Effect of Time and Frequency of Teaching Episodes on Preservice Instrumental Music Teachers’ Rehearsal Skills

Christopher M. Baumgartner
Ryan N. Meeks
Eric M. Pennello

University of Oklahoma
Review of Literature


- Student & novice teachers spent more time talking in rehearsal
  - ST were 50/50 teacher talk to student performance

- Experienced teachers utilized time more evenly, allowed for more performance time, and use more nonverbal modeling than did “younger” teachers

- Experienced teachers also got “on task [more] quickly” than did student and novice teachers (p. 299)
Review of Literature


- Expert teachers spent more time addressing higher-order music concepts (style, ensemble sound, guided listening)
- Novice and student teachers addressed wrong notes and pitch
- Minimal training improved the number of complete teaching sequences
  - Instruction - Performance - Feedback

- “...listening to recorded model effected no meaningful differences in the preservice teachers’ verbalizations.” (p. 246)

- In the model condition, student written comments were less self-focused and more critical of ensemble performance.

- No difference in rates of feedback when comparing conditions
Need for the Study

Previous researchers have examined:

- Percentage of performance vs. teacher talk time (Goolsby, 1996, 1997; Montemayor & Moss, 2009; Yarbrough & Price, 1981)

- Feedback rates and types (Duke & Henninger, 2002; Yarbrough & Price, 1989)

No research on the potential impact of duration or frequency of teaching episodes on both variables (teacher talk vs. performance time, feedback frequency)
Purpose of the Study

To determine the impact of time and frequency on rehearsal effectiveness of preservice instrumental music teachers’ rehearsal skills.

1. How does time or frequency of teaching episodes impact specific teaching behaviors (e.g., feedback, instruction, pacing) of preservice instrumental music teachers?

2. How do preservice music teachers perceive the impact of time or frequency of rehearsal episodes on their own development in the instrumental rehearsal?
Participants \((N = 17)\)

- Convenience sample of junior, instrumental music education students at a large Southwestern university
- Enrolled in second-level (of three) instrumental music education methods course
- Prior experience conducting/rehearsing:
  - One semester of basic conducting
  - Secondary-level instrumental music education methods course (first of three courses)
  - Various instrument techniques classes (e.g., brass, woodwind, percussion)
  - Roughly 25 hours of field experience in area public schools
Methodology – Teaching Episodes

All taught 10-minute rehearsals at beginning and end of sequence
  • Served as pre-/posttest data points

Greater Frequency Group (GFG, \(n = 9\))
  • Five, 11-minute lessons between the first and last rehearsals
  • Total 7 rehearsals, 75 minutes

Longer Duration Group (LDG, \(n = 8\))
  • Three, 18-minute lessons between the first and last rehearsals
  • Total 5 rehearsals, 74 minutes
Methodology – Music Selection

Works selected from either *Teaching Music Through Performance in Band* series or the Oklahoma PML

- All Grade 2-3 (as classified by either TMTP or publisher)
- Students arranged works to suit the class instrumentation and secondary instrument ability levels
Methodology – Planning and Reflection

Students wrote formal lesson plans before each rehearsal

- Included a long-range plan to span the entire rehearsal sequence
- Objectives, learning goals, assessments, NCAS, and procedures

Written reflections required students to focus on various aspects of their teaching (instruction, feedback, modeling, gesture)

- Included Scribe analysis
Methodology – Reflective Questionnaire

Researcher-designed survey with a focus on components of the teaching/rehearsal process

- Planning, teaching, and reflective practice

Individual prompts based on same teaching elements students considered in their weekly reflections & Scribe analysis

- Instruction, feedback, modeling, gesture

Included open-ended prompts regarding the perceived benefits and limitations of each setting
Observation Behavior Codes

Instruction Codes
- Verbal Performance Instruction (VPI)
- Nonverbal Performance Instruction (NPI)
- No Instruction/Procedure (NIP)
- Repetition/Drill Instruction (RDI)

Feedback Codes
- Specific Verbal Feedback (SVF)
- Unspecific Verbal Feedback (UVF)
- Nonverbal Feedback (NVF)

Modeling & Gesture
- Left Hand Expressive Gesture (LHG)
- Instrumental Modeling (INM)
- Vocal Modeling (VOM)
- Visual Modeling (VIM)
Data Analysis – Teaching Videos

Adapted behavior codes from previous research
  ● (Goolsby, 1997; Montemayor & Moss, 2009)

Interrater Reliability
  ● Each researcher independently analyzed 1 video
  ● Watched and discussed all codes for 1 video
  ● Lead researcher analyzed 5 other videos (total 20%)
  ● Graduate student researchers assigned codes to “time stamps”
  ● Interrater reliability was 0.77, no single video lower than 0.73 (Cohen, 1988)

Divided & independently analyzed remaining videos

Data compiled into SPSS for subsequent analysis
Data Analysis – Reflective Questionnaires

Open-ended Responses

- Two researchers independently coded same 20%
- Codes discussed to resolve any disagreements
- Independently coded remaining responses
- Codes combined into themes

