The Effects of Mindful Awareness Teaching Practices in the Wellness Works in Schools™ Program on the Cognitive, Physical and Social Behaviors of Students with Learning and Emotional Disabilities in an Urban, Low Income Middle School.

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Purpose and Nature of the Research Study:

This study examined six students' behavioral responses during a series of seven to nine lessons on mindful awareness practices and the changes in student behaviors that occurred over the six months of Wellness Works lessons. The researcher observed the frequency of students' cognitive, physical and social responses to the directions and instruction of the mindful awareness practices to determine students' participation and attention rates. A student's participation and attention rates are indications of his/her capacity for executive function. Further explanation of this term is found in the literature review. From the six to seven data sets collected on each student, the researcher assessed and evaluated the effects of the practices on each student and explored the potential of mindful awareness teaching practices to change student behaviors.

The study began in October 2008 and concluded in early May 2009 in an urban, middle school, grades six, seven, and eight, in Pennsylvania. The middle school population is 89.4 per cent economically disadvantaged. As to racial and ethnic groups, 72.8 per cent of the children are Hispanic; 20.2 per cent are African American; 6.1 per cent are White; with the remaining one per cent from other ethnic or racial groups (www.schoolmatters.com, retrieved 7/30/09).

Three students in each of two sixth grade classrooms were the focus of the research. The first classroom consisted of 17-20 students designated as learning support students. Students in this classroom were seated in a series of seven rows facing the front of the room. The second classroom consisted of 11 students and was a combined group of two smaller classes of students, the first group of five students were designated as emotional support and the second group of six, as learning support students.

In the first classroom, the teacher was a strong advocate of the mindful awareness lessons and had participated in teacher training conducted by the mindfulness program. In the second combined classroom, the two teachers included one responsible for the five emotional support students and one responsible for the six learning support

students. Both classroom teachers were supportive of the program but had not participated in the teacher training. The learning support teacher left teaching in mid-March for health reasons that were reportedly due to the stress of teaching. Two therapeutic support aides accompanied two of the five emotional support students and their teacher to the learning support classroom where the mindful awareness teaching occurred. The eleven students sat on two rows of chairs facing the front blackboards of the classroom. Each of the seventeen lessons observed were approximately 45 minutes in length. Two Kinder Associates instructors, expert in mindful awareness practices and experienced, former elementary education teachers, taught the mindful awareness lessons.

Mindful Awareness Teaching

Shapiro et al (2006, p. 375) constructed three axioms of mindfulness based on Jon Kabat-Zinn's definition, "paying attention in a particular way: on purpose, in the present moment, and non-judgmentally" (1994, p.4). These axioms include 1) **intention** or personal vision of self-regulation, 2) **attention** or the observation of one's moment-to-moment, internal and external experience or behavior, and 3) **attitude** or the quality one brings to his/her attention to the experience or behavior without evaluation or interpretation. According to Shapiro et al, "Through intentionally bringing the attitudes of patience, compassion and non-striving to the attentional practice, one develops the capacity not to continually strive for pleasant experiences, or to push aversive experiences away" (p.377).

Wellness Works in Schools^{TM} is a mindful awareness health and wellness program developed and conducted by Kinder Associates. According to *Wellness Works* (WW) program materials, the program is "designed to motivate, educate, and support students, teachers and families in developing the mental, emotional, physical, and social competencies needed to handle life's challenges healthfully, across school, home, work and community. Wellness Works presents mindful awareness practices and curriculums to promote positive nervous system function and behavioral expression" (Kinder Associates LLC, 2009, pp 1-2).

Each *WW* mindful awareness lesson includes

- group discussion of selected emotional intelligence and mindbody topics, e.g. handling challenging emotions such as anger or sadness, mental fitness, and inner and outer strength,
- mindfulness skills including focused awareness, attention, and concentration where the student focus shifts from external stimuli to internal awareness to sort out thoughts, emotions and impulses in a non-reactive way,
- healthy breathing to promote slowing down, reflecting, and becoming present,
- mindful movements to energize the mindbody connection by releasing tension and stress,
- relaxation skills to promote balance and calm,
- group reflections to allow students the opportunity for inquiry and comment.

