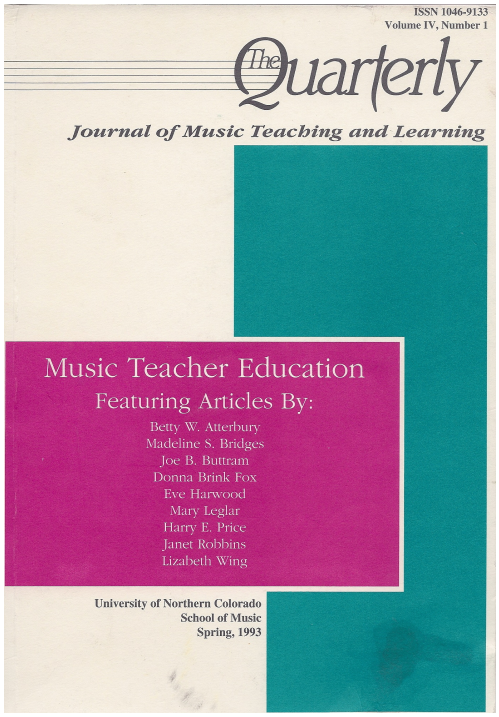

Title: Applications of Research to Music Teacher Education

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Source: Price, H. E. (1993, Spring). Applications of research to music teacher education. *The Quarterly*, *4*(1), pp. 36-44. (Reprinted with permission in *Visions of Research in Music Education, 16*(4), Autumn, 2010*). Retrieved from* http://www-usr.rider.edu/~vrme/

It is with pleasure that we inaugurate the reprint of the entire seven volumes of The Quarterly Journal of Music Teaching and Learning. *The journal began in 1990 as* The Quarterly. *In 1992, with volume 3, the name changed to* The Quarterly Journal of Music Teaching and Learning *and continued until 1997. The journal contained articles on issues that were timely when they appeared and are now important for their historical relevance. For many authors, it was their first major publication.* Visions of Research in Music Education *will publish facsimiles of each issue as it originally appeared. Each article will be a separate pdf file. Jason D. Vodicka has accepted my invitation to serve as guest editor for the reprint project and will compose a new editorial to introduce each volume. Chad Keilman is the production manager. I express deepest thanks to Richard Colwell for granting VRME permission to re-publish* The Quarterly *in online format. He has graciously prepared an introduction to the reprint series.*

Applications Of Research To Music Teacher Education

By Harry E. Price

University of Alabama

It may be considered rather remarkable that with several research journals in music education, including *The Quarterly Journal of Music Teaching and Learning,* and after almost 40 years of publication of the *Journal of Research in Music Education,* there seems to be no systematic application of research results to music teacher education (Boardman, 1986). This apparent chasm between teacher education practice and research is rather curious, given that many postsecondary institutions place an emphasis on systematic acquisition of knowledge through research. Brand (1985), in the conclusion to his article "Research in Music Teacher Effectiveness" notes the oversight or omission of empirical knowledge.

> The question is, are perceptions of effective music teaching based upon fuzzy concepts and educational folklore? We, in music education, need to assure ourselves that our beliefs, expectations and means of assessing teacher effectiveness reflect empirical knowledge and our profession's best collective wisdom (p. 16).

While perceptions of the mid-1980s are probably accurate, the current state of research in music and its relationship to teacher education reflects an ever-increasing interest in research in music education and its application to instructional settings. Along with the national trend toward a more research-based educational system, the Music Educators National Conference (MENC) is moving toward a stronger empirical foundation. An example is its publication of *What Works: Instructional Strategies for Music Education* (Merrion, 1989), an outgrowth of work by a team from Instructional Strategy, a special research interest group of the Music Education Research Council. To produce *What Works,* team "members examined and interpreted research literature having significant conclusions for application in music instruction" (p. vii). MENC now publishes the journal *Update: The Applications of Research in Music Education* and sponsors a new series of monographs intended to bring information from research in certain topics to the classroom.

> "Knowledge and application of research, coupled with our profession's best collective wisdom, can be very powerful. Each can inform the other; however, either one, functioning in ignorance, diminishes our profession."

