EXPLORING THE CURRENT EDUCATIONAL ENVIRONMENT
AND HOW INSTRUCTORS OPERATE IN
THIS ENVIRONMENT

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By
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CERTIFICATION OF APPROVAL

EXPLORING THE CURRENT EDUCATIONAL ENVIRONMENT AND HOW INSTRUCTORS OPERATE IN THIS ENVIRONMENT

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DEDICATION

This is dedicated to the countless men and women that work within our education system. To all social work professionals, school social workers, instructors, school administration and countless others that interact within our schools, here’s to the continued pursuit of social justice, to provide shared power within the classroom and encouraging creativity to thrive. I would like to say a special thank you to all the amazing instructors that I have had the pleasure of meeting throughout my life. To all of the instructors’ that encouraged me to think critically, embrace creativity and build a sense of empowerment within myself, your contribution matters.
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I would first like to acknowledge my beautiful family that has supported me through all of my endeavors to pursue my career, to chase after my dreams and live a fulfilling life. It could not have been possible without my siblings, Annastasia, Crystal, Katrina and Christopher. I cannot imagine my life without these fun loving, energetic individuals. Anna, thank you for the countless edits on papers and encouragement along the way, I love you. Crystal for all of your sarcasm and humor, I couldn’t have made it through without you, I love you blue and green M & M’s. Kat I love you little momma, your thoughtfulness and generosity helped get me to the finish line. Thank you for letting me have countless play dates with my niece Peyton when I needed a break. To my baby brother, Christopher, your dry wit never fails to put a smile on my face. I would also like to thank my dad, Wayne; I will forever be an eternal daddy’s girl. I would also like to acknowledge my Papa, although he’s not on this earth anymore he encouraged me to pursue my dreams, to never give up, to always stand up for the vulnerable and to pursue social justice in all things. Finally, to my grandma Claudette, thank you for the phone calls, the encouragement and push to keep going. Thank you to all of my family and friends who provided words of encouragement along the way, you know who you are. Here’s to the continued pursuit of social justice, to never accept things at face value but instead to always question and advocate for equality.
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ABSTRACT

The purpose of the study is to explore elementary school instructors’ perceptions of why they are interested in utilizing a whole brain teaching approach in their classroom. This study looks at the implementation of utilizing whole brain teaching in the classroom. A qualitative case study was chosen and was rooted in the person-in-environment perspective. This study included two elementary instructors as participants using a non-probability snowball sample. An individual interview was comprised of 13 open ended questions was conducted with each instructor to assist in answering the guiding research questions: 1) Why choose whole brain teaching? 2) What are the challenges faced in utilizing this approach? 3) Does whole brain teaching allow for creativity within the classroom? This researcher discovered that whole brain teaching was primarily chosen to “actively engage” all students in the learning process. It was further supported by school administration and also allowed moments of creativity to occur. These results directly assist in promoting future research that continues to look at the merits of whole brain teaching. They further assist school social workers in supporting instructors to utilize WBT as an approach to be inclusive of all students and their learning modalities. This study further assists in promoting early intervention techniques that can be implemented in the classroom that foster critical thinking, creativity, a sense of self and empowerment.
CHAPTER I

INTRODUCTION

Statement of the Problem

True generosity consists precisely in fighting to destroy the causes which nourish false charity. False charity constrains the fearful and subdued, the “rejects of life,” to extend their trembling hands. True generosity lies in striving so that these hands – whether of individuals or entire peoples – need be extended less and less in supplication, so that more and more they become human hands which work and, working, transform the world. (Freire, 1970, p.45)

Over the years much time and energy have been focused on our education system. Robinson (2011) argues that our education system was built and conceived for a different age; that it was primarily shaped from the intellectual culture of the enlightenment and from the economic circumstances of the industrial revolution. He argues that before the nineteenth century there were no formal practices of education systems and that in fact systems of education were originally met with resistance believing that there was no point in education. He further argues that in order for there to be continued change in education that one must push away from an industrial metaphor to a more organic metaphor (Robinson & Aronica, 2009; Robinson, 2011).

It would appear that the larger environment that we live in is negatively impacting our education system. The environment we currently find ourselves residing in is restrictive in allowing room for creativity and is limited in its ability to teach to a diverse population: not all children learn and receive information the same way (Jorgenson, 2012). Since roughly the 1980’s, our school system has been focused primarily on reforming education, especially with the implementation of No Child Left Behind (NCLB). Through NCLB there was a significant push to standardize education and utilize standardized testing. It also required, at
some schools, teachers’ evaluations be linked to the students’ test scores (Jorgenson, 2012). 

Jorgenson (2012) describes the idea of teaching to the standardized test as an environment that is restricted in creativity and limits the teaching style to what resembles a “Sit, Get, Spit, Forget” type of environment. This environment leaves little room to test every child’s level of comprehension due to the restrictive nature of testing by not teaching to all learning modalities. These standards are all outlined in the new edition of Standards for Educational and Psychological Testing; this book is a compilation of statistics and data gathered from the American Psychological Association (APA), National Council on Measurement in Education (NCME) and American Education Research Association (AERA) (2014).

Unfortunately, with standardized testing we still see areas in our school system that do not allow for the growth of all children. Children learn through interaction, imagination and creativity. Our education system is currently calling for reformation; major education reform took effect under the Bush administration and continues to be of concern under the current administration. Regrettably, this system of reform still operates under an outdated system of education that parallels a factory line industrial metaphor, complete with separating children by groups, set facilities, classes specialized into separate subjects and ringing bells telling them when and where to go. Robinson (2011) argues this type of environment is restrictive in that is does not allow for diverse thinking and encourages narrowing ways in which to score levels of intelligence by only focusing on one method of testing. As a result, we are failing to reinvent our education system to adapt to the idea that our children learn in different ways from each other and that we have evolved as a culture.

Gardner, a professor of education at Harvard University, articulated a list of seven different ways that individuals display intelligence (Armstrong, 1994). These seven identified displays of intelligence are through linguistics, logical-mathematical, spatial, musical, bodily-
kinesthetic, interpersonal and intrapersonal (Armstrong, 1994; Jorgenson, 2006). Gardner
developed the theory of multiple intelligence and incorporated aspects of each of the different
types of intelligence into his theory; one can argue that this theory was developed out of
utilizing creativity. Robinson and Aronica (2009) explained that there are three features to
consider when thinking about intelligence: human intelligence is extraordinarily diverse,
immensely dynamic, and distinctive. Robinson and Aronica further argue that the arts are
undersold and should be utilized more to increase the notion that intelligence can be
measured in more than one-way. Dance for instance is the kinesthetic process of utilizing the
entire body. Think of a beautiful ballet. The dancers must utilize memorization of complex
patterns and footwork while also physically engaging in the complexities of each movement.
Mathematics and logic are utilized in kinesthetic movement and it employs both the left and
right hemispheres of the brain. The left side of the brain focuses on logic and reasoning, as
well as mathematical logic and verbal skills while the right side of our brains focuses on the
recognition of patterns and movement or space orientation (Robinson & Aronica, 2009).

There is literature that addresses the benefits of incorporating movement based
learning or kinesthetic learning in the classroom. The question becomes, how in our currently
restrictive environment do we allow our teachers to engage in a creative learning process that
allows children the opportunity to learn and demonstrate their intelligence through diverse
ways (Ackerman, 2013; Kirk, Vizcarra, Looney, & Kirk, 2014)? There are incredible teachers
that are ready and willing to assist children placed under their charge in a creative learning
process. However, the environment they are residing in limits their ability to incorporate a
more creative learning process that recognizes multiple forms of intelligence and instead
forces them to engage in teaching to the standardized test.
One way to challenge the notion of an industrial education system that we have adopted is not to reform education but to instead transform it (Robinson & Aronica, 2009; Robinson, 2011). The Social Work Profession’s person-in-environment perspective provides educators with a lens for examining potential efforts to reform the system. That is, in the current educational environment, it is difficult for well-intended individuals (teachers and administrators) to operate in creative ways that might transform the learning environment. However, by studying efforts made by educators to transform the system, we might gain insight into factors that support and get in the way of novel teaching and learning strategies. This research study is grounded in the person-in-environment perspective and is the attempt of a social work professional to contribute to education transformation.

An action toward education transformation is emerging in one central valley school, Orchard Elementary, where educators are attempting to apply Biffle’s whole brain teaching, WBT. Biffle’s WBT strives to utilize both hemispheres of the brain to engage children in a more interactive learning experience and allowing them to utilize creativity. Whole brain learning became of particular interest to this social work researcher as it claims to push for a more well-rounded and interactive teacher student learning environment. Children are creative by nature and research shows that they primarily learn through play. In fact, the act of play can be identified as a universal element of human development. Through play, children are able to be active participants in the learning process and are able to hone and develop knowledge and skills. These skills include how to problem solve, build relationships, and an understanding of the role of others, such as teachers, moms, and dads. Play develops crucial skills in children that are used and carried with them into adulthood (Schriver, 2011).

By engaging students in WBT, their creativity and ability to learn may improve drastically. As children are engaged through seeing, saying, hearing and doing, ultimately
they are able to engage as an active participant in the learning process and move further away
from a banking system (Freire, 1970). As such, this study is specifically designed to further
explore if these educators in the Central Valley of California believe the incorporation of
Whole Brain Teaching activities in a classroom improve children’s social skills, cognitive
learning ability and overall retention of learned information and form a more collaborative
learning environment through their direct observation.

**Statement of Purpose**

The purpose of the study is to explore elementary instructors’ perceptions of why they are interested in utilizing a whole brain teaching approach in their classrooms. This study is exploratory in nature. Although education is a highly talked about aspect in our culture, rarely is whole brain learning a focus in education, utilizing both the right and left hemisphere of the brain which may increase the ability to engage in a creative learning process. As this specific topic is relatively new, this researcher chose to utilize an exploratory approach. This study is guided by three research questions: 1) Why did these instructors choose Biffle’s whole brain teaching? 2) What are the challenges to utilizing this approach in the current educational environment? 3) How does whole brain teaching allow for creativity in the classroom? This researcher believes that there are many exemplary instructors; however, their ability to teach is hindered considerably by the educational environment of teaching to a standardized test. This researcher further believes that incorporating aspects of creativity in the classroom may prove to be a challenge.

**Significance of the Study**

Schools are in a unique position to assist in providing the best tools and environment to shape the minds of our young children. If the utilization of whole brain learning assists in the transformation of our education system, we have taken a huge step toward furthering
social justice in education. The significance lies in successfully transforming education; by
focusing on the type of education children are receiving we are actively participating in
continuing to promote social justice in the lives of our most precious population, our children,
our future. According to the Council of Social Work Education (2008),

The purpose of the social work profession is to promote human and community well-
being. Guided by a person and environment construct, a global perspective, respect
for human diversity, and knowledge based on scientific inquiry, social and economic
justice, the prevention of conditions that limit human rights, the elimination of
poverty, and the enhancement of quality of life for all persons. (Schriver, 2011)

One of the systems that impacts family’s lives the most are our schools. For social
workers, clients come from what is deemed dysfunctional or broken family systems. By
examining the current educational environment we are assisting in promoting social justice
by looking at how the current structure impacts the development of children. It is our duty not
only to assist in promoting social justice but to look at the larger systems that impact clients
such as our educational environment. I believe the purpose of this study sufficiently falls into
the field of social work and is illustrated as a significant social justice issue and will be
instrumental in continuing to promote social justice in education by challenging the existing
rules and guidelines of a traditional education system.

As a culture we are quick to fall into the trap of believing that success and the value
of a person can only be measured on how well they do academically: how well they score
with pen and paper. By examining and challenging this educational environment it may assist
in opening the door to look at intelligence in a new way, by stripping away the limitation of
what intelligence is defined as. Individuals often define their self worth by their environment,
who resides in their environment and how individuals view them. By looking at intelligence
in a different way it may further promote self worth by allowing the client to be a contributor
in the educational process. It is crucial to remember that each person has his or her own set of
strengths and values and are able to offer contribution to the learning process (Freire, 1970; Chubbuck, 2010). It is human nature to constantly question the education that is being bestowed upon the up and coming generation.