In the lessons observed for this study, participation in mindful movement (sitting or standing) was voluntary. Students are not permitted to distract from the teaching or the learning of others. At times when a student was not participating or engaging in a disruptive behavior, one of the teachers used physical proximity to approach the student and redirect the students' behavior.

Two Kinder Associates instructors conducted the Wellness Works sessions. During the lesson, the two instructors took turns initiating the movement, skill, discussion or reflection while the other observed students' responses to the task. Each segment of the lesson generally was five to ten minutes in length.

Executive Function/ Reperceiving

Within the extensive body of research on brain-based behaviors and neurological science that has been developed since the 1980's, one area of study has focused on the executive functions within an individual's repertoire of cognitive, emotional, and physical behaviors. The executive functions are a collection of processes that are responsible for guiding, directing and managing cognitive, emotional, and behavioral functions, particularly during active novel problem solving. Goia et al stated that the "term, executive function, represents an umbrella construct that includes a collection of interrelated functions that are responsible for purposeful, goal-directed, problem-solving behavior"…. executive functions relate to the highest levels of cognition: anticipation, judgment, self-awareness, and decision making" (2000, p.1). These higher cognitive behaviors differ from the more basic cognitive functions such as language, visual-spatial activities, and memory abilities. Key aspects of the executive function behaviors include the "ability to initiate behavior, inhibit competing actions or stimuli, select relevant task goals, plan and organize a means to solve complex problems, shift problem-solving strategies flexibly when necessary, and monitor and evaluate behavior" (Goia, 2000, p.1). Goia et al also included working memory as a subdomain of executive function since the individual would most likely need to retrieve relevant information for complex problem-solving tasks.

Brain-based research has determined that the capacity for executive function behaviors occurs within the frontal system of the brain and relies on connections of the frontal regions with the cortical and subcortical regions of the brain. The developmental course of the executive functions within an individual follows the path of one's neurological development. Conversely, dysfunction can arise from a variety of forms of damage to the frontal region as well as to the interconnected cortical and subcortical regions of the brain.

Goia et al contend that the executive functions of self-awareness and control develop in parallel with specific areas of content. For example, as basic memory skills develop, knowledge about how to use and control these memories, or "metamemory," develops concurrently. Based on research studies on metamemory, Goia et al highlighted the importance of self-control strategies within the context of specific processes such as

reading or writing. They stated, “Assessment and intervention in learning disabilities must, therefore, include the control strategies (e.g. recognizing the critical “problem” situation, in addition to the primary domain-specific processing disorder (e.g., decoding words, extracting meaning from sentences)” (p.3).

The learning of the metacognitive skills of self-awareness and self-control are critical components of functioning for learning and for life. The development of these behaviors is an integral part of mindful awareness practices.

According to Shapiro et al, in “the process of mindfulness, one is able to disidentify from the contents of consciousness (i.e. one’s thoughts) and view his or her moment-by-moment experience with greater clarity and objectivity” (p. 377). They named this process, “reperceiving.” It requires that an individual stand back from the emotional context of the moment and witness it. This development of this mindfulness skill allows for the use and control of the moment, i.e. the metamemory of executive function, and the potential to increase self-regulation and self-management. They state that “through reperceiving, we are no longer controlled by states such as anxiety or fear but are instead able to use them as information. We are able to attend to the emotion, and choose to self-regulate in ways that foster greater health and well-being.” (p.380)

Research Methods:

For this study on students’ behaviors in response to mindful awareness teaching, the researcher conducted a series of seventeen observations over a period of six months. The schedule of observations for each of the two classrooms was determined by the availability of each class within the context of school demands such as vacations, standardized testing, special programs, etc. Each of the observations of the individual students occurred within the presence of the whole class. The researcher selected to focus on the behaviors of three students chosen at random, with the consideration of having both girls and boys represented in the study. The number of students was narrowed to three in each class to allow for more accurate observation of behavior frequencies. Two girls and one boy were observed in the part-time learning support classroom. Two boys and one girl were observed in the mixed learning support/emotional support classroom; the girl was the only girl in the latter class of eleven students.