Evidence exists of a growing union between the research and teaching communities in music education. This article discusses selected systematic research in effective music teaching and the application of this research to music teacher education. Three areas of investigation that have yielded valuable information

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applicable to music teacher education are research in conducting, teacher intensity, and sequential patterns of music instruction. This research has also systematically documented effective application of and research in techniques of self-observation.

Conducting

Conducting probably requires little justification among musicians as a critical skill for prospective music teachers who plan to direct ensembles, whether elementary school choirs or high school bands. Indeed, public school music teachers perceive good conducting as a critical competency that has an affect on pupil learning. Conducting was rated the second most important musical competency, with aural skills rated first (Taebel, 1980).

In *Competency-Based Music Education,* Madsen and Yarbrough (1985) present a competency-based instructional model for teaching basic conducting skills. Building upon previous research (Yarbrough, 1980; Yarbrough, Wapnick, & Kelly, 1979), Madsen and Yarbrough reviewed almost all conducting texts as they pursued two goals: first, to develop operational definitions for fundamental conducting skills; and second, to devise observation forms to be used in analyzing these essential conducting competencies. The authors divided basic conducting into eight categories: beat pattern, tempo, dynamics, style, eye contact, preparation, release, and cueing, with the last three further detailed by eye contact, body movement, and gesture. In the study, students were responsible for self-observation (self-evaluation) focused on the behaviors operationally defined, and they were provided with little instructor feedback regarding their conducting techniques. This model proved to be quite effective, with pre- to posttest gains ranging from 39 percent to 86 percent for a 15-week course (see Table 1). This research/teaching technique was successfully replicated in another teacher education program with students expressing a positive attitude toward this competency-based self-evaluation model (Price, 1985); gains ranged from 17 percent to 78 percent for a 10-week course (see Table 1). Research in conducting continues and has found behavioral self-assessment to be an effective tool in teaching basic skills (Yarbrough, 1987). This research and its application demonstrate that experienced teachers can successfully evaluate and improve their conducting through structured self-assessment.

While research in conducting is somewhat sparse, there are many articles, books, and research studies that help point the way toward some nonverbal skills that we might consider addressing in music teacher education (Grechesky, 1986; Julian, 1989; Sang, 1987). Price and Winter (1991) examined the impact of strict and expressive conducting on performances and attitudes of eighth grade band students. Definitions of strict and expressive conducting were taken from operational definitions developed in previous research (Madsen & Yarbrough, 1985; Yarbrough, 1975). Variables examined were expressive gestures, group eye contact, and approving and disapproving facial expression, and while there was no marked differ-

Table 1. Mean Pre/Posttest Correct Conducting Percentages

Category	Prestest %	Posttest %	Gain %
	15-Week*		
Beat Patterns	10.9	84.1	73.2
Tempo	39.9	84.3	44.4
Dynamics	20.9	59.8	38.9
Cueing	1.5	82.8	81.3
Preparations	5.2	90.2	85.0
Releases	35.2	86.1	50.9
Style	27.2	78.4	51.2
Eye Contact	2.7	89.2	86.5
	10-Week Replication**		
Beat Patterns	0.5	64.9	64.4
Tempo	2.1	79.6	77.5
Dynamics	52.3	90.8	38.5
Cueing	40.4	80.3	39.9
Preparations	53.3	78.8	25.5
Releases	48.2	65.3	17.1
Style	38.1	96.6	58.5
Eye Contact	15.9	69.1	53.2

* Madsen & Yarbrough, 1985, p. 119
**Price, 1985, p. 63

ence between performances under expressive and strict conductors, the eighth graders significantly preferred the expressive conductor.

In work with undergraduate beginning conductors, Byo (1990) found that they could recognize intensity contrast in conducting gestures, and he subsequently was able to teach these subjects to demonstrate high and low gestural intensity. First Byo produced an intensity-contrast videotape for students to view and presented live modeling. Students were then videotaped attempting to demonstrate contrasts of high and low intensities. The class observed selected examples of their high and low intensities, rated them, and were 92 percent and 95 percent accurate on two different sets of examples in identifying which intensity level was being modeled. A final example tape was evaluated by graduate musicians, undergraduate musicians, undergraduate nonmusic majors, and high school musicians. All groups were able to identify intensities accurately, with graduate students being most accurate. Undergraduate music majors, who were predominantly in music education, were able to identify, learn, and model intensity contrasts.

