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Abstract

As college students become more connected with the outside world through technology, instructors are experiencing an increasing presence of cell phones, typically used for text messaging, in the classroom. Many students believe that they are "multi-tasking," and that they are able to attend to the conversation in the classroom and the conversation with the outside world at the same time. In this article, we explore the perspectives of both students and professors regarding this issue.

In a college classroom, the students and the professor are actively engaged in a discussion of an educational topic. One student in the back of the room appears to be listening, but upon closer inspection, she is responding to a text message on her cell phone, which she has placed in her lap.

As new technologies begin to emerge in traditional settings of academia, scenarios like the one above occur more and more frequently. Because incidents like the Virginia Tech tragedy are ever present in their minds, it is understandable that administrators, parents and students feel that portable media is essential for safety and connection to the outside world (Caronia, 2008; Palfrey & Gasser, 2008; Alsop, 2008). This viewpoint is supported by a study by Kay Braguglia (2008) in which 100% of her research participants believed that they should be able to access emergency information over their cells phone during class time (p. 60). Most college professors would probably agree that in case of emergency, it is acceptable to use a cell phone in the classroom.

There are many times, however, when cell phones appear to be used for texting in situations that do not qualify as emergencies. Brendan Block (2009) shares a conversation with a student who said, "Today in class I thought of something I had to tell my mom; I texted her right then instead of writing down a reminder to call her. I am studious; I take notes; I don't think it makes my grades suffer because of it" (p. 1). This could be an example of a student who feels the need for constant communication or, perhaps this student believes, as do many, that she can successfully multi-task and is able to attend to the conversation in the classroom while simultaneously communicating with the outside world.

Texting during a university class is a common and even natural occurrence with many students today. In a study at Hampton University, Braguglia (2008) surveyed students, over half of whom stated that they use their cell phone in some manner during every college class. According to Braguglia, "a total of 73% of students (surveyed) believe that using a cell phone during class seldom or never interferes with classroom learning" while "4.6% indicate that cell phones often or always assist them while in class" (p. 59).

Students may not understand that texting in a college classroom could be perceived as being disrespectful or disruptive to the professor or to other students. Additionally, cell phone use in a learning situation may send the message that the cell phone call or text message is more important than what is taking place in class, yet that may not be the intention of the cell phone user. Many professors express concerns that "texting during lecture is impolite, disrespectful and hampers the learning process" (Block, 2009, p. 1). For example, one university professor in New York walked out of his lecture when a student was found text messaging on the front row of the lecture hall. The professor felt justified because of his perception of the "brazen" disrespect shown by the texting student (Jaschik, 2009).

Is the common place use of cell phones in university classes a "good" or "bad" practice issue? Apparently, this is not a matter that has been ignored. For instance, in light of several high profile tragedies that have taken place on university campuses, many institutions of higher learning have of late implemented emergency contact systems and have revised cell phone policies accordingly (Bragulia, 2008). And for varied reasons, many college professors now

include cell phone policies in their syllabi (Braguglia, 2008). But why the near global opposition to in class cell phone use by professors? Conversely, why do students feel that cell phone use in class is almost a right? Following is a discussion of possible reasons why there is such a discrepancy of views.

A Snapshot of Generations

Perhaps looking through a generational lens will help to better focus on how different generations have such vastly different perceptions of cell phone use in a university classroom. Does the "establishment" just not "get it" or are the young too young to know? Who are the people occupying university classrooms today?

Each generation is identified by certain characteristics that illustrate their perceptions, or behaviors. The differences that exist between generations have historically been described as the "generation gap" (Palfrey & Gasser, 2008). The need for older adults to apply their experiences in guiding the current students has those using strategies that worked when they were young but are perceived as "out of date" by the current population. This is especially apropos when addressing issues involving mobile technology. For instance, some students do not necessarily understand the far reaching consequences of their digital practices, yet do not think that adults as old as their parents have the depth of knowledge to assist them (Palfrey & Gasser, 2008).

Although 95% of the Silent Generation is in retirement at this time, it is possible that a student currently enrolled in a university may have a professor from this generation as a course instructor. Members of the Silent Generation were born between 1925 and 1942. They are known for conforming to societal norms and for a noteworthy work ethic (Clarke, 1970). Cultural influences were The Great Depression, World War II, the Korean War, the post war boom era and the G.I. Bill (Fogg, 2008). This generation grew up in a relatively peaceful time where families were nuclear in composition and gender roles were initially clearly defined (Winograd & Hais, 2008). A partial list of famous members of the Silent Generation reads like a who's who list of technological whiz kids. Some of the more famous are:

John McCarthy - pioneer in artificial intelligence
Gerard K. O'Neill – physicist and space station designer
Robert Noyce - inventor of practical microchip; founder, Intel Corp
Neil Armstrong – the first human being on the Moon
Carver Mead - microelectronics pioneer
Martin Cooper – the designer of the first mobile phone

The innovators of the Silent Generation paved the way for much of the technology we utilize today.

It is most probable a student in today's college classroom has a "Boomer" for a professor. Boomers, born between 1946 and 1964, were defined by the popular culture of the 1960's such as the popularization of television, the assassination of President John F. Kennedy and Martin Luther King, Jr., the Beatles, the first moon walk, the Vietnam War, anti-war protests, and the

sexual revolution (Fogg, 2008). Boomers, are known to be highly motivated workers and are typically the parents of the vast majority of students currently populating university campuses. Presidents Clinton, Bush and Obama are all Boomers. Notable Boomers in the field of technology include:

> Gordon Eubanks – microcomputer pioneer
> Steve Jobs – Apple Computer co-founder, entrepreneur
> Bill Gates – entrepreneur, chairman and chief software architect / co-founder of Microsoft Corporation
> Dave Winer – pioneering software programmer
> Paul Allen - co-founder of Microsoft
> Robert Jarvik – inventor of the first artificial heart

The Boomer generation is not only distinguished by their sheer size of number but also for their continuing contributions to modern science and technology.

It is quite possible that members of Generation X are not only students in university classrooms today, but may also be some of the younger professors teaching on college campuses. The Generation Xers are sandwiched between 80 million baby boomers and 78 million millennials and are roughly defined as anyone born between 1965 and 1980. Their cultural influences were the fall of the Soviet Union, the women's liberation movement, MTV, grunge, the rise of home video games and personal computers, the birth of the Internet, and the dot-com boom and bust (Fogg, 2008). Generation Xers are characterized as having a high affinity for technology and as being computer and Internet proficient. Some Generation Xers who have made significant technological contributions are:

> Jeff Bezos – founder of Amazon.com
> Tom Anderson – co-founder of MySpace
> Chris DeWolfe – co-founder of MySpace
> Jonathan "Jony" Paul Ive -internationally renowned as the principal designer of the iMac, iPod, iPhone, and iPad.

Although most of the Generation Xers are in their 30s or 40s, they have already significantly contributed ideas, inventions and innovations that many of us rely on and consider an integral part of the fabric of our society.

