Move to Learn: Enhancing Story Recall Among Urban African American Children

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This study continues a line of empirical work examining the extent to which incorporating movement into learning conditions enhances performance for African American students. To date, few studies have examined different types of movement opportunity. As such, five qualitatively different movement conditions were tested in an urban sample of 100 third grade African American students. Findings indicate that not all types of movement enhance story recall and only movement-expressive conditions yield better performance than contexts without movement. Results and movement are discussed in terms of developing culturally-relevant pedagogy for African American students.

A critical question facing the educational research community is how to develop learning conditions that effectively promote growth in the academic skills of children at-risk for school failure. Urban African-American children comprise one of the largest ethnic groups faring poorly in our nation's schools today—demonstrating significant lags in reading, mathematics, and science (National Center of Educational Statistics, 2006). Although research documenting ethnic differences in storytelling, writing, questioning, and oral language styles (Hale, 1986; Heath, 1986; Lee, 2007) abounds, there is limited work that considers culture in creating optimal learning conditions specifically for African American students (Lee, 2007). Advances have been made however, and one area of research that has particularly important implications for classroom practice is Movement Expression. Movement Expression is an Afrocultural construct advanced by Boykin (1986) that denotes a rhythmic orientation toward life that is manifested in the activity and speech patterns characteristic of African Americans. It is argued that when incorporated into the learning context, movement expression appears to improve learning outcomes

among African American students.

Traditionally, urban classrooms do not promote success for African American students because they operate under the myth that culture does not matter and assume a monolithic approach to teaching that does not create multiple pathways for learning (Moss, Pullin, Gee, Haertel, & Young, 2008; Nasir, Rosebery, Warren, & Lee, 2006; Rist, 2002). With regards to *movement* in the classroom, it is frequently regarded as a disruption or hindrance to learning and not a cognitive tool (Cole & Boykin, 2008; Gardner, 1983; Sternberg, 2008). The structure of urban classrooms often draws from a behaviorist approach, which assumes that children learn best under quiet, contained, physically restrained conditions (Shin & Koh, 2007). Hence, discussions about the proactive use of movement in the education of children are generally neglected in favor of behavior modification strategies for teachers to use in managing and controlling 'overactive' children (Brown, 2003; Weinstein, Tomlinson-Clarke, & Curran, 2004). These approaches may be particularly prevalent in the school experiences of African American children as there is evidence suggesting cultural variables play a central role in teachers' appraisals and expectations of their students' behavior (Irvine, 2003; Ladson-Billings, 2001; Tyler, Boykin, & Walton, 2006). For example, studies demonstrate a consistent elevation of teacher ratings on standard ADHD rating scales for African American students (Epstein, March, Conners & Jackson, 1998; Reid et al., 1998; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Observational studies demonstrate that teachers perceive African American students as being more impulsive, inattentive and hyperactive than European American students exhibiting a similar set of behaviors. Furthermore, African American students are overrepresented in receipt of punitive measures, such as expulsion and suspension (Skiba, Michael, Nardo & Peterson, 2000) and researchers have also documented their persistent overrepresentation in special education categories (Losen & Orfield, 2002). Such findings suggest that movement is a particularly important construct to examine in the school experiences of African American children.

Conceptual Framework

The conceptual framework for this work is derived from Boykin's cultural patterning theory, which suggests that African American

children are socialized in expressive cultural contexts (Boykin, 2000; Hale, 2001) that promote motoric competency and a rich culturally defined rhythmic movement repertoire. This movement-expressiveness is fostered in childhood and functions as a rhythmic way of engaging life. Because it permeates the early learning experiences of African American children, they exhibit these patterns not only because it is pleasurable and familiar, but also because it is vital to psychological health and optimizes performance (Abrahams & Szwed, 1983; Akbar, 1976; Boykin, 2000; Hale, 2001; Hilliard, 1992; White & White, 1998). Hence, there is reason to believe that learning environments that are devoid of the opportunity for movement-expression may not be optimal for African American children. In fact, empirical studies demonstrate that movement expressiveness is salient in the homes of African American children, is a preferred mode of engaging academic tasks, and, unsurprisingly, when incorporated into learning contexts, yields enhanced learning outcomes (Allen & Boykin, 1991; Allen & Butler, 1996; Boykin & Allen, 1988; Boykin & Cunningham, 2001). In a recent study by Cole and Boykin (2008), 128 African American children were randomly assigned to learning conditions varying in the opportunity for movement expression and results indicated that learning conditions infused with polyrhythmic-percussive music and high movement opportunity enhanced story recall better than other types of music-linked movement.