Byo's (1990) findings, taken in conjunction with those by Price and Winter (1991), indicate that the intensity and expressiveness of conductors are salient characteristics that should be included as part of a conductor's preparation. Students ranging from junior high school through the graduate level are able to detect differences in conducting and probably are affected by such differences. In light of this, it would seem to behoove present and prospective music teachers to work toward being the best nonverbal models possible in their conducting.

Research in different aspects of conducting demonstrates the value of operational definitions paired with focused self-observation in preparing future conductors. Information from these and other studies can be applied with little difficulty by experienced as well as prospective music teachers. These techniques can provide the means to self-assess conducting skills and the nonverbal behaviors that are perceived as adding expressiveness and appear to be preferred.

Teacher Intensity

Research in teacher intensity provides fertile ground for music teachers since it addresses verbal as well as nonverbal behaviors that also transfer from conducting. Over 20 years ago, a research review reported support for use of teacher enthusiasm as a salient variable in teaching (Rosenshine, 1970). In 1978, Collins studied effects of enthusiasm training on prospective elementary teachers. Areas identified as contributing to high enthusiasm were vocal delivery, eyes, gestures, movements, facial expressions, word selection, acceptance of ideas and feelings, and overall energy.

Work in teacher intensity has been applied to music education. In one of the first such studies, the researcher examined effects of magnitude of verbal and nonverbal conductor behaviors on choral students (Yarbrough, 1975). Reactions to high- and low-magnitude conductors were compared. The areas of teaching examined were eye contact, closeness, volume and modulation of voice, gestures, facial expressions, and rehearsal pace, with both high- and low-magnitude behaviors operationally defined. For instance, magnitude was defined as high when maintaining eye contact with group and/or individuals throughout the rehearsal; low magnitude was identified when the teacher was looking at the music, ceiling, or occasionally in the direction of the piano, but not looking at individuals or the group. High magnitude appeared to be more effective, with students preferring the high-magnitude conductor, remaining on task better and performing better than with a low-magnitude conductor. Another study (Sims, 1986) examined teacher intensity in relation to its impact on preschool children. This study, which focused on high and low teacher affect, found that children's attending behavior was associated with higher teacher affect. Music teachers who wish to analyze aspects of their own teaching intensity can use the operational definitions and observation forms developed by Madsen and Yarbrough (1985; see p. 61).

Another interesting aspect of intensity is its relationship to teaching effectiveness ratings. A strong relationship was found between teacher intensity and teacher effectiveness. Music experts tend to rate high-intensity

teachers more positively than low-intensity teachers. For this study, intensity was defined as sustained control of student/teacher interaction, evidenced by efficient, accurate presentation and correction of subject matter with enthusiastic and effective pacing (Madsen & Geringer, 1989). It should be noted that this definition not only includes enthusiasm but also places emphasis on quality of instruction in the form of presentation and correction accuracy.

These findings have been applied to teacher education to enhance preservice teachers' use of intensity. In one case, prospective music teachers were taught to demonstrate high- and low-intensity teaching. The students participated in a 90-minute teaching session, followed by student-teacher practice, and then tried to model high and low intensities while being videotaped. Finally, the students used self-observation to assess themselves. Besides teaching students to model varying intensities, this study demonstrated the prominence of intensity in teaching because both trained and untrained students were able to accurately assess intensity level. The 94 students participating in the study were asked what defined intensity to them; points mentioned by 10 or more students are listed in rank order in Figure 1 (Madsen, Standley, & Cassidy, 1989). In this research as well as previous studies, recurring variables appear: knowledge of subject matter, demonstrated teacher enthusiasm, positive student/teacher interactions, and a sense of timing in effective classroom management, and subject-matter presentation and monitoring.