Millennials, as Howe and Strauss (2000) refer to them, are young people born since 1982, and "are unlike any other youth generation in living memory. They are more numerous, more affluent, better educated, and more ethnically diverse" (p.4). Their cultural influences include the Internet, September 11, cell phones, Columbine and Facebook (Fogg, 2008). Children of the millennial generation have grown up with CD's DVD's, PC's and various incarnations of the cell phone. They commonly have the desire to be in contact with each other and use digital media to "hypercoordinate their social lives and construct social encounters moment-by-moment" (Caronia, 2008, p.103). They are in constant contact with their parents, friends, and significant

others through their cell phones, Blackberry's or IPhones (Elam, Stratton & Gibson, 2007). Interestingly, cell phones have been referred to "as a kind of umbilical cord" between parent and child (Caronia, 2008, p.106).

Although every generation has invested in the modern technology of the times, the Millennials are the first generation to have "spent their entire life surrounded by and using computers, video games, digital music players, video cams, cell phones, and all other toys and tools of the digital age" (Prensky, 2001, p. 1). To this group, digital media is a natural part of their life and life style (Montgomery, 2007). They are often referred to as the "Net Generation" and they actively create web sites, blog their thoughts and experiences, explore the multiple opportunities available to them through digital media and continually shape new sets of cultural practices (Montgomery, 2007).

Can We Not Get Service or Did Someone Hang Up?

So, back to the original concern: Why the disconnect between what professors think is appropriate and responsible use of mobile technology in a classroom setting and what students in those classrooms perceive as an activity as natural as breathing? Could the misunderstanding be as simple as the proverbial generation gap? Perhaps.

Prensky (2001) refers to individuals who were "not born into the digital world" as Digital Immigrants. He further explains that Digital Immigrants are those people that were not born in the current technology age, but were instrumental in helping to shape its direction and are comfortable in doing so. Digital Immigrants have come to technological use late in their lives but have feet in both the digital and the non-digital worlds. Immigrant professors may assign, retrieve, and grade an assignment online, but they are just as likely to print off a document and correct it by hand. Current Digital Immigrants were raised before 1982 in a different time with different cultural expectations.

Digital Natives, on the other hand, are individuals born since 1982 and arrived in a global society surrounded by technology and digital literacy (McHale, 2008). They are the Millennials, and they are fluent users of technology such as cell phones, Facebook, videogames, YouTube, and the Internet. They own portable devices that enable them to do research, check the weather, play word games, find out statistics about a specific geographical location, and communicate with friends and family in other cities or countries.

It is possible that instructors who speak an outdated language (that of the pre-digital age), may struggle to teach a population that speaks an entirely new language (Prensky, 2001). How do all stakeholders in modern day university classes negotiate traditional practices of classroom discourse with the more modern expectation of full engagement of all participants, possibly with the use of mobile technology?

The descriptions of Digital Immigrants and Digital Natives may be insightful, but, in point of fact, many Boomers go above and beyond technological expectations. They have lived the evolution of many modern technological innovations and are not timid about trying out new iterations. For instance, in our own university, professors are making use of Second Life to

engage students in fully online courses. Others are using Flip Camcorders to help students self-evaluate presentations. It is not unusual for professors to teach their course fully online using Tegrity, Skype and Windows Live programs. Professors also use different kinds of audience response systems to make their lessons more interactive. So why the aversion to including mobile devices as another technological tool?

Perhaps the issue is control. Professors can design and implement courses that fully integrate technology, however, the use of this technology is controlled by the professor. When students use cell phones, control is much more difficult. How do professors know students are using their mobile devices for an appropriate task and how do they know if a student is just using the technology for entertainment? This is probably one of the challenging issues surrounding allowing cell phones in the classrooms.

Professors have genuine concerns about their students using cell phones in the classroom. Often mobile devices are used as distractions and are distracting. Many students claim that they can "multi-task" and pay attention in class while texting, however, the literature does not support this (Bledsoe, 2009). At University of California at Los Angeles (UCLA), a study of 20 year olds found that while it is possible to multi-task on simple concepts, tasks that were more difficult or complex required a participant's full attention and were adversely affected by multi-tasking. By using Magnetic Resonance Imaging (MRI), researchers examined brain activity and function while their participants were performing their tasks. This provided a visible outcome to support their conclusions (Wolpert, 2006). Bergvik (2004) concluded that cell phone disturbance could be a consequence of a cognitive overload on the cell phone user. Managing the two concurrent tasks of interacting on the phone and with the local setting simultaneously could be problematic. The outcome could be that the phone user may give precedence to one of the interactions, and fail to respond and act properly to the other.

There is another critical question that needs to be asked: Are our lessons engaging enough to keep our students attention? Much has been written about the apparent need to "entertain" our students now in order to keep their attention. If this is true, we, the Silent generation and the Boomers are to blame. We brought them television shows like *Sesame Street*, *The Electric Company* and *School House Rock*. We purchased personal computers for them and bought *Reader Rabbit* and *Math Blaster* computer games. Do our students find our lessons engaging or are our lectures boring them to tears? If we want to engage them in authentic practices that pertain to the real world, perhaps we need to incorporate such everyday technologies as a cell phone into our instruction.

Staying Connected

First and foremost, we need to have an honest conversation. Before a semester begins, professors need to share their understandings, feelings and expectations about using cell phones in class. Are there appropriate times when students may use their cell phones, for instance in order to search for pertinent information? Are there times when using a cell phone is considered rude and disrespectful, perhaps during a professor's lecture or a peer's presentation? We owe it to students to lay the ground rules for what we consider appropriate practices with mobile

devices. Professors not only impart knowledge to their students, they also model what professionalism looks like in the field. If speech, dress, and manners are important to know in a profession, so is appropriate use of technology.

An even more effective way to address concerns about cell phone usage in the classroom is to include students' suggestions for a comprehensive cell phone policy. In one professor's classroom, students generated a list of appropriate behaviors in a classroom setting. Use of cell phones in the class was included on the list. The students then signed the list as an agreement of the policies. Students consequently took responsibility for their own actions, and the professor gained insight into what the students were thinking and recognized the value of open communication. This strategy is similar to the activity of having children develop their own classroom rules in elementary school, a practice recommended by early childhood professionals (Warner & Lynch, 2004; Epstein, 2007; Nelsen, Lott, & Glenn, 1997).

Again, the key is communication--continuous communication. As sure as technology will evolve, new technologies will make their way into our university classrooms. What is considered "professional" will change. There is no final ruling, but there will always be a need for thoughtful communication about the benefits of new technologies in our society and the usefulness of bringing these new technologies into our classrooms.

References

Alsop, R. (2008). *The trophy kids grow up: How the millennial generation is shaking up the workplace.* San Francisco, CA: Jossey-Bass.

Bergvik, S. (2004). Disturbing cell phone behavior-a psychological perspective. Implications for mobile technology in tourism. Retrieved from www.telenor.com.

Bledsoe, K. (2009). Why cell phones should be banned in the classroom. *Helium.* Retrieved from Helium.com.

Block, B. (2009). Text messaging invades the classroom. *The Omnibus.* Retrieved from The Omnibusonline.com.

Bragulgia, K. (2008). Cellular telephone use: A survey of college business students. *Journal of College Teaching and Learning,* 5(4).

Caronia, L. (2008). Growing up wireless: Being a parent and being a child in the age of mobile communication. In P. Rivoltella (Ed.), *Digital literacy: Tools and methodologies for information society* (pp. 99-125). Hershey, NY: IGI Publishing.

Clarke, G. (1970, June 29). The Silent Generation revisited. [editorial opinion]. *Time Magazine.*

Elam, C., Stratton, T, Gibson, D. (2007). Welcoming a new generation to college: The millenial students. *Journal of College Admission,* Spring 2007, p. 21-25.

