

## Preservice teachers' perceptions of teaching effectiveness during high positive versus high negative teaching episodes.

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[MacLeod, R. B.](#) & Napoles, J. (2012). Preservice teachers' perceptions of teaching effectiveness during high positive versus high negative teaching episodes. *Journal of Music Teacher Education*. 22(1) 91-102.

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### **Abstract:**

The purpose of this study was to examine preservice teachers' perceptions of teaching effectiveness when viewing teaching episodes with positive and negative feedback. A secondary purpose of the study was to examine several independent variables to determine whether they predicted perceptions of overall teacher effectiveness. Participants watched short teaching clips of eight experienced teachers in an applied teaching setting and rated them for overall teaching effectiveness, subject matter competence, modeling, appropriate feedback, teacher delivery, and teacher demeanor. Teacher videos included four high positive teaching episodes and four high negative teaching episodes and were counterbalanced for gender and instrument (trumpet, piano, voice, and violin). Participants rated positive teachers higher than negative teachers and females higher than males. Teacher delivery was the best predictor of perceptions of teaching effectiveness.

**Keywords:** teaching effectiveness | feedback | teaching evaluation | teacher delivery | perceptions of teaching effectiveness | music education | music teacher evaluations | music teacher education

### **Article:**

Feedback is an important gauge that allows students to develop an awareness of how they are performing on a given task. Given ubiquitously in classroom settings, many times in the form of an assessment measure (a grade on a written or performance test), sometimes feedback is given informally, in a casual conversation or via written comments, or even nonverbally. Presumably, the desire is for the student to make progress toward a learning goal.

Researchers have found that feedback is valuable in instructional settings. Dunn's (1997) findings revealed that students receiving feedback had higher performance ratings and recorded a

more positive attitude toward rehearsal than students who received no feedback. When discussing the direct instruction model, Price (1985) identified a complete teaching cycle as one that included teacher instruction, student performance, and teacher feedback: “telling students how to do something, having them try, and giving them feedback will result in attentive and accomplished students who have positive attitudes” (p. 13). Schmidt (1995) added that feedback focused on student improvement appeared to be valued most by students.

Researchers have investigated the purported benefits of approval versus disapproval feedback and results have varied. Those who promoted more approval than disapproval, especially in a ratio of four-to-one approvals to disapprovals, contended that student attitudes were significantly higher (Murray, 1975), students followed class rules for social behavior to a greater extent (Kuhn, 1975), and music taught with high teacher approval was more reinforcing to the students (Dorow, 1977; Greer, Dorow, Wachhaus, & White, 1973). Participants in Yarbrough and Hendel’s (1993) study rated teachers who used approval as more effective than teachers who used disapprovals. Price (1989) affirmed that a preponderance of positive feedback resulted in more efficient use of class/rehearsal time, in which students paid better attention, performed better, and were more positive about the teacher and the music. Furthermore, the preferred pattern of music instruction was one in which the teacher presented a musical task, students were allowed to interact with that task, and the teacher gave approval feedback that was both specific and related to the task presented (Price & Yarbrough, 1993/1994).

Other researchers noted that more effective music teachers incorporated higher rates of negative feedback. This observation occurred with expert band directors attempting to correct errors (Cavitt, 2003) and expert junior high and senior high band directors during rehearsals (Carpenter, 1988). Experienced teachers gave more disapproval to more experienced students than did more novice teachers during private piano lessons (Speer, 1994). Moreover, there was no relationship between the rate of positive feedback and evaluations of teaching quality by preservice teachers (Duke & Blackman, 1991) or by experts in the discipline (C. K. Madsen, Standley, Byo, & Cassidy, 1992).

Duke and Henninger (1998, 2002) argued that negative feedback did not necessarily adversely affect students’ attitudes or musical achievement, or evaluations of teaching by third party observers. They attempted to differentiate between directives and negative feedback. Directives were defined as commands that indicated a student should do something, whereas negative feedback identified what was wrong with a student’s performance. In the first study (1998), the researchers found no significant difference in attitudes and performance achievement between participants in the directive group and those in the negative feedback group. In the second study (2002), outside observers evaluated the same lessons and rated them positively in both conditions. Duke and Henninger concluded that participants could successfully achieve a musical goal and view the experience as highly positive, irrespective of the rates of negative verbal feedback from the teacher. The researchers noted, however, that there were always at least twice

as many positive feedback statements than negative feedback statements or directives in both conditions.