Freire (1970) was an advocate for social justice and a promoter for social change. Education is quite relevant to social work. It is not just a question about whether there is equal access to opportunities or services but instead a question of how social workers contribute to the research and advancement in righting social injustice. Education is relevant to social workers who must pursue and advocate for social justice on all micro, mezzo or macro levels (Miley, O’Melia, & DuBois, 2013; Schriver, 2011). As social workers we would be negligent in our duties to ignore identified systems of social injustice. For this researcher, our education system is one identified system of social injustice: one that has been of great concern for centuries. Education is one of the most talked about problems and issues we have today.
CHAPTER II
LITERATURE REVIEW

Overview

“Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.” ~ Albert Einstein

Whole brain teaching claims to be backed by brain research. However, no university level research has specifically been conducted on the merits of Whole Brain Teaching. As such, what is known is limited. However, parallel research based on kinesthetic and movement-based learning is available. This chapter seeks to explore the findings of what is and what is not known about the three guiding research questions: why one might choose WBT, what are the obstacles faced with the implementation of WBT and how does creativity tie into WBT?

Education has been a subject of interest for centuries and continues to be at the forefront of parents’ and societies’ concerns. During the Bush administration, No Child Left Behind was implemented and with that standardized testing become the predominate method of testing intelligence. However, research shows that several methods and ways of learning exist and that there are numerous ways individuals can demonstrate intelligence. This researcher chose to look at the Social Work Profession’s person-in-the-environment perspective, which provided a lens for examining potential efforts to reform the educational system. This researcher’s premise is that the current educational environment is restrictive in allowing well-intended individuals, teachers, to operate in creative ways that assist in transforming learning. It is further the responsibility of the Social Work Profession to assist in advocating for education that seeks to reach all learning modalities of students. Instructors are
on the front line in shaping young minds and in assisting with providing each student with skills that will promote higher levels of learning and instill a sense of self worth. As such, one of the focuses of testing intelligence was to look at movement based learning or kinesthetic learning, which is one of the primary modalities of WBT. This chapter is designed to focus on the history of Whole Brain Teaching and its implementation by looking at parallel research that matches elements of WBT; as such, the literature presented predominantly centers around kinesthetic movement.

**What is Known About Whole Brain Teaching?**

One of the main sources for WBT is wholebrainteaching.com. This cite provides links to current literature, lesson plans and instruction on how to start utilizing WBT. All educational material for WBT can be downloaded for free and has been provided to thousands of individuals who frequent this cite, such as teachers, students and social workers. WBT is a grass roots startup that began to sweep education reform in 1999. It was started by three Southern California teachers and is primarily led by co-founder Biffle who was joined by former students of his Rekstad and Vanderfin (Biffle, 2013; Whole Brain Teaching, n.d.). Biffle states that WBT methods are founded on cutting edge scientific research, specifically focusing on neuroscience (Whole Brain Teaching, n.d.).

The basis for utilizing a WBT approach was to include individual students that were acting out or causing problems within the classroom; however, this technique can be beneficial for all students not just those acting out or exhibiting problematic or disruptive behaviors (Whole Brain Teaching, n.d.). For many social workers, the use of labeling an individual as disruptive is controversial some believe it can be crippling and stunt his or her ability to learn while others believe it is necessary to identify a need (Miley, O’Melia, & DuBois, 2013; Schriver, 2011). However, this behavior also takes away from the rest of the
classroom as the teacher is constantly redirecting and pulling attention from the rest of the class. Learning to engage students in a different way by having them actively move can eliminate behavior that is deemed “disruptive” in class. As advocates, social workers are constantly looking for ways to positively engage all members of a group. For the classroom, finding a method that is inclusive of all individuals involved is beneficial. For the school, social work teaching techniques should not be designed to call out or label these students as disruptive as this can be difficult to disassociate from later in life (Miley, O’Melia, & DuBois, 2013). Instead, it is our job to assist in advocating for techniques that seek to foster success by discovering each student’s strengths to engage in an enriched learning process that is inclusive of all learning modalities.

Biffle believes that when students are acting out punishment only encourages the student to be more rebellious. With WBT a reward and penalty system much like a game is implemented to avoid negativity, allowing penalties to be entertaining. Biffle’s implementation of a game to assist in corrections appears to avoid the negative affects of shaming and instead promotes positive learning. Brown (2012), a social work scholar, completed research that focuses on the effects of shame. Based on Brown’s research, we know that shame is crippling to an individual’s capacity to function, negativity is internalized and an individual is unable to engage in crucial learning believing he or she is not good enough or incapable of the task. According to Brown, shame is highly correlated to aggression, addiction, depression, violence, bullying, eating disorders and suicide. For the social work field, advocating for techniques that avoid engaging in public shaming and utilizing tools and techniques that enforce positive change are required.

Biffle (2013) states that, “No sane adult wants to punish kids; we punish because we don’t know what else to do. Most challenging kids genuinely want to be part of the classroom
environment; this is why they work so hard, and continuously, to get everyone’s attention” (p.1, 2). Biffle believes that students are capable of learning the most when they are engaged. WBT is designed to increase the learning process by focusing on several learning modalities such as auditory (speaking and hearing), visual (seeing) and kinesthetic (doing, action and movement) (Biffle, 2013).

Biffle has published seven books based on critical thinking, reading and writing and has a vast following of instructors that appears to be growing each day. He presents seven activities that he believes are validated by contemporary research. These seven activities are:

Class-Yes, which involves the prefrontal cortex responsible for reasoning. Five classroom rules, in order to process each technique Biffle recommends to establish these five classroom rule signs as a way of cueing students and to allow the instructor to have order while implementing a high energy and interactive approach. These five rules are: 1) Follow directions quickly 2) Raise your hand for permission to speak 3) Raise your hand for permission to leave your seat 4) Make smart choices and 5) Keep your dear teacher happy (Whole Brain Teaching, n.d.). Teach-Okay, which activates the prefrontal cortex (reasoning), Broca’s area (speaking), Wernicke’s area (responsible for listening) and also engages the motor cortex and visual by using hand gestures. Biffle also indicates that using the teach-okay activity helps activate long-term memory that is found in the hippocampus. The scoreboard, engages emotion such as pleasure and pain, which primarily is linked to the limbic system and amygdala. Hands and eyes, primarily focuses on the visual aspect of learning. Switch, allowing students to develop and engage in public speaking and active listening found in the Broca and Wernicke’s areas of the brain. Finally, Mirror, which is designed to activate motor cortex and visual areas in the brain (Biffle, 2013). Each activity is presented to the classroom with a teaching purpose in mind and includes active engagement that involves full body
action such as hand gestures when learning new concepts or information. These techniques are designed to keep the teacher roaming the room and increase awareness of student involvement and understanding of key concepts presented in the classroom. It also provides a fun and engaging, interactive atmosphere that allows the child’s energy to be utilized positively within the class environment.

For social workers, these activities appear to be designed to assist in promoting a positive and engaging relationship between the teacher and students and students and peers. These methods seek to promote collaboration and help assist the learner in changing perceptions and challenging themselves to utilize their entire body to help make connections to concepts and information learned and assists in furthering critical thinking skills. These types of skills are critical for all individuals to master as they assist in crucial development by allowing all individuals to engage, practice and build positive communication. These skills are promoted in the social work field and used in various techniques such as cognitive behavioral therapy that seeks to connect thoughts, behaviors and emotions to help promote self-confidence, facilitate empowerment and positive collaboration.

**Why Choose Whole Brain Teaching?**

This research looks to answer why instructors might choose WBT as an approach to implement within the classroom. What we know is that there are three primary modalities of learning, which are done through auditory, visual or kinesthetic learning. For social workers, advocating for a technique that purposefully grasps all learning modalities would be beneficial to assist in reaching all children who are struggling in school. According to Reiff, what we have come to know as traditional teaching predominantly focuses on students who learn through auditory and visual instruction and fails to include students who learn more adeptly through kinesthetic instruction (Gage, 1995). Children that learn kinesthetically use
touch or some form or type of physical involvement to grasp concepts and information. As such, when traditional teaching is utilized it creates an environment that fails to include all learning modalities and allows some students to fall behind and be excluded from the learning process. This exclusion of young learners may cause some of them to seek help or be referred to the school social workers.

Likewise, Robinson and Aronica (2009) share that there are multiple types of senses that we utilize to learn. They are not limited to the five senses commonly referred to as smell, touch, sight, taste and hearing but instead can expand to include sense of temperature, sense of pain, vestibular sense (equilibrioception, a sense of balance) and finally kinesthetic sense (proprioception). These senses that we all develop instill in us a sense of self. This allows us to identify ourselves and our role within the world around us and includes the ability for us to function within that world. Gage (1995) presented a concise analysis that leads the reader to assume that if applied to Whole Brain Teaching, one of the reasons WBT may be selected by an instructor is to reach all learning modalities by engaging in visual, auditory and kinesthetic learning. By applying this technique it assists in building up a learner’s sense of self and identity within the world. As social workers, we want this experience to be a positive one providing necessary skills required to positively contribute to society.

Lardner (1989) shared the importance of understanding different teaching styles. Lardner presented a scenario in which a teacher named Randolph, allowed hands on work and student participation in the classroom environment. Randolph allowed the students to engage in conversation and interaction with each other to interpret information presented in the classroom, avoiding a traditional classroom environment. In this type of educational environment the teacher’s voice was diffused significantly in the classroom, and each student began to take on more and more responsibility by engaging with each other as equals, taking
part in listening, and learning from each other. This opened the door for collaboration among students and a shared responsibility for all individuals involved. Often techniques utilized by social workers seek to accomplish the same goal, especially in a group setting. This also allows each student to actively participate in social engagement and allows the students to further engage in “reflective thought”, which is a form of inward social speech, allowing the student to have his or her own voice (Lardner, 1989). This example suggests that by allowing the students to have a voice, they in turn take on responsibility, and are able to engage and cultivate collaborative approaches to solving problems.

Freire (1970) explains that the teacher student relationship influences the learning process. He states that when teachers take on a narrative role, teaching to the student, that the information is presented in a lifeless manner. In essence, the teacher talks to the students and deposits information; the student listens to the instructor and acts as a “depository” to be filled up with knowledge. Narration according to Freire simply enforces the learner to “receive, memorize, and repeat” (p. 72). This description is referred to as the banking concept of education. In this banking concept, individuals who consider themselves to be knowledgeable bequeath information onto individuals who are believed to know nothing. Freire states that by engaging in banking it further perpetuates an oppressive state as students in fact become experts at storing, filing and receiving information from those that are seen as knowledgeable. This according to Freire impedes one’s ability to be creative and to engage in transformation. The better one becomes at storing information, the “less they develop the critical consciousness which would result from their intervention in the world as transformers of that world.” (p.73). Freire states that one must strive to move towards a new approach that seeks to allow teachers and students to engage as both the teacher and learner. He further states that the teacher and learner must both engage together in collaboration to push for
critical thinking and the “quest for humanization,” one must be “imbued with a profound trust in people and their creative power.” (p.75). Freire concludes, that the banking concept does not allow for such a partnership between teacher and student to exist – such a partnership would undermine the current oppressive state and instead would serve to promote liberation.

Pirie (1995) focused on meaning through motion and provided a concise description of how movement can enhance a student’s learning experience and explained that students are capable of having several ways of “knowing”. Recall Gardner’s research on multiple forms of intelligence, which further supports this summary. Gardner’s research led him to believe that there were seven forms of intelligence. These seven identified displays of intelligence are as previously mentioned through linguistics, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal and intrapersonal. Gardner further believed that individuals are not limited to one form of learning but instead are capable of learning through multiple forms (Armstrong, 1994; Jorgensen, 2006; Skoning, 2010). Taking all this into consideration, Pirie (1995) lists several ways in which to incorporate dance and drama into the English classroom and explained when learning about literature it can be beneficial to have children engage in acting out or imagining how someone would act in a given situation. This ability draws on another area of learning and allows one to open the imagination and engage in a kinesthetic approach (Pirie, 1995). Learning through motion.

