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ABSTRACT

An after-school fine arts program was developed at J. W. Sexton High School (Lansing, Michigan), based on the premise that participation in the fine arts, particularly by African Americans, would lead to higher grade point averages and a greater commitment to school life. A review of relevant literature revealed a number of reasons for low academic achievement in African American children, including low self-confidence and non-supportive school environment. Research on brain hemisphericity and learning theory, integration of fine arts to enhance whole brain learning, and motivation and engagement of students in school life also supported the Sexton High School program. The program was designed to give participants confidence to join clubs, take academic risks, and become part of band, orchestra, drama, forensics, etc. during the next semester or year. Total number of program participants was 68, of whom 54 were considered "at risk." During the study, 45 percent of participants increased their grade point average, 100 percent of participants joined a school club or sport, and school staff noted an improvement in the behavior of participants. Parents involved in the program reported positive changes in their children's home and school behavior. The findings suggested that students are unsuccessful at school not because they lack the mental ability to perform the tasks, but because they lack responsible behavior. Fine arts require higher order thinking skills, individual and group efforts, and an atmosphere of controlled freedom which teaches responsibility. In this particular high school, the program supported the theory that whole brain development is critical to learning theory and should assure the inclusion of fine arts in the school curriculum and extra-curricular activities. The program also supported the premise that students involved in student life make a greater commitment to their academic achievement, and hence have greater success in high school. (Contains 50 references.) (ND)

CONNECTING RIGHT AND LEFT BRAIN: INCREASING ACADEMIC PERFORMANCE OF AFRICAN AMERICAN STUDENTS THROUGH THE ARTS

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CONNECTING RIGHT AND LEFT BRAIN: INCREASING ACADEMIC PERFORMANCE OF AFRICAN AMERICAN STUDENTS THROUGH THE ARTS

It has often been said that students who participate in the arts do well in other areas of their schooling. In fact, some even say that they do better than their counterparts. A program developed by J. W. Sexton High School in Lansing, Michigan is intended to prove this point. The premise is that students who participate in the fine arts tend to have higher grade point averages and a greater commitment to school life. They participate in activities outside the classroom and are able to handle conflict with some proficiency. These students build lasting friendships and become self-motivated. These are qualities we strive toward for all students while increasing their academic skill levels. Unfortunately, academic achievement data show that African American students do less well than White students in academic skills. Although some research shows the achievement gap between African American and white students narrowing, the fact that there is a gap remains. (Armor, 1992) This is manifested in lower grade point averages. African American student participation in fine arts is also minimal. One of the foci of the program at J. W. Sexton High School is that increased involvement of African American students in fine arts programs will consequently increase their academic achievement and commitment to school life.

The comparative knowledge base includes right and left brain research and the implications for learning theory, the priority of the fine arts in the school curriculum, and student motivation and commitment to school-life. The research hypotheses examined are: 1) African American students who participate in fine arts programs achieve higher academic success than African American students who do not participate in fine arts programs. 2) African American students who participate in fine arts programs have a greater commitment to school life than

African American students who do not participate in fine arts programs. The research presents a case study descriptive approach, highlighting the findings of J. W. Sexton High School.

Literature Review

Research indicates that there is a continuum of reasons for low academic achievement in African American children. Self confidence/self-leadership and family characteristics (Woodward, 1992), involvement in church, and community/family expectations (Gary & Booker, 1992), overcoming racelessness or "acting white" (Fordham & Ogbu, 1986), "disidentifying" with school (Steele, 1992), structural environment of schools - e.g. ability grouping (Oakes, 1995), the sociocultural climate (Harris, 1993), along with socioeconomic status, racism, and discriminatory practices, are some of the conditions cited on the continuum. The issues surrounding the disparate achievement of African American children are so profound and complex as to be overwhelming. Yet the competent, caring educator who knows that all children WILL learn continues to seek alternatives to reach ALL children. These competent, caring educators refuse to join in what Steele (1992) calls "problem fatigue" - or the resignation to an unwanted condition in life. They also refuse to allow African American children to be of a mind-set of hopelessness. They are constantly bombarding these children with expressions of love, caring, and a sense of succeeding beyond the odds given to them. These competent caring educators look at the literature and research on brain hemisphericity and learning theory, integration of fine arts to enhance whole brain learning, and motivation and engagement of students in school-life, and insert the piece that make it all come together for success - a belief that regardless of circumstances, African American children are expected to and will succeed. The research provides insight into the conditions affecting the low achievement and the application of various

theories to affect the conditions. But, part of understanding any of the variables affecting academic achievement lies in believing that our future as African Americans depend on the success of our children.

