The Influence of Arts Programming on Elementary Student Perception of the Classroom

Linnea M. Van Eman, Chris M. Ray, & James R. May
Oklahoma State University

Poster Presentation to the Rocky Mountain Educational Research Association
October 21, 2005
The Influence of Arts Programming on Elementary Student Perception of Classroom

The goal of arts programming is to change educational culture and the way in which teachers teach, placing an emphasis on exploration as opposed to discovery, valuing the surprise of the journey rather than controlling the outcome (Eisner, 2004). The purpose of this study is to investigate the influence of elementary arts programming on student classroom perception. Arts programming includes professional development of teachers for arts infusion and talent identification and development in music for elementary students, specifically string instruction. Student classroom perception is considered to be the self-reported views of elementary students for challenge, choice, interest, and enjoyment as measured by the survey instrument, My Class Activities (MCA) (Gentry & Gable, 2001). The MCA data was collected in the spring of 2004 from third, fourth, and fifth graders. Three ANOVA computations will be conducted, one for each dependent variable of challenge, choice, enjoyment, and interest. The independent variables are two levels of gender (male and female), four levels of group (strings and infusion teacher, no strings and infusion teacher, no strings and infusion teachers, no strings and no infusion teacher), and three levels of grade (third, fourth, and fifth graders).

INTRODUCTION

Efforts to improve student academic performance and behavioral characteristics by integrating the arts across all subjects have been well documented over the past several years. Likewise, the effects of talent development on student outcomes have been studied. However, little is know about the effects of a combination of arts integration and talent development. This study provides an exploratory glimpse of how arts infusion and talent development may influence student perception of their class. Research in arts infusion for high-risk elementary students supports the notion that arts integration produces positive effects for student achievement, motivation, engagement in learning, and positive changes in classroom practices (Catterall, 1995). Students who participate in arts infused classrooms demonstrate more positive attitudes and commitment to the value of personal effort toward achievement. Luftig (1994) reported an increase in achievement, creativity, affective behaviors associated to self-esteem, self-expression, strengthening student engagement with school through a program called SPECTRA+. High risk preschoolers have shown an increase in student engagement and interaction with their peers from exposure to arts infused classes (Torff, 1995). Cognitive transfer (Brown, 2001) supposes that the effects of arts integration provide a carry over into knowledge and academic skills.

Arts infusion into core curriculum provides teachers a powerful tool to help students engage in learning in a more meaningful way. A+ Schools determined that the scales on My Class Activities are an appropriate classroom climate survey for measuring student outcomes that correspond to interest in learning activities, challenge in learning new knowledge and skills and identifying students who would continue to be involved in the types of activities assigned (Gunzenhauser, Montgomery, Barry, et. al. 2004). Eisner poses that the arts fuel cognitive development (Brown 2001). First graders randomly chosen for music lessons for one year were given IQ tests before and after music lesson. After one year the students demonstrated consistently increases in full-scale IQ (Schellenberg, 2004).
Influence of Arts Programming

New Jersey Symphony Orchestra Newark’s early strings program sited benefits to students and teachers who participated in its program (evidenced by positive affective behaviors), improved academic experience; evidenced by high scores on standardized tests, and feelings of self worth (U.S. Newswire 2003). The argument for far transfer (cognitive transfer across domains that are dissimilar) seems to have merit when using music lessons to increase IQ (Schellenber, 2004).

Additionally, the KIPP Academy String and Rhythm Orchestra program in the South Bronx, one of the poorest neighborhoods in the United States, is one of the country’s most outstanding youth orchestras. Over 80 percent of the Latino and African American fifth through eighth grade students attending this charter school score above the national average in math, 73 percent above the national norms in reading and 90 percent are accepted into prestigious private high schools (Rosellini, 2004). The program builds discipline, confidence, and character skills. Affective behaviors improved as the children gained confidence with their instrument. Through music, the students gain success. Founder David Levin states, “Greatness, changes someone forever,” (Rosellini, 2004). Berger (2004) states that students participating in her sixth grade orchestra program demonstrate the capacity to form solid friendships through the orchestra program, take pride in accomplishment and responsibility for the care of their instruments.

