

Hocus Focus: Evaluating the Academic and Functional Benefits of Integrating Magic Tricks in the Classroom

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Abstract

As a society, we are looking to schools to be or become settings where our children learn the skills for successful adulthood. We are asking educators to teach an increasingly heterogeneous population of students, some of which face additional learning challenges. Many of these students have – or will have – a significant need to develop not only academic skills but also functional and social skills. However, instruction that addresses these needs is often not a component of the school-wide curriculum. This project was implemented to determine if learning and performing magic tricks as a part of an educational activity could bring about improvements in specific areas for special learners. Teachers used the Hocus Focus[™] curriculum for this project. This is an activity-based, academic and functional curriculum that integrates simple magic tricks into classroom instruction in an organized, systematic manner. Results demonstrated that the learning and performing of magic tricks could impact all three domains of learning resulting in student improvement in on task behaviors, planning and sequencing, socialization and meaningful conversation, and fine motor skills/dexterity.

Introduction

It has become critical for teachers to have a continuum of interventions and specialized strategies they can effectively implement in their classrooms while modifying their lesson plans to meet the needs of their students (Schmidt, Rozendale, & Greenman, 2002).

Hocus Focus[™] is an activity-based, student-centered, academic and functional curriculum that integrates simple magic tricks into classroom instruction. Each lesson is developed to align with U.S. National and Common Core State Standards of Learning as well as achieve specific functional objectives. The focus of this paper will address the findings of how the organized integration of magic tricks in the classroom can empower teachers and students to achieve desired outcomes and improve important learning skills identified by such studies as Bloom's Taxonomy of Learning, Michael Levine's Constructs of Neurodevelopmental Function, and Robert Marzano's New Taxonomy of Learning. These skills include sequencing, organizing tasks and movements, creativity, problem-solving, critical thinking, observational techniques, concentration, fine and gross motor skills, communication and presentation, and social behaviors.

In order to put into perspective the value of the *Hocus Focus[™]* curriculum as an effective tool educators can use to teach all students in an inclusive classroom environment, one must have an understanding of the changes in student demographics, the impact of current laws regarding the public education of special needs students, and the power of the arts to engage learners.

Literature Review

Legislation and Inclusion

In 1975, the U.S. Congress passed Public Law 94-142 (Education of All Handicapped Children Act), now codified as the Individual with Disabilities Education Improvement Act (IDEIA). In order to receive federal funds, states must develop and implement policies that assure a free appropriate public education (FAPE) to all children with disabilities. The IDEIA became a major instrument of change in U.S. public schools in the later part of the 20th century. In the 21st century, the No Child Left Behind Act of 2001 (NCLB, Public Law 107-110) has become the instrument of change in U.S. education by mandating that all states establish academic content and achievement standards.

In 2006, the United Nations passed the Convention on the Rights of People with Disabilities (CRPD). It is the main international policy document addressing the rights of people with disabilities by making general human rights laws applicable to these individuals and by clarifying existing international disability laws. While it is critically important that all children have access to education, they must be able to participate in school life and achieve desired outcomes from their education experiences. "While subject-based academic performance is often used as an indicator of learning outcomes, 'learning achievement' needs to be conceived more broadly as the acquisition of the values, attitudes, knowledge, and skills required to meet the challenges of contemporary societies" (UNESCO, 2009, p.6).

The global demand for improved access and more effective teaching tools for students with a disability classification are not expected to diminish. A May 2011 study released by the U.S. Centers for Disease Control and Prevention (CDC) revealed that about one in seven children in the United States (15% of American children) have been diagnosed with some type of developmental disorder – an increase of almost 2% from 1997 to 2008 or almost 2 million children (Boyle et al., 2011). The World Report on Disabilities released in June 2011 reveals the international statistic of children with a disability to be approximately 5.7%, or 106 million children, and rising (World Health Organization, 2011).

In fall 2007, almost 95% of 6- to 21-year-old students with learning disabilities in the U.S. were served in general schools (U.S. Dept of Education, 2010). In addition to the population of students with learning disabilities, it is widely accepted that a considerable number of other students will need specialized instruction and accommodations in order to become academically and socially competent. These students are referred to as “at-risk.” Today, it is estimated that 20% - 60% of the general education population in the U.S. may comprise these “at-risk” students. And, by most accounts, these students represent a challenge similar to that of students with disabilities. Effective strategies used to teach students with learning disabilities are equally applicable to at-risk students. (Gable & Hendrickson, 2004).

In order to comply with the provisions of the IDEIA, U.S. schools are establishing procedures to provide for retaining students at-risk and those with learning disabilities in the general education classroom. This process is referred to as mainstreaming (or inclusion) and reflects the least restrictive environment (LRE) provision of the IDEIA. As previously acknowledged, much of the developed world is also moving toward an inclusion model. This has placed – and will continue to place - an increased pressure on public schools to improve student educational outcomes, including those of students with a learning disability classification.

The CRPD also recognizes the right of children with disabilities to be educated in the general education system. Globally, children with disabilities are less likely to be enrolled in or stay in school (World Health Organization, 2011). In poor, developing countries, this trend is even more dramatically pronounced. While much of the developed world has moved (or is currently moving) toward an inclusive education model, many are still challenged by the demands of inclusion (World Health Organization, 2011). Of the 45 countries participating in the Education for All Fast Track Initiative (a partnership between developing countries

and The World Bank), only 10 had specific policy commitments for children with disabilities (World Health Organization, 2011).