Although fruitful, this line of work leaves many questions unanswered about whether incorporating other forms of movement into learning conditions will produce similar enhancement effects. In fact, the notion that rhythmic movement may be linked to cognitive competency is not restricted to Boykin's (1986, 1994, 2000) paradigm—some suggest it is a form of intelligence (Gardner, 1983). There is also a long standing history of its incorporation into music education (Campbell, 1991). Two models that have received particular attention are Steiner's Eurhythmy (McDermott et al., 1996), which is a key component of contemporary Waldorf education, and Weikart's beat competency used primarily to foster motoric skill or the acquisition of music concepts.

In Steiner's model, rhythmic movement is used to improve kinesthetic and language skill by emphasizing iconicity in the sound of speech (Steiner, 1923). For example, while reading a story a teacher verbally emphasizes and uses rhythmic movement to convey the

meaning of words (e.g., to say f-l-o-w-i-n-g). In contrast, Weikart's (1987) model focuses on training children to synchronize movement to replicate an external beat (e.g., singing and clapping rhythmic patterns, or marching and playing a drum). It is noteworthy that the research application of these models with African American children is limited. However, beat competency training has been shown to improve rhythmic competence among African American students (Weikart, 1987). Furthermore, this competence was correlated with academic achievement. Reports regarding the benefits of eurhythmy are mostly anecdotal, however, one ethnographic study reported positive affective results and improved standardized reading scores in a sample of urban African American students (McDermott, 1996; Prager, 2004). In sum, while both these models promote the use of rhythmic movement they add little to our understanding of cultural factors. They also suggest a very different perspective on the role it should play in the learning process than does the afro-cultural approach forwarded by Boykin, which operates on the premise that infusing learning contexts with opportunities for movement-expressive behaviors elicits culturally mediated cognitive skills in African American children.

The purpose of this study, therefore, is to examine and clarify the extent to which culture is an important variable in establishing movement as a pedagogical tool that can be utilized effectively with urban African American children. Toward this end, five qualitatively different learning conditions were developed, drawing from the literature on rhythmic movement. One condition served as the control condition and did not incorporate any movement; three learning conditions were designed to reflect aforementioned beat competency and eurhythmy models. The fifth condition was a replication of the movement-expressive context developed by Boykin (2000).

Method

Participants

The participants consisted of 100 African American third graders, including 50 boys and 50 girls, who were recruited from three elementary schools located in an urban city in the northeastern part of the US. The schools were predominantly African American and had over 50% participation in the free and reduced, Title I, lunch program. Letters of permission were sent to the homes of all third grade students in untracked and non-special education classrooms at each school.

Students who returned their slips were randomly assigned to one of the five learning conditions.

Materials

Story. A modified version of a folktale entitled, "Why Dogs Chase Cats,*"* written by Julius Lester (1989) for children at a third grade reading level was utilized in this study. The story was modified to facilitate more opportunities for gesture by adding adjectives describing the shapes or movements of objects or characters in the story. For example, "*sparkling sparkling stars*" replaced "*the stars"*.

Story recall quiz. This 20-item story recall quiz included questions assessing recall of central themes, characters, and actions (e.g., Question*: Who broke the promise*? Answer: *Dog*). Also included were questions that asked about relationships between characters or events in the story (e.g., Question: *How were Michael and Ann related?* Answer*: they were married*). All questions were open-ended, but phrased to elicit only one correct answer. Correct responses were scored "1" and summed for a total recall score.

Music. A small portable Radioshack boombox and cassette recordings of either a syncopated tune entitled, "Funky Soul Makossa," by Nairobi (Streetwise Records, 1982) or a classical piece, Bernstein's rendition of Mozart's piano concerto number 25 (Columbia records, 1978) was utilized in the learning conditions that included music.

