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Task 3: Literature Review

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**Does Arts Integration Increase Cognitive Abilities?**

Howard Gardner’s multiple intelligences theory (Burnaford, Brown, Doherty, & McLaughlin, 2007) provides the theoretical framework for teachers exploring arts integration in their classrooms. Ary, Jacobs, & Sorensen, 2010, state that research which attempts to clarify relationships among variables believed to be related is theoretical in its orientation (p. 33). Gardner’s list of intelligences includes logical-mathematical, linguistic, musical, spatial, bodily, interpersonal, and intrapersonal. Arts integration instruction blends content from the four main art forms consisting of dance, music, drama, visual arts, with the core academic subjects of math, science, social studies, and language arts. This mixing ideally occurs when there is a good fit of content and skills between an art form and a standard subject. The research reviewed in what follows uses at least one of the arts as the manipulated experimental treatment or independent variable with the observed and measured dependent variable being some type of cognitive benefit. (Ary et al. p. 26)

In a study of arts integration, de la Cruz (1995) used a creative drama program with 35 special education students to show evidence of increased linguistic and social skills. Similarly, DuPont (1992) developed a program of integrating drama with children’s literature to increase reading comprehension with 5th grade remedial readers. A third approach was used by Moore & Caldwell (1993) who researched the effects of “thought-organizing” (p. 32) drama activities on narrative writing in the primary grades. DuPont, Moore & Caldwell used a “treatment group” with two comparison groups (Ary et al. p. 270) and de la Cruz used the treatment group and one control group.

One of the comparison groups in the study established by Moore & Caldwell (1993) used drawing, instead of drama, as the independent variable. Students in this group utilized figure, action, and setting drawings to develop narratives. Moore & Caldwell (1993) concluded “drama and drawing are an effective method to warm up or rehearse students in ways that boost narrative writing performance” (p. 32).

Studies of arts integration have been done on several populations. DuPont (1992) and de la Cruz (1995) used populations in their research studies with learning disabilities. Poverty level, at-risk students were used with the Rose (1999), Moore & Caldwell (1993), and Neville et al. (2007) studies. A diverse cross section of cultural and economic backgrounds was identified for the student population types in the research by DeMoss (2002) and de la Cruz (1995).

DeMoss (2002) used qualitative methods to investigate students’ learning in arts integrated units of study by means of interviews, observations, and student writings. Also, Moore & Caldwell (1993) evaluated writing results in their qualitative research on the effectiveness of drama and drawing on students’ writing skills.

A study on arts integration that used dance as the independent variable considered the effect on improving first-graders’ reading ability (Rose 1999). In that study, students were taught to physically represent letters and sounds by making shapes with their bodies. Termed Basic Reading through Dance (BRD), three dance specialists led 174 students in three elementary schools in Chicago. All children in the BRD group improved in reading skills, demonstrating that movement can reinforce cognitive skill development, especially early reading skills.

A study conducted by DeMoss (2002) was an exploratory analysis of how children might process information differently when learning via the arts. This was a basic interpretive study with the “purpose of trying to understand the world or experience of another” (Ary et al. p. 29). The research setting was in the Chicago Public Schools with both arts integrated and traditionally designed classes participating. Students themselves assessed their own learning following arts integrated lessons. Conclusions were formed, such as: students were intrinsically motivated, cognitive processes were more complex as artistic knowledge was applied, competition was removed, learning was done for understanding as opposed to fact recall, and curiosity and inquiry were increased outside of class (p. 22-23). This research may support the conclusion that there are other important measures of achievement besides test taking and whether or how the arts might facilitate student growth.

A particularly distinctive study was one part of a series entitled *Learning, Arts, and the Brain* organized by Michael Gazzaniga for the Dana Consortium (2007). This collection was the result of research by cognitive neuroscientists from seven universities in the United States. Wandell, Dougherty, Ben-Shachar, Deutsch, & Tsang undertook a three-year longitudinal study of the “development of reading skills and the brain structures associated with this development” (p. 51). The research analyzed parent questionnaires, reading fluency test scores, and compared those with brain scans. The conclusion was that music provided the strongest correlation between arts training and reading. It must be noted that correlation does not necessarily prove a cause-and-effect relationship (Ary et al. p. 358). A second relationship or correlation in the research was observed between the early visual arts experiences of children and phonological awareness, an auditory skill related to reading ability.

Studies of arts integration sometimes produce some unanticipated results. Wandell (2007) noticed a surprising correlation between visual arts training in children and math calculation skill. DuPont (1992) found that drama not only helped in a particular story’s comprehension, but showed a “transfer of skills” (p. 22) to stories unrelated to the drama activity.

Also included in the Dana Consortium (2007) collected research was a study on the effects of music training on the brains and cognitive development of 3- to 5-year olds (Neville, Anderson, Bagdade, Bell, Currin, Fanning,…Yamata, 2007). This study by Neville et al. tested the hypothesis that “music training causes improvements in several diverse aspects of cognition and that one way music training produces these effects is by improving attention” (p. 105). The preschool Head Start research setting randomly assigned children to one of four groups. One group was small and contained the independent variable of music activities. The other three groups were “control comparison” (Ary et al. p. 270) classes and included: (1) regular Head Start large group, (2) regular Head Start small group, and (3) small group who received instruction on how to focus their attention. Study outcomes showed that the music training group and the small group trained in attention showed the most significant gains in language, special cognition, vocabulary, letter recognition, IQ, and developmental numeracy.

The above mentioned research correlating various art forms with cognitive abilities may open up future studies to discover how and if the performance or appreciation of the arts increases learning capacities. As a fairly new field of investigation and because of the difficulty this reviewer experienced in finding recent peer reviewed studies, new research is warranted to explore how or if arts integration is causal in its relationship to learning.

References

Ary, D., Jacobs, L.C., & Sorensen, C. (2010). *Introduction to research in education (*8th ed.). Belmont, CA: Wadsworth.

Burnaford, G., Brown, S., Doherty, J., McLaughlin, H. J. (2007). Arts integration frameworks, research, and practice: A literature review. Retrieved from

<http://www.aep-arts.org/files/publications/arts_integration_book_final.pdf>

de la Cruz, R. E. (1998). Effects of creative drama on social and oral language skills of children with learning disabilities. *Youth Theatre Journal*, *12*, p. 89-95.

DeMoss, K., & Morris,T. (2002). How arts integration supports student learning: Students shed light on the connections, p. 19. Unpublished manuscript.

DuPont, S. (1992). The effectiveness of creative drama as an instructional strategy to enhance the reading comprehension skills of fifth-grade remedial readers. *Literacy Research and Instruction*, *31*(3), p. 41-52.

Moore, B. and Caldwell, H. (1993). Drama and drawing for narrative writing in primary grades. *Journal of Educational Research*, November/December, 83 (2), p. 100-110.

Neville, H., Andersson, A., Bagdade, O., Bell, T., Currin, J., Fanning, J., …Yamata, Y. (2007). Effects of music training on brain and cognitive development in under-privileged 3- to 5- year-old children: Preliminary results. *Learning, arts, and the brain: The Dana Consortium Report on Arts and Cognition*, p. 105-116. New York: Dana Press.

Rose, D. ( 1999). *The impact of Whirlwind’s Basic Reading through Dance program on first grade students basic reading skills: Study II*. Unpublished Evaluation Study, February 1999, 3-D Group, Berkley, CA.

Wandell, B., Dougherty, R., Ben-Shachar, M., Deutsch, G., and Tsang, J. (2007). Training in the arts, reading, and brain imaging. *Learning, Arts, and the Brain: The Dana Consortium Report,* p. 51-59.