There is also research that displays neurological evidence that the mind and body are connected (Davis, Pitchford, & Limback, 2011; Jensen, 2005; Pirie, 1995). Jensen provides a vast pool of research that supports the belief that most neuroscientists concur there is a significant connection between movement and cognition. Strick and his team at the Veterans Affairs Medical Center of Syracuse, New York further support this claim. His team found that pathways are formed from the cerebellum, which is associated with motor control, to
various parts of the brain that are responsible for memory, spatial perception and attention (Jensen, 2005). This discovery shows a link between movement and learning. Likewise, Davis, Pitchford and Limback (2011) completed research that focused on children between the ages of 4 and 11. This research sought to discover the interrelationship between cognitive development and fine motor development. They discovered that all aspects of motor skills and cognitive processing do not in fact occur on different domains of the brain. Results suggested instead that these domains are developmentally linked. These findings further support the connection between movement and learning.

Jensen (2005), a schoolteacher in his own right, became fascinated by the biological makeup of the human brain and states it is fundamental to understand the human physical makeup in order to teach to the strengths of the individual. He believed the more we could understand the brain, the better-equipped instructors would be to engage students in the learning process. Jensen provided a concise listing of research taken from neuroscientists that looks at evidence from imaging techniques used in studying the brain, cognitive evidence and functional evidence. Research in all areas supports that quick thought processes to analyze, set goals and engage in movement precede motor activity. Each study compiled in Jensen’s analysis suggests that a relationship between all systems of the brain and the cerebellum exists. The cerebellum is responsible for linking, predicting, organizing, and rehearsing tasks before executing the actual action. It further suggests a relationship between cognitive processing and motor function (Jensen, 2005). As social justice advocates, supporting and being aware of the impact our school systems have on the up and coming generation is crucial. Our school systems impact families’ lives and the tools used to instruct directly impact students. Social workers primarily work with families, individuals and communities who typically are in some form of crisis. As such, examining research and advocating for
techniques that promote crucial skills and pulls on the strengths of each individual further assists in promoting social justice by examining the impact it has on the development of the children.

According to Jensen (2005), research completed by Anderson, Eckburg and Relucio, displays the importance that oxygen is essential to brain functioning. Good blood flow must occur in order to transport the oxygen to the brain. Without movement the brain would cease to function at optimal levels and the ability to engage in meaningful learning would not occur. Jensen further cites Greenough’s experiments conducted at the University of Illinois. In Greenough’s experiments conducted on rats he discovered that rats that were allowed to exercise in “enriched environments” had increased and better functioning neurons than rats that did not have an enriched environment (Jensen, 2005). This information suggests that engaging in physical activity can influence and improve memory and learning. Jensen indicates when we engage students in forms of kinesthetic learning, we are keeping their energy levels up, providing oxygen-rich blood to circulate through their systems, which fuels their brains functioning and creates an optimal learning environment. He further suggests that when students are restricted to what we have come to call “traditional” teaching, students’ ability to learn is significantly hindered (Jensen, 2005). One could conclude that WBT may be selected by individual instructors to better serve their students and engage them in an enriched learning process that meets the learning style and ability of every student. Knowledge is crucial in providing and developing the necessary tools required to assist in building strong, healthy, confident individuals that will be contributing to society.

What are the Challenges to Utilizing this Approach?

While all of this information supports and speaks to why an individual may choose WBT, Pirie (1995) and Leppo and Davis (2005) also cautions against utilizing kinesthetic
movement activities in the classroom just for fun, noting some of the challenges faced with implementation of such an approach. While there is an element of fun, its implementation must be demonstrated and utilized for the purpose of furthering the learning process. Its incorporation into the classroom should never be just for fun and if such an event is to occur, self-evaluation of the implementation must occur. Another factor that should always be examined is the comfort level of those involved in the process: are they comfortable with what you are asking them to do? Are they shy? To avoid discomfort one of the suggestions presented by Pirie would be to name their fear. Children may be eager to remove themselves from their desks to avoid further lecture in a traditional setting and jump at the chance to engage in physical activity; however, all elements of engaging in Kinesthetic learning process must serve a purpose, be as meaningful as any traditional work assignment and must engage in a creative process that is significant to the lesson presented in class. It may force instructors to push their students to engage on a deeper level to promote further reflection on the part of the student (Pirie, 1995). Implementing kinesthetic movement also can be exhausting and discouraging when first utilizing this approach. One of the cautions is to avoid burn out and to avoid separating this technique as less than a traditional style of teaching.

Egan, Stout and Takaya (2007) state, “our minds are not simple depositories for facts, but centers of constant activity in which emotions, intentions, and memories all intermingle with what is newly learnt to give it meaning” (p. 13). They further highlight limitations that are found in the current educational environment as it focuses on unitary vision and a set measure of learning and disregards aspects that allow for imagination as an educational goal. Egan (1997) provides a foundation that demonstrates that when children are creatively involved or allowed to utilize their imagination a higher level of learning is engaged and they
are motivated to continue to learn. Egan, Stout and Takaya’s (2007) research note the
difficulty with incorporating a teaching style or technique that allow for this by stating,

Infusing classrooms with imagination is a more difficult and complex task than it
might appear on the surface. Teachers are required to think in unfamiliar ways, to
acquire new kinds of resources, to take risks in what they ask of children, and to
reexamine their assumptions about children’s learning. (p.135)

Hruska and Clancy (2008) also state the benefits of incorporating active engagement
and movement in the classroom. They demonstrate several activities that can be incorporated
in the learning process to keep all individuals engaged. Based on this information it can be
assumed that high levels of energy for instructors is required and learning to adjust to such an
environment may be difficult for some. However, one can also assume this type of instruction
is just as meaningful and can have even better results when executed correctly as it engages
multiple senses in the learner. In practice it is crucial to reach young students before a serious
issue arises and as it requires active engagement, instructors are able to observe how each
student is doing in the learning process.

During the Bush administration, NCLB was at the forefront of education and with it a
push to promote standardized testing. Again, this process is crucial to the social work field
advocating for fair and balanced assessments of students’ individual levels must be taken into
consideration. It is our responsibility to ensure that children are not overlooked in the process.
Gallagher (2008) states in his research that traditional standardized testing does not
accurately test what students are learning. He further believes that utilizing traditional
accountability limits the capacity of measurement and disregards the unique educational
experience each student brings. He further infers that one of the challenges teachers face is
dealing with negative assumptions that they, the teachers, are lazy, selfish and incompetent
when measurements don’t reach the academic goal in standardized testing. Gallagher
concludes that this current environment strips teachers of their individual ability to teach and
instead provides mandated scripts that in essence disregard them as educational professionals. By testing, scores are tangible accounts of individual assessments of education and retention. It is something that is measured with pen and paper. As such, administration may be resistant to change in allowing such kinesthetic movement to be utilized in the classroom and instead hold to a traditional learning environment in an attempt to boost testing scores.

Opposing research was completed by Dollinger (2011) who focused on college students to determine if standardized testing led to “standardized minds” or if individuality or creative products could be measured and assessed. His research sought to assess if standardized tests would inadvertently screen out students with higher levels of creativity and if this would be a detriment to society. He opposes the notion that standardized testing does not allow for creativity or thinking outside the box. His results indicated that standardized tests in fact do account for creative individuals and do not result in creating a standardized mind. It is expected that resistance may be found among various individuals in school administration. This researcher maintains that although testing has its merits, incorporating kinesthetic learning may increase each individual’s capacity to think critically, learn more and retain more information and that the current educational environment should embrace change and continue to strive for more. Based on this research it is assumed that parents and administration may challenge new forms of teaching and question the quality and substance that is presented to young students. Another factor that may play a role in determining if WBT may be supported or hindered by administration may be dependent on whether or not the school district has adopted standardized testing or common core curriculum.

**How Does Whole Brain Teaching Allow for Creativity in the Classroom?**

For social workers one of the goals we are constantly faced with is assisting individuals in developing positive skills that will promote self expression, identity, learning
to take on responsibility, enhancing life skills and learning to problem solve. It would behoove the social work field to continue to challenge themselves to look at systems and approaches that are being utilized in teaching young individuals. These skills and approaches should be designed to promote the above-mentioned traits in order to promote social justice and avoid unnecessary interventions in individuals that are falling behind. Collard and Looney (2014) contend that all of these traits are crucial skill sets necessary for individual functioning and as such incorporating and nurturing creativity in education is a must. They further assert that by shifting greater focus on creativity it changes the dynamics of the teaching and learning process. Collard and Looney further (2014) argue that there is little guidance provided to instructors on how to incorporate new approaches in teaching that will assist in the development of creativity.

Robinson (2011) and Collard and Looney (2014) demonstrate that all individuals have the capacity for creativity. Robinson (2011) provides compelling and passionate research that demonstrates that the current educational environment is educating people out of their capacity for creativity. Robinson further explains that we do not allow individuals to be wrong, there is only one correct answer, until we can accept that being wrong is acceptable in allowing further thinking to occur we are limiting the capacity for creativity (Robinson & Aronica, 2009; Robinson, 2011). His research further demonstrates that as a society we allow brilliant people to go around believing that they are not, because the arts and capacity for creativity are stigmatized. Robinson states that our society as a whole has adopted academic accountability; however this excludes the creative mind and the ability to accept multiple ways of learning and testing intelligence. He demonstrates that intelligence is dynamic, interactive and distinct and further states that creativity is the process of having original ideas that have value (Robinson & Aronica, 2009; Robinson, 2011). Our job is to educate utilizing
the whole body not just focusing on one way of learning and to help the next generation make something of the future. Robinson’s research displays the need to allow creativity in the classroom in order to stop perpetuating the cycle of educating people out of their capacity for creativity. Each individual brings with them a certain knowledge base that has been developed both at home and in school. Instructors have the ability to continue to foster creativity in students to assist in developing crucial life skills. Social workers have the responsibility to support these teachers in presenting tools that foster the capacity for creativity as many young students find themselves requiring the assistance of a school social worker or other social work professionals. Allowing instructors to utilize skills that contribute to the health and wellbeing of these students would further assist in promoting empowerment among these individuals and assist in developing creative minds that will build our future.

WBT is designed to have the instructor and students engaged fully in the learning process. Biffle’s technique, WBT, claims to utilize shapes and motions to assist in establishing information to be retained, this process allows individuals to connect concepts with motions drawing on their creative capacity (Biffle, 2013; Whole Brain Teaching, n.d.). Individuals draw on what they know to create shapes that represent what they are learning. However, does the development of motions and concepts specifically focus on the teachers’ creativity or does it draw on the students ability to create as well? Based on the information provided by Whole Brain Teachings website not much is mentioned as to the child’s creative contribution. In fact, Wholebrainteaching.com has no mention of what the children contribute to the learning process and primarily focuses on the teachers’ role.