Left and right brain research has been the center of debate for educators for a number of years. As educators seek to find ways to maximize the learning opportunities for all students, attention is paid to whatever trend may disclose itself as enhancing this goal. Howard Gardner (1983, p. 285) says it well! "Many, for example, sincerely detect faults in our society, especially in its educational system, and are eager to use any method at their disposal to bring about desired changes." Original research on hemisphericity indicated that there was reason to believe that the brain is left or right hemisphere dominant. Generalizations continue to be made about the left and right hemispheres of the brain and their responsibility for specific characteristics:

> **Left-hemisphere Dominant** - Someone who is highly verbal, primarily a sequential learner who is time conscious, all-or-none (outcome) oriented, prefers logical and analytical thinking, and is basically rational.
>
> **Right-hemisphere Dominant** - Someone who is not easily able to express experiences in verbal form, has excellent spatial memory and highly developed sensory (particularly spatial) recall. This person tends to experience the "whole" before noticing the parts. Hence this person is adept at synthesis and intuitive processing.

(Caine & Caine, 1991)

Sperry, 1981 Nobel Peace Prize winner for split-brain research, indicates three discoveries: 1) Each hemisphere of the brain processes information differently; 2) There would seem to be two "people" in our brains: one rational and judgmental, the other creative, playful,

intui ive. In some people, the two "people" work well together; in others, they are in a constant state of disagreement; 3) The right hemisphere is not a "spare tire" for the left as originally thought; each hemisphere, while different, is equally important. (Conner, 1982)

Continuing research indicates that the left and right hemispheres of the brain interact together to maximize learning. Hence, attention to whole brain learning is the current guiding temperament among some educators. Neuroscientific research ignites this attention. Examples from studies in neuroscience indicate that splitting the brain by severing the corpus callosum gives a different dimension to understanding hemisphericity. The corpus callosum is the connecting nerve-fiber tract between the left and right hemisphere. One example was given of a patient who was blindfolded and asked to name an object by feeling it with only one hand. "A split brain patient who does this with the right hand (which is controlled principally by the left hemisphere) will have no difficulty naming the object. But if the procedure is repeated using the left hand, the patient will be unable to name the object. Apparently, information about the object does not get through to the speech centers located in the left hemisphere." (Springer & Deutsch, 1985, p. 4) Another example was given of a patient who was asked to describe what she had seen in a viewing box through a pinhole. A nude picture of a woman had been flashed before her. Her response was one of embarrassment and giggles. When she was asked what she saw, her response was, "Oh, doctor, you have some machine!" Springer and Deutsch indicates that her right hemisphere saw the picture and processed it sufficiently to evoke a general, nonverbal reaction - the giggling and the blushing. The left hemisphere, meanwhile, did not "know" what the right had seen, although its comments about "some machine" seems to be a sign that it was aware of the bodily reactions induced by the right hemisphere." (p. 33).

Brain research and its implications for educators is at best inconclusive. Researchers now know that both sides of the brain may play a part in regulating language use and comprehension among some left-handed persons. (Bower, 1992) Neuroscientists caution educators about transferring the preliminary findings in brain research to teaching and learning styles and developing them into theories of how best to teach children. Neuroscientists say that these theories are totally separate from what they are discovering about the biochemistry of learning. They say they are at the beginning of their scientific journey and are in no position to offer advice to educators. "It will be 25 years before the benefits of brain research reach the classroom. Scientists are only beginning to learn about the physiology of learning. Whatever is said now has a good chance of not being true two years from now because the understanding is so rudimentary and people are looking at things at such a simplistic level." (Jones, 1995)