UNESCO revised their guidelines to assist countries in the introduction and promotion of inclusive education, to strengthen policy development, and to bring about change in the education system to improve “all aspects of the quality of education, and [ensure] excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy, and essential life skills” (UNESCO, 2009, p. 27).

The World Bank and World Health Organization’s 2011 World Report on Disability (Levin Institute, 2011, p. 3) states, “when possible, students should be mainstreamed, schools should be flexible in their curriculum and assessments, classroom specialist should be provided, and education and rehabilitation services should be linked.” There is a critical need for educators to work cooperatively with their colleagues in other disciplines, i.e. school psychologists, therapists, guidance counselors, and speech/language pathologists. When activities that are implemented to meet academic objectives also reinforce psychomotor and social objectives, the synergy between professionals can lead to greater achievement in academic and social skills with at-risk and students with learning disabilities.

The global situation demands that we evaluate our present practices and demonstrate a willingness to abandon those that are inefficient for those that have been proven effective (Gable & Hendrickson, 2004). In inclusive classroom environments, methods of instruction that best benefit all students must be implemented in order to serve the needs of every learner. This requires educators to find new methods and tools to support a creative inclusive approach to education.

The Arts in the Classroom

The New Oxford American Dictionary (2010) defines art as “works produced by human creative skill and imagination” and the arts as “subjects of study primarily concerned with the process and products of human creativity and social life.”

Research has demonstrated that the arts ignite creativity (Fisk, 1999; Burton et al., 1999) and this can play an important role in supporting the diverse learning needs of students. Evidence indicates that learning through the arts can have a profound impact on learning in other domains including personal and social competencies (Fisk, 1999). Sir Ken Robinson, educator and creativity expert, has been challenging the way we teach our children for years. He contends that the modern education system is destroying creativity in our children through a hierarchy of subjects that diminish the

importance of the arts by ignoring their impact on learning. Robinson wrote:

The fact is that given the challenges we face, education doesn't need to be reformed -- it needs to be transformed. The key to this transformation is not to standardize education, but to personalize it, to build achievement on discovering the individual talents of each child, to put students in an environment where they want to learn and where they can naturally discover their true passions. (2009, p. 238)

Robinson champions a radical rethinking of our school systems to cultivate creativity and acknowledge multiple types of intelligence.

A 1999 study of over 2,000 students attending public schools in grades 4-8 found a significant relationship between arts programs and creative, cognitive, and personal competencies needed for academic success (Burton et al., 1999). When academic or social objectives are taught through the arts, they provide children and young adults with authentic learning experiences that engage their minds, hearts, and bodies. These learning experiences are real and meaningful for them, bringing together multiple skills and abilities. Cote (2011) suggests that the movement toward accountability and standardization is not conducive to stimulating these creative learning experiences because it focuses on assessment, measurable outcomes, and external control. When schools prepare students only for academic success (e.g., getting the answer correct), it is "detrimental to creative growth because creative learning involves experimenting, taking risks, making mistakes, and correcting them" (Cote, 2011, p. 129). Eisner (2002) argued that more attention should be given to the cognitive aspects of the arts. Eisner's position is that arts integration into curriculum can teach students valuable skills that include how to make good judgments about qualitative relationships, problems can have more than one solution, questions can have more than one answer, small differences can have large effects, and there are many ways to see and interpret the world (perspective).

Magic in the Classroom

The art of magic has a story as old as recorded history. Almost every society has some recorded form of magic. It may be the oldest and most universal of the performing arts because it easily translates from one culture to another (Christopher & Christopher, 2005). The Westcar Papyrus, written approximately 3000 BC, records the performance of a magician in the Pharaoh's court. Cave paintings by prehistoric people in southern

France and northern Spain contain images of magicians performing their tricks (Doerflinger, 1977). Magicians performed in the streets and marketplaces of ancient Greece and Rome. Magicians of the past were an important part of society and significant players in the world of theatre. Their problem-solving and creative abilities have made significant contributions to modern civilization including the parachute, vending machines, and the technology used to show movies.

The art of magic has the potential to capture and hold the attention of people of all ages. Children are especially intrigued by the seeming impossibility of a magic trick. Throughout the 1980s and 1990s, a small number of education researchers evaluated the effectiveness of using magic tricks with students with learning disabilities. Each researcher concluded that future research should be done based on their positive results, which include: (a) Magic tricks offer a creative means for stimulating the senses in special education students (Frith & Walker, 1983), (b) Magic tricks enhance the learning experience and encourage creative problem-solving skills, observational techniques, and critical thinking (McCormack, 1985), (c) Magic tricks provide a strategy for building teamwork and self-esteem in children with Emotional Behavior Disorders (Broome, 1989), and (d) Magic tricks in an educational setting can help students with learning differences attain higher self-esteem and self-confidence (Ezell & Ezell, 2003).

Dr. Aubrey Fine is a licensed psychologist who works with children with learning disabilities. Dr. Fine is also a Professor in the College of Education and Integrative Studies at California Polytechnic State University (Pomona, CA). Dr. Fine recognizes the value of magic as an intervention and wrote:

The teaching of magic has many therapeutic benefits. Not only does it work on confidence and communication, but it also can be used to teach cognitive and motor skills. It is amazing that people will work hard to learn materials that are intrinsically motivating to them. So often people don't realize that they are enhancing these skills because their primary goal is self-satisfaction and developing the skills to perform the magic. I have been amazed to watch children with ADHD or learning disabilities work slowly and carefully, following the necessary steps, because they want to get the trick or illusion. correct. (Personal communication, August 23, 2009)

Incorporating magic tricks into the learning process can be a powerful means of tapping into the creative process and drawing on multiple learning modalities—

visual, aural, and kinesthetic – allowing students to learn facts and concepts they can see, touch, manipulate, and talk about. Simple tricks can transform the learning process into a tangible and visible learning experience. It can also provide an appropriate means to build confidence, self-esteem, self-identity, and develop self-determination skills in students (Levin, 2007; Noll & Johnson, 2010).