Epstein, A. (2007). The intentional teacher: Choosing the best strategies for young children's learning. Washington, D.C: National Association for the Education of Young Children.

Fogg, P. (2008). When generations collide. *Chronicle of Higher Education*, 54(45).

Howe, N. & Strauss, W. (2000). *Millennials rising: The next great generation.* New York, NY: Vintage Books.

Jaschik, S. (2009). If you text in class, this prof will leave. *Inside Higher Ed.* Retrieved from insidehighered.com.

McHale, T.(2008). Portrait of a digital native. *Tech & Learning.* Retrieved from http://www. techlearning.com/article/4572.

Montgomery, K. (2007). *Generational digital: Politics, commerce, and childhood in the age of the internet.* Cambridge, MA: MIT Press.

Nelsen, J., Lott, L., & Glenn, S. (1997). Positive discipline in the classroom. Rocklin, CA: Prima Publishing.

Palfrey, J. & Gasser, U. (2008). *Born digital: Understanding the first generation of digital natives.* New York, NY: Basic Books.

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon, 9*(5).

Warner, L. & Lynch, S. (2004). *Preschool classroom management: 150 teacher-tested techniques.* Beltsville, MD: Gryphon House.

Winograd, M. & Hais, M. (2008). *Millennial makeover: Myspace, youtube, and the future of American politics.* New Brunswick, NJ: Rutgers Univeristy Press.

Wolpert, S. (2006). Multi-tasking adversely affects brain's learning, UCLA psychologists report. EurekAlert. Retrieved from eurekalert.org.

Effects of Deep Breathing and Muscle Relaxation on ACT Scores

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Abstract

This study examined the relationship between perceived test anxiety and ACT scores. Participants included 58 high-school students (21 males, 37 females), preparing for the ACT's. The experimental group received relaxation and deep breathing training to help manage their test anxiety. Results showed that while no significant differences were found among ACT scores between the experimental and control groups: post-test scores on an anxiety scale did reveal a significant difference. Implications of findings are discussed.

In accordance with the DSM-IV-TR, under the American Psychological Association (American Psychiatric Association, 2000), extreme levels of test anxiety meet criteria for axis I, generalized anxiety disorder (Bögels, Alden, Beidel, Clark, Pine, Stein & Voncken, 2010). It is important to understand that test anxiety is a situation-specific anxiety that occurs only when performance is being evaluated (Putwain, 2008). Students may not suffer from anxiety in other aspects of their lives, but when asked to complete an examination, they may begin to experience the cognitive, emotional, and physiological components of anxiety (2008).

As a personality trait, test anxiety can be seen as the situation-specific trait in which a student finds testing to be threatening (Spielberger, & Vagg, 1995; Putwain, Connors, & Symes, 2010). Anxiety, as a personality trait, has been linked to maladaptive perfectionism (Rice, Leever, Christopher, & Porter, 2006), where the greater the pressure placed on the student to do well on a given test, the more anxious the student would become (Mulvenon, Stegman, & Ritter, 2005). Students with personality trait anxiety will seek to gain approval through their test scores from either parents or teachers, while simultaneously feeling that regardless of their scores they will never meet those expectations (Rice et al, 2006). Anxiety occurs pre- and post-test because students think that their abilities to retain and remember information will fall short of their own expectations and of their instructors (2005).

Test anxiety as an emotional state is exhibited among students that do not normally experience test anxiety as it does not include underlying pathology and yet under certain circumstances these students can still experience test anxiety. These circumstances are test specific and include negative self-belief about performance on a test which may be linked to poor study habits, an emotional anomaly during the course of study for that specific test, and avoidant behaviors for the test (Putwain, 2008). Students who do not commonly have test anxiety may experience it if they do not feel prepared for the test.

The ACT

The American College Testing (ACT) organization was founded in 1959 and created the ACT to aid students in narrowing what college to attend and has also created an admission standard for colleges (ACT, 2010). There are four components to the ACT: English, math, reading, and science, which all comprise a total of 215 questions. Furthermore, there is the option of an additional writing exam (ACT, 2010). The ACT test has been administered in all fifty states since 1960. There are twenty-seven states where at least 50% of high school students take the ACT test. Subject matter on the test is based on curriculum mandated to high schools rather than IQ or aptitudes like many other standardized tests (ACT, 2010).

The implications and assertions that are made based on the scores of ACT's, can have fruitful and negative outcomes for those who take it, especially when scores are not accurately representative of the student's actual cognitive abilities. In fact, one study that examined test anxiety specifically, in relation to ACT scores, found that test anxiety and self-concept, uniformly affected academic achievement (Williams, 1992). Lee (1995) concluded that test anxiety affected memory processing in terms of speed and accuracy of declarative memory. The results of the aforementioned study depicted the conflict associated with timed high-stakes testing, such as the ACT and the in-ability to recall information. More and more studies

conclude a basic premise that test anxiety is significant and impactful on true test scores and can likely influence the outcome (Bradley, McCraty, Atkinson, Tomasino, Daugherty, & Arguelles, 2010; Everson Smodlaka & Tobias, 1994; Putwain, 2008; Swayer & Hollis-Sawyer, 2005). Cognitive abilities tests aim to measure students' performance as well as tapping into anxiety-influenced responses (Selkirk, Bouchey and Eccles, 2011).

Gender and Testing

The conflict between accurate representation of gender differences among achievement and testing can also be noted with regard to test anxiety. Some studies have revealed that gender, specifically females, is more likely to serve as predictors for test anxiety than males (Putwain, 2007; Selkirk, Bouchey and Eccles, 2011). On the other hand, other studies report that gender does not serve as a predictor for test anxiety. For example, Onyeizugbo (2010) conducted a study that found that gender was not a significant predictor for test anxiety, and attributes this to the current trends in society. In other words, expectations regarding gender roles, although different; are in fact changing. Those students currently in the college setting, as in the previous study are expected to excel regardless of their gender. This still doesn't account for the studies within the last five years, proposing the opposite.

Gender differences concerning measures that test an individual's cognitive abilities are evident in the 21st century. Indeed, differences in achievement and learning abilities have been studied for nearly a hundred years (Thorndike, 1914; Roberts & Bell, 2000; Sekine, Chandola, Martikainen, Marmot & Kagamimori, 2010). Males have had consistent classroom advantages regarding specific attention paid to their academic achievement and retention of information. On the other hand, females have not had the same kind of treatment as their male counterparts (Wellesley College, 1992). Not all research supports this type of assertion. In recent years, studies have shown where males once outperformed females, are now noting a shift where females are outperforming males in most areas of education (Marks, 2008; Van de Gaer, Pustjens, Van Damme & De Munter, 2009).

In terms of testing, the National ACT Score Report of 2010 showed that females still scored the same or lower than males on their composite scores as in previous years (2009, 2008, 2007, 2006). In Illinois, the 2010 score reports showed that students scored at a significantly lower rate than the national level in all four benchmarks, however, in terms of gender, composite scores were similar (males = 20.8, females = 20.6). At the national level, males scored higher in math and science and females scored higher in reading and composition. Some researchers have interpreted these inconsistencies to be attributed to those who make biased, single-statement summarizations of articles on the side of those referencing them. Other interpretations include a less fallacious account of different socio-cultural value systems in different parts of the world to help explain why studies are reporting different results (Lohman & Lakin, 2009; Marks, 2008).