Researchers who have looked at the geography of the brain also conclude that a whole brain approach to learning deserves attention. Brain imaging has shown that all people use all of their brain. Schneider, an early geographer of mapping out the functions of the brain, indicates that if the brain was "uncrumpled" we would see that there are 1,000 different regions, each about the size of a pencil tip, each associated with different functions. An analogy would be to imagine an uncrumpled brain stretched out to the size of a football field that is covered with sheets of typing paper laid end-to-end; each piece of paper represents a different brain function. Schneider says that different types of learning take place on different parts of the map. (pp. 24, 25)

Schools, however, have repeatedly geared instruction toward a specific type of learning. Conner (1982) says that educators cannot afford to ignore the information from brain research. "The findings are fascinating and we ignore them at our peril." (p. 3) Conner cites 4MAT studies

from work by Bernice McCarthy that show four quadrants of learning styles. He says that our schools are geared to approximately 22 percent of the population. This leaves 78 percent shortchanged. (p. 3) Conner also says that even the 22 percent for whom instruction is geared are shortchanged in that they are being denied a whole range of cognitive and affective experiences.

There is certainly a danger in stereotyping when teaching is based on an idea that one side of the brain is favored over another. These stereotypes are exacerbated for African American students, when we know that society many times seeks any "excuse" to label African Americans as inferior. Given the inaccurate interpretation of research and information by race, extreme caution must be garnered in such transferences. Hilliard (1992) says that misunderstanding of cultural behavior style has been shown to lead to errors in the estimation of a student's or a cultural groups': 1) intellectual potential (the consequences of which - mislabeling, misplacement, and mistreatment of children - are enormous); 2) learned abilities or achievement in academic subjects such as reading; and 3) language abilities.

While Hilliard's discussion centers on behavior style, there is a close association between behavioral style and learning style. Hilliard's 1976 study cautions us on interpreting information on behavioral style: "1) We do not regard style as the vehicle through which intelligence is expressed. 2) We do not posit the notion of style as an excuse to explain why some children do not learn in some subjects. In fact, we believe that there is evidence to indicate that a given style user will approach the task [based on their style preference] and [success is determined by] whether the approach that a given style user uses is compatible with that of the teacher or the institution which provides instruction. 3) Finally, it is our opinion that the evidence indicates that

style ***is***." (1992) Hilliard further asserts that there is considerable data to show that cultural groups vary with respect to behavioral style.

There is also a connection between the theories that have been used to link brain research and style. While styles are more like habits, values, and preferences or predispositions than they are like biological dispositions, the bond between brain hemisphericity and style is plausible. The controversy over hemisphericity fosters acknowledgment of the fact that there are differences in styles of learning. Reading styles (Carbo, Dunn, and Dunn 1986), learning and creative/perceptual styles (McCarthy 1981), and management styles inventories (Hermann and Hanwood 1980) were originally developed with a left/right brain theoretical foundation. (Caine & Caine, 1991, p. 35) Caution must still be used, however, in labeling and stereotyping by style. Students can master any style of instruction, provided they are given full opportunity to develop the new repertoire of stylistic behaviors or cognitive skills. (Hilliard, 1992) The key for African American children is the willingness of our rigid educational system to remove the barriers that impede their academic success and provide the full opportunity to develop the repertoire necessary to compete. The overriding issue in general pedagogical practices in American schools today is less a matter of style influencing learning than it is one of style influencing teaching and then teaching influencing learning. (1992)

The research on brain hemisphericity and learning theory extends to the integration of fine arts to enhance whole brain learning. Whole brain instruction is geared to pedagogical practices that amplify and unite the knowledge about left and right brain characteristics. One of the long held means of achieving whole brain instruction in schools has been the fine arts (e.g., music, art, theater). Yet, the arts continue to be under scrutiny and are generally the first target for budget

cuts. The arts are considered peripheral to academics, when they should be considered as academic as reading, writing, and arithmetic. Secretary of Education Richard Riley says that studying the arts is challenging, demanding work that teaches precision, discipline, and a sense of excellence. However, in the development of Goals 2000, the fine arts were noticeably absent. When we profess that "Every American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship," Goal #5, we must remind ourselves of the role that the arts play in this development. "We owe our children the creativity to respond to tomorrow's world. The arts are a training ground and crucible for the emerging vocations of the computer age", says Jane Alexander, Chair of the National Endowment for the Arts. (Orlofsky, 1995) Alexander goes on to say:

> When we teach a child to draw, we teach him how to see. When we teach a child to play a musical instrument, we teach her how to listen. When we teach a child to dance, we teach him how to move through life with grace. When we teach a child to read, we give the gift of creativity, discovery, we teach her how to think. (p. 8)

Ernest Boyer, President of the Carnegie Foundation for the Advancement of Teaching, asserts that "In the arts, students learn to think not only in linear fashion, but they learn to think intuitively and creatively, which in my judgement is just as profound a way of knowing as any other." (p. 8)

The right hemisphere of the brain acknowledges creative expression and is said to be related to spatial skills and musical abilities. Physicists at the University of California at Irvine developed mathematical models for the neural firing patterns associated with brain functions that mapped musical pitches onto these patterns. They found the high brain functions, when set to

music, sounded like a Mozart sonata. (Jones, 1995, p. 26). Psychologist Frances Rauscher studied the effects of music lessons on 3-year olds. She found children who received keyboarding and singing lessons scored between eight and 10 points higher on IQ tests that measured their spatial-temporal skills - the reasoning skills that are so important in understanding math and engineering concepts. In other studies, she found that college students scored higher on spatial-temporal tests when they had listened to 10 minutes of Mozart sonata. (p. 26)

The intra-curricular advantage of the arts has been shown in courses like Humanities. Humanities typically is the interdisciplinary integration of language arts, social studies, art, and music. The incorporation of whole brain learning techniques is also found throughout the curriculum. An example is the use of artistic expression to visually display reading comprehension. Studies are also showing the advantage that the integration of fine arts has on the achievement for all students, specifically African American students. "Intuitively learning on their part precluded the need for me to take them sequentially through the clay unit. It was as though they progressed through stages mentally, without the need to pursue them materially." (Merchant, 1993) Some educational experts say that there is a distinct African American learning style - an environment full of human interaction and verbal dialog, rather than still, passive, teacher-dominated mode of instruction. (Gary & Booker, 1992) If indeed this is the distinct learning style of African American children, then the arts lean themselves well to participatory instruction.

Participation in fine arts classes often lend themselves to involvement in extra-curricular activities. Performances and exhibitions are many times found beyond the school day. Finn and Voelkl (1993) indicate that there is significant research to show that students' involvement in

school-life has a strong impact on academic achievement: cross-sectional studies by Finn & Cox, 1992; Laffey, 1982; McKinney, Mason, Perkerson, & Clifford, 1975; Swift & Spivack, 1969 and longitudinal studies by Attwell, Orpet, & Meyers, 1967; Fincham, Hokoda, & Sanders. 1989; Spivack & Cianci, 1987. One of the fifty recommendations coming from a study on how to increase achievement among African American males, done in the New Orleans Public schools, indicates that strong encouragement should be given to participate in more extracurricular activities that are related to academics and leadership (such as academic clubs, yearbook staffs, debate teams, student councils, safety patrols, and so forth) and not just athletics. (Garibaldi, 1992)

Findings by Finn also indicate that students who do not participate in school from the earliest years and who do not develop a sense of identification with school are at risk for a number of long-te m, adverse consequences including disruptive behavior in class, absenteeism, truancy, juvenile delinquency, and dropping out of school. Unfortunately, Finn asserts, all of these behaviors are found more commonly among minority students or those from low-income students. The research on behaviors and factors affecting the achievement of African American students is extensive, and beyond the scope of this article. However, the factors are certain to be linked with identification with school-life. Scholars have argued that school size, student integration into school life, and a fair and effective disciplinary system influence student engagement, but only a small number of studies have examined these propositions empirically. (Finn & Voelkl, 1993) Bryk and Thum (cited in Finn & Voelkl, 1993) further advocate that, "No single factor makes schools effective in sustaining student interest and commitment. Rather, a constellation of both structural and normative features appears to be involved."