Additional research completed by Skoning (2010) shows that when students are able to call on their ability to imagine or create a movement to demonstrate a concept, they have an increased ability to recall that concept, character, or theme later. Skoning (2010) reported
that research completed on the incorporation of creative movement based learning documented increased self esteem, emotional expression, social function and self-regulation among students engaged in the process. Skoning explained that a constructivist approach can be utilized with creative movement by allowing students to develop their own understanding of concepts and ideas that are introduced in the classroom. Skoning also pulls on research completed by Brooks and Brooks who contend that when creativity is involved students’ perspectives are valued in the classroom and that their presumptions are continuously challenged in the process to achieve a higher level of understanding (Skoning, 2010). One of the criticisms of WBT may be that it is not quite apparent if creativity is a factor in the learning process or if a creative aspect can be incorporated into the process specifically to allow students to develop and build on their own creative capacities.
CHAPTER III
METHODOLOGY

Overview

The purpose of the study is to explore why elementary instructors’ are utilizing a whole brain teaching approach and how they operate in the current educational environment. Past research shows that children learn better through interaction and play, utilizing physical activity within a school setting to teach academic content; however little research has been done on the benefits of implementing a whole brain teaching approach (Schrider, 2011; Kirk, Vizcarra, Looney, & Kirk, 2014). Even less research has been conducted to examine how the broader environment supports or impedes an educator’s decision to adopt such an approach. This study will explore the personal observations and opinions of three elementary school teachers that utilize and incorporate Biffle’s whole brain teaching (WBT) approach. It will further explore how they are able to utilize this approach in the current educational environment.

This researcher hopes this study will further challenge the education system into discovering new ways to transform and further the development of teaching in the current educational environment. This study is specifically designed to further explore if instructors believe the incorporation of WBT activities in a classroom improve children’s social skills, cognitive learning ability and overall retention of learned information. It is further designed to explore if this technique forms a more collaborative learning environment between teacher and student through the instructors direct observation. This study is guided by three research questions; 1) Why did these instructors choose Biffle’s whole brain teaching? 2) What are the
challenges to utilizing this approach in the current educational environment? 3) How does whole brain teaching allow for creativity in the classroom?

**Research Design**

This research is exploratory in nature and designed to use qualitative data through the use of one on one interviews with three specifically identified teachers who utilize and implement Biffle’s Whole Brain Teaching technique in their classrooms with third and fourth graders. Due to the limited research available to this writer, specifically focusing on Biffle’s WBT in research practice, this case study design was selected. The hope is to gather information regarding the usefulness and the direct affects WBT have on children’s ability to participate and retain information in this current educational environment. The information gathered by using this design will assist in guiding future research, planning, developing, and in maximizing service utilization.

A qualitative case study was chosen for this design and was rooted in the person-in-the environment perspective. This design was selected as a way to allow each participant to describe his or her own experiences in the classroom while implementing Biffle’s WBT. This design will further look at each participant’s experiences and observations as they balance teaching and learning while utilizing this approach and operating in an environment that may not support such an approach.

Exploratory research is used when the topic is relatively new. Some of the drawbacks to this type of research are that it seldom offers conclusive answers to the research questions posed. Although much research has been done on education, to this researchers’ knowledge, no hypotheses have previously been formed surrounding Biffle’s WBT as a tool to transform the education system. Due to the nature of this study and limited information available to the researcher on this technique, this design was deemed appropriate.
**Sampling Plan**

A non-probability snowball sample will be used. Participants will be accessed through the use of one on one interviews conducted and contacted by this researcher. Instructors will be identified through the referral of a colleague who has access to instructors in Central Valley Elementary Schools that utilize Biffle’s WBT. Three specific instructors who incorporate Biffle’s WBT will be identified and used in the sample based on their knowledge and implementation of the technique. It is the intention of the researcher to utilize these instructors’ interviews in qualitative data collection.

**Instrumentation**

This qualitative research will be gathered through the implementation of a one on one interview with each of the instructors. This researcher will invite each instructor to a one on one interview at a time that is convenient for the participant in a location of their choosing to accommodate feasibility and comfort in the process. It is the intention of this researcher to restrict the meeting to occur in a public location such as, a local coffee shop or on site at the school to assist in the protection and competence of each individual.

This researcher carefully crafted each interview question based on the research done. This writer designed each interview question included in this study and attached, as Appendix A. Questions were further developed to assist this researcher in focusing on each instructor’s implementation of WBT and how the current educational environment impedes or allows for creative development. Assistance for the development of each interview question was provided under the supervision of this researcher’s faculty thesis chair advisor. Based on the design, which is exploratory in nature, a total of thirteen interview questions were developed. This researcher carefully outlined demographic questions to be listed initially as they are fairly easy and least time consuming to answer. Each interview question will gradually move
to more open-ended questions designed to qualitatively capture each instructor’s direct observation and reason for implementing Biffle’s WBT.

The purpose of this interview process is to explore the ability of each instructor to operate in a teaching and learning capacity in this current educational environment. It further looks to discover the reason for each instructor’s selection of WBT, what the significant challenge is in implementing this technique, and exploring how this technique allows for creativity. This researcher, to minimize bias as much as possible, created carefully worded questions. This writer included various open-ended questions throughout the interview to best capture each participant’s responses.

It is the intention of this researcher to increase depth to the qualitative case study by participating in direct observation of each instructor operating in his or her educational environment immediately following the interview process. This researcher plans to directly observe each instructor utilizing WBT in his or her classroom with the permission of each participant. The focus of this observation is to better understand how each instructor utilizes WBT and better solidify the researchers understanding of the process. This observation is not designed to document the words or behaviors of the students in any way. This research hopes to directly observe the person in the environment to further assess how each instructor operates in this current educational environment.

**Data Collection**

This researcher will gather all data for the purposes of this study. Three invitations will be extended to each of the identified instructors that this researcher was referred to that incorporate Biffle’s WBT. A small incentive to participate in the research study will be provided as a token of appreciation. Each instructor that participates in the study will be given a $10.00 Starbucks gift card. At the implementation of each interview, each participant
will be given an informed consent document designed to outline the purpose of the study, how the information will be utilized, the intent of the design, limitations, cost, benefits, participants’ rights, as well as explain the basis and reason for the interview.

It is expected that this process will take up to one month. This will allow for flexibility within this design by providing this researcher the opportunity to follow up with each instructor in the event that clarification or additional questions should be asked. It is the intention of this researcher to utilize a recording device to record all responses from each participant during the interview to insure accuracy is enforced and to further assist in chronicling each response.

One of the pros surrounding self-administered one on one interviews, is the low cost to the researcher as it typically involves one individual to administer to the sample group. This qualitative interview technique was chosen to allow for participants to give more thorough answers and for the researcher to clarify where needed. This method was determined to be appropriate as respondents may choose to be more accurate in their responses if given adequate time and the ability to clarify what they mean. This method for gathering data is an exceptional way of gathering refined descriptive assertions from each participant’s responses in regards to their personal reasons for choosing Biffle’s WBT and to ascertain how they are operating in this current educational environment. It further allows each individual to identify what he or she believes to be the most significant challenge in implementing this technique and how each participant feels this technique allows for creativity.

For the purposes of this study this researcher will also engage in direct observation of each instructor’s classroom immediately following each interview completed. It is the intention of this researcher to document observations with pen and paper to assist in
preserving observations noted. The focus of the observation is to better understand how each instructor utilizes WBT in their classroom following each interview. This observation is to better assist in understanding the process more fully. This observation is not designed to document the words or behaviors of the students. Instead, it is designed to help the researcher better understand how each instructor implements and utilizes WBT. The purpose of direct observation by this researcher is to solidify the person in the environment, and how each of the instructor’s happens to be observed operating in the educational environment while utilizing WBT.

This researcher identified one of the limitations to this form of research as being generally weak in validity. However, based on the carefully crafted interview questions to gage each elementary instructors’ personal reason for why they chose Biffle’s WBT and what they identify to be the most significant challenge in implementing this technique, reliability is stronger. Each question was designed to help answer the guiding research question.

**Plan for Data Analysis**

It is the intent of this researcher to utilize Neuman’s (2013) guidelines for analyzing qualitative data. Care was taken when designing the interview questions to implement organization with sorting and classifying each of the thirteen questions. Participant’s answers are unique and subjective. Open coding will be used to label and identify patterns and themes throughout the respondent’s answers to each individual question. This will allow the data to be condensed into overarching categories. This researcher, with the guidance and supervision of the university thesis chair, will complete the organization of data into patterns and themes. Once patterns and themes have been identified in answering participant’s responses for why they chose Biffle’s WBT and what they identify to be the most significant challenge in implementing this technique and how they feel this technique allows for creativity, this
researcher will create a synopsis summarizing each response. This synopsis will attempt to interpret and elaborate the qualitative data gathered into concise paragraphs. Allowing the researcher to condense the responses into one summative concise description. This researcher’s intent is to report on the gathered data to describe each participant’s responses and thoughts in a descriptive manner (Neuman, 2013). Respondents’ answers may be quoted within the results of the research, as it is qualitative in nature. Finally, it is the intent of this researcher to present this study to the thesis committee for further analyses that may be necessary.

Protection of Human Subjects

Each of the elementary school instructors that participate in this study will be informed of the description of the purpose, goals, confidentiality, and outlined timeline of the study. Duplicate copies of the informed consent documents will be given to each participant at the interview, two copies will be signed by each participant one for the researcher to keep and the other for each participant to retain for their records. Participants will be required to review the informed consent document however, contact with the researcher will allow participants to ask questions should anything remain unclear and contact information for the researcher will also be provided should any further questions arise (National Association of Social Workers (NASW), 2008). A set of phone numbers will be given for the participants to contact this researcher and research thesis chair for participants to obtain additional information if needed. Hard copies of each of the participant’s informed consent will be kept at California State University, Stanislaus. When not on site this researcher will carry the documents in a locked box; only this researcher and thesis chair advisor will hold the key to the lock box. For the purposes of this study this researcher plans to record each participants’
answers to best preserve each respondents answer to the questions. This recording will also be kept in the lock box with the informed consent forms.

The consent form will outline in detail the purpose of the study to explore elementary instructors perceptions of why they are interested in utilizing a WBT approach. Each participant will further be informed that there is no foreseen harm for participants in this study. Furthermore, each participant will be informed that there is no direct benefit to each participant’s primary employment for their participation in the study and that there is no cost to each participant aside from the time it will take to answer each of the interview questions and potential follow up questions. No penalty will be implemented for refusal to participate in this exploration of instructor’s perceptions on WBT (Grossman & Moshantz, 2012; National Association of Social Workers, 2008). Upon completion of this study all raw material gathered from participants will be shredded and destroyed to insure confidentiality will remain intact.
CHAPTER IV

RESULTS

Overview

This chapter is designed to organize and present the research findings. This researcher utilized Neuman’s (2013) guidelines for analyzing qualitative data. Open coding was utilized to determine patterns and themes that resulted from each individual interview. These patterns and themes are then carefully condensed into overarching categories (Neuman & Kruger, 2003). This chapter seeks to search for patterns and themes that emerged from the individual interviews completed with instructors who utilize WBT in their classroom and ultimately seeks to discover answers related to the guiding research questions: why one might choose WBT, what are the obstacles faced with implementing WBT in the classroom and how creativity is tied to WBT?

Overview of Sample

Each instructor who was selected for the purposes of this study was carefully selected based on utilization of incorporating WBT in the classroom. Further, a non-probability snowball sample was used in the selection, as WBT is relatively new. Due to various circumstances, two instructors were chosen to participate in the research study and ultimately came from two different school districts within the Central Valley of California. Due to availability of the teachers the grade level taught also changed; both instructors had experience teaching first grade and one was currently teaching fourth graders. These instructors each completed an individual interview. For the purposes of confidentiality, the names of both instructors have been changed and do not reflect the actual name of each participant. To add depth to the study, this researcher was able to directly observe one
classroom to further solidify an understanding of WBT and its implementation in the current educational environment. This researcher faced an additional obstacle that prevented direct observation of the second instructor’s classroom. Two brief video clips were provided to this researcher to directly observe the instructor utilizing WBT in the classroom environment; however due to the brevity of each video clip, a full understanding of the process could not be determined. Therefore, the research findings include results from each individual interview and this researcher’s direct observation of one of the instructors implementing WBT within the current educational environment.

Findings

The purpose of this qualitative case study was to explore elementary instructors perceptions of why they are interested in utilizing WBT approach within their classrooms. It is further designed to utilize the person in the environment perspective in observing how teachers operate in the current educational environment. These findings seek to answer the three guiding research questions: 1) Why did these instructors choose Biffle’s whole brain teaching? 2) What are the challenges to utilizing this approach in the current educational environment? 3) How does whole brain teaching allow for creativity in the classroom?

