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The purpose of this study was to develop, implement, and evaluate an in-service training program in music for child-care personnel working with infants and toddlers. Results of a needs assessment determined that most child-care centers offer music activities and that caregivers would be interested in receiving training. Training materials were developed, pilot-tested, and revised. For the final training program, caregivers in a university-based child-care program attended three in-service training sessions. Evaluation of the program revealed that caregivers made significant improvements in their attitude toward and knowledge about music activities for young children. Additionally, caregivers increased their use of 9 out of 11 behaviors considered necessary for successful music activity implementation. The children in their care also increased the amount of time they were visually, vocally, and physically engaged during music activities. These results suggest that a music training program can benefit both caregivers and children.

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An In-Service Training Program in Music for Child-Care Personnel Working with Infants and Toddlers

Over the last three decades, the number of families in which both parents work outside the home has increased dramatically, especially those families with children under 3 years of age (Committee for Economic Development, 1993; Scarr, 1998). Consequently, more than half of all infants and toddlers in the United States now spend time each day in some type of child-care setting. These changes call upon child-care staff to undertake numerous and varied responsibilities, including providing appropriate music activities for groups of young children.

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Music activities are commonly offered in child-care settings and are strongly recommended by experts who regulate child-care quality (American Academy of Pediatrics & American Public Health Association, 1992; Child Welfare League of America, 1992; Kenney, 1997; O'Brien, 1997). Despite such widespread support, caregivers may find the responsibility of providing music activities somewhat daunting. Many child-care staff report having limited musical knowledge, misconceptions regarding their musical skills, and a lack of adequate resources (Gharavi, 1993; Hildebrandt, 1998; Isenberg & Jalongo, 1993; McDonald, 1993).

These issues affect the quality and frequency of musical experiences in day-care settings. Without sufficient knowledge or skills, caregivers may hold unrealistic expectations for children's behavior and unknowingly implement activities beyond children's developmental capacities (Andress, 1989; Kenney, 1989). Children may then lose interest or respond in undesirable ways, causing caregivers to avoid or minimize music activities (Hildebrandt, 1998; Jalongo, 1996). To remedy this situation, music educators suggest that a modest amount of well-designed training would most likely provide child-care staff with adequate skills and knowledge to use music effectively (Feierabend, 1992; Kenney, 1989; Scott-Kassner, 1994).

Researchers have begun to examine the concept of music training for preschool teachers. A recent survey determined that preschool teachers are interested in receiving music training if it is offered at a convenient time and for a reasonable cost (Gharavi, 1993). Another study demonstrated that preschool-age children who participated in a music program taught by licensed Kindermusik educators made significant gains on the Young Child Music Skills Assessment and on the Stanford-Binet Bead Memory subtest (Bilhartz, Bruhn, & Olson, 1998; Thorndike, Hagen, & Sattler, 1986). In an earlier study, researchers provided an in-service music education program for preschool teachers and then measured the children's responses during music activities (Nichols & Honig, 1995). Results indicated that children whose teachers received music instruction demonstrated significantly higher amounts of attending behavior than did children whose teachers did not receive such training.

These two studies suggest a positive relationship between music training and improved behaviors of preschool-age children. More research is needed to assess the effects of music training on very young children, such as infants and toddlers. In addition, researchers should examine changes in caregiver behaviors. On the basis of their findings, Nichols and Honig (1995) predicted that teachers who receive music training will be better prepared to use music activities with young children.

The purpose of this study was to develop, implement, and evaluate an in-service training program in music for child-care personnel working with infants and toddlers. Four research questions were addressed:

1. Does a music-training program change child-care personnel's ability to implement music activities with young children?

2. As a result of child-care personnel participating in a music-training program, do the infants and toddlers in their care demonstrate a change in engagement behaviors during music activities?

3. Does a music-training program alter the attitudes of child-care personnel toward implementing music activities with young children?

4. Does a music-training program influence child-care personnel's knowledge of developmentally appropriate music activities and resultant benefits for young children?

METHOD

Development of Training Materials

The method for this study was a training program evaluation. A needs assessment survey was distributed to 100 child-care centers serving infants and toddlers in two states in the American Midwest. Of the 59 usable questionnaires, 98% of respondents indicated that they do include music activities as part of infant and toddler care on a regular basis. The majority of center directors also expressed an interest in receiving music training (92%). These results were combined with information from research literature on early childhood and music. This information was then submitted to a five-member panel of experts, including board-certified music therapists and professors of music, whose responses were used to formulate learning objectives for the training materials.