Learning is deepest when students have the capacity to represent what they have learned to others. Helene Illeris, Professor of Arts Education at the University of Agder in Norway, suggests that, in the performative aesthetic learning process, knowledge can be communicated through symbolic forms (Illeris, 2011). The performance of a magic trick is a motivating, skillful, and appropriate way to provide a platform for demonstrating what students have learned.

Using magic tricks in the classroom can also impact student behavior (Levin, 2007). Inner Harbor Hospital (Atlanta, GA) is an intensive-level experiential residential psychiatric hospital for severely emotionally disturbed youth 6 to 18 years of age. Admission to the school program requires the diagnosis of at least one Axis I diagnosis and each student is prescribed psychotropic medication(s). The entire student population is classified as requiring special education. Within this setting, a population of pre-adolescent boys was used to evaluate the potential benefits of learning magic tricks for both academic and personal/social development in a variety of classroom settings or programs. Diagnoses of students in the study included: Depressive Disorder Not Otherwise Specified, Oppositional Defiant Disorder (ODD), Conduct Disorder, Intermittent Explosive Disorder, Attention Deficit Hyperactivity Disorder (ADHD) or Attention Deficit Disorder (ADD), Bipolar Disorder, Post-Traumatic Stress Disorder (PTSD), and Schizoaffective Disorder. Common psychosocial stressors included a history of physical and/or sexual abuse, poor family functioning and/or termination of parental rights, legal issues, and substance abuse. The six-week study was conducted under the supervision of therapist and teacher David Levin.

Final results showed an improvement on eight (8) of the ten (10) items on the Rosenberg Self-Esteem Scale in pre/post testing. Behavior tracking also indicated significant positive gains. There was a 65% decrease in interpersonal boundary violations and a 62% decrease in the requirement of staff to intervene with behavior disciplines. These results suggest that integrating simple magic tricks into classroom instruction can engage even the most difficult students in the learning process and have a positive impact on self-esteem, self-concept, behavior, and social cognition.

The use of magic tricks with children to assist in the development of cognitive, motor, speech, and psychosocial skills in a therapeutic rehabilitation setting is well established (DeRoovere, 1997; Fisher, 2007; Green, 2010; Kwong & Cullen, 2007; Sui & Sui, 2007;). An organized program called Healing of Magic has been training therapists for more than 20 years in the therapeutic use of magic tricks. The American Occupational Therapy Association (AOTA) recognizes the benefits of learning magic tricks as “a therapeutic method that aids the patients by enhancing their attention, problem recognition, problem solving, perception, neuro-muscular and motivational skills (AOTA, 1985).” Rebecca Phillips, the Administrative Director of Rehabilitation for Martin Memorial Hospitals in South Florida, acknowledges that magic tricks can be used with clients to elicit motivation, coordination, range of motion, prehension, fine motor dexterity, and perceptual training (Personal Correspondence, February 18, 2011). Julie DeJean, the Administrative Director of Stormont-Vail West, a behavioral medicine hospital in Topeka, Kansas, agrees that magic tricks can engage and motivate clients to experience gains in motor skills, cognitive skills, and social skills (Falcon & Shoop, 2002).

The Hocus Focus[™] Curriculum

Hocus Focus[™] is an activity-based, student-centered educational curriculum that integrates the art of magic into 11 weeks of lesson plans (10 lessons and a bonus lesson) with the flexibility for teacher adaptation based on the abilities of the students and available classroom time. It was developed for two reasons: (1) to tap into the curiosity and intrinsic motivation of children in order to engage them in the learning process, and (2) to provide organized lesson plans that would allow for inter-disciplinary collaborations between educators, psychologists, and therapists to concentrate on and reinforce the desired outcomes (academically and functionally) identified in an Individual Education Plan (IEP).

The curriculum includes the Teacher’s Manual, an Instructional DVD, Supplemental CD, and the magic supplies for each lesson. The Teacher’s Manual is divided into five sections: Introduction to the Curriculum, Educational Factors, Guidelines for Implementation (assessment, instruction methods, etc.), Assessment Surveys, and Lesson Plans. Each lesson plan contains goals and objectives aligned with at least one National Standard of Learning and Common Core State Standard, activities to support those objectives, step-by-step illustrations for the trick being taught, and assessment tools to evaluate the students’ progress. In

addition to the academic objective, each lesson also contains cognitive, motor, psychosocial, speech and functional objectives.

The Instructional DVD is for use as a part of the classroom instruction. The DVD menu lists each lesson as a separate chapter. Each lesson contains the demonstration of the trick followed by the step-by-step instructions for students. The step-by-step instructions on the DVD align with the step-by-step illustrations provided to each student by the teacher. The DVD is also English subtitled.

The Supplemental CD contains the illustrated instructions for all the magic tricks in each lesson, copies of the assessment and evaluation surveys to be used, a Certificate of Completion, the Magician's Code of Ethics, the "Wizard's Book of Secrets," and a letter to the parents introducing them to the concepts and benefits of the curriculum.