Enthusiastic, excited expression
Eye contact
Proximity; movement toward group
Concentration, attention to students or teaching; involvement
Strict, precise body movement or conducting gestures
Voice volume, pitch, inflection; change in voice
Energy, effervescence, vigor; pizzazz
No hestitation in voice; no filler words (uh, ah)
Planning, knowledge; competence
Pacing
Short, simple instructions

Figure 1. Definitions of Intensity Mentioned by ≥10 of 94 Subjects

In another study involving preservice teachers, Cassidy (1990) examined the effect of intensity training on instruction accuracy and delivery effectiveness. Elementary education majors were educated in the use of varying teaching intensities through laboratory practice and field teaching situations. Control and experimental groups both increased in level of teaching intensity; however, the experimental group spent more time in musical activities and maintained more group/individual eye contact, both of which are related to higher student attentiveness and possibly achievement. The preservice teachers in the experimental group also appeared to be more interactive with students. In this study, the factors involved in teacher intensity are defined as sustained control of student/teacher interaction, accurate presentation of subject matter, accurate correction of subject matter, enthusiastic affect, and effective pacing. These concepts are accessible to teachers of all levels and experience and can certainly be applied to further enhance teacher intensity, which is associated with effective teaching.

Implications of music education research in teacher intensity are that, in contrast to low-intensity teaching, effective teachers have high-intensity behaviors in their repertoire and can use them frequently and at appropriate times. While high teacher intensity appears to be important and effective, this does not imply that effective teachers are always operating with high-intensity behaviors; indeed, research documents the need for a large repertoire of teaching styles, a variety of pacing, and quiet time. These studies also demonstrate the value of operational definitions, modeling, and self-observation in teaching and learning requisite skills.

Sequential Patterns of Instruction in Music

The sequential pattern of teaching (sometimes labeled direct instruction) has been

found to be very successful in other subject areas and has been demonstrated to be pertinent to music teaching and learning as well. First noted by music education researchers in two 1981 studies (Moore; Yarbrough & Price), sequential patterns have been applied in a variety of music education settings, including music therapy, elementary classrooms, school ensembles, professional orchestras, courses and workshops for experienced teachers, and teacher preparation programs.

In a comparative study of teaching time by American and British elementary music specialists, researchers observed a pattern of instruction that followed the sequence of instruction, preparation, musical activity, and discussion (Moore, 1981). Studies carried out in secondary school ensemble settings demonstrate that a similar pattern exists in the form of teacher presentation, student response, and teacher feedback (Yarbrough & Price, 1981, 1989); the same pattern has been reported in private studio settings (Benson, 1989).

Sequential patterns of instruction in music are defined, in their most basic form, as a three-step process that begins with a teacher presentation of a task, opportunity for students to interact with the task, and then feedback. Over time, the components that comprise teacher presentations, student interaction, and teacher feedback have been refined (Price, 1992; Yarbrough & Price, 1981, 1989) and some aspects are presented along with their operational definitions in Figure 2.

An apparent hierarchy emerged during

Teacher Presentations (1)
1a - *Academic* musical task presentation (talking about musical or performance aspects, including modeling by teacher or piano; what or how)
1d - *Direction (*giving directions regarding who will, or where to sing/play; not how)

Student Responses (2)
2p - *Performance* (entire ensemble, sections, or individuals performing)
2v - *Verbal* (ensemble members asking or answering a question, or making a statement)
2nv - *Nonverbal* (ensemble members nodding heads, raising hands, or moving in response to teacher instruction)

Feedback (3)*
3va - verbal academic or social *Approval* (positive statement about student performance or social behavior)
3vd - verbal academic or social *Disapproval* (negative statement about student performance or social behavior)

*With feedback, one also assesses whether it is *Specific (descriptive)* or *Unspecific*. If specific, one also assesses whether it is *Related* or *Unrelated* to the teacher academic presentation that preceded the student response.

Complete Sequential Pattern
Patterns that follow a 1-2-3 sequence without error are complete. They must include an academic task presentation (1a) and the direction (1d) must not interrupt the flow (i.e., 1a-2p-3va, 1d-1a-2v-3va, 1a-1d-2p-3vd).