After an initial observation of a mindful awareness teaching class, the researcher constructed a behavioral frequency rating chart. Seventeen behaviors related to students’ responses to the lessons were identified. Of these five behaviors identified cognitive responses, e.g., “attention to teacher directions;” eight behaviors identified physical responses, e.g. “maintains erect posture in seat;” and four behaviors identified social responses, e.g. “displayed helpful response to teacher question.” The behavior indicators were generalized to allow for observation of different lessons. A specific frequency number or number of points was assigned to each behavior. A point was deducted each time a student did not perform the behavior. This point system allowed

for consistency of rating over the series of lesson observations. A copy of the frequency chart is included.

Findings:

Classroom A:

Student 1:

Description: Small, thin Latino male, age 12, designated learning support, English language learner, seated in the front row, near the center of the classroom.

Behavior frequencies:
Throughout eight observations, Student 1 maintained the highest point value in all categories, meaning he performed every task assigned, except in one category. During the first four observations, Student 1 repeatedly fidgeted his legs while performing sitting tasks. The researcher noted this to the regular teacher and suggested that the student's desk may be too large for him since his feet did not touch the floor. By the next class, the teacher had a smaller desk for him. His fidgeting of his legs stopped. In one observation, he asked to demonstrate the balance task for the whole class. In March this student was removed to a regular classroom, where he could have more ELL instruction. He missed one mindful awareness class, but was allowed to continue with the remainder of the classes at the request of the researcher.

Student 2:

Description: Tall, thin, African American girl, age 12, designated learning support, seated in second row on right side of the classroom, one desk from the end.

Behavior frequencies:
In the first observation of the total of nine observations was conducted in October 2008, Student 2 had five points deducted for the cognitive behavior, "attention to teacher directions;" two points deducted for the cognitive behavior, "attention to seat tasks." In the second observation in December 2008, she performed all behaviors as directed, maintaining the total point value for each category. She, however, was assisted by one of the teachers three times in learning the task. She also offered one helpful response to the teacher's group inquiry. For observations 3, 4, and 5, Student 2 performed at the highest levels in all categories; she offered two helpful responses during observation 5; in observation 6, she was observed laughing with a peer, Student 3, three times; in observation eight, she did not maintain an erect posture in her seat or standing two times. In the ninth observation, she performed all behaviors at the highest level.

Student 3:

Description: Tall Latina female with early signs of puberty, age 12, designated learning support. First observation occurred in January, 2009. She replaced a girl who was observed in October and December and who moved from the school over the Christmas holidays.

Behavior frequencies:
In the first observation, she had a point deducted in "following directions given by the teacher once," due to her head being on her desk. She lost one point for "maintaining erect posture," and one for "fidgeting at her seat" by looking around. She also laughed with her peers two times. During observations 2 and 3, she performed all behaviors at the highest level. For observation 4, she fidgeted at her seat throughout the lesson by biting her nails. She also was observed laughing with a peer, Student 2, three times. In observation 5, points were deducted for each of the cognitive behaviors, and she was redirected to the task by one of the teachers once. She bit on her name tag two times during the lesson and was moved to the front of the room by the regular classroom teacher. She resisted this at first but complied. She also laughed with a peer once. In observation 6, she had points deducted for each of the cognitive behaviors. One of the mindful awareness teachers took her name tag away from her since she was biting it. She leaned on her desk twice and fidgeted with her name tag until it was removed. She laughed at Student 2 three times but Student 2 did not respond. At the beginning of observation 7, she tried to sit near Student 2, but was moved by her regular teacher. She had one point deducted from the "followed directions given by the teacher once" and received assistance from the teacher on this task once. She also leaned on her desk once. She raised her hand once to offer a response. She laughed with another girl once.