There were several specific questions on which the researchers focused regarding the efficacy of the *Hocus Focus*tm curriculum. This paper, however, will focus on only one of those questions: How does the use of the curriculum encourage student growth and development, i.e. does it achieve measurable outcomes in the improvement of the previously identified cognitive and psychomotor skills as well as student affect?

Method

Participants and Settings

Three settings were selected with varying demographics in order to assess the effects of the *Hocus Focus*tm curriculum on diverse populations. These settings comprised nine teachers and 76 students.

Setting one included four classrooms at a public school in north St. Louis County, Missouri. Each classroom contained between 8 and 11 students who had been placed within the school via the decision of an Individual Education Plan (IEP) team. The students' diagnoses included Autism, Emotional Behavior Disorder, Learning Disability, ADHD, Intellectual Disability and Communication Disorders (speech and language).

The first classroom was made up entirely of female students, ages 14-18, who had educational diagnoses of Emotional Disturbance and/or Learning Disabilities. The second classroom was made up of male and female students, ages 18-21, with educational diagnosis of Autism and/or Intellectual Disabilities. The third classroom was made up of all male students, ages 15-18, with educational diagnosis of Emotional Disturbance and/or Learning Disabilities. The final classroom was made up of male and female students, ages 14-16, with a

primary educational diagnosis of Learning Disability. There were 19 females and 15 males included in the study. The students were predominately African-American from lower socio-economic neighborhoods. One supervisor, working cooperatively with each teacher, was placed in charge of overseeing the evaluation of the curriculum in each classroom. The objective was to determine if the *Hocus Focus*tm curriculum would positively impact student growth by improving cognitive abilities and influencing behaviors (Walkenhorst, 2010).

Setting two included four separate level IV classrooms containing a total of twenty-seven students in the state of Minnesota (USA). All students were diagnosed as having an Emotional Behavior Disorder and Learning Disability. The students' ages ranged from 12-14 years old. The evaluation of the curriculum in each classroom was under the supervision of a teacher and one graduate student from the Department of Special Education at Saint Cloud State University (SCSU) in Saint Cloud, Minnesota. The objective was to improve on task behaviors, frustration tolerance, sequencing, and social behaviors (Noll & Johnson, 2010).

Setting three included one classroom containing fifteen students, ages 12-14, who were identified as having a learning disability under Minnesota law to receive special education services. The evaluation of the curriculum in this classroom was under the supervision of a teacher and a graduate student from the Department of Special Education at Saint Cloud State University (SCSU) in Saint Cloud, Minnesota. The teacher and graduate student adapted the curriculum by selecting three students who would learn, present, and teach the magic tricks to the remaining twelve students in the class. The objective was to decrease inappropriate behaviors in one student with Emotional Behavior Disorder and increase self-advocacy skills of one student with a Learning Disability and one student with Asperger's disorder (ASD) (Noll & Johnson, 2010).

Materials and Procedure

Data were systematically collected and evaluated utilizing both qualitative and quantitative data collection methods. These methods included observation checklists, pre/mid/post student surveys, pre/post teacher surveys, teacher observation data sheets, and anecdotal recording by teachers and students. Analyses were conducted across data collected from each of the three settings. In this manner, validity of the emergent themes was ensured.

In setting one, students were given two self-assessment tools to complete at three distinct times throughout the 11-week curriculum. The first

assessment tool used was the Rosenberg Self-Esteem Scale. The second assessment tool was the *Hocus Focussm* Self-Efficacy Scale. This scale was created specifically for this curriculum and is based on the self-efficacy theories of Albert Bandura (Pajares & Urdan, 2006). These were administered on the same timeline as the teachers' surveys, i.e. prior to start of curriculum, week six of curriculum, and after the final week. Students were also asked to keep a "Wizard's Book of Secrets" which contained their thoughts, ideas, and stories for each trick learned through the curriculum. Likewise teachers were asked to keep short anecdotal notes about the ease of use of the curriculum, noting what worked, what did not work and other thoughts about the curriculum. Both the "Wizard's Book of Secrets" and the teacher notes were collected and analyzed. Each of the data sets was initially coded by applying both deductive and inductive coding strategies.

The supervisor scheduled classroom observations on weeks 1, 3, 6, 9 as well as during the final performance. Each class was observed for either the entire lesson or a minimum of 20 minutes. Informal interviews were conducted with students and teacher participants following observations.

In settings two and three, students were given two self-assessment tools to complete at the beginning and end of the curriculum evaluation. The first assessment tool used was the Rosenberg Self-Esteem Scale. The second assessment tool was the *Hocus Focussm* Self-Efficacy Scale created specifically for this curriculum and based on the self-efficacy theories of Albert Bandura (Bandura, 2005). Informal student interviews were conducted throughout the evaluation period and students were asked to keep a "Wizard's Book of Secrets" or journal which contained their thoughts, ideas, and stories for each trick learned through the curriculum. Teachers were asked to observe student behaviors and make a careful review of the research process.

Findings

In this study, the majority of the students who participated achieved success and experienced improvements in all identified areas. Students who demonstrated the most significant improvements with little or no adaptations of the *Hocus Focussm* curriculum were those with a diagnosis of ADHD, Emotional Behavior Disorder, and Learning Disability. Students with Intellectual Disabilities and Communication Disorders required some adaptations to the curriculum (i.e. required more time for the lesson) but were also able to demonstrate improvements in measured areas (Walkenhorst, 2010). It is important to note that students with Autism also experienced a level of success

in learning and performing the tricks. These students were more persistent in learning the steps of each trick and were observed maintaining focus longer than in other classroom situations (Walkenhorst, 2010).