Sequential Pattern Errors
1. Sequence contains only directions (1d) with no musical task presentation (1a) or direction is extended, thus interrupting the flow between musical task presentation (1a) and student performance (2p), i.e., 1a-1d-----2p-3vd/va.

2. Reinforcement is not specific or not related to the task presented, or reinforcement is not correct.

Figure 2. Sequential Pattern and Selected Component Operational Definitions

continued research, both in sequential patterns and their components (Price & Yarbrough, 1991, 1992; Yarbrough & Hendel, 1992; Yarbrough, Price, & Hendel, 1992). Basically, sequential patterns that contain academic (musical) information are preferred over those with direction only; those with approval are preferred over those with disapproval or no feedback; and specific feedback (that which includes specific details about what was good or bad) is preferred over unspecific feedback. Within the various combinations of components, a sequential pattern hierarchy of values has emerged that includes an academic task, student interaction with the task, and specific or general approval as the most preferred pattern. Following this group are patterns that have an academic task and student interaction with no feedback, or ones with directions only, and student interaction with approval feedback. Lowest rated patterns are those that have an academic task or only include directions succeeded by student interaction with the task, and specific or general disapproval.

In an experiment where the reactions and performances of a university instrumental ensemble were investigated, the pattern that followed the sequence of teacher musical information, student performance, and corrective feedback was found superior to patterns that consisted of teacher directions followed by student performance and to ones that were composed of teacher musical information and student performance. In this study, students were more attentive and performed better in situations with feedback as opposed to no feedback, and they rated teaching using the complete pattern as best (Price, 1983).

With these data as a foundation, numerous efforts have been successful in transferring these concepts to music teacher education courses, workshops for experienced teachers, and personal teaching settings. Jellison and Wolfe (1987) used spoken and written instruction in an effort to improve elementary education majors' use of teacher presentation and feedback. Their students increased use of questions and directives, general and descriptive approvals, and they increased complete teaching sequences.

Two studies are notable because they were done by teachers who chose to apply research findings to their own teaching. A studio teacher (Benson, 1989) and a high school band director (Arnold, 1991) successfully used knowledge of sequential patterns of instruction in music and self-observation techniques in efforts to study and change the way they taught. Benson (1989) increased presentation of musical information and decreased giving directions. The high school band director, after one session of videotape self-observation and analysis, increased his use of complete sequential patterns by almost 20 percent, increased music activities time by almost 50 percent, and consequently decreased already low student off-task time by more than a third, from just over six percent to less than four percent. Besides effective application of research to their teaching, these individuals demonstrated that "research is not necessarily the province of college professors...Music educators at every level can contribute effectively to research" (Arnold, 1991, p. 13).

Undergraduate music education programs have incorporated teaching students to use sequential patterns of instruction in the curricula, and some published studies report how this has been done. Rosenthal (1985) used written and videotaped models, instructor feedback, and videotape self-observation. In her study, use of sequential patterns increased, feedback increased, and music time increased.

In a set of three experiments that incorporated videotape self-observation and operational definitions, with limited or no teacher feedback, undergraduate music education majors successfully changed their laboratory teaching to adhere more closely to the preferred aspects of sequential patterns (Price, 1992). In the first study, prospective music teachers increased 1-2-3 sequences, decreased teacher talk, and increased music time. In the second study, which included no teacher feedback to the undergraduates and relied exclusively on models, operational definitions, and self-observation, undergraduates were able to positively change their teaching with regard to sequential patterns and their components. Use of complete patterns—teacher presentation of a musical

(academic) task, student interaction with the task, and specific and related feedback—had a dramatic increase from 5 percent to 52 percent of teaching time. Within the patterns, time spent in teacher task presentations was reduced, with more time being spent presenting music information and less time spent giving directions. There was also an increase in amount of feedback, with all of it accounted for by approvals (see Table 2). The third study basically replicated the second in techniques and results.