There has been evidence to suggest that outside observers do not always accurately assess classroom events, and such is the case with perceptions of approval and disapproval. C. K. Madsen and Duke (1985a) assessed participants' perceptions of teacher approval and disapproval given to elementary students and compared these with the actual responses of the teacher. All participants inaccurately estimated the amount of teacher time devoted to approval and disapproval. Similarly, observers tended to overestimate the proportion of negative feedback given in instructional interactions (C. K. Madsen & Duke, 1985b). It seemed that many practicing and prospective teachers, when observing the teaching of others, were particularly sensitive to negative teacher feedback.

Previous research has provided mixed results in regard to the use of approval and disapproval, and many studies investigating positive and negative feedback are less current. Whereas some researchers have found that giving students more approval than disapproval resulted in more effective teaching (Kuhn, 1975; Murray, 1975; Yarbrough & Hendel, 1993), other researchers have found no relationship between the use of approval and perceptions of effective teaching (Duke & Blackman, 1991; Duke & Henninger, 1998, 2002; C. K. Madsen et al., 1992). It is still unclear how feedback affects perceptions of effective teaching. Additionally, prior studies have not examined gender or major area of study as it relates to perceived teaching effectiveness. The purpose of this study was to investigate preservice teachers' perceptions of teaching effectiveness when viewing teaching episodes that included high positive (four-to-one approval ratio) and high negative (one-to-four approval ratio) feedback statements. Specifically, do positive/negative feedback, gender (of the participant and of the teacher), or major area of study of the rater (choral vs. instrumental) affect perceptions of teaching effectiveness?

A secondary purpose was to examine which teaching elements predicted perceptions of overall teaching effectiveness. We chose elements previously identified in the literature: subject matter competence (Kelly, 2008; Millican, 2008), teacher delivery (Hamann, Baker, McAllister, & Bauer, 2000; K. M. Madsen, 2003; K. M. Madsen & Cassidy, 2005), and modeling (Dickey, 1991, 1992; Sang, 1987, 1998; Siebenaler, 1997) and added our own categories (appropriate feedback and teacher demeanor, to tease out the positive/negative variable and how it was perceived) as suitable for this study. We wished to investigate whether these elements cited in the literature would indeed be viewed by preservice teachers as traits of an overall effective teacher.

## Method

### Participants

Participant volunteers were upper division music education majors at two large state universities (N = 75), one in the western and one in the southeastern United States. There were 40

instrumentalists and 35 vocalists, 36 females and 39 males. All were recruited from the semester's offerings of music education courses.

### Preparing the Stimulus Video

Experienced teachers in trumpet (2), voice (2), piano (2), and violin (2) were videotaped in a simulated applied music lesson. Half of the teachers were male ( $n = 4$ ) and the other half female ( $n = 4$ ). All teachers had a minimum of 8 years of teaching experience, were between 30 and 40 years old, and were Caucasian. The teachers selected were from different states than where the participants went to school and were unknown by the participants.

Teachers were asked to instruct the "student" as though he or she were a beginner and to model using an instrument or voice as appropriate to the lesson. To encourage similar lesson content, prior to recording the lesson, all teachers viewed a model lesson that demonstrated the high positive or high negative feedback desired. The researchers were the mock students but were never in view of the camera. We attempted to minimize differences between the quality of student performance during all teaching excerpts by performing equally well or poorly during both positive and negative feedback conditions.

One half of the teachers taught their lesson under the high positive feedback condition (using four approvals and one disapproval) and the other half taught under the high negative feedback condition (using four disapprovals and one approval). Teachers were asked to provide feedback that was specific, contingent, and related to the student's performance. Gender was counterbalanced such that there were two males and two females in the high positive condition, and two males and two females in the high negative condition. In addition, if a female taught trumpet under the high positive condition, the counterpart was a male teaching trumpet under the high negative condition. Teachers were permitted to practice the lesson prior to videotaping and were provided with visual cues about the ratio of positive to negative feedback given throughout the lesson. Lessons were videotaped with a digital video camera focused on the teacher. Multiple recordings were taken of each lesson for later review by the researchers.