The training program was pilot-tested with volunteer participants from a child-care center serving infants and toddlers in a large, midwestern city. Pilot-test participants attended three 30-minute in-service training sessions and completed two types of pretest/posttest measures. Test-item analyses were conducted on their responses, and average pretraining and posttraining scores were compared, enabling revision and improvement of training materials.

Development of Data-Collection Methods

All data-collection methods used in this study were original. With the exception of the Infant/Toddler Engagement Behaviors, development of each method began in the same manner: results of the needs assessment were combined with information gleaned from research literature on early childhood and music. This information was then submitted to the panel of experts, whose responses were used to develop data collection methods.

Caregiver Behaviors. The panel of experts identified 11 caregiver behaviors as being most critical for caregivers to use when implementing music activities with young children. These 11 behaviors were grouped into the following three categories: (1) group leadership skills, including positive affect, positive verbal reinforcement, modeling of physical movements, and demonstration of organization and preparation through lack of "down time" between activities; (2) musical skills, including vocal projection, singing or chanting with confidence and enthusiasm (vocal confidence), and demonstration of rhythmic accuracy through movements, such as patsching or clapping; and (3) presentation of musical material to infants and toddlers, including use of developmentally appropriate songs, engaging children in physical movement, providing a variety of songs, and modifying musical elements as needed to maintain children's attention or encourage imitation.

Eight behaviors were evaluated using a 15-second "observe"/10-second "record" time sample method. The remaining three behaviors were recorded using a global evaluation method based on a 5-point Likert-type scale ranging from a score of 1 (behavior never observed) to a score of 5 (behavior consistently observed). These behavioral observations were used to address the first research question: Does a music training program change child-care personnel's ability to implement music activities with young children?

Infant/Toddler Engagement Behaviors. To determine the influence of the music training program on the children receiving care, infants and toddlers were observed for engagement behaviors during music activities. Engagement behaviors were selected as a dependent variable following a thorough review of research literature on early intervention and subsequent consultation with a national expert in early child care. Early childhood professionals have conducted considerable research on engagement and consider it to be "one of the most useful and broad-based goals of early intervention," as well as a prerequisite behavior for both developmental progress and optimal learning (McWilliam & Bailey, 1992, p. 252). Consequently, engagement seemed to be an appropriate behavioral goal for young children of varying ages and levels of development.

Using the Placheck method of data collection, live observers coded the number of children who were visually, vocally, or physically engaged at the beginning of every 1-minute interval during 10 minutes of music activities. Observations of the children were used to answer the second research question: As a result of child-care personnel participating in a music training program, do the infants and toddlers in their care demonstrate a change in engagement behaviors during music activities?

Attitude Scale. The Attitude Scale was designed to assess caregivers' attitudes toward conducting music activities with infants and toddlers. Statements on the scale pertained to caregivers' opinions of the importance of music in day-care settings, their beliefs regarding the efficacy of music activities, and their personal comfort level in conducting music activities. The initial items for this scale were first administered to a pool of 18 caregivers not otherwise involved in the study. These individuals were asked to read the series of 22 statements and evaluate each one using a 5-point Likert-type scale ranging from a score of 1 (strongly disagree) to a score of 5 (strongly agree). Based on their feedback, certain items were then reworded

or deleted. The Attitude Scale was also given to pilot-test participants, and additional revisions were made resulting from their responses. The final version of the scale contained 14 items ($r = .85$). The scale was used to answer the third research question: Does a music training program alter the attitudes of child-care personnel toward implementing music activities with young children?

Learning Tests. Using information from the needs assessment, research literature, and the panel of experts, three separate learning tests were constructed to measure participants' knowledge gained from training. Each test was based on the session's learning objectives and consisted of multiple-choice questions pertaining only to the content of its associated training session. Pilot-test participants completed each test, which allowed for item analyses and revision. For the final test versions, split-halves reliability was calculated as follows: Test 1—$r = .66$; Test 2—$r = .60$; and Test 3—$r = .67$. The learning tests were intended to answer the fourth research question: Does a music training program influence child-care personnel's knowledge of developmentally appropriate music activities and resultant benefits for young children?