The last study in the application of research in sequential patterns of instruction to music teacher education described here is one that reflects experienced teachers' choices regarding their own practices in light of knowledge of research. It examined their rehearsal skills and teaching values and how these changed with knowledge of research findings (Yarbrough, Price, & Bowers, 1991).

Experienced teachers participated in a two-week summer workshop on rehearsal techniques. They began the workshop by conducting a videotaped 12- to 15-minute rehearsal that demonstrated their best teaching skills and by evaluating transcript excerpts of teaching examples from music rehearsals. The workshop consisted of an extensive review and discussion of research on effective rehearsal techniques, and operational definitions and observational techniques for sequential patterns and their component parts. The teachers then conducted a practicum in which they were given the opportunity to practice what they had learned in the workshop. They could choose whether they wanted to work on score preparation, eye contact, conducting gestures, sequential patterns, or personality; there were no grade criteria involved in the choices. The teachers also evaluated the teaching excerpts from music rehearsals again.

It is interesting to note which rehearsal techniques these experienced teachers chose to work on and how well they succeeded. At the workshop's beginning, 5 of the 12 teachers used the sequential pattern of teacher presentation of academic musical information, student interaction, and positive feedback (most preferred pattern); however, at the end of the workshop, all 12 chose to do so. In addition, proportions of correct and complete patterns, academic tasks to directions, approvals to disapprovals, and specific feedback to nonspecific feedback all increased.

At the beginning of the workshop, there was not a strong relationship between what teachers indicated they thought was good teaching, based upon their evaluations of transcript excerpts of music rehearsal teaching examples, and how they taught. Their final behavior, however, reflected a positive, significant, and high correlation with their final transcript evaluations (verbal). In other words, at the end of the workshop their teaching was in much greater agreement with what they said they valued than it had been at the beginning. In light of their increased knowledge of research in effective rehearsal techniques, these experienced teachers chose to change their values and their teaching.

Conclusion

Self-Observation

In each of the three areas of research that have been applied to music teacher preparation, self-observation techniques have been employed. The effectiveness of self-observation, even when compared with teacher instruction, is well-documented (besides previ-

Table 2. Mean Pre/Posttest Complete Sequential Patterns and Components

Pattern & Component	Pretest %	Posttest %	Gain %
Complete Sequential Patterns	5.0	51.7	46.7
Teacher Task Presentations	54.5	48.4	- 6.1
Musical Information	22.8	28.3	5.5
Directions	27.3	18.8	- 8.5
Feedback	3.8	8.0	4.2
Approvals	3.0	7.7	4.7

ously cited examples, some others that might be of interest are: Alley, 1980; Furman, 1984; Greenfield, 1978; Hanser & Furman, 1980; Killian, 1981; Moore, 1976; Prickett, 1983, 1987; Saudergas, 1972; Stuart, 1979; Thomas, 1972). One may assume that those who employ observation training and self-observation do so, in part, as one of many research-based techniques in teacher education. Research seems to indicate that individuals can learn a great deal about their teaching by listening to an audiotape or viewing a videotape of themselves. Learning will likely be enhanced if personal experience is expanded by reading research and writing by other experts and making efforts to apply this knowledge. The studies noted in this article included prospective and experienced teachers, all of whom benefited from clear operational definitions and self-observation. These techniques are accessible to all who care to use them.

Informed Practice

Although this article deals with just a portion of only three areas of research in music education, it is fraught with applications to teacher education. Individuals can teach themselves, given the opportunity and necessary structure. Clearly, research findings can guide prospective and experienced music teachers to learn or improve conducting, use teacher intensity in their presentations, and use sequential patterns of instruction in music. Any informed individual can take these ideas and put them to work to become a more successful teacher.

If the goal of music educators is to improve teaching and learning for students, obtaining knowledge of research and systematically applying it to educational settings is one way of achieving it. One would hope that as music educators move toward national curricula, education and certification standards, they will be informed by research that has been demonstrated to be a valuable and applicable resource. Knowledge and application of research, coupled with our profession's best collective wisdom, can be very powerful. Each can inform the other; however, either one, functioning in ignorance, diminishes our profession.

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