Relaxation and Deep Breathing

Progressive relaxation had its start in the early 20th century by Edmund Jacobson who introduced a physiological way of dealing with tension and anxiety (Bernstein, Borkovec, & Hazlett-Stevens, 2000). Jacobson wrote, "You Must Relax," in 1934 for those interested in

learning about muscle relaxation in a way simple enough to follow as a layperson. His actual research came together in 1938 in an extensive book-length technical instruction of, "Progressive Relaxation." Since then, a plethora of research supporting the uses of a systematic relaxation technique on a multitude of symptoms that ranges from anxiety to speech distortions to blood glucose levels in the management of diabetes (Detling, 2008; Ganesan, 2009; Grant, 1980). Rasid and Parish (1998) conducted a study examining the effects of two types of relaxation training using 55 high school students with varying levels of anxiety in an experimental-control group design. Results showed that both behavioral relaxation and progressive muscle relaxation techniques produced significantly lower anxiety scores in the experimental group as compared to the control group. The authors also found that the use of progressive muscle relaxation led to reduced test anxiety in high school juniors in preparation for the ACT (1998).

For the purposes of this study, students who participated in this experiment comprised of those who participated in an earlier study and who consented to release their ACT scores, as they were all mandated to take the ACT. The hypotheses for this experiment were that 1.) relaxation and deep breathing training would affect participants levels of anxiety and that 2.) relaxation and deep breathing would affect ACT scores for those in the experimental group.

Method

Participants

All eleventh-grade students from a Midwestern high school were invited to participate in the study. Those students who returned a signed parental consent form were included. A signature line for the high school students was included on the parental consent form to indicate participant's assent for the study. Volunteers who participated for this study included 11th grade students from a Midwestern public high school (21 males, 37 females; median age = 17 years). Of the 58 participants, self-reported ethnicities were as follows, 51 Caucasian, 3 African American, 1 Hispanic, 1 Asian American, and 1 who identified as Other. The initial sample size was 85, however, four students unexpectedly dropped out of the study and only 58 participants consented to release their scores.

Measures and Instrumentation

Westside Test Anxiety Scale. The Westside Test Anxiety Scale (WTAS: Driscoll, 2007) was originally designed to identify students suffering from anxiety impairments who could benefit from anxiety reduction. The WTAS consists of 10 items, each using a Likert response scale where 1 = "never true" and 5 = "always true." It yields an overall anxiety score and measures anxiety impairments with six items assessing incapacity (i.e., memory loss and poor cognitive processing) and four items measuring worry and dread (i.e., catastrophizing) which interferes with concentration (Driscoll, 2007). Scores for the two subscales, incapacity (items 1, 4, 5, 6, 8, & 10) and worry (items 2, 3, 7, & 9), are obtained by summing the respective item responses; a total score is obtained by adding up the scores and dividing by 10 (Grimes & Murdock, 1989) where higher scores indicate a greater level of test anxiety. In the present study, the total score was obtained in order to measure a general level of test anxiety.

Deep breathing instructions were obtained from an online reference (Anxiety Community, 2010). Selection for this method was utilized due to the simplicity and applicability to high school students under a limited amount of time. The guided progressive muscle relaxation technique was selected for the purposes of focusing on all parts of the body from feet to head (Unknown).

Procedures

All participants were given the WTAS (pre-test) and a short demographic questionnaire to complete during their physical education class and participant's pre-test scores were rank-ordered from highest to lowest and then divided in half creating homogenous groups. Participants with the highest anxiety scores were then assigned to the experimental group (N = 37), and the rest of the participants were assigned to the control group (N = 44).

The control group participated in physical education as normally expected while the experimental group met in the wrestling gym where there were mats available for the students to lay down and the lights were dimmed to create a relaxing environment. Training took place at school, two days a week, over a five-week period leading up to the actual standardized testing date. On training days, we began by discussing the upcoming standardized test which included the ACT to elevate levels of anxiety. During training, relaxing music was played in the background. While in training, participants in the treatment group were taught both deep breathing exercises and progressive muscle relaxation. Participants practiced breathing exercises for five to ten minutes at the beginning of each session and then proceeded through the progressive muscle relaxation for the following 15-20 minutes. At the conclusion of the five weeks, participants in both the experimental and control groups completed the Westside Test Anxiety Scale as a post-test measure of anxiety.

Results

Data was obtained through SPSS using an independent samples t-test and a bi-variate, pearson product-moment correlation coefficient with a significance level of .05. Results showed a significant difference of post-test scores between the experimental (M = 23.31, SD = 8.01) and control (M = 30.55, SD = 6.23) groups, $t(56) = -3.84, p < .001$. Table 1 summarizes these findings. A significant difference was not shown between ACT scores and the experimental (M = 23.31, SD = 5.63) and control (M = 22.27, SD = 4.66) groups, $t(56) = .762, p < .449$. Table 2 summarizes these findings. Relationships were found among gender and those planning to attend college, $r(58) = -.31, p < .05$; gender and post-test scores, $r(58) = .28, p < .05$; ACT scores and pre-test measures, $r(58) = -.41, p < .01$. Table 3 summarizes these findings.

Table 1

The means and standard deviations of the ACT score and post-test scores for the experimental and control groups.

	Experimental			Control		
	N	M	SD	N	M	SD
ACT Score	29	23.3103	5.6322	29	22.2759	4.66673
Post Test Scores	29	23.3103	8.01384	29	30.5517	6.23118

Table 2

Independent Samples Test for the ACT score and Post-Test scores for the experimental and control groups.

	Experimental and Control Group		
	Sig.	t	df
ACT Score	.449	.762	56
Post-Test Scores	<.001**	-3.841	56

Table 3

Correlation Matrix of gender, students who are planning on attending college, pre-test total score, post-test total score and the ACT score.

Variables	1	2	3	4	5
1. Gender	___	-.306*	.251	.277*	.179
1. Plan on Attending College	-.306*	___	-.063	-.141	-.122
2. Pre-Test Total Score	.251	-.063	___	.660**	-.407**
3. Post-Test Total Score	.277 *	-.141	.660**	____	-.197
4. ACT Score	.179	-.122	-407	-.197	____

*Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

Discussion

The present study investigated the effects of relaxation techniques on test anxiety in high school students, specifically, on their ACT scores. Juniors in high school were taught two relaxation techniques; after which the treatment group reported a significant decrease in anxiety as compared to a group of their peers receiving no training. Participants in this study were from ages 16 to 19 years and results supported earlier findings that relaxation techniques can be learned and utilized successfully by children and young adults (Zaichkowsky & Zaichkowsky, 1984; Lohaus & Klein-Hessling, 2003). Results from this study suggested that while treatment and relaxation influenced post-test scores, as indicated in a previous study (Larson, et al., 2011) the treatment appeared to have no direct effect on participants ACT scores, therefore, the null hypothesis was not rejected. A limitation to this study that may also lend itself in explaining how these results were established may be attributed to the fact that this was a sub-sample of participants from an original study, as only a small number consented to release their ACT scores (Larson, et al., 2011). With that said, the independent samples t-test that was conducted utilizing post-test scores on the experimental and control groups, yielded positive results.

The correlational data has indicated that the relationship between gender and whether participants indicated any intention to proceed to college, has suggested that females had a higher tendency to indicate that they were going college as opposed to males, who had a lesser tendency to report this. Alongside this relationship, it can be noted that females also tended to report higher levels of anxiety on their post-test scores, whereas their male counterparts did not.