Teacher Themes

Based on teacher interviews and a review of their notes, each educator recognized the value in the sequencing, writing, and problem solving utilized in the *Hocus Focussm* curriculum. They also were able to see a connection between the skills taught in the "magic curriculum" and those in other core curriculums (Noll & Johnson, 2010; Walkenhorst, 2010). One teacher wrote, "This is one of the first pre-made curriculums that I have encountered that is accessible, engaging, and achievable in the classroom, even with all of the demands placed on us as educators" (Walkenhorst, 2010).

Several additional common themes emerged among the teachers when comparing the data from each of the three settings. All nine of the teachers involved with this study independently made these observations:

- The *Hocus Focussm* curriculum captures the students' attention immediately.
- Students spend their time learning instead of watching, actively engaging them in both physical and mental capacities.
- Students are introduced and taught the importance of sequential steps and following directions by the learning of simple magic tricks. The tricks included in the program offer enough 'wow' factors to keep the students engaged in the learning process.
- Students are encouraged to help each other and to provide constructive feedback to their peers as they learn together.

In setting one, the supervisor examined the results from the pre, mid, and post assessments. Teachers were asked to complete a brief survey on each student identifying their level of independence on each of these criteria: sequence 1-3 steps, sequence 3-7 steps, follow simple directions, follow complex directions, problem-solve, and on task behavior/focus. Rankings were identified as none, emergent, guided, and independent. Results were compiled and each ranking was assigned a numerical score, i.e. none at 0, emergent at 2, guided at 4, and independent at 6. The scores of each student were averaged together and the mean average was listed for each assessment. Figure 1 illustrates the results of these surveys.

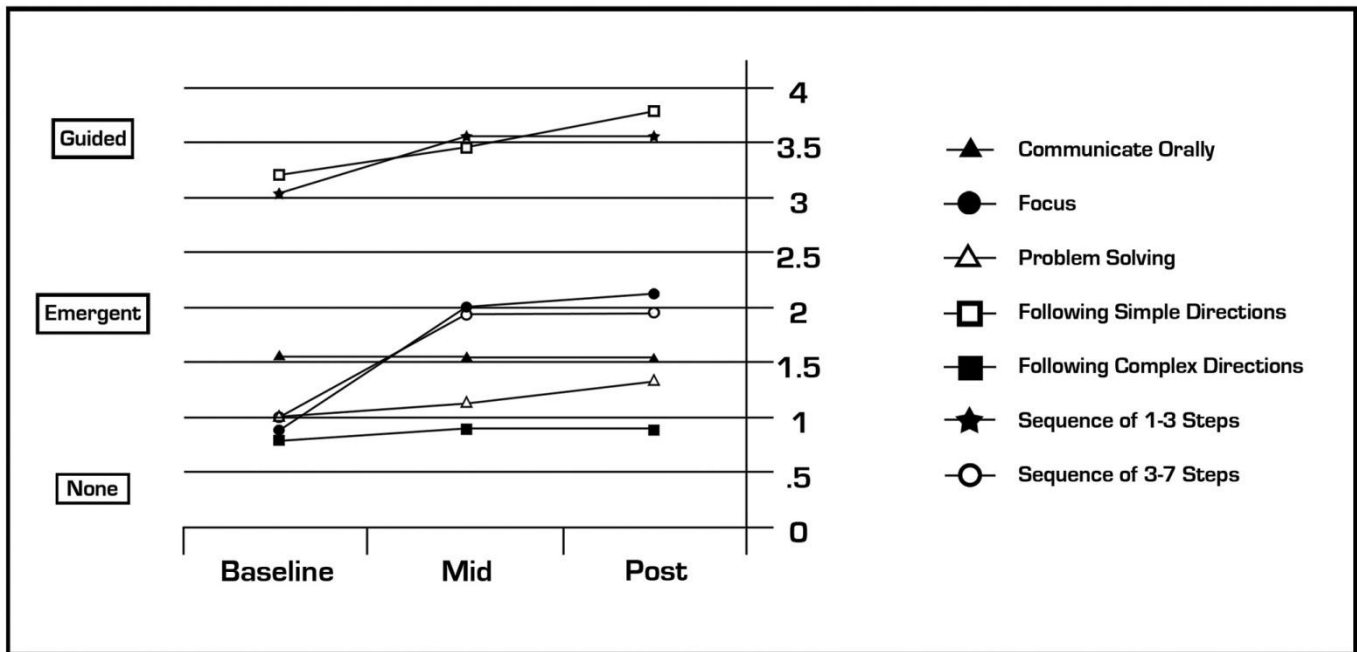


Figure 1. Results of these surveys. Informal interviews with the participating teachers suggest that the lack of growth in oral communication was because greater emphasis was on the areas of following directions and problem solving. While this evaluation did not show growth in oral communication, teachers agreed improvement would be expected in this area as students continue to learn and master the lessons in this curriculum and move into the performance aspects of the curriculum. Due to time constraints, students were not able to concentrate on the performance of the tricks.

Student Themes

The following student themes emerged from the qualitative data defined by teacher observation and assessment in settings one, two, and three (Noll & Johnson, 2010; Walkenhorst, 2010). Each theme has been identified and individual teacher statements are provided to support each theme.

Improvement in following multi-step directions, concentration, and memory skills. Teachers observed that students were more attentive during lessons and demonstrated an ability to follow complex, multi-step directions. There were noticeable improvements in each child's level of self-determination as well as their ability to memorize and sequence the complicated processes that some magic tricks incorporate. Importantly, many students were aware that they were achieving a difficult task and accepted both positive and negative feedback in order to improve their magical performance.