The research on brain hemisphericity and learning theory, integration of fine arts to enhance whole brain learning, and motivation and engagement of students in school life, support a program that has been developed by J. W. Sexton High School in Lansing, Michigan. The basic premise of the program is that students who participate in the fine arts tend to have higher grade point averages and a greater commitment to school life.

J. W. Sexton High School After School Fine Arts Program

School Demographics

J. W. Sexton is a comprehensive public high school, offering instruction to approximately 1,400 students in grades 9-12. Sexton is located in Lansing, Michigan, an urban midsize city of approximately 130,000. The ethnic breakdown of the student population is 46 percent African American, 42 percent white, 6 percent Hispanic, 4 percent Asian, and 1 percent Native American. The percent of students who receive free/reduced lunch is 37.

Program Description

J. W. Sexton High School started an after school fine arts program (January, 1995) to encourage students to take a more active part in school. The belief that students who participate in fine arts have higher academic success than their counterparts, was central to the development of the after school fine arts program. Fine arts was chosen because each year during the awards programs for graduating seniors, the students most often receiving awards and honors are those who are also involved in fine arts. These students also participate in the honor society, school clubs, school sports, and are frequently asked to act as ambassadors for the school.

"What we have found is that students who participate in the fine arts tend to have higher grade point averages and a greater commitment to school life. They participate in

activities outside of the classroom and are able to handle conflict with some proficiency. These students build lasting friendships and become self-motivated. These are qualities we strive toward for all of our students while increasing their academic skills level." (C. W. Henderson, personal communication, February 23, 1994)

The focus of the after school fine arts program at J. W. Sexton High School is to increase student school success through participation in an after school fine arts program coupled with study sessions. The premise, active participation in after school fine arts yield positive increases in attendance, academic performance, school pride/affiliation, and citizenship. The program is designed to give these students an edge and confidence to join clubs, take academic risks and become part of band, orchestra, drama, debate, forensics, etc. the next semester or year. The Sexton High School after school fine arts program had the following goals:

> At the end of the school year at least 10 percent of the target group will have, increased attendance by 35%, increased GPA to at least 2.0, joined a school club or sport, decreased discipline referrals by 30%, receive certificate of successful completion, and meet the goals of the contract.

Becoming successful in the after school fine arts program would manifest itself in the student becoming responsible for their individual successes and ability to work in a group setting to fulfill one goal. During the entire process they attend study sessions and are expected to show improvement on a weekly basis in academic work throughout the school day while maintaining good attendance and behavior.

The after school fine arts programs includes offerings in vocal music, forensics/debate, visual arts, instrumental music, drama, dance, and study skills. Students meet two afternoons a

week for a two hour period, over the course of one semester (18 weeks). The program staff consist of a coordinator, building security, and an administrator. However, the administrator assumes the responsibility for the program within her job duties. The program is funded from monies allocated to the school district for "at-risk" programs by the State of Michigan.

Research

The data from J. W. Sexton compare information from students participating in the program and a controlled group of students who are not participating in the program. The information gathered is disagreggated by race/ethnicity. Two hypothesis were examined:

- African American students who participate in fine arts programs achieve higher academic success than African American students who do not participate in fine arts programs.
- African American students who participate in fine arts programs have a greater commitment to school life than African American students who do not participate in fine arts programs.

The results should be helpful to schools and districts looking at alternatives to increase the achievement of African American students.

Discussion

All students at J. W. Sexton High School were invited to participate in the after school fine arts program. A target group, consisting of 40 percent of the students with the lowest grade point average per grade level, was selected based on parent, counselor, teacher, and administrator recommendation. These students constituted the "at-risk" population. A composite of these students' grade point averages, attendance profiles, behavior - as indicated in discipline referrals and actions, and standardized test scores were used to get a complete educational view of the

student. The total number of students participating in the program during the 1995-96 school year was 68. Of this number 54 were "at-risk". The ethnic/racial composition consisted to two Hispanic-American females, two Asian-American females, four Caucasian females, one Caucasian male, nineteen African-American males, and forty African-American females.