The researchers viewed all video recordings and counted the feedback statements to ensure that the correct four-to-one ratio was present. Video recordings that included an incorrect ratio of positive to negative feedback statements were eliminated. Two independent outside observers agreed that the appropriate positive/negative condition was incorporated in each of the final excerpts. Lessons ranged from one minute to two minutes in length. In addition to the eight teaching episodes created for the study, two practice examples were videotaped and included on the final DVD. Four orders were generated from the master tape, and each lasted 18 minutes total, with a 20-second blank screen in between each teaching episode to allow for participant response time.

As a pilot study and validity check, eight experienced teachers viewed the video examples and rated the teachers. The experienced teachers were asked what they thought the study was about

and whether any of the clips seemed inconsistent when compared to the others. All agreed that the excerpts varied in the form of feedback delivered, and there were no other distracting differences between teachers noted. Several suggestions for clarification in the instructions were incorporated, and response time was increased to 30 seconds between each video.

### Designing the Questionnaire

We identified several teaching elements that might be predictive of overall teaching effectiveness: teacher delivery, modeling, appropriate feedback, and subject matter competence. To test whether participants had perceived the independent variable of positive/negative feedback condition accurately, we added teacher demeanor as an element to be evaluated.

### Procedure

After answering demographic questions, participants were given the following instructions:

You are about to view 8 short teaching clips of experienced teachers teaching an introductory lesson to a beginning student. After viewing the clip, answer the questions on your answer sheet. You will rate each teacher for subject matter competence, teacher delivery, modeling, appropriateness of feedback, teacher demeanor, and overall teaching effectiveness on a scale of 1 to 5, 1 indicating very low, 5 indicating very high. We will first do two practice examples. Are there any questions?

After the practice examples, questions were answered, and the video was played. See the appendix for an illustration of the survey form administered.

### Results

Preliminary analyses revealed no significant differences in teaching effectiveness ratings between the eight teachers within like categories (both positive female teachers were rated as similarly effective, as were both positive male teachers, negative female teachers, and negative male teachers). Furthermore, there were no significant differences between the two universities on any of the subcategory ratings ( $p > .05$ ), so the two samples were subsequently treated as one population. Ratings for each teaching element were combined by gender and positive/negative feedback condition so that comparisons could be made between four distinct categories: positive female teacher, positive male teacher, negative female teacher, and negative male teacher. The individual scores were then added together between like categories, providing a scale of 2 to 10 (rather than 1 to 5), from low to high. An alpha level of .05 was used for all statistical comparisons.

**Table 1 is omitted from this formatted document.**

To test whether participants perceived the high positive feedback and high negative feedback conditions as intended, responses to the “teacher demeanor” question were examined. Overall,

females assigned to the high positive condition were rated as having a positive demeanor,  $M = 9.25$ ,  $SD = 0.81$ , as were males assigned to the high positive condition,  $M = 9.12$ ,  $SD = 0.89$ . Females assigned to the high negative condition were rated low on this category,  $M = 5.13$ ,  $SD = 1.88$ , as were males,  $M = 3.53$ ,  $SD = 1.53$ . It is clear that participants were able to discriminate between the positive and negative teaching conditions (see Table 1).

We analyzed the ratings given by the participants for the question concerning teacher demeanor using a repeated measures analysis of variance with four within-subjects variables (positive females, positive males, negative females, negative males). A significant main effect was found between the four teacher conditions,  $F(3, 222) = 445.91$ ,  $p < .001$ , partial  $\eta^2 = .86$ . Pairwise comparisons using the Bonferroni test revealed significant differences between the positive feedback condition and negative feedback condition for both male and female teachers. There was no difference between the ratings of teacher demeanor for the positive female compared with the positive male. However, there was a significant difference between the ratings for the negative female and negative male.