Why Choose Whole Brain Teaching?

Jane

An individual interview was completed with Jane on February 18, 2015 at a local public Starbucks. During the interview Jane described her reasons for choosing WBT stating, “As an instructor, I seem to have more students engaged and active listeners. Also, it allows the kids to get out of their seats, gets their hand motions moving so they’re using their kinesthetic learning modalities.” Jane further provided an additional reason for selecting WBT, “when you use WBT, the kids are part of it. The kids are part of the learning goal,
they’re part of the objective of the lesson and the kids use these hand motions. They’re up and they’re out of their seat. When they’re with their partners they’re engaged as opposed to old school. As opposed to before we teach up in the front giving a lesson… They’re up engaged, eyes moving around the room, it becomes just more active listening.” Jane went on to describe how whole brain teaching changed her teaching style by sharing, “how it (WBT) changed my teaching: I was roaming the room more, monitoring more, I was more actively thinking. Not just how I was teaching but how they’re (students) interacting. How their collaborating was a lot different. I had really engaged in that process as well.”

When asked what was missing from her classroom before she began to utilize WBT Jane responded, “Active engagement, kids check out and kids need constant engagement strategies to use.” Jane went on to reiterate that she ultimately chose WBT to increase “active engagement” between herself and her students. She further mentioned, “Before common core came, we were missing a collaborative piece and a more collaborative culture. That’s what was missing. With WBT you get that. You get more of that collaborative discussion piece, that academic discourse.”

When questioned as to how she was able to incorporate active engagement and collaboration, Jane explained that Biffle had presented a conference in Stanislaus County that “upped the anti” for how she utilized WBT. Stating that it was high energy and intense. He presented more in depth knowledge to utilizing the approach. For example, “we talked about questioning, so if I ask a question to the kids, they need to ask a question to their partner. So it added on to the way the class was being run.” Jane clarified that she was not the only one asking questions of the students but that the students were actively asking questions of each other. “That was different when Chris (Biffle) came because there was a different component to it and then there’s a different component to the growth model.” She further stated, “It’s
not only about the active engagement…but it’s also about the growth model. So if kids are making small steps there’s big celebrations in the class. He’s (Biffle) big on rewarding on the growth model. Making it apparent for everyone, everyone’s celebrating growth model no matter what.” Jane further stated, “It’s always positive” and explained that correction is made in different ways. It is not designed to correct them in a negative fashion but instead refer them to the class rules for example, “So lets just say you talked out in class without raising your hand, one of his ways to redirect that is to ask can you read me rule number one? You never actually told the student that they were talking out or that they did something wrong it’s just the way you do that.”

For Jane, she stated that she had primarily started teaching first grade and became comfortable with utilizing WBT in the classroom. Later she was moved to teaching fourth grade and described the environment as shifting back to a traditional classroom format where she taught in the front of the classroom and lectured to her students, “I was bored half to death…I was bored to tears just teaching.” She further explained that she was unsure how to utilize WBT with fourth graders as she had been primarily teaching first graders but once she was able to start incorporating WBT in her teaching approach she loved it. She further stated, in fourth grade the students become part of the “learning goal, they become part of the lesson, so they become teachers themselves.”

Kate

Located in a different county this researcher also met with Kate at a local public Starbucks also on February 18, 2015. When this researcher inquired as to what some of the benefits for incorporating WBT in the classroom have been, Kate explained, “the reason I decided to start using it (WBT) was because I was noticing a lot of my students were getting distracted, especially first graders, it’s hard to keep them engaged. You really can only teach
for five or six minutes and then that’s it, it’s all you get them for. I wanted those five or six minutes to really be powerful.” Kate went on to describe that she completed research on her own visiting wholebrainteaching.com and observing videos of WBT. Kate explained once she started using WBT she noticed a difference, “just the interaction, you can tell that the kids are engaged because they have to Mirror you. They have to respond exactly the way you phrased the question or match the tone of your voice. So all of that makes them stay engaged. I felt they would understand the curriculum better and retain the information.”

Kate explained that one of her main reasons for WBT was to find a way to “positively engage them and keep them engaged…and then my other thing was just the retaining information. So I was teaching things but they would forget so quickly over and over and over again and I wanted to figure out a way to get them to retain that information.” Kate further went on to explain that she felt there were additional elements missing from her classroom before she began to utilize WBT, “they weren’t as engaged, they were spacing out, or I was noticing behavior issues so they were off task and would then be distracting people next to them.” By incorporating WBT she was able to stop constantly trying to correct behavior that was disruptive in her classroom and instead stated, “it was just a way of positively getting them engaged so they don’t have time to do those behaviors.”

When asked if she was able to see a difference since switching from a traditional teaching style to one that incorporated WBT, Kate responded, “what I’ve noticed at the beginning of the year when I wasn’t doing it (WBT) as much, I was spending a lot of time correcting behaviors and their scores on their assessments by Friday…they had already forgotten what we had talked about all week.” She further stated, “That was just within a week, not even long term. Now what I’ve noticed is I can do one of them, (meaning) the motions that we did for a definition of a word and all I have to do is the motion and they
remember the whole definition. So that’s nice to see because they are carrying it beyond just a week. It’s two, three weeks down the road and they still know it.”

**Major Themes.**

Upon review of Jane and Kate’s interviews, the overarching pattern and theme that resonated throughout each response was the desire to utilize a technique that fostered “active engagement.” Jane and Kate both stated that WBT provided an element of “engagement” that was lacking before. WBT allowed the school environment to be inclusive of all individuals in the learning process. Before utilizing WBT in their classrooms they each explained that they had completed research-surrounding WBT and ultimately have had positive experiences with utilizing this approach. Another primary theme that emerged throughout Jane and Kate’s interview challenged the traditional classroom structure of the teacher teaching to the students in a lecture format. Instead both Jane and Kate seemed to welcome an interactive and collaborative teaching environment that utilized all learning modalities.

**What are the Challenges to Utilizing this Approach?**

**Jane**

This researcher posed questions to obtain information about the types of feedback she received from school administration, her Principal, or Vice-Principal? Jane explained that the school she teaches at has a coach. “She (coach) has actually filmed me, doing it (WBT)…She wanted to see how I use learning goals in my classroom and how WBT is used and what that means. Break it down for doing hand motions for it, and so she has video taped that because she had just happened to be in my class and liked it.” She further explained that her Coach “sent it on to certain people who might be interested.” She also disclosed, “My Principal loves it, she just comes in and comments ‘thank you for being active in the classroom, they’re learning, it’s not just the teacher talking.’ So its been a very positive experience.”
Jane also discussed some of the concerns that she and some of her colleagues have voiced: the concern is, “that it can become rote. It can get very old. You have to constantly change up the way you approach it. If you are always using the same cues, ‘class class’ response ‘yes yes’ after you’ve been doing that for a while, they can check out. My procedures have to change it up a little so I’m not constantly saying ‘teach’.” She further explained, “You have to be really careful about changing it up...because it can become rote.” She explained that this was not an administrative concern but was instead a concern among teachers. Jane further stated, “Our current administrator likes the program, that’s why she brought it to our school. Loves the program, but she does caution to be careful it’s not the end all for sure. But, definitely adds a reception to learning and teaching.” Jane reiterated that one of the ways her district supported her in using this teaching approach was to organize and host Biffle’s WBT conference.

When asked if she had any opposition or had faced any difficulties in utilizing WBT Jane responded, “my school specifically, its very easy to use this approach because our administrator is very supportive. I think we’re in an era now... we’re coming to common core, a more collaborative piece, which makes this easier to use this. Before when we had to be on page 42 all at the same time at 9 o’clock in the morning, really did not allow for this kind of teaching, and our district was like that, I would say 4 years ago.” She attributed this change in philosophy to a shift from standardized testing to new common core curriculum, “it’s changing everywhere with common core. Common core has a collaborative piece in it. So the nature of it just allows us to use it (WBT).” She further explained that she was not promoting common core as the “end all be all” but explained that the shift in common core allowed for a more collaborative piece to be incorporated which was accomplished by utilizing WBT.
This researcher was curious to know if any feedback or concerns had been noted by parents. Jane stated, “no not the parents, parents from our district, they tend to come from lower income and we don’t have as much parent involvement.” Jane’s further stated that unfortunately, “The less parent involvement the less knowledge there is about the types of programs that we’re using. It’s not necessarily the reason but it’s a part of it, a piece of it.” Her experience in utilizing WBT thus far has not had any parent inquiries.

On a more personal note, Jane discussed the challenges that she faced with utilizing WBT, “I think some of the challenge is just keeping up with it. It is extremely exhausting and it can be emotionally exhausting to do. And to do it to the best of your ability every single day is so difficult. You have to be on your game 24/7. You really do, and it’s hard to do, to keep up with it.” However, she also described her motivation to keep utilizing the approach as she sees a difference in her classroom and she finds support from a colleague who also utilizes this approach. “She and I will say ok I’m gonna do this and I’m gonna do this tomorrow. And sometimes we’ll just support each other that way. We do realize there’s certain lessons that work better with WBT than other lessons.” Jane provided an example stating, “so social studies tends to get dry sometimes and we’ll notice ok, we’ve gotta beef it up with social studies, we need to get that WBT working.”

Kate

This researcher posed the same questions to both participants. When asked what type of feedback Kate had received from school administration or from Principal, Vice-Principal? Kate responded, “Well my Principals’ haven’t challenged it at all because they like the movement based instruction. That’s one of the things our school really focuses on.” She further reported that the school looks for ways to “incorporate movement into our instructional day…that was another that I really kind of geared towards WBT because it had
that movement aspect and the visual aspect, which is what we (the school) focus on.” Kate
concluded by saying, “My Vice-Principal observed me recently and that was one of the
things that she really liked that I was doing in my class.” Upon further inquiry Kate explained
her experience with utilizing WBT was getting positive feedback from her co-workers as
well. “We’ve kind of all bounced ideas and I had shown them a few of the ideas (WBT) and
they’re starting to use some of it too.”

Kate reported that she was unsure if her co-workers had noted changes since
incorporating aspects of WBT in their classrooms but stated, “one of my co-workers, she
started doing the “Mirror” recently and she said that she’s noticed that they (students) are
starting to remember what she said. She was struggling with that, teaching the vocabulary.
She would teach the words and the same thing I was saying, they would just forget but now
she said they are starting to remember.” Kate reiterated that she has not personally felt any
resistance from administration or her coworkers since utilizing WBT. Kate further reported
that she was recently observed by a coordinator, “their job is to kind of critique you and tell
you what you could be doing better, how to help with engagement and that was one of the
things she said...that the engagement was really good in the classroom because of WBT. So
she (the coordinator) suggested that I share it with other people.”

When asked what some of the things that her school or district does to support her in
utilizing WBT Kate explained, “so the movement they really like that...we are all expected to
have movement based instruction but it’s very broad. They just call it movement-based
instruction. It’s not specific.” She elaborated by saying the founder of the school had
completed research primarily on the affects of visual instruction. Kate stated, “there’s a lot of
research that shows that they (students) have a picture of what they need to do they are more
likely to be able to do it correctly. So even like routine stuff, getting ready in the morning.
We have a picture, oh I need to brush my teeth, then I’m gonna go to my closet and pick out clothes, like we know what it looks like.” She stated for children a visual piece is needed, “so what I have found with the WBT doing all the motions, it’s basically a picture for them. Oh this is what the word means, “round” (moving her arms in a circle to demonstrate).”