Setting One: "When probed, students were able to identify that the learning of the sequence of steps was important and useful in other classes."

Setting Two, Teacher 1 – "Students were able to follow multi-step directions, problem solve, show concentration, and memorize the tricks."

Setting Two, Teacher 2 – "The students were able to recognize themselves that they were following multi-

step directions, accepting feedback, and had an increased sense of determination."

Improvement in self-determination skills and self-esteem. After using a magic trick in a classroom lesson, the teacher proceeded to teach the students the method. The teacher not only taught them a new skill that they can repeat for peers or adults but, by learning to do something that others may not be able to accomplish, the student achieved self-efficacy, enhanced self-esteem, and built self-confidence. Teachers observed that students were motivated not simply to learn the trick in each lesson, but also to teach the trick to someone else. This argues the use of higher order cognition. In addition, this "teaching" skill enhanced the student's self-concept and self-esteem.

Setting Two, Teacher 4 – "Much of the day, these students are reminded of the difficulties they have in school but when they mastered a trick, they felt smart and proud of what they could do...The use of this curriculum showed me that if my students were given something that they felt good about being able to accomplish, they were much more willing to socialize and almost brag about what they had learned. To see some of the more reserved students trying to show and teach someone at lunch a magic trick was a great thing."

Setting Three – "The students were able to identify tricks they wanted to learn and teach to others. Each

student walked away with a higher self-esteem and greater self-advocacy skills.”

Setting Two, Teacher 4 – “The two areas that I found to have the greatest growth in the Self-Efficacy assessment were ‘I can work and play well with a group of other people’ and ‘I can get my parents to take part in my school activities.’ With some of my students, they really enjoyed teaching anyone (and everyone) their tricks, but others did not want to share it with anyone but other special education teachers and friends. Overall, I am pleased that it gave them another way to interact.”

Improvement in motivation as well as on-task and participation behaviors. Teachers observed that students were more interested and willing to participate in group-learning experiences. Once students understood the content of the lesson and were aware of the potential frustrations, they felt they were able to deal with those frustrations in a more appropriate manner. Teachers also became aware that the lessons in the curriculum provided learning experiences that focused on authentic outcomes. Students learned from one another and had incentives to work harder; but the most notable improvement seen by teachers and students was the increase in student motivation and the incentive to try harder. Teachers discovered that the magic tricks provided an excellent basis for problem solving, frustration tolerance, and task follow-through.

Setting Two, Teacher 1 – “All students felt they were able to work together and problem solve better after completing the magic lessons. They felt they could deal with frustrations in a more appropriate manner and learned that not everything is as easy and not to give up.”

Setting Three Teacher: “Each student was willing to be involved and was enthusiastic about sharing his knowledge with the class along with performing the trick.”

Setting Two, Teacher 1 – “The curriculum is engaging, a positive motivator for the student and improved their on-task behaviors.

Setting 3: “In the class where we incorporated the *Hocus Focus*[™] curriculum, I feel like I offered learning experiences that focused on authentic outcomes. Students learned communication skills and had a better picture of how they could function effectively in a setting in which they had previously had difficulty. They learned from each other and had great incentives to work harder. The increased motivation was perhaps the most notable improvement.”

Setting Two, Teacher 1 – “I saw improvements particularly in several students’ motivation level to complete homework. For one student, this was the first time he was putting effort into getting his homework done and asking for help with his homework.”

Improvement in leadership and socialization skills. The teacher modeled appropriate social skills when teaching the magic trick to the class. This modeling allowed students to practice or perform an illusion with peers or adults in order to exercise appropriate interactions, practice giving and receiving feedback, and practice presentation or assertiveness skills versus aggression. In several instances, teachers commented that this proved to be an effective way for the student who enjoys excessive attention to receive it appropriately. Teachers observed that students were building relationships with other students that were not normally a part of their peer group. The team learning approach (social learning theory) discounted negative peer pressures, strengthened appropriate behaviors, and encouraged students to demonstrate leadership strengths by offering to assist their classmates.

Setting Two, Teacher 1, “I witnessed classmates getting along with one another who usually fought constantly and had a history of negative peer relationships. During the time I taught the magic lesson, I was amazed at the camaraderie between the kids and the friendship skills they showed. The students who caught on to the tricks faster would help the students who hadn’t quite mastered the tricks. Students worked together and showed great leadership skills by taking the initiative to help their classmates.”

Setting Three Teacher, “The students were attentive to task and appeared proud to be a leader.”

Positive peer relationships, peer mentoring, and peer collaboration. Teachers observed that students of different academic and physical abilities worked cooperatively in the learning of each lesson. Students who were able to learn the trick more quickly voluntarily assisted those who needed more guidance. Teachers noted there were demonstrable changes in classroom behaviors and dynamics. As one teacher wrote, there was “a dramatic increase in their self-respect and the quantity and quality of their peer relationships.” (Walkenhorst, 2010).

Setting Three: “In addition to increased motivation, other areas of improvement included self-advocacy, attention-to-task behavior, and collaboration with peers. It is difficult to find strategies that address both academically capable students and students who require more intensive instruction. The *Hocus Focus*[™] curriculum is one strategy that addresses this concern.”

Setting Two, Teacher 4 – “They really had fun learning. They opened up and talked more, in a friendly tone, to each other when trying to learn and teach each other how to do each of the tricks.”