To determine whether positive/negative feedback, gender (of the participant and of the teacher), or major (choral compared to instrumental) affected perceptions of teaching effectiveness, we used a repeated measures analysis of variance, with three between-subjects variables (participant gender, major, and order) and three within subjects variables (teacher gender, positive/negative feedback condition, and the effectiveness ratings). Assumptions of the analysis of variance were met and error variances were homogeneous. Results revealed significant main effects on ratings of teacher effectiveness for positive/negative feedback condition,  $F(1, 62) = 165.03$ ,  $p < .001$ , partial  $\eta^2 = .72$  and teacher gender,  $F(1, 62) = 55.54$ ,  $p < .001$ , partial  $\eta^2 = .47$ . Excerpts under the positive feedback condition ( $M = 8.88$ ,  $SD = 1.25$ ) were rated higher than excerpts under the negative feedback condition ( $M = 5.71$ ,  $SD = 1.79$ ) and females ( $M = 7.78$ ,  $SD = 2.08$ ) were rated higher than males ( $M = 6.81$ ,  $SD = 2.24$ ). Figure 1 illustrates teacher effectiveness ratings by gender and positive/negative feedback condition. The figure shows that females were rated higher than males in effectiveness for both feedback conditions. There were no other significant main effects or interactions.

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To answer our second research question, that is, which teaching elements predicted perceptions of overall teaching effectiveness, we conducted multiple regression analyses. Examinations of histograms and scatterplots indicated that the assumptions for linearity, normality, and homoscedasticity were met. Tolerance for each independent variable was greater than .1, indicating that multicollinearity assumptions were also met. All variables were entered simultaneously employing an exploratory regression model. An alpha level of .05 was established a priori.

Regression results indicated that the overall model significantly predicted teaching effectiveness,  $R^2 = .82$ , adjusted  $R^2 = .82$ ,  $F(5, 294) = 281.88$ ,  $p < .001$ . This model accounted for 82.7 % of variance in overall teaching effectiveness. There were high positive correlations (.58 to .87) between each predictor and overall teaching effectiveness. Bivariate and partial correlation coefficients are presented in Table 2 and illustrate that four of the five independent variables (teacher delivery, subject matter competence, teacher demeanor, and appropriate feedback) had  $t$  values that significantly contributed to the model. Teacher delivery had the highest beta weight, and the highest partial  $r$  (although the latter value was the same as teacher demeanor). Modeling was eliminated as a variable predicting teaching effectiveness, since it did not significantly contribute to the regression model ( $p > .05$ ).

Table 2. Regression Coefficients for Final Model

|                      | B   | $\beta$ | t    | p     | Bivariate r | Partial r |
|----------------------|-----|---------|------|-------|-------------|-----------|
| Appropriate feedback | .12 | .11     | 2.49 | .013  | .81         | .14       |
| Competence           | .21 | .13     | 3.74 | <.001 | .58         | .21       |
| Demeanor             | .27 | .35     | 7.07 | <.001 | .84         | .38       |
| Delivery             | .36 | .38     | 7.18 | <.001 | .87         | .38       |

## Discussion

The purpose of this study was to investigate preservice teachers' perceptions of teaching effectiveness when viewing teaching episodes that included high positive (four-to-one approval ratio) and high negative (one-to-four approval ratio) feedback statements. Consistent with previous research (Price & Yarbrough, 1993/1994; Yarbrough & Hendel, 1993), participants in this study perceived positive teaching episodes to be more effective than negative teaching episodes. Teaching excerpts were rated in the following order of perceived effectiveness: positive female teachers, positive male teachers, negative female teachers, and negative male teachers.

We found a significant difference between male and female teachers. Female teachers were rated as more effective than male teachers within like feedback conditions. In other words, positive female teachers were rated higher than positive male teachers and negative female teachers were rated higher than negative male teachers. However, this difference may be attributed to the participants' perception of the feedback statements. Previous research has suggested that outside observers do not always accurately assess rates of teacher approval and disapproval (C. K. Madsen & Duke, 1985a, 1985b), and such may be the case in this study, since participants did not respond to all negative teaching episodes equally. Instead, ratings showed that the negative

male teachers were perceived as more negative ( $M = 3.53$ ,  $SD = 1.52$ ) than the negative female teachers ( $M = 5.13$ ,  $SD = 1.87$ ). It is likely that this discrepancy contributed to the significant main effect of gender. Additional research is necessary to determine whether this difference was due to perception or related to a difference in delivery style between the teachers in this study. Since there were only two teachers per like category (negative female, positive male, etc.), and four of each gender in total, generalizations about differences between males and females are not appropriate without further study.