Kate also disclosed some of the challenges she is faced with in utilizing WBT as an instructional tool, “the only thing that I would say that makes it difficult is the amount of time that I have for teaching. We have a lot of “specials” so we have music, Spanish, PE, so they are pulled out (from the classroom) a lot to do that and so sometimes it feels choppy.” Kate further explained, “So its just basically the time constraints. Sometimes we are just really getting into the flow of it and then we have to stop. So that’s one of the big things that makes it difficult but as far as them (administration and colleagues) saying no you can’t do this (WBT), that’s never been an issue.” This researcher inquired about the receptiveness of parents to utilizing WBT. Kate explained, “sometimes because it’s just directed instruction and there’s not like a work sheet of evidence as to what we’re doing some of the parents think, ‘oh, they didn’t do anything today’. They’re not realizing, as much as you try and explain it they don’t always get it.” When asked to elaborate Kate expounded, “they are learning and when we take the assessment you can see they did learn stuff. That’s been the hard thing with parents, it’s just helping them to understand.” Kate reported that parents don’t often come to observe the classroom however mentioned that one student’s grandmother, a former teacher, did observe one day and stated to Kate, “Wow, they’re really engaged and they seem to be really getting it and I like how you use the visual and the movement.”

Kate illustrated since using WBT that positive change has been reflected through the use of Common Core assessment. “Basically we do weekly tests for language arts, they have their phonics section and comprehension. What I’ve been working on with comprehension is
while we’re reading stories having them (students) make up a movement for that. What would symbolize that for the story.” She further explained that they complete weekly tests and also have computer testing throughout the week, “that one has all of the common core standards. The nice thing about this test is that the questions, as they answer them correctly, get harder and harder and harder until they can’t answer them correctly anymore…it starts from a basic level, this is where you should be, if they can’t answer it correctly then they make it easier to figure out where they (students) are.” Kate reported that she had compared scores from fall to winter and stated all of her students, “except for two, have grown and some grew a lot of points, like beyond what I would think. To me that was positive feedback…they’re just making connections that I don’t even have to make for them.”

**Major Themes.**

The predominant theme surrounding this section was the acceptance and support of Jane and Kate utilizing WBT in their schools by administration and coworkers. Various support was seen through providing training from Biffle in one school district as well as through the backing of administration by completing research on the benefits of visual instruction that incorporated movement based learning. This acceptance may be contributed to the shift towards common core assessments instead of standardized testing. Both Jane and Kate recapitulated that common core elements brought in a collaborative piece that allowed for WBT to be utilized in the current educational environment. Jane and Kate differed in their assessment of what posed as a challenge in utilizing WBT. For Kate, she expressed the difficulty in demonstrating to parents what the students have learned that day, as there is no tangible evidence with pen and paper. For Jane, parent involvement and inquiry was not a real concern. Instead Jane expressed a personal challenge that instructors may face with
utilizing WBT, as it can be both physically and emotionally draining and there is a real danger in allowing WBT to become rote.

How Does Whole Brain Teaching Allow for Creativity in the Classroom?

Jane

This researcher wished to first understand what the children were able to contribute to the learning process using WBT. Jane was able to explain that each child was able to be active participants in the process, collaborating to come up with goals and objectives, “So it starts off with a learning goal, they have to tell me what they are going to learn today. And they have to all do it together, they can come up with hand motions right…and then we do it as a class and then they do it with a partner, then we have someone be the teacher. They’ll say, ‘ok this is what we’re gonna do today.’ So they are telling us what we’re gonna do, they are starting the objective.” She further explained, “Depending on what we are doing, they stop, they collaborate, they teach, they turn to each other they share to each other… we’re sharing information we’re learning, not just me doing it but with their partners.” She expanded further by stating, “So they are sharing the information, they are doing the information, they are talking the information, they are motioning the information, and then at the end they are able to make sense and presenting what they’ve learned in some kind of way.” To further illustrate her point, Jane shared that the students have the opportunity to create within this environment. “ We just did mission presentations, and so when they got up to present, they present to me, like I would present to them. ‘Ms. Jane’, our learning goal today is…so they tell me.” Jane inferred to this researcher that there is a shared role between student and teacher by stating, “So when they present I have to do the questions, I have to do the learning, I have to share with my partners, so they take on my role too.”
Jane also explained further how each student found a voice and presence within the classroom by utilizing WBT. “The ones that are shy and the ones who are intimidated to talk in the class don’t get a choice anymore, because it’s a collaborative culture, there’s stepping in my classroom there is no way of getting out of talking, there’s no way of getting out of sharing of ideas, even if they don’t understand there’s a pace that they can do, because lets say we’re working on “perimeter”, “the perimeter on the pole is around the pole” and lets just say the child doesn’t know. She will say to her partner, tell me again what perimeter is? Let me see it. And she’ll do it. “ Jane noted that WBT forces an individual to be part of the whole process and may push students out of their comfort zone. “There’s expectations, you have to go along with this and you have to go from the beginning, because if it’s really gonna work they have to know what does a learning partner look like? You know we’re knee to knee; we’re eye to eye. We have to motion to each other, we have to listen, we have to repeat or engage with each other. So there is an expectation that goes along with it (WBT). But it does, it allows the kids that don’t want to open up, or don’t normally volunteer, not to have a choice in that.” Upon further inquiry, Jane explained that within WBT each student could find something that they were comfortable with but also explained that as for forcing a student to participate, “I think the teacher has to approach it a little differently. So lets just say you and I are doing it together, and I’m the one that’s intimidated and we’re gonna get up and we’re gonna present. I as the teacher know that she (pointing to herself) is shy and I might have you (pointing to this researcher) start it off, right …and you (pointing to this researcher) engage in a little piece, massage it to match a personality, but in our jobs and in every day life, they’re gonna have to collaborate, so it’s a piece that they do need. We have to give them the opportunity for that.”
To obtain a better understanding of how this related to creativity this researcher inquired what Jane’s thoughts were regarding incorporating creativity in the classroom. Jane stated that she did not believe WBT allowed for creativity throughout the entire process but stated that she did believe glimpses of creativity were present particularly when students were able to present. “You know when you’re introducing a concept, and you’re working through the process I’m not seeing a whole lot of creativity. What I’m wanting is just to see them get the concept down.” However, Jane further went on to state, “Where it comes into play is presenting. So whatever I’m asking them to do, maybe they’re writing a summary and they have to use evidence based terms, lets just say, and they’re working together… they’re highlighting everything and they have to get up and present it. Well they can present it using WBT; they can do it in a manor like that.” Jane further went on to clarify, “Its (WBT) creative in terms of reaching all learning modalities, but as far as the kids getting to create, I think it’s done through the presenting process than it is in the initial learning process.” Jane also noted that she believes having a shift from standardized testing and moving to common core allowed room for creativity to be present in the classroom but stated they are only in their second year of implementing common core.

Kate

To further understand if WBT allowed for creativity Kate was able to explain what she sees her students are able to contribute to the process of learning with WBT. Kate explained that sometimes it is difficult to keep up and that she may not always have motions assigned to vocabulary words and may rely on the students’ contribution to the process. Kate stated, “I’ll stand there in front of them sometimes and I don’t have the motion ready. They’ll raise their hand and say what about this, or what about this motion. So sometimes they make up the motion, and that’s fun because they actually remember those ones better, the ones that
they create.” Kate further noted that she has started shifting towards this more stating, “having them create their own (motions) because it means something to them when they create it. That’s part of their creativity. “ Kate also noted elements of utilizing creativity through collaboration by peer teaching. Kate stated, “as soon as I say, “ready teach” they go “ok” turn and teach. That’s when they really get to explain it to someone and I tell them you’re the teacher. When I say, “ready teach” you’re teaching. Its that confidence that they feel, “oh I do know this” or they kind of have a reality check and realize “oh I don’t know this” I need to ask questions.”

Kate explained that by allowing students to have the opportunity to teach each other she is able to observe the interaction and can visually see if they truly understand the lesson or need additional help. “I can see as well, I’ll ask them once they’re done teaching their partner I’ll say ok. Then we come back and then I’ll ask them the question, what does round mean? We would have already gone over the definition, made up the motion, everything and most of the time they can do the motion and tell me the definition but there’s been a few times no one knew the definition…this shows me we need to reteach that. It’s kind of nice because they get to be in charge of it and they can show me what they know.” Kate further talked about what she observes when her students take on a teaching role and are able to work together. “It makes them feel confident, but it also makes them realize the importance of paying attention. They realize oh I need to know this. She’s gonna ask me and it’s very clear if they don’t know it because they will sit there and they’re not doing the motion or whatever it was. But I do notice their confidence is a lot higher and they feel empowered. Empowered, like I know this or this is my responsibility to learn.”

Kate demonstrated how her students were able to have a voice and presence within the classroom while utilizing WBT. Kate stated, “I think honestly the biggest part that I find
that they feel that their voice is heard, when they get to give me a motion, you can just see it in their face some are like yes, that was my motion, that was me I made that up.” She stated an additional way that students were able to have a voice and presence within the classroom was to utilize partner teaching, “I had some students that just…they would not raise their hand to answer questions and when they do they stand there for a good three minutes quiet without anything to say.” She further stated, “they would stumble on their words, but when they are partner teaching it’s nice because it’s with someone who is their age, it’s their peer, and you know they trust that person enough.”

Kate explained that when she gives her students the ability to partner teach she is able to observe her quieter students engage in the process and realizes that they do understand and they are contributing to the learning process. “I hear them just rattling off the definition, they get really into being the teacher and asking the question. Then after they’ve had time to partner teach we get to come back and share out and they are more willing to share out because they’ve had time to talk it through with just one person.” Kate concluded that this approach was inclusive of all of her students, even those that were quiet and shy and those that were hyper and constantly talking. Kate explained, “I have no way of knowing what they know (referring to her quiet students) and some of them they really know a lot but they’re just not sharing. My ones that are typical behavior issues and very hyper and all over the place even they are able to stay engaged and talk to the person. So it’s beneficial for both. The quiet and the loud.”

Kate expressed that creativity was crucial in developing confidence and learning to take pride in oneself. When asked what her thoughts were on incorporating creativity in the classroom Kate stated, “I think it’s really important because when they get a chance to be creative they feel ownership of something. When they feel like they own it or it’s theirs it just
helps with that confidence.” Kate provided an example, “Even when we do art I tell them, artists make mistakes but when they paint something wrong they turn it into something else. So I tell them, really you’re never wrong if you are being creative because you can always just change it if you need to.”

Kate conveyed incorporating chances for children to engage in creativity was difficult in an educational environment that was book based. Kate stated, “I mean there are just so many standards its very book based and you have to read the book and answer the questions and they don’t really get a chance to be creative and express themselves so finding those little ways to do it is important.” Kate spoke of the difference she observed from switching from a traditional teaching style to incorporating WBT and how it allowed for creativity and a shared responsibility and power in the classroom dynamic. She explained, “Well when you’re lecturing its mostly you the teacher talking. You’re the one talking all the time, you, you, you, you. Whereas if you’re using WBT it’s a lot more of them talking, they’re the ones coming up with the solution, they’re the ones answering things. It honestly takes a lot off the teachers’ plate and the teacher has to be willing to give up a lot of power. Because typically in a traditional class the teacher has the power, we do everything, you listen to me, if you’re not listening to me you’re bad, but this allows them to be positively engaged and they’re talking most of the time which to me, that was the biggest improvement for my class.”

**Major Themes.**

One of the guiding themes reported by Jane and Kate was the core belief that creativity is crucial to the learning process. For Kate, creativity was crucial in building confidence and empowering her students. For Jane, she noted that creativity could be seen when she shared the teaching role with her students to switch roles allowed them to take on
the classroom, to share out what they knew in presenting. Within WBT they each noted aspects of the approach that allowed students to share and engage their creative capacity through presenting, partner teaching and creating motions for themselves that were more meaningful to them. This allowed for another theme to emerge, when children engage in creativity it brings about a fuller capacity to retain information as they take ownership of what they have accomplished. It further brought about a collaborative environment.

