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Increasing Engagement through Music and Movement

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Abstract
Young children need to be physically and cognitively active to learn well. Music and movement can positively impact attention and engagement so that time spent teaching is more effective. Integrating music and movement produced positive results for two focus first-grade students and their teacher reported that all students refocused and engaged actively in group lessons and individual work. Early childhood educators can optimize possibilities for increased academic engagement through the integration of music and movement activities.

Introduction
The adoption of Common Core State Standards (CCSS) (NGA & CCSSO, 2010; Common Core, 2012) is redefining early childhood literacy instruction, materials and activities for early learners. Never before have four-, five-, and six-year-olds been under so much pressure to achieve, problem solve, and acquire literacy. In a genuine attempt to turn young children into early readers and writers, many schools have adopted a lengthy block of time for literacy instruction based upon the thinking that more time will equal more learning. When administrators make decisions that increase the amount of focused instruction in one content area, something has to give. More often than naught, the art-based subjects, music, and physical education are cut in order to accommodate extended blocks of instructional time in language arts and mathematics.

Intuitively, it does seem that language arts and mathematics are the most important subjects in early childhood education. The three R's have been the basis of our educational system for years. Test scores in language arts and mathematics loom as indicators of school success, teacher evaluation, and student progress. It is no coincidence that CCSS began with English language arts and mathematics. Meeting the developmental needs of young children can be at odds; however, with the worthwhile attempt to begin preparation for college and career readiness in the early childhood classroom. Specifically, the domains of cognitive and physical development for children under the age of eight complicate the move toward more formal instruction for longer periods of time. Early childhood educators face very specific challenges. Questions that arise in our work with novice as well as experienced teachers include: How can I accommodate the young child's need to be physically active during extended literacy instruction? How can I keep young children engaged and focused on literacy tasks? Music and movement may be one way to answer those questions.

Literature Review
Since President Obama urged the educational community to consider longer school days and school years in 2009, school districts and states around the county began to consider the idea that more time in the classroom would lead to more achievement. At one level, that makes sense. To deeply understand

the issue of the amount of time for learning in schools, observational studies established four separate categories of "time" within the school day (Berliner, Fisher, Filby & Marlieve, 1976; Silva, 2007). The first category is allocated time (every minute a child is at school), followed by allocated class time (the time the child is in the classroom but not lunch, recess, or going to special classes such as library, music, art, and physical education), then instructional time (the part of allocated class time with the teacher including time used for discipline, transitions, etc.), and finally academic learning time. This last category, academic learning time, is the portion of the instructional day available for appropriate instruction and learning.

In order to increase learning during the school day, it is fair to say that just "more time" is not the answer. More "academic learning time" is what is needed to maximize learning. For this to happen with young children, it is necessary to keep them physically, as well as cognitively, active (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2008). Particularly for children between the ages of two and six, physical activity is necessary to engage the young child's brain in learning and retaining information (Kelly & Clausen-Grace, 2009; Lee & Shute, 2010). The "push down of the curriculum" (Bruce, 2010; Ginsburg, 2007) has preschoolers covering primary literacy instruction in an effort to meet academic standards without full regard for developmental appropriateness. Young children are sitting for longer periods, completing more pencil and paper tasks, and are expected to master academic challenges that may not be developmentally appropriate nor lead to increased achievement (Suggate& Reese, 2012). To increase academic learning time, music and movement may be one way to meet the young child's need for physical activity. Recent brain research links music and movement to positive effects on learning, attention, and engagement.

Using brain research in the classroom meets both the physical and cognitive developmental needs of all learners but especially those under the age of eight (Zadina, 2008). A child's brain learns best and retains most when the body is active. Early childhood students need activity to assimilate and accommodate new schemata as they interact socially, emotionally, cognitively, linguistically and physically with the people and things in their environment (Jensen, 2008). After periods of focused concentration, the body and brain of the child needs action to rejuvenate to be ready for the next cognitive activity. The challenge for the early childhood educator is to balance those periods of inactivity with activity and to gradually increase the child's ability to pay attention.