An interpretation of these findings suggest that females planning to go to college will have higher levels of anxiety regarding their performance on the ACT, due to their future goals of seeking acceptance into a college or university. This interpretation supports earlier theories that females tend to have higher anxiety in terms of seeking college entrance and therefore, supports the concept of making treatment modalities like relaxation and deep breathing available to students who are experiencing test anxiety (Altermatt & Kim, 2004).

The last correlational relationship found to be statistically significant involved ACT scores and pre-test scores. Those with high ACT scores tended to report lower levels of anxiety and those with low ACT scores tended to report higher levels of anxiety on their pre-test measures.

As it stands today, the National ACT Score Report (2010) clearly states that many of the students within the US, despite gender or any other influencing variables are still not ready for college upon graduating high school, based on average scores across states. According to the ACT college readiness standards, benchmark scores for each section of the test are determined to represent the criteria needed for students to suceed in post-secondary education. For example, a score of 18 on the English portion, a 22 on the mathematics portion, a 21 on the reading and a 24 on the science portion are what student ideally would need to make in order to be considered, "college ready." At the national level, 66% of students met or exceeded an 18 on the English portion; 43% met or exceeded a 22 on the mathematics portion; 52% met or exceeded a 21 on the reading portion and 29% met or exceeded a 24 on the science portion. Only 24% of students at the national level met or exceeded criteria in all four areas of the ACT's. In other words, 76% of students graduating from high school in 2010 were not ready for college, based on the ACT standards. Both males and females in the state of Illinois, had scores below the national average ACT college readiness scores (2010). This data is worth noting due to the fact that participants' average ACT scores between experimental and control groups were just barely above the national and state average ACT score.

The averages presented in this study are not robust and arguably not representative of the entire state of Illinois, however, this study suggests that with the combination of high stakes testing and test-anxiety, ACT scores have the potential to increase once effective treatment methods are developed and systematically implemented within high schools. Students in American public schools need interventions to combat the adverse behavioral, cognitive and physiological effects of high stakes testing (Carter, Williams, & Silverman, 2008). The increase in test anxiety among students may be attributed to the increase in distribution of high-stakes testing in American public schools (No Child Left Behind Act, 2002; Black, 2005). This higher anxiety can result in students becoming overly concerned with the consequences of failure (Spielberger & Vagg, 1995), thus adversely affecting their ability and desire to learn (Cheek, Bradley, Reynolds, & Coy, 2002).

It is unlikely that high-stakes testing will be eliminated or significantly reduced in the near future (No Child Left Behind Act, 2002; Triplett & Barksdale, 2005). Schools can play a role in addressing test anxiety by incorporating intervention programs such as relaxation training into the curriculum (Cheek, Bradley, Reynolds, & Coy, 2002). School counselors and teachers can have a scheduled time of day to teach students how to respond to physiological and

psychological responses to anxiety and stress through the utilization of relaxation training. The interventions discussed in this article are brief and not difficult for children to learn. These interventions and techniques can be implemented in the academic environment to mediate anxiety and can be generalized to life skills.

There is also little known of the direct effects that relaxation and deep breathing have on actual test scores. Not enough research emphasizes gender in the context of high stakes testing, however, the inclusion of this in any replication of relaxation and deep breathing treatment methods can be effectively incorporated into a study such as this. Further emphasis on the different methods of relaxation and deep breathing and their effectiveness with high stakes testing should be explored.

References

Act. (2010). Retrieved from http://www.act.org/

Act. National score report. (2010). Retrieved from
	http://www.act.org/news/data/10/pdf/profile/National2010.pdf?utm_campaign=cccr10&
	tm_source=profilereports&utm_medium=web

Altermatt, E., & Kim, M. (2004). Can anxiety explain sex differences in college entrance
	exam scores?. *Journal of College Admission*, (183), 6-11. Retrieved from EBSCO*host*.

American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders
	(Revised 4th ed.). Washington, DC: American Psychiatric Association.

Anxiety community. (2010). http://anxietyhelp.org/treatment/longterm_relaxation.html

Bernstein, D., Borkovec, T., Hazlett-Stevens, H. (2000). *New directions in progressive muscle
	relaxation training: A guidebook for helping professionals.* Westport, CT: Prager
	Publishers.

Black, S. (2005). Test anxiety. *American School Board Journal*, 192(6), 42-44. Retrieved from
	EBSCO*host*.

Bögels, S., Alden, L., Beidel, D., Clark, L., Pine, D., Stein, M., & Voncken, M. (2010). Social
	anxiety disorder: Questions and answers for the DSM-V. *Depression & Anxiety (1091-
	4269)*, 27(2), 168-189. doi:10.1002/da.20670

Bradley, R., McCraty, R., Atkinson, M., Tomasino, D., Daugherty, A., & Arguelles, L. (2010).
	Emotion self-regulation, psychophysiological coherence, and test anxiety: Results from
	an experiment using electrophysiological measures. *Applied Psychophysiology &
	Biofeedback*, 35(4), 261-283. doi:10.1007/s10484-010-9134-x

Carter, R., Williams, & Silverman, W.K. (2008). Cognitive and emotional facets of test anxiety
	in African American school children. *Cognition and Emotion*, 22 (3), 539-551.

Cheek, J., Bradley, L., Reynolds, J., & Coy, D. (2002). An intervention for helping
	elementary students reduce test anxiety. *Professional School Counseling*, 6(2), 162-165.

Detling, N. (2008). The effects of anxiety reduction techniques on anxiety and blood
	glucose control in adolescent athletes with type 1 diabetes. *Dissertation Abstracts
	International Section A*, 68, Retrieved from EBSCO*host*..

Driscoll, R. (2007). Westside test anxiety scale validation. *Online Submission*, Retrieved from
	EBSCO*host.*

Everson, H., Smodlaka, I., & Tobias, S. (1994). Exploring the relationship of test anxiety and
	metacognition on reading test performance: A cognitive analysis. *Anxiety, Stress &
	Coping: An International Journal*, 7(1), 85-96. doi:10.1080/10615809408248395

Ganesan, R. (2009). Management of slurred speech or speech distortion. *Indian Journal of
	Community Psychology*, 5(1), 42-49. Retrieved from EBSCOhost.

Grant, A. (1980). The effects of relaxation training on the test anxiety of public school students
	in grades nine through twelve. *Dissertation Abstracts International*, 41, Retrieved from
	EBSCO*host*.

Grimes, W., & Murdock, N. (1989). Social influence revisited: Effects of counselor influence on
	outcome variables. *Psychotherapy: Theory, Research, Practice, Training*, 26(4), 469-
	474. doi:10.1037/h0085465

Larson, H., Yoder, A., Brucker, S., Lee, J., Washburn, F, Perdieu, D, Polydore, C., & Rose, J.
	(2011). Effects of Relaxation and Deep-Breathing on High School Students: ACT Prep.
		Manuscript submitted for publication.

Lee, J. (1995). Information processing model of test anxiety and its effect on the speed-accuracy tradeoff (ACT or the Spreading Activation Explanation). Retrieved from EBSCOhost.

Lohaus, A., & Klein-Hessling, J. (2003). Relaxation in children: Effects of extended and intensified training. *Psychology & Health*, 18(2), 237-249. Retrieved from EBSCO*host*.

