

# Developing Expert-like Thinking in Preservice Music Teachers

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## Summaries of Music Teacher Expertise

- Single, N. A.(1991). A summary of research-based principles of effective teaching. *Update: Applications of Research in Music Education*, 9(2), 3-10.
- Duke, R. A.(1999). Measures of instructional effectiveness in music research. *Bulletin of the Council for Research in Music Education*, 143, 1-48.
- Duke, R. A., & Simmons, A. L. (2006). In search of expertise: 19 common elements observed in the private lessons of three renowned artist-teachers in music. *Bulletin of the Council for Research in Music Education*, 170, 7-19.

## Findings

- Efficiently use rules, procedures, routines and signals to communicate behavioral expectations.
- Organize and present information efficiently and effectively, including the use of questions.
- Organize effective guided practice.
- Demonstrate musical skills accurately and musically.

## More Findings

- Accurately assess students' understanding and provide appropriate feedback.
- Select appropriate musical tasks and have a clear auditory image of the selection.
- Focus on fundamentally correct performance and correcting fundamental errors.
- Generally work at a rapid pace, maximizing student performance.

## Expert vs. Novice Research

- Time Use
- Instructional Targets
- Conducting
- Decision Making

## Expert vs. Novice Research

### Problems

- Studies describe expert behavior. None point toward a pedagogical framework that promotes expertise.
- Methods used to select 'experts' were not valid.
  - Success
  - Peer Recognition
  - Experience

## Early Research on Expertise

### Characteristics of Chess Grand Masters

- Exceptional Memory
- Pattern Recognition
- Cognitive Load Reduction

# Generalized Characteristics of Expertise

Glaser, R., & Chi, M. T. H. (1988). Overview. In M. T. H. Chi, R. Glaser, & M. J. Farr (Eds.), *The nature of expertise* (p. xv-xxviii). Hillsdale, New Jersey: Lawrence Erlbaum Associates, Inc.

- 1 Experts have superior subject matter knowledge
  - Experts excel mainly in their domain.
  - Experts perceive large meaningful patterns in their domain.
  - Experts have superior short- and long-term memory.
- 2 Experts know how to apply that knowledge
  - Experts are fast at recognizing patterns and implementing routines, thereby solving problems quickly and correctly.
  - Experts represent problems in their domain at a more principled level.
  - Experts spend time analyzing problems qualitatively.
- 3 Experts have strong self-monitoring skills.

## The Experience Factor

- Experience is the key, but the door still has to be unlocked.
- Experts in any domain require at least 10,000 hours of deliberate practice to achieve expert status.
- Dreyfus & Dreyfus Model of Skill Acquisition - adapted by David Berliner to teachers.
  - Novice: deliberate
  - Advanced Beginner: insightful
  - Competence: rational
  - Proficient: intuitive
  - Expert: arational

# Expertise Developmental Sequence

- Novices learn to follow rules; experts learn when and how to break them.
- Progressive Problem Solving

# Contributing Factors to Expertise

- 1 Desire for excellence
- 2 Good Instruction
- 3 Deliberate Practice

# How Expertise Does Not Develop

## The Specialist and the Expert

Bereiter, C., & Scardamalia, M.(1993). *Surpassing ourselves*.  
Chicago, IL: Open Court Publishing Company.

- Specialists strive to reduce the complexity of the task.
- Experts continually strive to take on more levels of complexity.

# Professional Knowledge Base

## Subject Matter Knowledge

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), 1-22.

- 1 Subject Matter Knowledge - knowing what.
- 2 Pedagogical Knowledge - knowing how.
  - General Methods
  - Pedagogical Content Knowledge
- 3 Knowledge of Students - knowing who.
- 4 Knowledge of Context - knowing where.

# Developing Integrated Knowledge

## Knowledge Application

- Develop Instructional Routines
- Develop Progressive Problem Solving Habits

# Pattern Recognition

## Self-Regulatory Knowledge

### Reflection

- Studying Master Teachers
- Structured Self-observation
- Dialectical Journaling

# Developing Pre-expertise

## A Preliminary Study

### Deliberate Reflection Framework and Time Use

- Students used a deliberate reflection framework.
  - Hiebert, J., Morris, A. K., Berk, D., & Jenson, A.(2007). Preparing teachers to learn from teaching. *Journal of Teacher Education*, 58(1), 47-61.
  - Knowledge Application
- Students used computer-assisted self-observation to develop expert-like time use habits.
  - Self-regulatory knowledge

# A New Research Agenda Based on Theories of Expertise

- 1 No longer equate experience, success, or peer recognition with expertise.
- 2 Develop a comprehensive definition of expert music pedagogue.
- 3 Develop a model for development of music pedagogy expertise.
- 4 Decide what competencies can reasonably be developed during preservice, and in a manner that prepares them to learn from inservice experience.

## A New Research Agenda Based on Theories of Expertise

- Develop pedagogies for teaching instructional routines and progressive problem solving.
  - Self-observation and evaluation (deliberate reflection)
  - Problem-based Learning
- Develop models for induction, mentoring, and professional development based on expertise research.