One relatively easy way to create this kind of fluid instructional setting is to integrate music and movement periodically throughout the literacy instruction. Music has the ability to prepare the brain for states of deep concentration and focus (Campbell, 2000; Jensen, 2000). Music integrates the functions of both hemispheres of the brain, stabilizing mental, physical and emotional rhythms (Kranowitz, 2010). Rhythm acts as a hook to capture attention and stimulate interest. It provides the mental break from the focused concentration of formal instruction that can improve student learning (Madigan, 2004, Rupert, 2006).

This study investigated the effects that music and movement activities had on creating a better learning state for attention and engagement among first graders. An action research design allowed investigation of the following question: To what extent do music and physical movement activities increase attention and engagement in first grade students?

Method

Three instructors in a large teacher preparation program designed the action research study which took place at a school in a high poverty neighborhood in a large metropolitan city in the Southwestern United States. The study began with a pilot in kindergarten, 2006 and, after students moved to first grade, continued in the fall of 2007. The lead researcher taught kindergarten at the school and was available to mentor and observe Isabella, the first grade teacher in the study, and her ethnically diverse group of first graders (N = 28) which included two focus students. Spanish was the first language of 23 of the 28 students. Isabella had recently earned tenure in her district after teaching successfully for three years. She reported using some music and movement in her classroom, such as playing CDs during writing time, chants, finger plays and rhyming songs periodically, but music and movement were not part of literacy instruction.

The focus students were two first graders. Both spoke Spanish as their first language. Student R (seven years old) had a difficult time paying attention, following directions, and participating in group activities.

Student J was six and often disrupted the class by talking, moving, and frequently disturbing those around him.

The lead researcher was a special education teacher and early childhood educator with 35 years of teaching experience who regularly used music and movement activities during instruction. She collaborated with Isabella to incorporate these activities in the first grade class during literacy instruction. Many of the students in Isabella's first grade class had been members of the researcher's class the year before the study, including Student R and Student J. The other researchers assisted in designing data collection, data analysis, and reporting results. Both were tenured faculty members of the local university with backgrounds in early childhood education.

Materials and Procedure

Time sampling data was collected using the Student Observation System (SOS), a component of the Behavior Assessment System for Children, Second Edition (BASC-2) (Reynolds &Kamphaus, 2004). Each focus student was observed during regular literacy instruction for 15 minutes immediately after music or movement activity implementation. Observation intervals of 27 seconds were followed by three seconds for recording. Behavior during each observation interval was recorded as either adaptive or problem. Adaptive behaviors as defined by the BASC-2, were: (a) responses to the teacher or lesson, (b) peer interaction or participation, (c) work on school subjects, or (d) appropriate transition movement. Problem behaviors were defined as: (a) inappropriate movement, (b) inattention, and (c) inappropriate vocalization. The adaptive behaviors were used as indicators of attention and engagement and the problem behaviors were used as indicators of lack of attention and engagement. Time sampling occurred once a day for five weeks. There were 25 observations for student R and 22 for student J. To provide control data, one baseline observation was completed before the study began during which no music or movement activities were integrated into the literacy curriculum. In order to assure reliability of coding when using the BASC, a second observer simultaneously scored 10 sessions and inter-rater reliability came in at 92%. Problem behaviors, adaptive behaviors, and the number of shifts between the two were counted for each observation. The data were further analyzed to determine changes in the students' behavior over time and the frequency of either type of behavior after the music and movement activities.

Daily interviews supplemented data collection. Isabella met with the lead researcher before and after school during the five-week period of the study. The daily interviews had three parts: (1) plans for music and movement activities, such as singing, dancing, crossing the midline activities, chanting, finger plays, and rhyming, (2) the teacher's report on the progress of the entire class and their on-going reactions, and (3) the progress of the two focus students. The lead researcher confirmed the progress of the entire class with observations of student engagement at various times throughout the day. Daily interviews and observations of the entire class formed the basis for field notes, which were analyzed using Grounded Theory approach (Glaser & Strauss, 1967).

