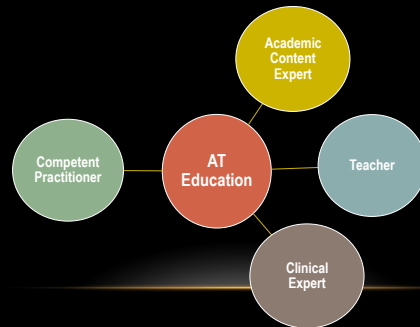


## TEACHING VS. CONTENT EXPERTISE AND STUDENT LEARNING: IMPACT AND STRATEGIES

Paula Sammarone Turocy, EdD, LAT, ATC  
Duquesne University



## PARADOX OF AT EDUCATION



## POSSIBLE LIMITATIONS TO DEVELOPING EXPERTISE

- Limited staffing
- Teaching assignment method
- Other academic and/or clinical responsibilities
- Lack of formal training as teacher
- Lack of depth of learning (content)
- Competence expected; however, **IMPOSSIBLE** to be a master of all content areas



## EXPERTISE

- **Expert Teacher**
  - Understand how students learn, recognize learning differences, able to use multiple instruction methods, able to adjust curriculum and instruction accordingly
- **Content Expert**
  - Understands breadth and depth of content, as well as inter-relationships of content
- **Expertise in one area does not necessarily indicate expertise in the other....**

## TEACHING EXPERTISE & STUDENT OUTCOMES<sup>1</sup>

- Transition from novice to expert teacher
  - 2 - 5 years
- Students able to recognize lack of teaching expertise, but still able to learn required content
- Student learning improves as teacher expertise increases, **but not the whole story**



## TEACHING EXPERTISE & STUDENT OUTCOMES

- Students' critical thinking and reasoning skills take longer to adjust with novice teachers
  - Skills and behaviors not modeled by teacher
  - Inability of novice teacher to explain inter-relationships or integration of new and old learning



**EXPERT TEACHER<sup>2</sup>**

- Excel mainly in own content area and in particular contexts (e.g., population-specific)
- Able to develop systems for repetitive operations that allow accomplishment of goals
- More opportunistic and flexible in teaching
- More sensitive to task demands and social situations surrounding them when solving problems

**EXPERT TEACHER<sup>2</sup>**

- Present content in qualitatively different ways through perception of meaningful patterns in ways experienced (e.g., exercise physiology)
- Faster and more accurate pattern recognition and student capabilities
- Often solve problems slower, but richer and more personal sources of info influence how to solve problems

**EXPERT v NOVICE TEACHER<sup>3</sup>****Planning**

- **Extensive mental plans including sequence of lesson components and contents**
  - Novice - Use mental plans, but majority of time spent determining how to represent content to students
- **Contingencies developed based upon student performance – able to adjust more readily/appropriately**
  - Novice - Able to work out solutions to problems by constructing detailed mental plans of presentation which are often time-consuming and inefficient

**EXPERT v NOVICE TEACHER<sup>3</sup>****Interactive Teaching**

- **Able to skillfully keep lessons on track and accomplish objectives;**
- **Able to use student comments and questions as springboards**
  - Novice -- Explanations clean, neat, easy to follow
  - Student comments/questions lead to unrehearsed answers which generally found not to be completely correct

**EXPERT v NOVICE TEACHER<sup>3</sup>****Interactive Teaching**

- Able to illustrate or reinforce concepts/skills spontaneously or locate quickly in text, balancing content and student-centered instruction with minimal planning
  - Novice - Rarely able to link related concepts within lesson or across curriculum without planning

**EXPERT v NOVICE TEACHER<sup>3</sup>****Post-Lesson Reflections**

- Focused primarily on student understanding of material and impact on accomplishment of instructional goals
- Little focus on student behavior or affect
  - Novice - Focus on student participation, active involvement, understanding, behavior

## EXPERT v NOVICE TEACHER<sup>3</sup>

### Post-Lesson Reflections

- Little assessment of own teaching effectiveness
  - Novice - Comment on own teaching effectiveness



## METHODS TO IMPROVE AS TEACHER

- Solicit and get feedback on all aspects of teaching
- Utilize available University services/centers of excellence
- Seek teaching mentor(s)
- Model expert teaching behaviors
- Investigate how content fits into larger curriculum and curricular sequence
- Reinforce students' previous learning by integrating with new learning

## METHODS TO IMPROVE AS TEACHER

- Take teaching evaluations (peer and student) seriously; utilize "pearls" of insight
- Find text to match curriculum rather than adjusting/creating curriculum to match text
- Understand the limitations of "the book"
- Be open to change, feedback
- Admit and address limitations in performance

## ADMINISTRATOR IMPACT - IMPROVE TEACHING

- Hire as early as possible before start of school
- Encourage sharing of resources, ideas, expertise
- When possible, assign lighter loads initially, then increase load as teaching expertise increases
- Consider team-teaching or course assignments to allow novice teachers to teach content expertise first
- Decrease administrative and service responsibilities until "get feet on the ground" with teaching

## CONTENT EXPERT<sup>1</sup>

### Content Knowledge

- Deep understanding of content being taught
- Evidence to suggest that teacher knowledge of subject/content is associated with higher quality instruction, which has positive effect on student learning



## PEDAGOGICAL CONTENT EXPERT<sup>4,5</sup>

- **Knowledge it takes to make content accessible to students in a way that the topic and the reasoning surrounding it makes sense to learners**
  - Able to break down into components that students can understand and link together
  - Allows for multiple explanations and multiple teaching strategies

### IMPACT ON PEDAGOGICAL CONTENT KNOWLEDGE (PCK) ON STUDENT LEARNING<sup>1</sup>

- Higher levels of PCK linked to higher levels of cognitive activation and better learning support for students
- Teachers with high levels of PCK were enthusiastic about teaching, and their students demonstrated increased enjoyment of learning

### DEVELOPING AS CONTENT EXPERT

- MOST basic level
  - Find a good/current text – build foundation
- Delve into current literature and available evidence
  - EBP Techniques
- Utilize information “feeds”
  - MedBridge, GoogleScholar, PubMed



### DEVELOPING AS CONTENT EXPERT

- Identify and utilize update “feeds” and professional standards
  - CalBerkeley Wellness Letter
  - Tufts Nutrition Newsletter
  - NATA, ACSM, AAOSSM, and other relevant positions statements and consensus statements

### DEVELOPING AS CONTENT EXPERT

- Join additional professional organizations
  - ACSM
- Seek out new learning opportunities at conferences; attend different conferences
- Make it part of the “job” to learn more content
- Take opportunities to practice what you preach and utilize practice scenarios in teaching

### ADMINISTRATOR IMPACT - DEVELOP CONTENT EXPERTISE

- Encourage deeper learning and career learners
- Support other membership, activities, and opportunities to practice
- Tie research areas to teaching responsibilities
- Reward and recognize those working to develop and maintain content expertise
- Ensure electronic and other resources readily available
- Help identify and share content updates

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**THANK YOU**

**Paula Sammarone Turocy, EdD, LAT, ATC**

Director – Pre-Medical and Health Professions Programs

Associate Professor of Athletic Training

Duquesne University

600 Forbes Avenue

Pittsburgh, PA 15282