METHOD

PARTICIPANTS

Three high-risk elementary schools were identified and accepted the invitation to participate in the project. Approximately thirty five teachers participated in the professional development opportunities during the 2003-2004 academic year. Infusion teachers attended at least seven professional development seminars and committed to using artists and art activities in their lessons and units. The infusion teachers and other non-fusion teachers in the three elementary schools identified students who were placed in stringed music talent development groups from students in all three schools in grades 3-5.

The sample for this study includes 354 students in grades 3-5 from each of the schools who completed the My Class Activities (MCA). The target populations for the three schools include one school with an overwhelming predominant African American population. Hispanic ethnicity represents the majority of students in the second school and students in the third school have a substantial Native American population.

INSTRUMENTATION

My Class Activities was developed out of research in gifted education and is directly tied to motivation and learning. More than 3700 students in grades 3-8 participated in the administration of this instrument for standardization and provides acceptable reliability (Gunzenhauser, Montgomery, Barry, Dell, & Raiber, 2004). My Class Activities proposes that challenge and stimulation are required for intellectual development. Performance and motivation directly impact interest in a subject. Motivation and achievement increases as choice of goals and learning styles increases. Enthusiasm for teaching enhances interest and therefore increases learning. Some sample items from each of the four scales of this instrument are as follows:
Choice
- I can choose to work in a group or alone
- I can choose my partner.
- I can choose my own projects

Interest
- What I do in my class fits my interest
- What I do in my class gives me new and interesting ideas
- My class has helped me explore my interests
- I have to think to solve problems in my class

Enjoyment
- I look forward to my class
- The teacher makes learning fun
- The activities I do in my class are enjoyable

(Gentry & Gable, 2001)

The two-page instrument consists of 31 statements about students’ classroom perception. The three scales use the same questions and responses. Five possible response options include: Never, Seldom, Sometimes, Often, or Always. Using a ratio scale with a meaningful zero point will indicate the absence of independent group variable A’s influence on B or C or any other combination of possible interactions for the study. The experimental design used the data from the 2003 MCA instrument collected from the three elementary schools 3rd-5th grades during May and June.

PROCEDURE

Data for this study was collected from a larger research study - Project CREATES: Connecting Community Resources Encouraging All Teachers to Educate with Spirit. As part of its mission, CREATEs goal is to facilitate the development and delivery of high quality academic instruction, to the volunteer teachers of students attending three high risk elementary schools in Tulsa, infused with high quality arts instruction leading to talent identification and development. Quality professional development is offered to the self selected teachers who learn how to design and deliver arts infusion lessons to all students. These teachers and project staff identify emerging talent and those students are invited to participate in talent development opportunities. This study examines the talent development groups for cello, violin, and viola lessons.

Following OSU Institutional Review Board policy, Tulsa Public Schools granted district level approval for the larger study. Each principal approved the research design and the use of the instrument at his or her school. Parental consent was required for each student to complete the MCA.

Researchers were trained to administer the MCA in small groups of third, fourth, and fifth grade students. Students whose parents provided consent gathered in one classroom and were read the student assent script. There were at least two small group administrations for each grade at each of the three elementary schools. Time varied for administration from 30 to approximately 45 minutes. Each item was read to the students while at least one other researcher supervised the small groups of students who were responding to the oral narration of the
The Hispanic population of one school required the presence of a translator to assist the graduate students while administering the MCA.

The researchers administered the instrument on the scheduled day during school hours. After the students received a copy of the MCA, they filled in the blank spaces for their subject/class, and teacher name. One researcher read the assent script and continued with the introductory statement as follows (Gentry & Gable, 2001):

“We would like to know how you feel about your class activities. Read each sentence and indicate how often this happens for you in your class by coloring in the doughnut. There are no right or wrong answers. Your answers will be kept secret. Remember to color in a doughnut for each sentence” (p. 1)

Students were allowed to ask questions during the administration; however, they were reminded to raise their hands if they needed help. Each researcher also reminded the students that the answers were their opinions and should not be shared with other students. One research assistant collected the instrument from each student as it was completed.