Results

Time sampling data show that both students showed a general increase in adaptive behaviors and a decrease in problem behavior. Daily interviews and observations indicated this increase in adaptive behaviors corresponded with the teacher implementing music and movement before each literacy lesson. These activities also had a positive effect on attention and engagement for all students in the classroom.

Time sampling

Total adaptive behaviors and total problem behaviors were counted for each observation. From these totals, the percent of adaptive behaviors per observation was calculated. Figure 1 displays this data for Student R.

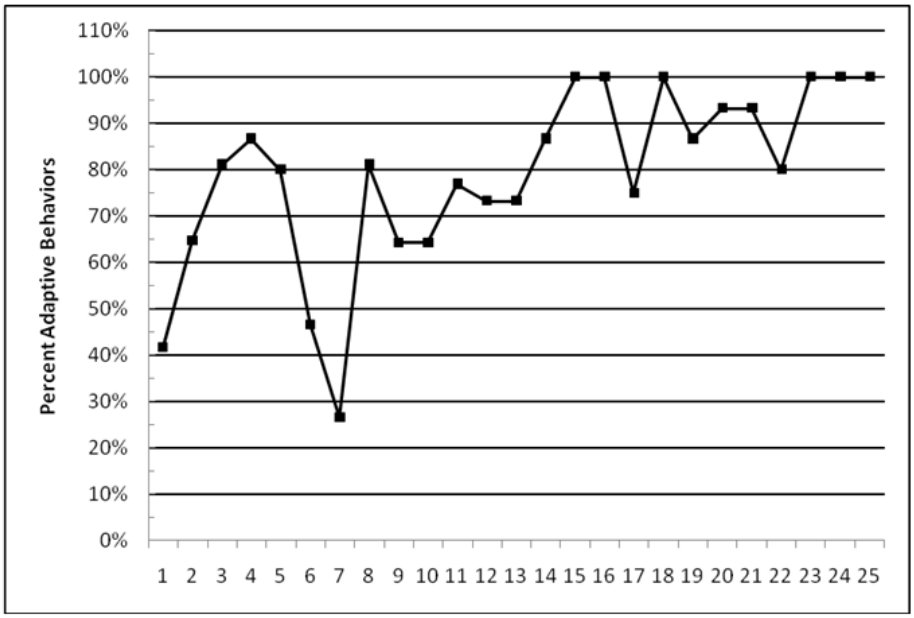

Figure 1. Percent of adaptive behavior by Student R from Day 1 to Day 25

Student R had 40% adaptive behaviors during the baseline observation (day1 in Figure1). Once music and movement was instituted (day 2 and after) his percent of adaptive behaviors increased steadily. The trend was generally positive, increasing from day 2 to day 25, except for 2 days with a dip in adaptive behavior on days 7 and 17. In total, this produced positive results for Student R. His adaptive behavior gradually increased and, conversely, his problem behaviors, while not eliminated, were very low.
Figure 2 shows the results for Student J.