Setting Two, Teacher 3 – “The *Hocus Focus*[™] curriculum was used during a social thinking class. Specifically it was used to improve self-esteem, positive

behavior, motor coordination, socialization, self-determination, attention to task, and willingness to be involved. Student growth was 100% in all of these areas with a dramatic increase in their self-respect and the quantity and quality of their peer relationships. One student who struggled with confidence increased his ability to be able to stand up and talk in front of a group of people.”

Positive Impact on Behavior. Teachers stated that integrating magic tricks into their lessons allowed for many teachable moments in regards to frustration tolerance, appropriate social behaviors, and improved interactions in the classroom. Students who became frustrated during the learning process were able to focus on the task because of their strong desire to succeed and accomplish the goal of performing the trick. Students with different learning challenges were able to work together effectively and communicate well.

Setting Two, Teacher 2 – “Students would become frustrated if they could not perform the trick. However, those moments were great for learning because we talked about how to deal with frustrations and the meaning of determination.”

Setting Three: “From the students’ perspective, each one had something to offer to the group. The student with EBD was able to be a productive leader. The student identified with a Learning Disability was able to read and comprehend the material. The student with Asperger’s was able to socially interact with two other peers with whom he normally would never communicate. The three students worked together remarkably well.”

Rapport Building with Students. Teachers recognized that using magic tricks in the classroom could provide a simple means for the teacher to connect to the student and deliver a particular lesson, whether academic or social/developmental. Magic tricks can be an appropriate means of removing boundaries and providing “comfort zones” when teachers initially get to know the student and may help faculty appear more playful and approachable (Gilroy, 1998). Magic activities are highly engaging and tend to capture and hold the attention of children very quickly.

Setting Two, Teacher 4 – “During discussions with my students about the strengths and overall feelings of the curriculum, my students informed me that they thought learning the magic tricks was fun. They also stated they liked that it seemed like I was just having fun in class while we learned the tricks – that I seemed more relaxed.”

Setting Two, Teacher 4 – “I struggled with using the curriculum in my math course and would have rather used it in a social skills course. However, I believe that the curriculum allowed me to connect with my students

in a way that I would not have otherwise. To share something with my students helped them feel closer to me and, hopefully, allowed them to see me as someone they could talk to about issues in their lives.”

Discussion

The findings from this study have profound implications for the education of students with special needs and those involved in their education. The results suggest that use of the *Hocus Focus*sm curriculum may provide a venue for equity in the educational experiences of traditionally disadvantaged students, a means to increase self-esteem among students, engage the students in their learning, offer opportunities for peer-to-peer collaboration, and address the “whole” student. Each of these areas will be discussed in depth.

Based on the pre and post assessments of the participants and the examination of the teachers, the following observations became evident when integrating magic tricks into the classroom experience by way of a structured lesson plan. These observations are:

1. *Help “level the playing field” for students from disadvantaged circumstances or those with learning differences.* All students, regardless of their abilities, start at the same place when learning magic. It makes no difference their socio-economic status, their language, or their skill levels. Some students with autism learned more quickly because of their increased focus and their ability to think in terms of patterns and sequences (the very heart of the art of magic). Students with varying degrees of ability were able to achieve some level of success in the learning and performing of a magic trick.
2. *Engage multiple skills and abilities that develop cognitive, social, and personal competencies.* Learning magic requires students to think sequentially, follow directions, and perform specific tasks. Performing the magic trick for an audience, no matter the size, requires confidence, the ability to communicate (tell a story with the trick), and some knowledge of social rules. Combined, they bolster self-esteem and move a child toward achieving self-actualization.
3. *Reach students who are not otherwise engaged in school and excite them about the learning process.* Frith and Walker (1983) found that magic has a special appeal for students because it gives them a chance to do something that cannot be equaled by their peers. Traditional instruction has focused on individual learning that isolates the student from social interaction. By integrating magic tricks into the educational

process, students can engage in authentic experiences, purposeful conversation, and depend on each other's thinking to enrich their own understanding and construct meaning.

4. *Provide an opportunity for students to teach or mentor other students in the classroom.* Marzano (2007) writes that many studies support the idea that learning is most effective when it is social and collaborative. This cooperative learning process is a valuable experience for children. Helping one another stirs creativity and builds positive relationships. It also increases a student's feeling of control over his environment and improves self-esteem. The concept of magic tricks may also be used to talk about perspective and how two individuals may perceive the same situation differently. In today's inclusive and diverse classrooms, collaboration is a way to learn to contribute to the common good, seek collegiality, and to draw on the knowledge and resources of others.
5. *Engage the "whole person"- the student is invested in ways that are more meaningful than simply knowing the answer," or reciting facts from memory.* Unlike traditional learning experiences that look for right or wrong answers, being engaged in the learning and performance of a magic trick allows for multiple outcomes. When we allow students to learn creatively, we remove the stressors of "being right" and give them permission to take risks and make mistakes. And through those mistakes, they develop self-determination, critical thinking, observational techniques, and problem solving abilities. These are essential skills if young people are going to be productive in today's societies.

The validation of the results of this research project across four different educational settings suggests that similar results would be achieved in similar situations. Given the comparability between the challenges that are confronted by special education and at-risk students internationally, it could be generalized that this type of curriculum could also improve the learning skills of those students. Beyond the scope of this research, the author of this paper had the opportunity to work in several classrooms with Orphaned and Vulnerable Children (OVC and special education and at-risk classification) in Windhoek, Namibia during the summer of 2011. The principal and teachers were able to observe similar results with their students – engagement, participation, improved on-task behavior, and socialization. This suggests that future research should be conducted internationally to determine if the learning

of magic tricks in varying educational settings would prove as effective in different societies and cultures.