EXPERIMENTAL DESIGN

Using the data from the *My Class Activity* instrument, a 4x3x2 between group factorial design for 3 separate dependent variables was initiated. With 3 dependent variables there is the likelihood of family wise Type I error. Therefore, it was prudent to test the hypotheses for the 3 separate groups with a more rigorous p value of $\alpha=.01$. Further, it is assumed that each scale is independent of the other scales for the interest of this study.

The focus of this study is to determine if student perception of choice depends on an interaction of strings classes and having an arts infusion teacher (group), the grade a student is in, and their gender. Perception of choice could be an interaction influenced by group and grade alone. The possible interaction could also be influenced by group and gender alone. Finally, the perception of choice could be an interaction of grade and gender.

Statistical tests were run to look for possible interaction effects for choice, enjoyment, and interest. Due to an absence of interaction effects appropriate post hoc tests were administered to discover the variables that contribute to the significance.

Normal distribution violations were controlled by using $\alpha=.01$ to compensate for a small sample size of 3rd, 4th, and 5th grade students participating in the study. Through instructions to the students prior to taking the survey, violations to independence were possibly minimized, but the fact that students are tested within intact classrooms could pose possible limitations. Random selection was not an option, but the intact classroom perception is a part of the $H_0$ (impact of student perception within arts infused classrooms, as opposed to non arts infused classroom). The more robust $p$ value accounts for Type 1 error. Training of the researchers who administer the instrument, 30 to 45 minute allotment for administering the instrument, specified directions to the students added another layer to protect against violations to independence. The assumption of between-group homogeneity of variance required the use of the Levene Test to check for heterogeneity of cell or group variances.
RESULTS

INTEREST

The analysis of student-perceived interest in classroom activities revealed no statistically significant three-way interaction effects for gender, grade level, and student/teacher participation in Project CREATES development programs: the effects of student and/or teacher participation in Project CREATES on level of student interest in classroom activities does not depend on both the student’s gender and grade level. However, there are statistically significant interaction effects for student/teacher participation in Project CREATES depending on the gender of the student as well as for student/teacher participation in Project CREATES according to the grade level of the student.

CHOICE

The analysis of student-perceived opportunity to choose classroom activities revealed no statistically significant three-way interaction effects for gender, grade level, and student/teacher participation in Project CREATES development programs: the effects of student and/or teacher participation in Project CREATES on level of student interest in classroom activities does not depend on both the student’s gender and grade level. Male and female students reported similar patterns of perceived opportunity to choose classroom activities; however, these patterns differ depending on both the student’s grade level and on whether they and/or their teachers participated in Project CREATES.

ENJOYMENT

The analysis of student-perceived enjoyment of classroom activities revealed no statistically significant three-way interaction effects for gender, grade level, and student/teacher participation in Project CREATES development programs: the effects of student and/or teacher participation in Project CREATES on level of student interest in classroom activities does not depend on both the student’s gender and grade level. The effect of student and/or teacher participation differs significantly depending on the student’s grade level, but not on the student’s gender. Post hoc analysis of interaction comparisons revealed that students in classrooms of non-Project CREATES teachers who also participate in Project CREATES talent development enjoy classroom activities more than students in classrooms of Project CREATES teachers who do not participate in Project CREATES talent development.

DISCUSSION

This study was conducted as a preliminary examination to be included in an interim report. The necessity of drawing upon intact groups resulted in unequal numbers of subjects at each level in the analysis: although the study adopted a more stringent alpha level ($\alpha < .01$) to address this concern, unequal-$n$ conditions effected our ability to perform appropriate post hoc analyses. Accordingly, we report provisional results for the study, and plan to collect more data for the final report.
Influence of Arts Programming

References