Participants

For the full investigation, 22 child-care workers were recruited from an early-intervention/child-care program located at a large, midwestern university. Participants, all women, ranged in age from 20 to 27 years old, with an average age of 22, and a mean of 3.85 years of child-care experience. All caregivers were college students seeking specializations in early childhood education, child care and development, or children with disabilities. The child participants were those receiving direct care from the adult participants identified above (N = 24; 9 infants and 15 toddlers).

Procedures

This study used a quasi-experimental pretest/posttest time-series design. The project began with a 3.5-week baseline condition, during which one 10-minute videotape observation was made of each adult while she implemented music activities with the infants or toddlers in her care. Each videotape observation was then analyzed for the 11 caregiver behaviors selected by the panel of experts. At the same time that caregivers were being videotaped, the children available for participation (i.e., those who were awake and not being diapered or fed) were observed for engagement behaviors. Following the baseline condition, each adult participant completed the Attitude Scale.

Adult participants then attended three, 30-minute in-service training sessions. The length and number of sessions were determined with the goal of making the training accessible to participants. Child-care staff rarely have time during a normal workday to attend in-service training, and they tend to work long, stressful hours for minimum wages. Without monetary compensation, caregivers are not likely to pursue in-service training unless it is required to retain their employment. The training sessions in this study were embedded into ongoing, weekly staff training sessions that caregivers were required to attend as part of their job requirements. Common topics for these weekly meetings pertained to the direct care and safety of the children. The music training sessions, therefore, had to be offered at times that were convenient to all caregivers and be presented in such a way that attention to normal caregiving issues was not diminished.

In the first training session, caregivers learned about music perception, musical development and the purpose of music activities for young children. The second training session addressed caregivers' ability to identify and sing developmentally appropriate songs with infants and toddlers. The third training session covered selection and use of musical instruments as well as basic group leadership skills. Training activities included brief lecture periods, review of written material, group participation in music activities, viewing videotaped examples of music activities conducted with young children, provision of handouts and a compilation of children's songs, and demonstrations of musical instruments.

Prior to and following each training session, participants took a corresponding Learning Test. After each training session, observational procedures identical to the baseline phase were repeated for both adult and child participants. Following the final observation period, child-care participants completed the Attitude Scale as a posttest. The entire training program lasted approximately 4 months.

RESULTS

Seven adults were excluded from data analysis because they did not complete either the training sessions or the data-collection procedures. The final results pertain to the remaining 15 women.

Caregiver Behaviors

For the eight time-sampled behaviors, interrater reliability was obtained for 20% of all observations at .81. Reliability for the remaining three globally assessed behaviors reached .66. Data were examined using a one-way, repeated-measures analysis of variance (ANOVA) and eta-squared effect size analysis. Post-hoc comparisons were conducted as needed in the form of pairwise contrasts between the baseline and each training period mean.

Group leadership skills. Time-sampled skills in this category included positive affect, positive verbal reinforcement, and modeling of physical movements. See Table 1 for means and standard deviations. Positive affect increased significantly over time [F (3, 12) = 18.2, $p < .001$; $\eta^2 = .82$]. Post-hoc comparisons located differences between the baseline and all three training periods: between baseline and

Table 1
Percentage of Caregivers' Time-Sampled Group Leadership Skills

	Baseline	Training 1	Training 2	Training 3
Positive affect				
M	.37	.64	.76	.90
SD	.06	.08	.08	.05
Verbal reinforcement				
M	.03	.04	.02	.05
SD	.01	.02	.01	.03
Modeling				
M	.43	.56	.62	.63
SD	.06	.06	.07	.05

Note. Behaviors were recorded using the following key:
"O" = observed
"N" = not observed
"U" = behavior not available from videotape

Training 1, F (1, 14) = 13.16, p = .003; for baseline and Training 2, F (1, 14) = 18.53, p = .001; and from baseline to Training 3, F (1, 14) = 63.42, p < .001. Positive verbal reinforcement increased from baseline to Training 3, however, not significantly, [F (3, 12) = .55, p = .656; η^2 = .12].

While modeling of physical movements did not increase significantly, the eta-squared value suggested a large effect size [F (3, 12) = 3.36, p = .055; η^2 = .46]. Post-hoc comparisons revealed significant differences between the baseline and all three training periods. For baseline and Training 1, F (1,14) = 6.30, p = .025; and for baseline and Training 2, F (1, 14) = 9.95, p = .007. Between baseline and Training 3, F (1, 14) = 8.10, p = .013.