Conclusion

The *Hocus Focus[™]* curriculum provides educators with access to specific, goal-oriented magic tricks for use in the classroom. Each of these tricks assists the student in the achievement a specific functional and/or academic objective aligned with a National Standard and/or Common Core State Standard of Learning. When teachers integrate these magic tricks into learning experiences, they can provide students with authentic opportunities for advancement in critical thinking, problem solving, creativity, and retention, as well as positively impact the metacognitive and self-system processes.

The conclusions of this study can be categorized into three primary areas.

Psychological Benefits for Students

Self-Esteem and Self-Efficacy. Students often developed greater confidence in their self-worth and abilities with each successful learning experience. In addition, students were also more confident in their abilities to produce the desired outcome, i.e. perform the magic trick. As they achieved mastery of each new objective, they demonstrated a stronger sense of efficacy. This assurance in their abilities provided a basis on which they attempted new and more difficult tasks and their "fear of failure" was replaced by a willingness to "take a risk."

Self-Determination and Self-Regulation. Students developed strategies by which they could control the outcome of each lesson, i.e. to learn the trick and corresponding objective. They were able to set challenging goals and maintain a strong commitment to accomplish those goals. They were able to exercise appropriate influence over their own motivation, thought processes, emotions, and behavior. And they were able to affirm their efforts – in the face of potential failure – because the "pay off" of performing the magic trick was worth the risk.

Self-Actualization/Self-Realization. Students were able to realize their potentialities through the mastery of each magic trick providing them with a more realistic perception of themselves, their classmates, and the realities in which they learn and live. When other students had difficulty with the trick, they were motivated to help them solve the problem.

Metacognition. Because each of the *Hocus Focus[™]* lessons build on knowledge from previous lessons, students developed an understanding of the challenges

that they may encounter when learning increasingly more difficult tricks. Based on this understanding, they were motivated to strategize, make choices, reflect on learning, and organize (aware of their own thought processes) the steps required to accomplish each goal.

Pedagogical Implications for Students

Student Engagement. The *Hocus Focus[™]* lessons provided opportunities for stimulation that ignited student imaginations and provided them with creative learning outlets. The learning process became enjoyable for students providing for an atmosphere where success was more conducive. It allowed for partnerships within the classroom but also provided for partnerships that extended beyond the classroom (cafeterias, home, etc.). These opportunities encouraged both active and interactive learning that empowered students with new skills and the ability to access content in a different way. Students became energized by their learning and found fulfillment in solving problems and understanding concepts. This knowledge provided a foundation that allowed them to take the next step in their thinking by which they created variations of the trick they had learned.

Student Collaboration. Students demonstrated a preference for doing rather than listening. As previously noted, learning-by-doing is the most effective way for individuals to learn. Learning the magic tricks provided opportunities for students to value working with others (teamwork) and better develop the skills necessary to do interact effectively.

Development of 21st Century Skills. The intrinsic curiosity found in most students is one of the most compelling attributes that leads them to discover their full potential. This study demonstrated that integrating magic tricks could assist learners in developing skills that are essential in today's education and business environment. These skills include creativity and innovation; critical thinking and problem solving; communication and collaboration; flexibility and adaptability; initiation and self-direction.

Pedagogical Implications for Teachers

Teacher Efficacy. Teachers who reviewed the *Hocus Focus[™]* curriculum prior to introducing it to their students demonstrated a greater confidence in their ability to assist students in reaching the performance and academic objectives. However, all of the teachers included in this study grew in their level of confidence in unison with their students. This allowed teachers to build a stronger rapport with their learners assisting them

in classroom instruction, classroom management, student engagement, and student motivation.

As educators, it is our job to provide an environment that is conducive to learning – one that is engaging, goal-specific, and challenging. But we must also not lose sight of the concept that learning can be fun. IEPs must describe strategies for providing the student with acceptable and understandable ways of communication, teaching situation-appropriate social behaviors, and providing experiences that satisfy sensory needs. *Hocus Focus[™]* provides educators with another strategy to assist their students in meeting these IEP objectives. The *Hocus Focus[™]* curriculum provides educators with proven strategies and tools to help their students reach their goals and better prepare for the future. Integrating simple magic tricks into the overall learning process can be a powerful and motivating way to engage students in their education – academically and functionally.

Teacher Proficiency. Knowledge of the subject to be taught, the skills to be developed, and the materials that embody the content of the curriculum provide the fundamentals for proficient teaching (NBPTS, 2002). As teachers became more familiar with the content of the *Hocus Focus[™]* curriculum, they became more effective in teaching the lessons. One of the teachers stated that she had many “should’ve” moments after a class when she could identify when she could have made a connection between the *Hocus Focus[™]* curriculum and the skills taught in the core curriculum. She described these as a light bulb going on after a particularly difficult lesson as she reflected back on what could have been done differently (Walkenhorst 2010).

Teacher Satisfaction. Studies have concluded, “teacher motivation is based in the freedom to try new ideas, achievement of appropriate responsibility levels, and intrinsic work elements” (Sylvia & Hutchinson, 1985). They explain that real job satisfaction comes from the gratification of higher-order needs. Teachers who implemented the *Hocus Focus[™]* curriculum in this study found satisfaction in bringing new ideas and strategies to their students, observing student growth, and celebrating student successes.

Preliminary research demonstrates that *Hocus Focus[™]* can provide educators and students an opportunity to experience growth and development in a fun, exciting, and engaging way. Future research should be explored to see what results could be achieved in specific student populations, especially Autism.

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