Classroom B

Student 4:

Description: Tall, thin, African American female designated learning support, age 12. Very quiet. During all the observations, she did not talk to another student. Seated in second row closest to the wall.

Behavior frequencies:
Student 4 was observed five times. She was absent for three observations. For each of the five observations, she performed at the highest level with a few exceptions: Observation 2, she did not attend to the teacher's directions three times and was observed picking at her hair once. For observation 4, she had a point deducted for "attention to tasks in a standing position."

Student 5:

Description: Short, overweight Latino male designated learning support, age 12. Seated in second row in the middle near a table which he leaned on.

Behavior frequencies:
For the first of eight observations, he had two points deducted for each of the cognitive tasks, and was redirected by one of the teachers four times. He leaned on his desk two times. In observation 2, he had two to three points deducted for each of the cognitive tasks and was redirected by one of the teachers one time. He did not maintain an erect posture in his seat and had his head in his hand once. In observation 3, he performed at the highest point value for three cognitive tasks, but had three points deducted for "followed directions given by the teacher once." He was chewing gum but removed it at the teacher's request. He laughed with a peer once. In observation 4, he had one point deducted for cognitive task, "attention to teacher directions" and for "attention to seat task." He leaned on his desk once and offered a helpful response to the teacher once. In observations 5 and 6, he performed at the highest level for each category. For observation 7, he had three points deducted for cognitive tasks, "attention to tasks in a standing position" and for "followed directions given by teacher once." He was assisted three times by his regular teacher in performing the tasks. He moved into or touched peers with his outstretched hands three times. In observation 8, he received the highest point value for three of the cognitive tasks, but was deducted two points for "attention to seat tasks" with his head on his desk. He followed the direction when it was repeated to him for these tasks. He performed at the highest level for all other tasks. He demonstrated the use of a mindful tool once and offered a helpful response once.

Student 6:

Description: Latino male, designated emotional support, age 12. Has therapeutic support person as his individual aide. He seated himself in the front row in the center.

Behavior frequencies:
In observation 1, he performed at the highest point value for two cognitive behaviors, "attention to teacher directions" and "attention to seat tasks." He had two points deducted for the cognitive behavior, "attention to tasks in standing position." He had the directions repeated to him four times. He followed one direction from the mindful teacher with resistance. He fidgeted in his seat three times and clicked an object in his pocket each time. He asked questions about the chimes used by the instructor to open and close each mindful awareness session. In observation 2, he had highest points for all tasks, except for the cognitive task, "attention to tasks directed in a standing position." Twice a teacher repeated directions to him. He pulled his shirt over his head. He was very inquisitive and asked several questions. He also wanted the lights off. He placed gum on his chair. He kept looking around the room at his peers. In observation 3, he came into the room playing with something in his pocket. He was chewing gum until the teacher asked him to remove it. He did not attend to the teacher's directions

five times. He changed his seat from the front to one in the second row. He put his head down in his lap one time. In observation 4, he lost one point for “attention to teacher directions” and one for “attention to seat tasks.” He fidgeted at his seat one time. He displayed a helpful response to the teacher once. In observation 5, he had six points deducted for “attention to teacher directions,” two points deducted for “attention to tasks in a standing position” and was redirected by the teacher three times. He maintained an erect posture in his chair and in standing position each time. In observation 6, he performed at the highest level for all cognitive behaviors, had one point deducted for “maintains erect posture in his seat” and one for “fidgeting in his seat.” He displayed one helpful response to the teacher. In observation 7, he performed at the highest level for all tasks, except he had one point deducted for “attention to tasks in standing position” and one for maintaining erect posture when standing. In observation 8, he performed at the highest levels for all tasks. He requested one of the tasks be done again for the class. He also showed the teachers where he had fallen on his bike. He demonstrated how to roll his foot to relax the muscles. He pulled his chair to the front of the room and requested to demonstrate the flashlight. He was fully engaged throughout this lesson.