One additional group leadership skill, which was measured globally, included lack of "down-time" between activities. This behavior was rated on a scale of 1 to 5, with 1 indicating "behavior never observed" and 5 meaning "behavior consistently observed." During baseline observations, this behavior received an average score of 3.13 (*SD* = .36). After training session one, the mean increased to 3.93 (*SD* = .26) and following training session two, dropped to 3.80 (*SD* = .20). After training session three, the mean returned to 3.93 (*SD* = .23). Essentially, this skill increased over time, but not significantly [F (3, 12) = 1.67, p = .23; η^2 = .29]. The high eta-squared value, however, warranted post-hoc comparisons that revealed significant differences between baseline and Training 1 [F (1, 14) = 5.51, p = .034] and between baseline and Training 3, [F (1, 14) = 5.10, p = .041].

Table 2
Percentage of Caregivers' Time-Sampled Musical Skills

	Baseline	Training 1	Training 2	Training 3
Vocal projection				
M	.76	.81	.91	.88
SD	.08	.06	.02	.04
Vocal confidence				
M	.77	.84	.90	.90
SD	.08	.05	.03	.02
Rhythmic accuracy				
M	.44	.53	.65	.62
SD	.06	.06	.07	.05

Note. Behaviors were recorded using the following key:
"O" = observed
"N" = not observed
"U" = behavior not available from videotape

Musical skills. All behaviors in this category were measured via time-sampling. See Table 2 for means and standard deviations. While vocal projection increased over time, these differences were not significant [F (3, 12) = 1.16, p = .363; η^2 = .23]. Vocal confidence also increased, but not significantly [F (3, 12) = 1.37, p = .300; η^2 = .25]. Rhythmic accuracy increased significantly [F (3, 12) = 3.77, p = .041; η^2 = .48]. Post-hoc comparisons revealed differences between baseline and Training 2 [F (1, 14) = 10.31, p = .006] and baseline and Training 3 [F (1, 14) = 5.37, p = .036].

Presentation of musical material to infants and toddlers. Time-sampled presentation skills included using appropriate songs and engaging children in physical movement. Table 3 provides means and standard deviations. Although caregivers' use of appropriate songs did not increase significantly over time, the eta-squared value suggested a very large effect size [F (3, 12) = 2.92, p = .078; η^2 = .42]. Post-hoc comparisons revealed significant increases in appropriate song usage between baseline and Training 2 [F (1, 14) = 6.00, p = .028] and from baseline to Training 3 [F (1, 14) = 6.91, p = .020]. The skill of engag-

Table 3
Percentage of Caregivers' Time-Sampled Presentation Skills

	Baseline	Training 1	Training 2	Training 3
Uses developmentally appropriate songs				
M	.80	.88	.93	.91
SD	.05	.03	.02	.02
Engages child in movement				
M	.16	.14	.16	.14
SD	.04	.04	.05	.03

Note. Behaviors were recorded using the following key:
"O" = observed
"N" = not observed
"U" = behavior not available from videotape

ing children in physical movement during music activities occurred infrequently and actually decreased from baseline to Training 3 with no significant changes over time [F (3, 12) = .14, p = .933; η^2 = .03].

Two other presentation skills, song variety and modification of musical elements, were evaluated globally. See Table 4 for means and standard deviations. Song variety increased from baseline to Training 1, but then steadily decreased across the training program [F (3, 12) = 1.35, p = .31; η^2 = .25]. Modification of musical elements increased significantly [F (3, 12) = 3.58, p = .047; η^2 = .47]. Post-hoc comparisons revealed differences between baseline and Training 1 [F (1, 14) = 5.56, p = .033] and from baseline to Training 3 [F (1, 14) = 6.67, p = .045].

Infant/Toddler Engagement Behaviors

Three children were excluded from data collection because they did not attend the child-care center for the duration of the training program. The following results pertain to the remaining 21 children, including 8 infants (5 male and 3 female) and 13 toddlers (4 male and 9 female). Interrater reliability was obtained for 20% of all observations at .87.

Data were analyzed using one-way, repeated measures analysis of variance (ANOVA) and eta-squared effect size. Post-hoc comparisons were conducted as needed in the form of pair-wise contrasts between the baseline and each training period mean.

For descriptive statistics on all engagement behaviors, see Table 5.