Participants in this study rated delivery, modeling, appropriate feedback, subject matter competence, and demeanor of the teachers in addition to overall teaching effectiveness. Consistent with previous research (Hamann et al., 2000; K. M. Madsen, 2003), data analysis revealed that teacher delivery was the strongest predictor of perceptions of overall teaching effectiveness. Teacher demeanor, subject matter competence, and appropriate feedback also predicted perceptions of overall teaching effectiveness, although to a lesser degree.

Inconsistent with previous research that found no relationship between the rate of positive feedback and evaluations of teaching quality (Duke & Blackman, 1991; C. K. Madsen et al., 1992), we found that teachers perceived as more positive were rated higher (more effective overall) by participants than teachers perceived as less positive. Furthermore, relationships between teacher demeanor and overall teaching effectiveness followed the exact same rank order (see Table 1).

Based on the results of study, it seems that participants believe it is most important for teachers to have good delivery and a positive demeanor, and perhaps less critical to provide appropriate feedback or display subject matter competence. We wonder whether participants were particularly “unforgiving” of high negative conditions because they were told that the students in the video excerpts were just beginning instruction on their instrument. Participants may have different expectations for beginning students and the type of feedback that is appropriate for the teacher to administer at these early levels. Other studies that incorporated higher rates of disapproval (Carpenter, 1988; Cavitt, 2003) included junior high and senior high school age students in ensemble contexts. Speer (1994) found that experienced piano teachers gave more disapproval to students with more than 3.5 years of playing experience than to students with less playing experience. It is possible that effective rates of approval to disapproval change according to age and context. Further research is certainly warranted with respect to student ability level and teacher feedback.

Previous research found modeling to be an effective mode of instruction in instrumental music settings (Dickey, 1991, 1992; Sang, 1987, 1998; Siebenaler, 1997). Surprisingly, modeling was not a predictor of perceptions of overall teaching effectiveness in this study. One possible explanation for this outcome is the fact that each of the eight teachers was required to model for the student during the teaching episode. We did not attempt to compare teaching episodes that contained modeling to teaching episodes that did not. Isolating modeling as an independent



variable may produce different results. Furthermore, the students' "response" in the video excerpts was controlled in our study. It is possible that modeling positively affects student performance, which in turn could influence perception of teaching effectiveness. Future studies are needed to clarify how modeling affects both the perception of teaching effectiveness and the student performance and understanding.

There are several limitations to consider when reviewing the results of this study. The video excerpts created for the study included only eight teachers; therefore it is inappropriate to make broad generalizations concerning teaching effectiveness. Furthermore, the teaching episodes used in this study were created to represent a private lesson setting with a beginning student. Different contexts with different age groups will likely provide different results. Preservice teachers participated in the study and are still forming ideas about effective teaching. Experienced teachers may have viewed the video excerpts differently or rated teaching elements in a different order.

Preservice teachers were able to view only the teacher in each teaching excerpt and were unable to view the student in the video. Student attentiveness, attitude, progress, and other reactions from students may contribute to observers' perception about the effectiveness of a given lesson. Future research should investigate the impact of various student responses on viewers' perception of effective teaching.

This was solely a perception study, and participants may believe there are other factors, besides those chosen, that contribute to teaching effectiveness. Another possible limitation of this study was that the researchers served as mock students and teachers were required to use the specified ratio of approvals to disapprovals, therefore the teaching episodes were somewhat contrived. Further research in an authentic classroom setting may produce different results. Research investigating additional characteristics of effective teaching, such as modeling, nonverbal feedback, various ensemble settings, and different age-groups would be beneficial in clarifying the results of this study.

**Appendix 1 is omitted from this formatted document.**

### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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