Discussion:

For Students 1 and 4 who have developed skills of self regulation and self awareness, the mindful awareness teaching lessons reinforced these executive function behaviors and provided an opportunity for these students designated as learning support students to perform at the highest level of teacher expectations and in front of their peers. The mindful lessons provided observable success for these students in school.

For Student 2, her responses to the mindful awareness teaching practices improved significantly from the first observation to the second observation. She maintained high frequencies of positive responses for cognitive, physical, and social behaviors for the remainder of the observations.

For Student 3, her need for social interaction and her nervous habits of nail biting and biting her name tag interfered at times with her ability to perform at high frequency ratings for her social behaviors. Her cognitive and physical behaviors were at high ratings throughout the observation. The mindful awareness teaching with its calm practices and nonjudgmental, quiet redirecting or assisting with tasks provided the opportunity for the student to redirect and discontinue her nervous behaviors. They also limited her social interaction and caused her to focus on the practices requested.

Student 5, a learning support student, showed measurable improvement in his frequency points over the course of six months. He was able to attend to directions and respond to the teacher directions and tasks.

Student 6, an emotional support student whose negative behaviors in his regular classroom have required the presence of a therapeutic support person and have resulted in school suspensions, demonstrated the most improvement in behaviors over

the six months. By observation 8, Student 6 was the model student for the class and was actively and positively engaged in all aspects of the lesson. His frequency ratings for cognitive, physical, and social behaviors were at the highest point value.

For each of the six students observed, the mindful awareness teaching lessons provided the opportunity to sustain/reinforce or improve their executive function skills of self regulation and self awareness. For Student 6, the changes in behavior were most dramatic and significant. This improvement supports research findings that have concluded the strongest changes in executive functioning occur in students who have the most difficulty when they begin directed lessons on mindful awareness practices (Smalley, S. L. et al, in press). For the three other students designated as learning support students, improvement in cognitive, physical and social behaviors occurred.

In conclusion, this observational study and the data collected strongly supports the positive effects of mindful awareness teaching on student cognitive, physical, and social behaviors for both learning support and emotional support students during mindful awareness lessons. The study, however, is limited in that it did not investigate the transference of the positive changes in students' behaviors to their regular classrooms. To address this limitation, the researcher will conduct a randomized study of mindful awareness teaching practices on middle level children in this urban school in the 2009-2010 school year. Through the use of the nationally validated survey instrument, the Behavior Rating Inventory of Executive Function (BRIEF), the teachers of approximately forty children including a percentage of children identified as learning support or emotional support students will assess students' executive function behaviors before and after a series of eight mindful awareness teaching lessons as a means of determining the transferability of the mindful awareness practices to the regular classroom.

<u>References:</u>

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Student Behavior Observation Rating Instrument
For Wellness Works in Schools

Date_____ Time _____
School _____

Classroom_____	Student I	Student II	Student III
Age	_____	_____	_____
IEP/non-IEP/Designation	_____	_____	_____
Ethnicity	_____	_____	_____
Language	_____	_____	_____

Mental			
Attention to Teacher Directions			
Attention to seat tasks and assignments			
Attention to tasks and assignments directed in standing position			
Followed directions given by teacher once			
Followed directions by teacher- repeated to student more than one time			
Physical			
Maintains erect posture in seat			
Maintains erect posture when standing			
Stays still without fidgeting at seat			
Stays still without fidgeting in standing position			
Remains in seat during sitting lessons/instruction			
On task with all extremities during entire lesson			
Maintains self-control over body during entire lesson			
Exhibited body control			

without touching peers			
Social			
Displays appropriate voice level for classroom			
Displayed helpful responses to teacher direction			
Laughing with peers			
Laughing at peers			
Needed to be reminded of appropriate behavior expectations			

Notes:

2009 Rating Scale developed by
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