Results

1. Forty-five percent of students who participated in the after school fine arts program achieved an increase in grade point average.
2. 100 percent of the students joined a school club or sport.
3. Data is not available at this time on the attendance, discipline referral, and meeting the expectations of the contract goals.
4. Many students found that in order to be successful academically, they had to forego their friends during the school day and focus on the after school program goals. As they did so, they began to achieve success.
5. The highest participation was in vocal music - which took the form of a gospel choir. Thirty to forty students attended the sessions. The choir performed for the principal's birthday, an elementary school, a parent program and a school assembly.
6. Students in drama participated in forensics tournaments locally and in state competition. Students also went to Mackinac Island, Michigan to participate in a forensics tournament. They also performed for parents. One couple progressed to state finals.
7. Students who participated in dance have been selected to perform during half time at home basketball games. They are also forming a school dance club.
8. Students who participated in visual arts had their work critiqued by faculty at the local

community college.

9. Building public safety officers/hall guards noted an improvement in their relationship with the students who were part of the program. These students were also instrumental in helping to control negative hallway behaviors.

10. All students took part in a school assembly, parent assembly, school club or sport and were more willing to help peers and staff in different situations.

11. Many parents stopped by the after school program and offered assistance as well as noted positive changes in their student's home and school behavior.

Conclusion

Students are unsuccessful in school not because they lack the mental ability to perform the tasks, but because of their lack of responsible behavior which manifests itself in academic success. Fine arts are challenging subjects requiring higher order thinking skills. Success in these subject areas is through individual and group efforts. Students achieve success in an atmosphere of controlled freedom which teaches responsibility. Students who choose not to explore fine arts in middle school will seldom choose them at the high school level although they may have the interest. Students are afraid to enter the classes feeling their proficiency level is considerably below the level of those with prior exposure.

Generally, students with poor elementary and middle school experiences are the ones who have their greatest problem making the transition in high school. They enter high school feeling hostile and needing to make their own comfortable environment. The problem is that their comfort level is usually seen in negative behaviors--poor grades, attendance, disruptive/abusive/confrontational, substance abuse and other self-defeating behaviors. For some

reason they never become part of the school culture. The proposed fine arts program will give them an edge and confidence to join clubs, take academic risks and become part of band, orchestra, drama, debate, forensics, etc: the next semester or year.

The J. W. Sexton after school program was successful in supporting the hypothesis that: 1) African American students who participate in fine arts programs achieve higher academic success than African American students who do not participate in fine arts programs. 2) African American students who participate in fine arts programs have a greater commitment to school life than African American students who do not participate in fine arts programs.

The design presents a descriptive case study of J. W. Sexton High School and the results may be limited to the constraints surrounding Sexton's program. Caution must be used in interpreting the results beyond the experiences of Sexton High School. The program, although narrow in its implications for other school communities, certainly warrants further research.

The after school program developed by J. W. Sexton High School is one example of how participation in the arts can be shown to increase student achievement. It supports the research on hemisphericity that whole brain development is critical to learning theory. Understanding whole brain development includes an assurance that fine arts have an appropriate place in school curriculums and extra-curricular activities. The after school program also supports the position that students who are involved in student-life, make a greater commitment to their academic achievement and hence have greater success in high school. Decisions by students to enhance the school climate by increasing the time spent with students who are pursuing positive academic goals and avoiding negative behaviors are by-products that make schooling a positive experience.

There are many issues that affect the achievement of African American children. After

school programs such as the one implemented at J. W. Sexton High School in Lansing, Michigan provide one vehicle for impacting achievement. However, as with any program, the key variable is the personnel. There must be a pervasive belief by program staff that the program will make a difference and that the children whom the program is impacting are worth the time and effort it takes to implement. Without an expectation for success and an energized staff, committed to providing the success, any program is doomed for failure.

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