Likert-type responses exported to SPSS for analysis
Results – Change Score Descriptive Statistics

Increased Behaviors

- Verbal Performance Instruction ($M = 2.29$, $SD = 4.43$)
- Specific Verbal Feedback ($M = 2.24$, $SD = 3.58$)
- Left Hand Gesture ($M = 3.94$, $SD = 4.16$)

Decreased Behaviors

- Unspecific Verbal Feedback ($M = 1.65$, $SD = 3.12$)
- No Instruction/Performance ($M = 2.53$, $SD = 5.55$)
**t-test: Teacher Talk by Group**

Slight decrease in Teacher Talk Time percentage
- approx. 1% for both groups
- \( t(15) = -0.11, p = .91 \)

### Group Statistics

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>changeTeachTalkPerc</td>
<td>GFG</td>
<td>8</td>
<td>-1.1450</td>
<td>4.11873</td>
</tr>
<tr>
<td></td>
<td>LDG</td>
<td>9</td>
<td>-.8100</td>
<td>7.40973</td>
</tr>
</tbody>
</table>

### Independent Samples Test

<table>
<thead>
<tr>
<th></th>
<th>Equal variances assumed</th>
<th>Equal variances not assumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levene's Test for Equality of Variances</td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>changeTeachTalkPerc</td>
<td>4.457</td>
<td>.052</td>
</tr>
</tbody>
</table>

- Equal variances assumed
- Equal variances not assumed
**t-test: VIP, SVF, & LHG by Group**

**Left Hand Gestures**
- Greater increase in LDG

**Verbal performance**
**Instruction & Specific Verbal Feedback**
- Greater increase in GFG
Behavior & Survey Correlations

<table>
<thead>
<tr>
<th>Observed Behavior</th>
<th>Survey Prompt</th>
<th>Spearman’s $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left Hand Gesture</td>
<td>Effectiveness of Gesture</td>
<td>$(r = .64, p = .007)$</td>
</tr>
<tr>
<td>Student Performance Time</td>
<td>Ratio of TT to SP</td>
<td>$(r = .61, p = .012)$</td>
</tr>
<tr>
<td>Vocal Modeling</td>
<td>Modeling</td>
<td>$(r = .59, p = .018)$</td>
</tr>
<tr>
<td>Repetition/Drill</td>
<td>Clear/Concise Instructions</td>
<td>$(r = -.52, p = .036)$</td>
</tr>
<tr>
<td>Student Performance Time</td>
<td>Pacing</td>
<td>$(r = .52, p = .040)$</td>
</tr>
<tr>
<td>No Performance/Instruction</td>
<td>Effectiveness of Gesture</td>
<td>$(r = .51, p = .045)$</td>
</tr>
</tbody>
</table>
Results – Open-Ended Survey Responses

Authentic experience

- Longer duration = more like the “real world”
- Quick turnaround?

Reflection and Application

- More opportunities to reflect and apply (GFG) vs time for deeper reflection (LDG)
Results – Open-Ended Survey Responses

Planning and Preparation

“I was able to seriously think about fixing a list of concepts down in such a short time, so it forces me to think how to teach more effectively.” (GFG)

”…allowed me to dedicate more time to developing plans for each individual episode rather than feeling rushed.” (LDG)

“It was hard to plan for 18 minutes. If my lesson plan ran out, I had to improvise.” (LDG)
Results – Open-Ended Survey Responses

Feedback and Instruction

“The shorter rehearsal time did help me improve drastically on giving quick, specific feedback and increasing the overall pace of my lesson.” (GFG)

“Having experienced shorter episodes earlier… I think the variety allowed me the flexibility to try different rehearsal procedures and really nail down my teaching frames within a longer plan.” (LDG)
Discussion

Though no significant difference in behaviors by group, there were meaningful increases/decreases in specific behaviors overall, suggesting experience may have impacted the change.

- Increase: Student Performance Time, VPI, SVF, LHG
- Decrease: Teacher Talk Time, UVF, NPI

Change in Teacher Talk Percentage was greater in the Greater Frequency Group (GFG)

- Possibly due to shorter episodes (recognition of time usage in 10 minutes)
- All students approximately 50/50 ratio (similar to Goolsby, 1996)
Discussion

Left Hand Gestures in the LDG more than doubled the increase from those participants in the GFG.

- Longer teaching episodes may afford preservice teachers opportunities to “get into it” and focus more on gesture, less on instruction.

Verbal Performance Instruction and Specific Verbal Feedback increased more in GFG

- Perhaps shorter teaching episodes “force” preservice teachers to deliver more clear and succinct instruction & feedback verbalizations
Implications for Music Education

Since students referenced positive and negative attributes in both configurations, music teacher educators should consider including both greater frequency and longer duration of teaching episodes in MTE preparation.

Further research (e.g., larger sample size, more teaching episodes, progressively longer duration) is needed to more accurately determine any significant impact of frequency or duration on teaching behaviors.

Preservice teachers appear to recognize improvements in their own teaching (i.e., correlation of behaviors to survey data), which has implications for continued reflection and empirical analysis of teaching episodes/videos