Table 4
Caregivers' Globally Evaluated Presentation Skills

	Baseline	Training 1	Training 2	Training 3
Uses variety of songs				
M	3.67	4.20	3.93	3.67
SD	.35	.28	.15	.29
Modifies music				
M	1.93	2.53	2.53	2.60
SD	.15	.29	.34	.27

Note. Behaviors were recorded using the following key:
1 = never observed
2 = rarely observed
3 = sometimes observed
4 = frequently observed
5 = consistently observed

Visual engagement increased over time, but not significantly [F (3, 17) = 2.52, p = .093; η^2 = .31]. The large effect size, however, warranted post-hoc comparisons and revealed significant differences between baseline and Training 2 [F (1, 19) = 5.13, p = .035] and from baseline to Training 3 [F (1, 19) = 7.52, p = .013]. Vocal engagement increased significantly over time [F (3, 17) = 4.51, p = .017; η^2 = .44]. Post-hoc comparisons located differences between the baseline and all three training periods: for baseline and Training 1, results showed F (1, 19) = 5.16, p = .035; baseline and Training 2 yielded F (1, 19) = 12.67, p = .002; and for baseline and Training 3, F (1, 19) = 9.55, p = .006. Physical engagement increased over time, but not significantly [F (3, 17) = 1.10, p = .377; η^2 = .16].

Attitude Scale

Using a scale ranging from 1, meaning "strongly disagree," to 5, indicating "strongly agree," participants' average pretest attitude score was 3.72 (SD = .56). The average posttest score was 4.17 (SD = .30). The difference between mean scores was significant, t (14) = –4.23, p = .001.

Learning Tests

On Learning Test 1, participants averaged 6.73 out of 13 possible correct answers on the pretest (SD = 1.79) and 9.53 correct answers on the posttest (SD = 1.24). The difference between scores was sig-

Table 5
Percentage of Infants' and Toddlers' Engagement Behaviors

	Baseline	Training 1	Training 2	Training
Visual engagement				
M	.34	.41	.42	.44
SD	.04	.04	.04	.04
Vocal engagement				
M	.01	.03	.05	.05
SD	.00	.01	.01	.01
Physical engagement				
M	.37	.37	.37	.43
SD	.03	.03	.05	.03

Note. Behaviors were recorded using the following key: A = absent or unavailable (i.e., eating, being diapered, or napping); U = Unengaged (available for participation but not engaged); E = Engaged: 1 = visual, 2 = vocal, 3 = physical. (Numbers were for coding purposes only and could be used in any combination.)

nificant t (14) = −6.23, $p < .001$. On Learning Test 2, participants averaged 9.13 out of 13 correct answers on the pretest (SD = 1.77) and 10.53 correct answers on the posttest (SD = 1.85). The difference between scores was significant, t (14) = −2.37, p = .033. On Learning Test 3, five questions were excluded from analysis due to the fact that they demonstrated negative correlations with the overall test. Results indicated that participants averaged 3.60 out of 8 possible correct answers on the pretest (SD = 1.68) and 6.20 correct answers on the posttest (SD = .94). The difference between scores was significant, t (14) = −6.93, $p < .001$.

DISCUSSION

Based on these results, several conclusions can be drawn regarding the effectiveness of this music training program. First, the program was more effective at increasing some caregiver skills than others. Caregivers showed the greatest improvement in group leadership and musical skills, but increased only some presentation skills. Two presentation skills actually decreased, including engaging children in movement and using a variety of songs. Engaging children in movement most likely did not increase because caregivers were leading group music activities. Participants may have thought that extended physical contact with one child would have detracted from their ability to maintain group involvement.

Caregivers' use of a variety of songs also decreased over time. These results are not necessarily negative in light of other information addressed during training. Participants were encouraged to sing the same song repeatedly while making needed changes in tempo, dynamics and lyrics. Song repetition is developmentally appropriate for children of this age as it provides multiple opportunities to hear, observe, and participate in the musical experience. Additionally, the children frequently requested to sing the same song again during music time. An initial concern in this study was that caregivers would know very few songs and might not have a suitable repertoire. Casual observations and data collection, however, soon revealed that these caregivers apparently knew a sufficient number of songs and were quick to learn new songs from one another.

Despite the difficulties just noted, certain caregiver skills seemed to increase consistently across time, as evidenced by large effect sizes. Specifically, caregivers showed comparable increases in their use of positive affect, movement modeling, rhythmic accuracy, appropriate songs, and modification of music. Essentially, caregivers displayed similar increases in these areas, indicating that perhaps the training program was most effective at improving these behaviors.

