
Coaching
Advantages:
- Learner begins to assume greater role in the activity
- Learner carries out and integrates skills through highly interactive feedback and suggestions

4. Scaffolding
Teacher provides support to help learner carry out a task
- Carries out parts of the overall task learner cannot yet manage
- Provides physical supports
- Provides suggestions or help
Scaffolding: More at the beginning of a clinical placement
- Clinician to student: “Where are we going with this? Let’s keep sight of the plan”
- Clinician to student: “OK let’s try it this way”

5. Fading
- Gradual removal of supports until learners are on their own
- More at the end of a clinical placement
  - Clinician listens to student’s presentation of a case at rounds. Doesn’t intervene unless necessary
  - Clinician observes student-patient interaction from a distance. Doesn’t intervene unless absolutely necessary. Feedback given after the interaction

Scaffolding and fading
Advantages:
- Combined with coaching, allows learners to acquire enough autonomy to be able to work on their own.
- Gradual progression over time

6. Exploration
- When coaching and scaffolding are relaxed and fading occurs, independent exploration of student learning occurs (Collins et al. 1988)
- Exploration pushes students to try out hypotheses, methods, and strategies similar to those that experts use to solve problems (Collins, 1991)
- Exploration encourages learner autonomy in defining and solving problems
- Exploration enhances discovery of new knowledge and acquisition of general problem-solving skills (Shunk, 2000)

Implications of cognitive apprenticeship for clinical learning
- Clinical experiences woven through the curriculum provide authentic learning opportunities for students to enter into cognitive apprenticeship with practicing clinicians through discussion, observation of their practice and progressive participation in clinical tasks (Thomas, 2007)
- Supervisors demonstrate and model the skills and behaviors that students are expected to learn.
- Gradually, they provide less direct assistance becoming guides or facilitators of learning.
- Attention to the student’s ability to take on the role of the therapist independently (Galvin & Bossers, 1998).
Cooperative learning

Characteristics of collaborative learning

- Increased responsibility for learning.
- Positive interdependence among learners.
- Individual accountability of learners.
- Face-to-face interactions.
- Group social skills.
- Group and self-evaluation.

Impact of CL on learning

- Fosters positive attitudes towards learning.
- Fosters critical thinking.
- Fosters self-monitoring and self-evaluation.
- Increases persistence and retention.
- Reduces anxiety and enhances sense of control and competence.

Collaborative learning in the clinical setting

- Allow students to work in small groups (support, resources, space, time).
- Can be within or across disciplines (e.g., PT and OT; OT, PT and nursing; all OT; all PT).
- Attend first group session and “pop-in” from time to time.
- Clearly define the objectives of the small group work.

Examples:
- For clinical projects
- For improving knowledge on a condition
- For treatment planning
- For preparation of team meetings

Models of supervision
The possibilities are endless...

Advantages of this model

- The interaction between the student and the educators is a partnership in education
- Students can bring additional energy and enthusiasm to the educator's practice
- Student and educator have more time to get to know each other
- Potentially more time for practice and reflective discussion than other models

Role of the educator

- Prepare, present, project, Orientation- make clear measurable goals before start
- Use learning tools: contracts, journals, logs
- Review goals regularly
- Provide opportunities for practice
- Foster open communication
- Role model clinical skills and collaborations

Role of the student

- Share ideas with educators
- Self-assess and reflect
- Be an active learner, express interest, seek out information
- Understand learning goals
- Act professionally

1 student: 1 educator

Advantages of this model

- Students take more responsibility for their learning
- Decrease dependency on educator
- Increase time for reflection and practice without increasing educator's time commitment
- Mutual companionship between students
- Encouragement and feedback to each other
- Student anxiety may decrease from peer support
- Promote open communication among all members of learning team
- Emphasis on teamwork and communication skills

Role of the educator

- Facilitate collaboration and discourage competition
- Establish ground rules for joint supervision
- Clear goals for each student
- Provide time for team work
- Each student should journal
- Set up joint structured learning activities
- Role model collaboration

Role of the student

- Share ideas and intervention techniques with other student
- Receive and provide peer feedback
- Divide labor on assigned tasks
- Support each other
- Respect each other's contributions
- Seek out information from other students as well as educator

2 students: 1 educator

Role of the educators

- Meeting of educators prior to placement for joint organizational planning
- Review learning contract together with student
- Agree on similar expectations, for students
- Orientation to both areas of practice (schedules, supervisor meetings)
- Learning contract together with student and agree on similar expectations, for educators (vs. one educator)
- Agree on procedures for student and team evaluation and referral
- Awareness of verified needs
- Share task of evaluating student

Role of the student

- Accepting responsibility for SDL
- Recognize strengths and differences between educators
- Communicate with educators regarding any differences in style, pace or personality that may be causing undue stress
- Be aware that multiple factors and is normal
- Make sure that enforcing some and share
- Seek feedback from both educators
- Be flexible

1 student: 2 educators

Role of the educators

- Sharing of educational preparation work
- Agreement on similar expectations, for students
- Orientation to both areas of practice (schedules, supervisor meetings)
- Learning contract together with student and agree on similar expectations, for educators (vs. one educator)
- Agree on procedures for student and team evaluation and referral
- Awareness of verified needs
- Share task of evaluating student

Role of the student

- Accepting responsibility for SDL
- Recognize strengths and differences between educators
- Communicate with educators regarding any differences in style, pace or personality that may be causing undue stress
- Be aware that enforcing some and is normal
- Make sure that enforcing some and share
- Seek feedback from both educators
- Be flexible
Advantages of this model

- Broader experiences and access to placements in specialty areas
- Opportunity for part-time therapists to be involved in fieldwork education
- Opportunity for students to develop time management and organizational skills
- Educators benefit from discussion and collaboration that occurs from the shared experience
- Fewer demands on a therapist's time and workload than in 1:1 model

Self-directed learning

- "A process in which individuals take the initiative with our without the help of others to determine their learning needs, formulate learning goals, identify human and material resources for learning, choose and implement appropriate learning strategies and evaluate learning outcomes" (Knowles, 1975)

Major assumptions of SDL

- SDL assumes that learners grow in capacity and need to be self-directing
- Learner experiences the consequences of learning
- Individual learns how to perform the tasks of living
- Self-directed learners are motivated by various internal sources, such as the need for self-esteem, curiosity, desire for mastery, and protection of accomplishment
- Student is co-active participant in learning
- The process of learning is viewed as part of the content
- The educator provides a framework or guide to support a content expert
- SDL is learnable, transferable, and transferable
- SDL is an interaction of behavior, motivation, and cognition
- SDL has positive effects on learning and self-education
What does a self-directed learner look like

- Someone that is proactive instead of being reactive to teacher and teaching
- Someone who generates thoughts, feelings and behaviors towards achieving goals
- Someone who is aware of strengths and limitations (or at least tries to find out what these are)
- Someone who monitors their behavior and their performance to see whether it is helping in achieving goals
- Someone who reflects on goals and on achievement
- Someone who shows superior motivation and adaptive learning methods
- Someone who is more likely to succeed academically and be more positive about the future
- Someone who knows when to seek help

How do you help students be more self-directed?

- By understanding what SDL is
- By understanding that SDL should be valued and encouraged
- By understanding what SDL means for you specifically and in the context that you need it for
- By giving students the time they need
- By giving feedback and support