Lohman, D., & Lakin, J. (2009). Consistencies in sex differences on the cognitive abilities test across countries, grades, test forms, and cohorts. *British Journal of Educational Psychology*, 79(2), 389-407. Retrieved from EBSCO*host*.

Marks, G. (2008). Accounting for the gender gaps in student performance in reading and mathematics: Evidence from 31 countries. *Oxford Review of Education*, 34(1), 89-109. Retrieved from EBSCO*host*.

Mulvenon, S., Stegman, C., & Ritter, G. (2005). Test anxiety: A multifaceted study on the perceptions of teachers, principals, counselors, students, and parents. *International Journal of Testing*, 5(1), 37-61. doi:10.1207/s15327574ijt0501_4

No Child Left Behind Act. (2002, January 8). Washington, D.C.: Ed.gov, U.S Department of Education. Retrieved October 10, 2008, from http://www.ed.gov/policy/elsec/guid/states/index.html#aa

Onyeizugbo, E. (2010). Self-efficacy, gender and trait anxiety as moderators of test anxiety. *Electronic Journal of Research in Educational Psychology*, 8(1), 299-312. Retrieved from EBSCO*host*.

Putwain, D. (2007). Test anxiety in UK schoolchildren: Prevalence and demographic patterns. *British Journal of Educational Psychology*, 77(3), 579-593. doi:10.1348/000709906X161704

Putwain, D. (2008). Do examinations stakes moderate the test anxiety-examination performance relationship?. *Educational Psychology*, 28(2), 109-118. Retrieved from EBSCO*host*.

Putwain, D., Connors, L., & Symes, W. (2010). Do cognitive distortions mediate the test anxiety-examination performance relationship?. *Educational Psychology*, 30(1), 11-26. doi:10.1080/01443410903328866

Rasid, Z., & Parish, T. S. (1998). The effects of two types of relaxation training on students' levels of anxiety. *Adolescence*, 33(129), 99. Retrieved from EBSCO*host*.

Rice, K., Leever, B., Christopher, J., & Porter, J. (2006). Perfectionism, stress, and social (dis)connection: A short-term study of hopelessness, depression, and academic adjustment among honors students. *Journal of Counseling Psychology*, 53(4), 524-534. Retrieved from EBSCO*host*.

Roberts, J., & Bell, M. (2000). Sex differences on a mental rotation task: Variations in electroencephalogram hemispheric.. *Developmental Neuropsychology*, 17(2), 199. Retrieved from EBSCO*host*.

Sawyer Jr., T., & Hollis-Sawyer, L. (2005). Predicting stereotype threat, test anxiety, and cognitive ability test performance: An examination of three models. *International Journal of Testing*, 5(3), 225-246. doi:10.1207/s15327574ijt0503_3

Sekine, M., Chandola, T., Martikainen, P., Marmot, M., & Kagamimori, S. (2010). Sex differences in physical and mental functioning of Japanese civil servants: Explanations from work and family characteristics. *Social Science & Medicine*, 71(12), 2091-2099. doi:10.1016/j.socscimed.2010.09.031

Selkirk, L., Bouchey, H., & Eccles, J. (2011). Interactions among domain-specific expectancies, values, and gender: Predictors of test anxiety during early adolescence. *Journal of Early Adolescence*, 31(3), 361-389. doi:10.1177/0272431610363156

Spielberger, C.D., & Vagg, P.R. (1995). *Test Anxiety: Theory, assessment, and treatment.* pp. 197-215. Philadelphia, PA: Taylor & Francis.

Thorndike, E. L. (1914). *Educational psychology, Vol 3: Mental work and fatigue and individual differences and their causes*. New York, NY US: Teachers College. Retrieved from EBSCO*host*.

Triplett, C.F., & Barksdale, M.A. (2005). Third through sixth graders' perceptions of high stakes testing. Journal of Literacy Research, 37(2), 237-260.

Van de Gaer, E., Pustjens, H., Van Damme, J., & De Munter, A. (2009). School engagement and language achievement: A longitudinal study of gender differences across secondary school. *Merrill-Palmer Quarterly*, 55(4), 373-405. Retrieved from EBSCO*host*.

Wellesley Coll., M. n. (1992). How schools shortchange girls. A study of major findings on girls and education. The AAUW Report. Retrieved from EBSCO*host*.

Williams, J. (1992). Effects of test anxiety and self-concept on performance across curricular areas. Retrieved from EBSCOhost.

Zaichkowsky, L.B. & Zaichkowsky, L. D. (1984). The effects of a school-based relaxation training program on fourth grade children. *Journal of Clinical Child Psychology. 13*(1), 81-85.

Fun and Games in Higher Education

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Abstract

Sweeney (2007) called them the Net generation, with "wires running through their veins, kids who grew up on video games and the Web" (p. 1). They are impatient and goal-oriented; they hate busywork, learn by doing, and are used to instant feedback. Westman and Bouman (2006) referred to them as Generation G, for gaming. Many college professors think of simulation when they think of games, such as the "Darfur is Dying" website (Brown, 2007) or a business environment simulation (Cheung, 2005; Drake, Goldsmith, and Strachan, 2006). Simulation has also been used for teacher education to prepare teacher candidates for situations they may face in their roles. If traditional age and older college students use games for leisure, there are more options than simulation for a professor who wants to use games for learning. Perhaps the "pedagogy of gaming" goes too far, but modified versions of Trivial Pursuit, Jeopardy, and Monopoly, among others, have a place in the service of learning, review, or even assessment.

Introduction

Teachers spend considerable amount of time trying to engage students in the topics of the course in which the students are enrolled. "Games provide a natural motivation, are part of good teaching strategies, and, fortunately, there are many that can be used to help build concepts" (Brendzel, 2004, p. 32). This may be particularly true with current college students of traditional age.

Sweeney (2007) called them the Net generation, with "wires running through their veins, kids who grew up on video games and the Web" (p. B10). He identified this Net generation as being born between 1980 and 1994; they are now 16-30 years of age. Further, they are "impatient and goal-oriented. They hate busywork, learn by doing, and are used to instant feedback" (p. B10). Westman and Bouman (2006) referred to them as Generation G, for gaming.

Many college professors consider the intellectual work at the college level to be antithetical to having fun or playing games. Among college professors who would or do use games at the postsecondary level, most think of simulation when they think of games. These might include simulations such as the "Darfur is Dying" website (Brown, 2007), a business environment simulation (Cheung, 2005; Drake, Goldsmith, & Strachan, 2006), or a computer driven virtual experience (Barak & Nater, 2005; Clark & Smith, 2004). Simulation has also been used in teacher preparation programs for allowing teacher candidates to work toward understanding and solving complex social situations, such as a dysfunctional family crisis, in which there are roles from parents and advocates for the children to the children's teachers and psychologists, and even judges (Sotille & Brozik, 2004).

What about the use of real games, not just sophisticated role playing and technology-based simulation? There is a place for games in higher education classrooms. Modified versions of well known game formats, using game boards and commercial games, as well as original games add to the potential variety in a college professor's pedagogical arsenal.

Hudson and Bristow (2006) reported on the successful use of the "Who Wants to Be a Millionaire" televised game format with first-year undergraduate medical students. The game served as a formative assessment, which has been associated with learning gains, for students to understand and apply concepts about human growth, development, and physiology. Medical students reported relief that they could admit a lack of knowledge and lean on peers for collaboration to generate answers. They also noticed that the level of interaction was related to the level of enjoyment and that immediate feedback, rather than waiting for days or even weeks for test scores, was helpful to their learning.