Procedures

This study employed a quasi-experimental design with five music/movement conditions. For each condition, groups of four students were led to an empty classroom in which there was a semi-circular arrangement of child-sized chairs. A male and a female African American experimenter were present throughout the learning and testing phases. Once children were seated, an experimenter read a scripted prompt that described the condition and both experimenters modeled the type of behavior expected during the story reading. The prompt also informed students that they would complete a short quiz after the story.

Experimental conditions. (1) *Low Movement-Expressive*—as defined by Boykin & Allen (1988) this condition had no music present and the story was read in a "standard" non-rhythmic fashion. Children were encouraged to sit still and listen to the story without moving their hands or bodies. (2) *Iconic Movement/No Music*—devoid of music, in this condition the story was read in a standard no-rhythmic fashion,

however, the experimenter described, modeled, and encouraged students to display iconic movement. Iconic movement is a physical representation though bodily movement or gesture of a cognitive concept. For example, using the finger to draw a circle in the air to the words, "*round round moon,*" or mimicking a scratching motion to "*the dog was scratching.*" (3) *Beat-Replication/No Music*—devoid of music, in this condition the story was read rhythmically and a sequenced beat involving lap patting, hand clapping, and finger snapping was modeled by the experimenter and students were encouraged to imitate and maintain the beat as the story was read. (4) *Iconic Movement/Classical Music*—in this condition children were introduced to iconic movement and encouraged to move iconically to classical music playing in the background, as the story was read in a standard non-rhythmic fashion. *(5) Expressive Movement/ Syncopated Music*—children were introduced to expressive movement and encouraged to move expressively to syncopated music playing in the background, as the story was read rhythmically. Expressive movement was described as including rhythmic clapping, snapping, swaying, bopping, tapping and/or dancing to the beat of the syncopated music.

Immediately following the story, children were separated and placed at individual desks, and provided a pencil and a sheet of lined paper with numbers corresponding to the quiz questions. Each question was read out loud twice and participants were given 30 seconds to record their response. They were told they did not have to write in full sentences, spelling did not count, they should try not to leave blanks, and do their best. After completing the quiz students were debriefed, thanked, and escorted back to their classrooms.

Results

Analyses were conducted to test two hypotheses: (1) students would have higher story recall performance under the expressive movement/syncopated music condition than the four remaining conditions, and (2) conditions that had any provision for movement (conditions 2, 3, and 4) would perform better than students in the no movement/no music condition. To test whether students performed differently under each condition, a 2(gender) X 5(learning context) univariate analysis of variance (ANOVA) was run with total story recall as the dependent variable. The analyses revealed that there

was no significant main effect of gender [$F(1, 90)=1.67$, $p=.20$], nor a significant gender by condition interaction effect [$F(4, 90) =1.65$, $p=.17$]. Analysis did reveal a significant main effect for condition [$F(4,90) =5.02$, $p=.001$, $\eta^2 =.18$]. Scheffe post hoc analyses were conducted to detect under which conditions performance was different. This analysis revealed that students under the expressive movement/ syncopated music condition ($M= 10.80$, $SD=4.81$) scored significantly higher than students under the no movement/no music condition ($M=5.90$, $SD=3.96$), beat replication condition ($M=6.05$, $SD=3.83$), and iconic movement/classical music condition ($M=6.00$, $SD=3.52$), but did not perform significantly differently from the iconic movement only condition ($M=7.55$, $SD=4.93$). There were no significant differences in story recall among the four remaining conditions.