**Observations of Kate’s Classroom**

This researcher was able to observe Kate’s first grade class on March 19, 2015. Upon entering the classroom the first observation that struck this researcher was the immediate awareness that all desks and chairs remained void of students. Instead the children were sitting in various positions on the floor on one side of the room intently listening to Kate as they summarized their math lesson that was just ending. This researcher was able to directly observe language arts period. Throughout the lesson the students remained away from the desks and chairs. The class quickly directed their focus to Kate as she introduced the learning goal for the day. The children had been learning vocabulary words and definitions through reading a short story as a class.

This researcher directly observed moments Kate implementing elements of WBT such as Mirror, allowing partner sharing, implementing WBT phrases such as “ready teach”, “mirror check” and “mirror with words”. One of the main observations noted that Kate also changed her position within the room, sometimes she would stand in front of the children, at other times she was sitting on the floor with them and often placing herself at the same level as the students. Kate’s ability to roam the room was assisted through moments of allowing students to partner share. While learning a vocabulary word Kate would bring attention to the lesson being learned by calling out, “mirror check”, every student promptly looked up and
directed their attention towards Kate. Kate would then call out “mirror with words”, the children would then hold up their hands ready to participate. Kate would break up a word and definition with motions and gestures that directly reflected the word or concept being learned. Once she had reviewed with them she would then state, “ready teach.” It was quite apparent that each student was comfortable with utilizing WBT.

Throughout the observation it was readily apparent which students were quieter than others and who were more outgoing and hyper. Kate utilized elements of WBT in such a way that all students were engaged in the process. During partner sharing it was directly observed that some of the identified quieter students became more animated and engrossed in sharing what they knew with their partner about the concept or definition being learned. During these moments Kate roamed around the room stopping and observing each learning group as students were paired in groups of two or three. As the lesson continued Kate provided direction and movement, motions to assist in connecting the concept. Five vocabulary words and concepts were learned throughout the lesson. For example Kate would say, “Mirror with Words”, the students would focus their full attention to Kate, “Cherish means,” the students repeated the phrase back to her. Kate continued, “to show great love” (Kate placed her hands in a heart over her head), the children would repeat the phrase with the motion, Kate would continue, “for someone” (pointing at each person), “or something” (pointing around the room). Kate introduced celebrate, grateful, cherish, surprise and memory. Upon introducing a new word Kate would inquire first what students knew about that particular word, some were not quite as ready to share out. Once a motion and definition were presented to the class students then had the opportunity to share with each other switching the role of teacher to them, this was prompted by “ready teach”. To draw their attention back as a collective group Kate would state, “Mirror Check.” As students looked to her Kate opened the floor to allow
students to share out what they had learned from each other. As each new concept and definition was introduced Kate would review with the class from the beginning reciting each definition with motions allowing students to connect meaning to the lesson. One of the major observations noted was the use of positive feedback. When each student presented information that they had learned collectively the class would support them with a positive “great job” or form of praise.

While engaging in partner sharing it was difficult to determine if students had the ability to incorporate a creative capacity to it. However, elements of creativity were incorporated into the lesson. Once student reviewed all five-vocabulary words and had the opportunity to partner share and present what they learned Kate, had the students form five separate groups. Each group was assigned one of the vocabulary words. Kate provided parameters for the assignment and explained that each group would get the opportunity to act out their word, they were not allowed to use the vocabulary word in their skit but were instead instructed to use phrases or act out a scene that would convey they word assigned to the group. The rest of the class would then guess what vocabulary word that group was assigned. The creative capacity was astounding as students drew on what they knew about each concept and engaged in learning positive communication, collaboration, and affective critical thinking skills. Students were able to assign themselves roles within this assignment some taking on speaking roles while others took on more of the acting role. As each group presented a shared respect for one another was demonstrated, if a group got a concept incorrect it was not quickly admonished but instead Kate would state, “class what does cherish mean” and as a group the class would recite with motions the definition to the words and then be offered the opportunity to try again. A respectful environment was observed as each group finished presenting their skit, the class would then guess as to what word they
were trying to convey. As each word was correctly guessed they would demonstrate respect for each group by saying “great job group.”

Overall major observations noted that students remained actively engaged throughout the lesson, switching focus from the teacher to each other and back to the group. Kate provided a safe environment for students to test out their knowledge. As the students engaged in the lesson Kate roamed the room checking in with each group and observing the children interact with each other. This type of interaction allowed for Kate to actively observe if each student was connecting concepts and ideas or if more assistance was needed. Kate affectively incorporated movement within her instruction and allowed students to contribute to the learning process through partner sharing, presenting and collaborating within groups.

**Summary**

One of the predominant patterns and themes that emerged through each interview was the reason for choosing WBT is that it kept all children “engaged” and was inclusive of all individuals involved in the learning process. When each instructor was asked what was missing from their classrooms before they began to utilize WBT they each responded, “active engagement”. Both Kate and Jane explained that they had completed research on WBT and had observed YouTube videos and searched through Biffle’s cite, wholebrainteaching.com to gather information before implementing it in their classrooms. An additional pattern and theme that emerged challenged a traditional classroom format of the teacher teaching to the students while children remained seated awaiting instruction. It further provided an interactive collaborative process.

During the course of the interviews, questions designed to illicit what some of the challenges were in utilizing WBT were posed to each instructor. Surprisingly, one of the major themes presented was an acceptance of utilizing WBT by the school and co-workers.
This acceptance may be contributed to a shift towards common core assessments instead of standardized testing. Reasons for what they believed some of the additional challenges faced however differed somewhat among both instructors for one she noted that it can be difficult to demonstrate to parents what they have learned on any given day as there is no tangible evidence, paper and pen, that reflects the information learned that day. For the other, working with parents was not a real concern, but noted instead that the technique and implementation of WBT can be exhausting, not just physically exhausting but emotionally exhausting.

Based on the descriptive responses provided from Jane and Kate the predominant pattern and theme is the core belief that creativity is crucial to the learning process and brings about a fuller capacity to retain information. Each noted in some capacity or other that the benefits of allowing creativity to reside within the current educational environment contributed to fostering a collaborative process and was further inclusive of all individuals participating in the process. For these instructors, they noted that allowing creativity to have a place in the school classroom allowed for the opportunity for crucial life skills to be learned and assisted them in utilizing positive communication.

This researcher’s direct observation of Kate’s implementation of WBT in her classroom further demonstrated how unique approaches could be incorporated to reach all individuals specific learning modalities. Knowing this it is crucial to relate these finding to what is already known about movement-based learning. It is further crucial to understand how these concepts and abilities relate to the social work practice.
CHAPTER V
DISCUSSION

Overview of Major Findings

This study sought to answer three guiding research questions. The first question sought to answer why instructors might choose WBT within the classroom. The major findings throughout this study show that the predominant patterns and themes reflect a desire to engage children actively within the learning process and to allow them to participate in that process. This study also found that instructors were not intimidated and did not feel challenged by allowing the classroom dynamic of teaching and learning to be shared. They did not appear to be threatened by losing that dominant power of teaching in a traditional teacher lecture format. These reasons answered the first guiding research question of why they chose WBT.

The second research question inquired as to the challenges instructors faced with utilizing WBT. The results indicate that both Jane and Kate were not met with the predicted hostility or resistance from administration, Principals and co-workers that past research suggested. However, a difference expressed by the instructors showed that for Kate, utilizing WBT into the curriculum can be challenging as students do not have tangible evidence to take home to their parents that reflects what they learned in class that day, such as activities completed with pen and paper. One the other side of the spectrum Jane expressed a personal challenge with utilizing WBT as it requires a physical and mental level that takes the learning to the next level and that it can be exhausting emotionally as well to always think in creative ways to further each students capacity to learn.
The third guiding research question sought to answer how WBT allowed for creativity. Although a focus on creativity is not expressly written into the curriculum surrounding WBT each instructor identified moments within WBT where creativity is found. Both Jane and Kate stated in various ways that creativity is a crucial aspect to the learning process and allows for an enhanced ability to retain information. Ultimately WBT does allow for creativity; however, instructors must continue to challenge themselves to help foster moments where creativity can be utilized. For Jane, creativity in WBT was found in the students’ “presentations,” and for Kate, creativity in WBT was discovered through “partner sharing” and in allowing students to create their own shapes and movements to connect concepts. It was further solidified in Kate’s classroom through direct observation utilizing aspects of WBT and allowing students to then act out and demonstrate what each word meant to them. Ultimately, allowing creativity for each instructor provided the students to engage collaboratively, think critically and learn positive life skills such as communication.

These findings assist in understanding and furthering the knowledge base on utilizing WBT within the classroom and how instructors are able to operate within the current educational environment. WBT is one such approach that can, if implemented correctly and with an open mind, include all individuals, both teacher and student, to engage in the learning process by sharing power in the classroom. Implementing WBT fostered shared learning, pushed for better critical thinking skills, allowed for moments of creativity and assisted in developing collaboration and good communication skills. These results and abilities are needed to be active contributing members in society and are often the exact skills Social Workers seek to help assist individuals in discovering. Many of these students may have interactions with school social workers or be an active recipient of social work interventions. As social work advocates we must strive for social justice that seeks to meet our clients
where they are and allow preventative measures to be taken to avoid unnecessary services to be offered in the future. WBT places instructors on the front lines to meet students, to engage positively with them and to foster crucial life skills. All this must be done within the current educational environment. Jane and Kate ultimately found a technique that allowed for this type of interaction within the current educational environment.

Existing Knowledge

Reasons for Choosing Whole Brain Teaching!

Biffle demonstrates that by implementing the tools of WBT that individuals are able to engage in promoting positive and engaging relationships between both the teacher and students and students and peers (Biffle, 2013; Whole Brain Teaching, n.d.). Based on the individual responses from Jane and Kate during the qualitative case study completed, a resounding consensus for utilizing WBT was to reach all of their students in a positive and engaging manner. What was lacking in Jane and Kate’s classrooms was an inclusive atmosphere that could engage all students. This finding holds true to the existing literature presented by Gage (1995) to be inclusive in discovering various ways to measure degrees of intelligence. It further holds true to Robinson and Aronica’s (2009) research that demonstrate there are multiple types of senses that are involved in the learning process. In this sense the findings remain in line with what is already known. Both the responses from Jane and Kate and parallel literature support the assumption that by engaging in WBT it can be a tool designed to not only engage students but to build up a sense of self and identity in the world through positive interaction. All of these skills are powerful tools that social workers often strive to assist clients in discovering. By utilizing WBT it may assist in some preventative measures.
Another similarity that was noted throughout the study was a shift in the classroom dynamic to actively move away from a traditional classroom format of the instructor teaching to the students utilizing lecture while the students meekly remained seated looking at the instructor. This researcher directly observed this ability to shift the focus of a “traditional” class to one that was more collaborative and inclusive of all students and their style of learning. During this researchers observation, not once did the students use their desks and chairs but instead remained sitting around the floor or up engaging in acting out definitions and vocabulary words making connections to the lesson through the use of movement, visual representation and listening or auditory learning. This observation directly relates to social work values of engaging clients in a way that fosters empowerment and the opportunity for all voices to be heard. Jane and Kate both demonstrated a willingness to relinquish some of the power that comes along with the position they hold. By allowing them to give the students the opportunity to interact, offer suggestions, partner teach, and engage collaboratively with their peers they provided a safe environment for students to be creative and offer their own knowledge to contribute to the learning process. These results directly correlate to Lardner’s (1989) research, where this interactive approach to teaching allows the teachers voice to be diffused significantly in the classroom and shares in the responsibility of teaching and learning from both students and teachers. WBT also challenged the “banking” concept that Freire (1970) cautioned against and rose above the obstacles faced with a traditional educational environment and allowed teachers and students an alternative option to operate within our education system. Jane and Kate both demonstrated a willingness to be the learner and allow the students to teach them by engaging in presenting and in creating their own shapes and movements to go along with concepts being learned. This information is further supported by David, Pitchford and Limback’s (2011) research as well as Jensen’s (2005) and
Pirie (1995) who demonstrate that a neurological connection exists between mind and body. Kate reported that when she engages with WBT and simply uses the movement or motion learned in class that the students are able to instantly recall what that definition or concept was.