Low level activities in the game genre have reportedly been successful. These activities include the use of word searches for generic code practice (Helser, 2003) and using playing cards to demonstrate organic chemistry principles (Welsh, 2003). The use of games has a place in nearly every discipline. Thomas and Austin (2005) detailed the use of games to stimulate grammar practice in English, while Franklin, Peat, & Lewis (2003) described games as a means of getting students to participate in discussion in biology classes. Ching and Lee (2005) devised a

game in which students walk on a circular path , directed by randomly chosen number cards, in order to show that there is a mathematical relationship determined by probability to the course of the path.

Games with Widespread Application

True/False

Take a page from Olympic scoring judges. Put two cards in the hands of each student. Prepare hot pink 3" by 5" cards by printing a 150 Times New Roman font F on them; use electric green 3" by 5" cards for T. In this way, you are using a convention with which students are already familiar, that of red for stop and green for go. If the lack of true colors is of concern, print the letters on card stock (65 pound) on actual red and green, with four to a page. The only drawback is the need for a paper cutter to separate the individual cards. The professor or other designated game host then reads statements to which each participant indicates agreement or disagreement through the use of holding up the intended card (see Figure 1 for sample questions from a variety of disciplines). If students forget and turn the letters towards themselves, the color is still readable. What if some students do not know the answer and merely observe what others are showing and join the crowd? This may not be of any import if the activity is for review, as the students who imitate may be learning the material as the activity ensues. The game host may call upon individual players to articulate why a statement is false and what would be needed to make the statement true.

Figure 1

Sample True or False Items

1. One of the systems of government in ancient Greece was the oligarchy.
2. In a concerto, one solo instrument is accompanied by an orchestra.
3. Theology, a reasoned discourse about God or the gods, is focused exclusively on Catholic teachings at Catholic colleges.
4. Professors who have high standards for student performance do not use variety in instructional methods.
5. Using game formats to provide review is an inappropriate use of college class time.
6. I frequently use methods other than lecture in my classes.
7. The Pythagorean theorem relates the length of the sides of a rectangle to one another.

The professor can easily observe if there are any students who are not participating at all. This type of activity provides the opportunity for every student to participate simultaneously. Imagine a typical college classroom. One voice is speaking. It might be the professor giving a lecture or a student giving a presentation. Even in a debate or panel format, only one person speaks at a time. Invariably, some members of the class do not speak at all in any given session. Some speak only rarely in an entire semester. Professors often encourage participation by giving credit towards the course grade for engaging in class participation. However, the format and the formality as well as the size of most classes prohibit full participation. Further, for students with certain learning styles or personal characteristics, the likelihood of participation is low. Introverts, for example, are more likely to listen, planning in their heads what they might say because they have trouble

thinking while speaking (Laney, 2002). Some even write their potential comments but, by the time they are ready, the moment for such a comment in the discussion has passed. The true/false game has the advantage of full participation for all types of learners.

Trivial Pursuit

Use the game board that comes with the commercial game. Determine categories specific to the course. Display those categories on a white board, black board, or tented index cards. Write questions in the categories or, perhaps more effectively, have students create questions in the course categories (See Figure 2 for sample categories and questions by discipline). If teams of students write questions for a single category, ensure that during the playing of the game, writing terms are redistributed to playing teams. At least on person from each team should be seated close enough to the game board to move the game pieces and collect the pieces of "pie." It may be necessary to allow only three questions per group before allowing the next team to take a turn if the game is for review and the students are well prepared. Research suggests that both writing questions and playing the game serve to reinforce learning.

Figure 2

Sample Items in the Field of Special Education

Vocabulary	Theorists	Language Arts Deficits	Mathematics Deficits	Social Skills Deficits
10 points **Q** Meaning to cut with scissors, hand write, or sew by hand **A** Fine motor skill	10 points **Q** Coined the term learning disabilities in 1963 **A** Sam Kirk	10 points **Q** Failure to gain consistent meaning from print **A** Dyslexia	10 points **Q** Persistent difficulties in math function **A** Dyscalculia	10 points **Q** One deficit that contributes to social misinterpretation **A** Inability to read tone of voice
20 points **Q** Meaning rote repetition of what has been heard **A** Echolalia	20 points **Q** Developed the first formal intelligence test **A** Alfred Binet	20 points **Q** Technique in which student and teacher read aloud simultaneously **A** Choral reading	20 points **Q** Technique that emphasizes practice in specific time segments **A** Constant time delay	20 points **Q** Technique by which student practices social skills in a protected setting **A** Role play
30 points **Q** Involving more than one sense **A** Multimodal or multisensory	30 points **Q** Developed raised bump system for people without sight **A** Louis Braille	30 points **Q** Technique in which student reads the same passage more than once **A** Repeated reading	30 points **Q** Learning problem that may result in inversions and reversals of numerals **A** Perception difficulties	30 points **Q** Uses schoolwide teaching of behavioral expectations **A** Positive behavioral support

Monopoly

        Without modification, Monopoly might serve the purposes of an economics, real estate, or finance professor. Consider the many alterable aspects of the game, however, and it is clear that adaptation to a variety of disciplines is possible. Community Chest and Chance cards can be created that are specific to a course's content, from social work issue to genetic mutations. The game board can be used simply as a trip, such as in the game of life, or it can be abandoned. Money has a potential in almost every discipline and may be used in a variety of ways to simulate expenditures and payments. Greenman (2003) reported on art students remaking classic games like Monopoly with realistic photographs and artwork.

Jeopardy

        A professor can use the main elements from Jeopardy (points, categories, levels of difficulty), which is in many ways the most versatile of the games described here, to teach or review almost any subject area. The teacher may or may not employ/enforce the traditional stipulation that the participant's answer must be in the question format and that the information on the board must be the answer. The professor determines how answerers are selected. Divide the class in half but arrange students so that all can view the central point in the middle. Provide a desk top or a flat-topped stool and set a thick marker in the middle. Call a contestant from each team forward. Both contestants place their hands behind their backs. The professor or game host reads the question. The contestant who both believes that he or she knows the answer and grabs the marker first answers the question. If the answer is correct, that contestant's team gets the points. These should be recorded publicly near the central location of play. If the contestant is not correct, the other contestant attempts to answer the question, without the question being repeated. If the second contestant does not provide the correct answer, the game host sends both contestants back to their teams, repeating the question one time. The contestant who had the marker first now consults with his or her team (it is clear now why all contestants are listening, even though only two are actually participating in the beginning) and provides an answer. It is a good strategy for the team to consult quietly to avoid providing information to the other team. If the first team is unsuccessful in obtaining the points, the second team, as a group effort, has the opportunity to provide the correct answer. If incorrect, the game host provides the answer. The next two contestants, one from each team, come forward to play. In this way, each student has an opportunity to act as an individual, as well as several opportunities to consult with team members; this set-up contributes to knowing, learning, and acquiring information about the content of the course. The team that receives points on the last question chooses the category and difficulty (number of points) for the next question. The game is over when all categories and levels of play are exhausted or when each "round" of students has had a chance to compete.