Anecdotal observations

In the low movement-expressive context, students were very attentive for the first few minutes of instructions and story reading, i.e., they leaned toward the experimenter and listened. However, after a few minutes into the story, many students appeared bored, yawned, and looked restlessly around the room. Students in the iconic and beat replication movement conditions participated enthusiastically, i.e., they caught onto the type of movement very quickly, and throughout the first two to three minutes of the story anticipated and performed movements eagerly. Over the course of the story, enthusiasm waned; movement responses were less immediate and had to be encouraged to be maintained, particularly in the beat replication condition. However, at completion, children in these conditions frequently and spontaneously commented, "that was fun!" In the iconic movement/ classical music condition, students giggled when they first heard the music. While attentive in the beginning, their attention during the story reading faded much earlier than in the same condition without the classical music. Also, there was a more noticeable instance of yawning. In two separate sessions of this condition, more than one child verbally expressed that the music was distracting them from doing the movements. In contrast, the expressive-movement/syncopated music condition prompted immediate and spontaneous rhythmic movement (i.e., bopping and rocking to the beat, finger snapping, and foot tapping) from one or two members of each session, usually boys. Additionally, once a single student displayed this behavior the others followed soon after. This condition was also marked with a lot

of laughter and the amount of movement was extremely high—most children moved their whole bodies, one boy got out of his seat and actually danced! At the end of the story, students in this condition were markedly energized and smiling.

Discussion

The goal of this study was to examine whether the movement-expressive condition is a more effective pedagogical tool for African American students than are other movement variations. We predicted that story recall would be highest in the movement-expressive condition, as it facilitates the expression of a culturally defined movement repertoire that is familiar and congruent with the socialization experiences of African American children. Consistent with previous studies of this kind, our findings support this prediction, as this condition yielded significantly higher story recall than the no movement/no music control condition, and also higher than the iconic movement/classical music and beat competency conditions. However, contrary to our predictions, the expressive-movement condition did not yield significantly higher performance than the iconic movement condition. Our second hypothesis was not supported by our findings. Contrary to the results in previous studies, (Cole & Boykin, 2008) having some opportunity for movement, albeit less culturally familiar, did not lead students to perform better than those in the control condition that was devoid of movement. These unexpected findings may, however, be explained by our small sample size, as an examination of the means reveals that differences are in the predicted direction.

To assist with the interpretation of our findings, it may also be helpful to refer to the qualitative observation notes, as these suggest that students were more positively engaged in the movement-expression condition than in the other conditions in which children sometimes appeared distracted, frustrated, or bored. Other studies demonstrate that the movement-expressive context may induce a positive affect which mediates performance outcomes (Cole & Boykin, 2008). A more systematic examination of the process, through which movement-expressive conditions elicit better performance is warranted, including an examination of the affective and motivational components of learning.

Limitations & future directions

While the present study confirms and extends the cultural responsive pedagogy literature in many ways, there are some limitations. Our limited sample size and the lack of congruence between the learning conditions, introduces significant interpretative constraints. As such, the results should be interpreted with caution and be considered exploratory. Findings are also not generalizable to children of different ages, ethnicities, or even to the whole African American population, as children were sampled from low-income schools located in a single urban city. Finally, the authors do not claim to be experts on eurhythmy or beat competency curriculum. The learning conditions modeled after these approaches are likely watered down versions of much more comprehensive approaches to incorporating movement into the educational experiences of children.

Furthermore, although the types of movement, music, and the ways in which they were combined were theoretically informed, it may prove fruitful to try different combinations based on the findings reported herein. For example, the mean score for performance under the iconic movement/no music context was the highest mean after the expressive movement/syncopated music condition. Yet, the iconic movement/classical music condition yielded the second lowest score. This suggests that music type may be an important variable, and a combination of iconic movement and syncopated music may also yield high performance scores.

Conclusions

In conclusion, this work highlights the ways in which the movement repertoires of African American children can be harnessed to enhance their learning. While this work is preliminary and highlights the many challenges associated with efforts to create culturally responsive pedagogy for urban African American children, it is an important step towards rethinking how we educate children. We believe that children's educational success is, to some extent, contingent upon our ability as researchers and educators to recognize and harness the unique cultural capital with which children enter our schools.

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Appendix A

Table 1
Means and Standard Deviations for Study Variables

		Total Story Recall	
	N	*M*	*SD*
Condition			
No movement/No music	20	5.90	3.96
Iconic movement only	20	7.55	4.93
Beat replication only	20	6.05	3.83
Iconic movement/Classical music	20	6.00	3.52
Expressive movement/Syncopated music	20	10.80	4.81
Gender			
Male	50	7.80	4.56
Female	50	6.72	4.55
Total	100	7.26	4.57