All of these discoveries directly relate to the social work field as the reasons for utilizing whole brain teaching directly correlate to allowing students to engage actively and ultimately foster the students ability to build up their sense of self and their identity in the world. It further fostered a collaborative atmosphere and shifted the class dynamic to provide students with the ability to become empowered by contributing to the learning process. Lardner (1989) reported this type of environment allowed the students to engage in “reflective though” fostering a form of inward social speech. All of these goals are all utilized by social workers when engaging with clients. By advocating for this type of instruction to be utilized in our school systems we are directly promoting skills that would benefit our society. By utilizing these techniques we can try to eliminate some of the need for individuals to seek out help from school social workers or various other individuals that practice within the social work field.

**Challenges to Utilizing Whole Brain Teaching!**

Surprisingly the results indicate that there was no resistance to implementing WBT within Jane and Kate’s classrooms. This research hypothesized that resistance may be seen among administration, co-workers, Principal or parents within the schools. Dollinger's (2011) research demonstrated that standardized testing did not eliminate a creative mind. This researcher believed that with such results administration and parents might be resistant to change as standardized testing provided tangible evidence of measurement of each students learning capacity.
One of the distinct differences in responses from Jane and Kate was that of parent concern over utilizing WBT. For Kate, she expressed a concern that it was difficult to convey to parents what their child had learned that day in class, as there were no tangible accounts of what they had worked on that day, no visual proof on paper of the lesson learned. However, for Jane, she explained that parent involvement is minimal at best and utilizing WBT was not a real concern of the parents. Jane attributed this lack of interest by parents to possibly be based on socio economic status. Although different reactions for parent involvement were voiced both Jane and Kate agreed that administration and various individuals they worked with supported them in their endeavor to utilize WBT.

In Contrast, Gallagher (2008) stated that traditional standardized testing does not accurately test what students are learning. Gallager inferred that when teachers utilize or challenge the current educational environment that often the teachers are faced with negative assumptions that they, the teacher, are lazy, selfish and incompetent. As such, it was assumed that administration again would oppose the use of WBT. This however was not the case; both Jane and Kate expressed how they each felt supported by administration, co-workers and Principal or Coach in utilizing WBT in the classroom. This support was demonstrated by providing training from Biffle in one school district. It was also supported in another school district through completing research on the merits of visual instruction that ultimately included movement-based learning. Kate’s school had an expectation to incorporate movement-based learning into the classroom. Although movement-based instruction is a broad description Kate was able to adopt WBT to account for this element. For Jane, her coach actively pursued allowing her to utilize WBT.

One of the reasons such an acceptance of WBT in each of the schools may be present is the shift in curriculum. This researcher assumed that each school might still be coming
from a standardized teaching perspective. Although Jane and Kate both experienced that environment they stated that each school had shifted to adopt common core standards and assessments. Both Jane and Kate further explained that within common core an element of collaboration was written into the curriculum, which allowed for WBT to be more readily accepted and included into daily instruction. This discovery is crucial for future research as well as to the social work field, advocating for equal balanced assessments of individual learners levels must be taken into consideration. For social workers it is our responsibility to ensure that children are not overlooked in this process. This shift appears to have fostered a collaborative learning environment that is accepting of WBT and inclusive of all learning modalities. For social workers advocating for systems that are inclusive of all individuals needs is important to further develop sense of self within the environment.

Another identified link between previous literature and the current study was the personal challenges faced with utilizing WBT. Both Jane and Kate identified aspects of incorporating such an interactive approach that proved to challenge them the most. For Jane she expressed a common concern that the incorporation of WBT like any curriculum could become rote. She further expressed that WBT challenges all individuals to continue to find new ways to engage with the students and noted the toll it takes on not just the physical but mental and emotional level. Jane stated that WBT requires a high-energy atmosphere that can be emotionally draining and explained that having support from follow co-workers helps her get through. For Kate, one of the challenges she faces the most is time constraint. Kate explained that when the students are on a role and learning concepts it can be difficult to constantly be interrupted by other things such as PE and Spanish. She explained having flexibility to continue with a lesson when the students are fully engaged and learning is not always available. These results are all supported by Egan, Stout and Takaya’s (2007) research
as well as Hruska and Clancy (2008) and Pirie (1995) as all of these researchers expressed that some of the limitations to incorporating a movement based learning approach requires high levels of energy, that lessons must be developed to further insight critical thinking and not “just for fun.” The merits of incorporating such an approach provide the ability to reach all learners, it may be more complex as Egan, Stout and Takaya’s (2007) research on incorporating creativity and imagination in the classroom expressed, however the benefits challenge the learner to engage critically, push for making connections to concepts and definitions, builds communication skills and fosters empowerment among each student. These benefits are primary skills that all social workers commonly strive to assist individuals in achieving.

**Creativity in Whole Brain Teaching!**

Throughout the qualitative case study interviews, Jane and Kate demonstrated that they each had a core belief that creativity was crucial to development and learning process. The overarching discovery was that WBT does provide moments where creativity can be fostered and encouraged among the learning process. Kate demonstrated throughout her interview that creativity was crucial to building confidence. She further demonstrated that when students engaged creatively and developed a concept or meaning, put their own interpretation of those meanings into motions, that they were more inclined to remember them later. Students took pride in what they were able to accomplish. Kate and Jane both were able to see confidence and empowerment being fostered among their students. For social workers some of the challenges that our field is faced with is assisting individuals in developing skills that promote, learning, identity, self-expression, and problem solving.

Collard and Looney (2014) demonstrated through their research that these traits are necessary and crucial in developing skill sets that are promoted through the freedom to engage
creatively. Therefore, the current research remains in line with past literature. Jane also reported being able to observe students engage in creativity through presenting. Taking on the role of instructor themselves they gained a sense of pride and achievement. These findings are also similar to Robinson’s (2011) assessment that all individuals have the capacity for creativity. Robinson’s research further highlights additional similarities as he stated that intelligence is dynamic, distinct and interactive. Through direct observation of Kate’s classroom and the incorporation of WBT, this researcher discovered that this statement is quite accurate. Each student was provided the ability to engage in a creative capacity and brought his or her own perspective on the assignment and were able to engage by collaborating together to develop a presentation that represented a vocabulary word and what it meant to them.

Kate reported that her students felt a sense of pride and empowerment when the ability to create their own shapes and movements to concepts was provided. Skoning’s (2010) research also demonstrated the same thing. When individuals feel that their perspective or what they have to offer is valuable they are able to take pride in what they have accomplished. The research findings indicate that by allowing individuals to call on their ability to imagine and create there was an obvious and discernable increase in the ability to recall information. Through this researchers direct observation of Kate’s classroom it was apparent that she valued her students’ contribution to the lesson. During the presentation of each group’s demonstration of the vocabulary words, Kate also allowed herself to be part of the learning group. These consistent finding demonstrates that individuals thrive when their contributions are valued, when creativity is present and presumptions are challenged deeper and more meaningful understanding can be achieved.
Limitations

One of the primary limitations of this study is that exploratory research is generally weak in validity. However, with the implementation of directly interviewing participants to gather qualitative data on Jane and Kate’s personal reasons for choosing WBT and what they identified to be challenges faced in utilizing and implementing this technique, it was found that reliability was stronger. Each instructor was able to provide insightful and meaningful answers that directly related to their specific experiences in utilizing WBT within the current educational environment.

Another notable limitation to this study was the unforeseen obstacle in observing Jane’s classroom to directly observe how she utilized and operated within her classroom while implementing WBT. This researcher understands that valuable information was unable to be included in the research findings. This particular research study also focused on a small sample size and was designed to include only individuals that currently utilize WBT in their classroom. Therefore, the information obtained through this qualitative case study was limited to the experiences of two instructors within the Central Valley of California. As such, these findings may not be an accurate representation of the Central Valley’s Instructors observations of WBT and cannot be generalized to all instructors’ currently utilizing WBT. However, the data collected from Jane and Kate begin to explore the direct observations of individuals that currently utilize this approach.

Implications

Practice

It is imperative that social workers continue to support and challenge systems where vulnerable populations can obtain tools and techniques to further increase positive skills, such as empowerment, self confidence, learning to collaborate, engage in critical thinking skills
and positively foster communication skills. It is further imperative that social workers support other academic professionals such as instructors in encouraging them to utilize skills that assist in developing these traits. One such population that can assist in supporting instructors is school social workers. School social workers are in a distinct position to assist instructors in continuing to challenge and implement techniques that engage the students. Supporting instructors in engaging with students would improve the quality of instruction provided as well as continue to foster positive relationships among instructors, students, families and social workers. The results from this study can directly assist social work practitioners in supporting our education system by encouraging instructors to teach to all learning modalities and to further engage in sharing power within the classroom.

**Policy**

Social workers are held to a certain standard as outlined by the National Association of Social Work (NASW) code of ethics (NASW, 2008). The NASW code of ethics is designed to serve as a guide for social workers professional conduct. A particular passage that applies states, “the primary mission of the social work profession is to enhance human well-being and help meet the basic human needs of all people, with particular attention to the needs and empowerment of people who are vulnerable, oppressed, and living in poverty.” (NASW, 2008, par. 1). This statement further encourages individuals in the social work field to advocate for policy change that would directly promote an inclusive education system that seeks to foster positive skills that students (children are one of the most vulnerable populations) can utilize to develop a sense of self and how they operate within that world, as well as promoting positive communication skills, critical thinking skills and providing a safe environment for students to create, explore and contribute to the learning process. The social work field promotes these skills; by advocating for techniques that promote early intervention
and tools that students can draw on, WBT assists in fostering these skills and furthers the social work field.

**Future Research**

The goal of this exploratory research was to begin to obtain information about WBT and how instructors are able to operate within the current educational environment while implementing an interactive kinesthetic approach. To further the knowledge base future studies may include a larger sample size to obtain deeper meaning and understanding. Gathering additional information from a larger sample size may increase the knowledge base on WBT exponentially.

This study could expound by including a larger sample size to assist in broadening the knowledge base by allowing the opportunity to conduct more comparative analysis of individuals that utilize WBT versus individuals that do not. It is further speculated that focusing on the geographical area of each school to observe if a change in acceptance is dependent upon location could strengthen potential comparative data.

Future research is also required to assist in furthering the limited knowledge base that surrounds the utilization of WBT and the benefits or obstacles faced by incorporating such an approach. This information will be crucial for both social workers and those that work outside the field to continue to advocate for social justice among vulnerable populations by creating and inclusive environment that benefits from the contributions of all involved.
REFERENCES


Biffle, C. (2013). Whole brain teaching for challenging kids: (and the rest of your class too!). Yucaipa, CA: Whole Brain Teaching, LLC.


Association for Supervision and Curriculum Development.


APPENDIX A

EXPLORATION OF TEACHING IN THE CURRENT EDUCATIONAL ENVIRONMENT

Demographic Questions

1. Please describe your current position within the school?
2. Which grade do you currently teach?
3. Please describe what your highest level of education attained is?

Basis for choosing Whole Brain Teaching

4. What are some of the benefits for you as an instructor in utilizing WBT in the classroom?
5. What was missing from your classroom before you began utilizing WBT?
6. Why did you choose WBT?

Challenges faced with utilizing WBT

7. What type of feedback have you received from the school administration related to your use of WBT? Principal, Vice-Principal, co-workers?
8. What are some things that your school or district does to support you in using this teaching approach?
9. What are some things that your school or district does that makes it difficult for you to use this approach?
10. What other challenges have you encountered since utilizing a WBT approach aside from administration?

Assessing creativity

11. What are the children able to contribute to the learning process?
12. How does the incorporation of WBT allow each student to have a voice or presence in the classroom?

13. What are your thoughts regarding incorporating creativity in the classroom?