Another conclusion of this study is that when caregivers received music training, the children in their care demonstrated increases in visual, vocal, and physical engagement behaviors. Specifically, visual engagement increased steadily throughout the training program. This change may reflect the children's growing attention toward and interest in music activities. Vocal engagement occurred at a very low frequency throughout the study, which is not surprising considering the children's age range. Increases in vocal activity are promising, however, possibly indicating that the children were learning songs and that caregivers were presenting songs in appropriate ways.

Changes in both visual and vocal engagement were stable over time, with little variability across participants. These findings may indicate that the training program was most effective at increasing visual and vocal engagement, but perhaps not as effective at promoting physical engagement. While the children did not show significant increases in physical engagement over time, they did demonstrate a consistently high level of physical engagement during music activities. These results correspond with observations from educational literature that state that moving to music represents one of children's earliest and self-initiated musical behaviors (Andress, 1991; O'Brien, 1997). Furthermore, the children's physical engagement may have shown a greater increase over time had the caregivers initiated more physical contact with them.

A third conclusion from these findings is that music training seemed to be effective at improving caregivers' attitude toward implementing music activities with young children. These responses are especially encouraging given that a common concern of childcare workers pertains to feeling uncomfortable about singing or implementing music activities (Jalongo, 1996; Wolf, 1994). Improved

attitude and comfort level may result in caregivers' providing music activities more frequently and with greater enthusiasm. Finally, participation in a music training program seemed to increase caregivers' knowledge about meaningful music activities and resultant benefits for young children. Caregivers equipped with this information are more likely to select suitable materials, to uphold appropriate expectations of children's behaviors during music activities, and to structure musical experiences in appropriate ways.

Overall, these findings support future research on music training programs for child-care workers, with certain revisions. First, training sessions should be increased by both number and duration in order to provide caregivers with more information, as well as adequate time to practice skills. The content of future programs should also be modified, first to address caregiver behaviors that did not increase in this study. For example, training should provide caregivers with specific ways to engage individual children in physical contact, while at the same time maintaining group involvement. In addition, while song repetition is appropriate for young children, training should strive to teach caregivers a large repertoire of songs. Caregivers will then have several songs to choose from at any given moment, as suitable to the children's needs. Last, future programs should emphasize the inclusion of children with special needs in music activities. Successful inclusion often depends on effective collaboration between child-care staff and special service providers, such as therapists, in the form of staff training (Bruder, 1994). Currently, few studies exist regarding collaborative training (Erwin, 1996), and no published studies have examined the effects of music training on child-care personnel and special needs children in inclusive settings.

To summarize, the results of this study concur with previous research in which music training resulted in positive outcomes for preschool-age children (Bilhartz, Bruhn, & Olson, 1998; Nichols & Honig, 1995). This study expands the knowledge base by demonstrating the benefits of training for much younger children, such as infants and toddlers. In addition, this study established the positive effects of training on caregivers. These findings support future music training program development and evaluation. Increased interest in such programs will ensure that music activities continue to be a meaningful part of all children's earliest experiences.

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Feelings of satisfaction are vital to learning because they provide the motivation necessary for children to continue to participate in private music lessons. The aims of this study were to examine factors related to satisfaction with private music lessons from a child's perspective and to develop a reliable, valid, and practical measure of music lesson satisfaction to help improve private music instruction. Factor analysis using a sample of 568 children, ages 9 to 12, yielded the 34-item Music Lesson Satisfaction Scale (MLSS), which loaded onto one unidimensional factor. Enjoyment and practicing seemed to be important to children's music lesson satisfaction, with children indicating that they were generally satisfied with their private music lessons overall. These results support previous music research. The effects of age, gender, and musical instruments on satisfaction are discussed, as are implications for music educators.

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Children's Satisfaction with Private Music Lessons

Research has shown that the majority of American children spend much of their time in school or participating in leisure activities such as watching television or interacting with friends (Larson & Verma, 1999). Although children experience high levels of concentration and are challenged intellectually at school, evidence indicates a lack of intrinsic motivation as well as high rates of boredom over time (Larson, 2000). Conversely, children may be motivated to watch television and talk to their friends, but they do not experience high levels of concentration or challenge when engaging in these activities (Larson, Ham, & Raffaelli, 1989). Thus, neither school nor unstruc-

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