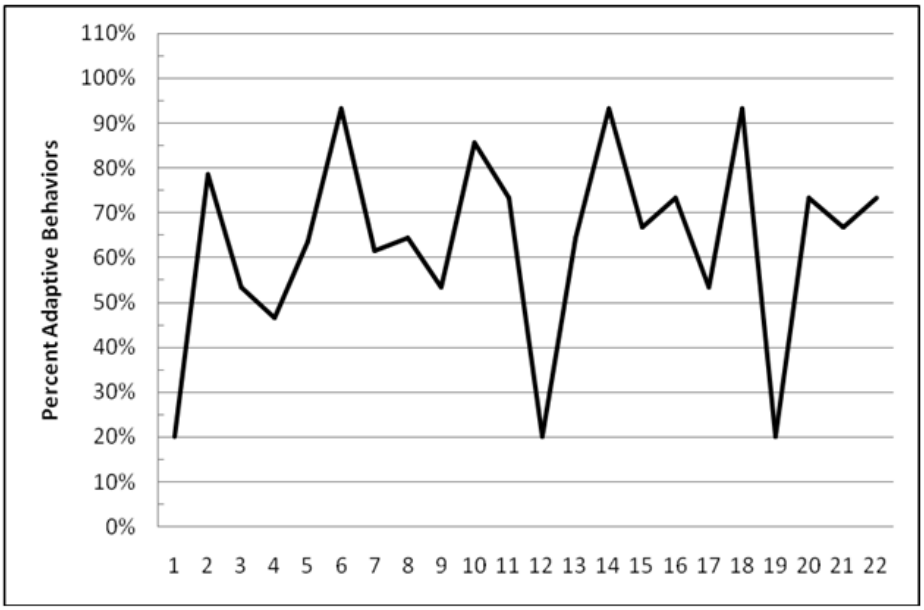

Figure 2. Percent of adaptive behavior by Student J from Day 1 to Day 22

Student J had 20% adaptive behaviors during the baseline observation. Once music and movement was instituted (day 2 and after) occurrences of adaptive behaviors increased from 20% to a peak of 93%. The

trend was generally positive increasing from day 2 to day 22, except for 2 days with a dip in adaptive behavior back to baseline levels on days 12 and 19. Adaptive behavior was trending upwards from days 20 through 22, where the data stops abruptly when J withdrew from school. In total, Student J's adaptive behaviors improved over the 22 days of observation, but the improvement was erratic, lacking consistency.

Daily Interviews and Classroom Observations

Isabella reported that, as music and movement activities were integrated, her students would refocus and engage actively in group lessons and individual work. For example, when the students were off-task, she would sing a song, chant or rhyme, which helped the students refocus and complete their work. Further, she reported that integrating movement into spelling, sight words, or literacy concepts reenergized the students, increased attention to the task, and helped concentration. For example, she integrated movement into word study activities by cross-crawling letters in a word (crossing the midline with hands touching the opposite knee), acting out letters (standing for tall letters like l, sitting for short letters like e, hopping for doubles, etc.), or tracing letters on the back of a partner all while spelling the word out loud. Such active learning techniques calmed down her active class, eased transition periods, and increased motivation to engage in drill and practice activities like spelling and practicing word lists. Isabella further reported that the music and movement created a positive atmosphere and became an effective classroom management strategy.

Recurring themes that emerged from the interviews and observations indicate changes in classroom practice reflecting implementation and ownership. Isabella had seen and heard other teachers using music and movement in their classrooms but did not know that many songs, chants and rhymes herself nor did she know how to integrate them in her daily literacy curriculum. Once Isabella noticed how well music and movement worked with her class, she began to take ownership of integrating those activities in the classroom by finding songs on the Internet and revisiting old favorites. Significantly, she began to be more aware of appropriate times for music and movement intervention that increased the amount of academic learning time in her classroom.

Discussion

Learning how to read and write is the work of early childhood. Intuitively, it seems, if every child could read and write early, student achievement would increase, students would feel more successful, and learning outcomes as articulated in the English language arts and mathematics CCSS would ensue. Unfortunately early learning advantages, such as developing attachment and autonomy, varied and diverse learning experiences, complex interactions with oral language, and literacy-rich environments, are not equal opportunities for all children. Regardless, all children benefit from full body and brain experiences that increase attention and engagement. Integrating music and movement activities into literacy instruction is one way to accomplish this.

The results of this study indicate that early childhood teachers who take the time to integrate music and movement activities optimize possibilities for increased academic learning time. Integrating music and movement activities is easy, inexpensive, and fun. The action research design of this study limits generalizability; however, future research could use an experimental design to investigate the effects of music and movement on student achievement, classroom environments, teacher efficacy, or similar constructs in early childhood education.

Results affirm the work of traditional classroom teachers whose voices are becoming lost in the development of instructional mandates and wide-sweeping adoption of CCSS. Integrating music and movement on a consistent and spontaneous basis can create a learning environment that engages children productively. Blending knowledge of child development and how the brains of young children develop as well as a genuine desire to positively impact the learning possibilities for all children can support teachers as they implement strategies into literacy instruction for young children.

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