        Jeopardy has been used successfully for sign language review. The contestant from the team with the last earned points selects a category and a point value (difficulty level), the teacher signs a word or a phrase from the category and the contestant who grabs the marker first and says in English what the signed phrase means gets the points. The category titles may be obscure or clever as in the televised game ("You Filthy Animal" for animal words and phrases or "Food Fight" for meal words and phrases) or they may be straightforward ("Days of the Week," "Sports," etc.). Jeopardy has also been used for review of theorists, vocabulary, historical

periods, mathematical symbols (where the question is a flash card of a symbol), plot elements, and countless other categories that uniquely conform to the intent of a class or its professor.

Schmidt (2004) even provided a Power Point "Jeopardy" template (at http://www.jmu.edu/madison/teacher/jeopardy/jeopardy.htm). The template allows a professor to generate a self-directed version of the game that can be broadcast on the screen in the classroom. Another advantage of this version is the capacity to use it in conjunction with a Smart Board, this freeing the professor or the game host from a podium and permitting participants to simply touch the Smart Board to select a category and a level of play. There are downsides; creating hyperlinks to the homepage of the Power Point requires a good deal of work, and items are static. If a professor merely wrote on a whiteboard or chalkboard the titles of the categories and erased them as selected, the game would be less labor-intensive. Items could be generated and stored in simple Word documents that could be easily edited for another semester or section of a course. Alternatively, items can be recorded by hand on a sheet of paper and devised at intervals as the professor grades papers, sips coffee, or muses in the office.

Games for Dual Use

Teaching Teachers and Potential Teacher Use in Elementary and Secondary Classrooms

For professors in teacher education, games may also serve as models for use by preservice teachers with their classrooms of elementary and secondary students. The games herein described may lay the foundation for the teacher's repertory. Rotter (2004) noted the wonderful versatility of "Jeopardy!" for effective use with students with disabilities, both for motivation and for palatable repetition. Watson (2003) also reported on the successful use of games with students with disabilities, specifically using what Watson described as the "versatile" Magic Square (a mathematical grid such that the n numbers in all rows, all columns, and both diagonals add up to the same constant). Naylor (2005) advocated for the use of games in mathematics to increase motivation and participation by students of all levels of skill. Additional games may be added for variety. Teachers and students may create a game board specific to an area of study, for example, regarding ancient Egypt (Selvidge, 2006).

Learning vocabulary requires active involvement as any student who has copied the words for the week, rewritten their dictionary respelling, copied a definition (likely truncated), used them is sentences, passed the quiz (or maybe not), and then promptly forgotten the words will attest. Games, due to the active nature of playing, provide an antidote to the problem. Smith (2003) recommended a variety of games, including the well known "Charades" for teaching vocabulary. Another game is a Scavenger Hunt in which students roam the classroom, trying to make matches among index cards, some with the vocabulary words and others with the definitions, and free to use dictionaries, glossaries, and any other support. Then, students face one another in a large circle and each student who has made a successful match "teaches" the rest of the group about the word. Every student sees the word, sees the definition, and hears a classmate read and define each word, making this learning multisensory. Adding a social component (classmates are doing the talking, not the teacher) is appealing to many students and results in better understanding and longer retention of the vocabulary. Smith (2003) also suggested the use of storytelling, employing the vocabulary under study; cooperative learning

techniques, by which students work in small groups to teach one another vocabulary and use it meaningfully; and story development, where students each use a vocabulary word to advance a story told in a chain fashion, with each student adding another piece to the story until all of the vocabulary words have been used and the story has reached closure.

While advocating for the use of simply constructed games, simulation should still remain a choice. Okula (2003) wrote about the many positive outcomes of the "stock market game," that has been used by middle school, high school, and college teachers to engage their students in understanding the stock market at various levels of sophistication with only simulated risk. Marek and Howell (2006) reviewed a number of games, including simulation and board games, as well as discovery games, in the subject of science. Professors in teacher education can create games to teach or review teacher education content while their teacher candidate students are scheming ways to adapt the games to elementary and secondary curriculum content for later use in the classrooms.

Caution must also be exercised with competition. Competition is only reasonable among reasonably matched players, each of whom has the legitimate potential for winning. When one player is significantly better prepared or more skilled than the other, the game is no longer fun to play or even to watch. Professors can overcome a poor match by placing students in teams of mixed ability, or through thorough preparation of all of the students. Another idea is to have students engage is a game with no winner or actual conclusion, for instance, with a game board that has no clear beginning or end in a game with no points. Once all students have learned or reviewed a particular area of study with this no-risk game, students are regrouped by the ability or mastery of the area of study (determined by the professor). The players now engage in a competitive tournament, with the most able students competing with one another to be the first to answer correctly when the professor poses a question. For the tournament, the professor may employ touch lamps, available at department stores, hardware stores, home improvement stores, or drug stores. A person in the group who first hits the lamp may answer the question. If correct, points are awarded to the original mixed ability team on which that player served. If incorrect, the question is repeated and another player in the same group may hit the lamp and answer the question. The next question, less sophisticated or complex, is posed the next group of students, who are of middling ability or skill on the subject. The next question, even less complex, is posed to the next group of less skilled students. In this way, students are only competing against others of like ability or skill, where presumably each has a reasonable chance to be successful with the difficulty level of the question posed.

However, in order to generate accountability and active participation in the first round with the noncompetitive game, each player takes points won in the tournament back to the mixed ability practice team. The high ability student on the mixed team now has a motivation for ensuring that the others on the team also learn the information, rather than just doing the work to "get it over with" and ensuring the best quality for a grade. There is an incentive for each member of the original team to be the one who answers correctly at the tournament level. Students may report their original team membership as they are awarded points during the tournament or each may carry a tented index card with the number or name of the original team recorded on it for ease of scoring. Scores should be recorded at a public location, central to playing the tournament.

Games alone would not provide sufficient introduction of new information to learners. The ideas here are not intended to replace instruction. A professor or teacher seeks to have games as part of a pedagogical repertory, along with other components. Features such as game design, content format, team membership, competition or cooperation, and time required are areas of consideration for the teacher or professor. Board games, card games, and computer games and simulations may serve an instructional purpose. Students at all levels of education complain about school being boring. Especially for Generation G (for gaming) and their successors, adding games to a rich instructional plan may add fun and success for both teachers and students. Perhaps the "pedagogy of gaming" goes too far, but modified versions of Trivial Pursuit, Jeopardy, and Monopoly, among others, have a place in the service of learning, review, or even assessment.

References

Barak, P., & Nater, E. A. (2005). The virtual museum of minerals and molecules: Molecular visualization in a virtual hands-on museum. *Journal of Natural Resources and Life Sciences Education, 34*, 67.

Brendzel, S. (2004). Games that teach. *Science Scope, 27*(8), 32-33.

Brown, J. G. (2007). Teaching about genocide in a new millennium. *Social Education, 71*(1), 21-23.

Cheung, S. L. (2005). A classroom entry and exit game of supply with price-taking firms. *Journal of Economic Education, 36*(4), 358.

Ching, W-K., & Lee, M. S. (2005). A random walk on a circular path. *International Journal of Mathematical Education in Science & Technology, 36*(6), 680-683.

Clark, S. & Smith, G. B. (2004). Outbreak! Teaching clinical and diagnostic microbiology methodologies with an interactive online game. *Journal of College Science Teaching, 34*(1), 30-33.

Drake, R., Goldsmith, G., & Strachan, R. (2006). A novel approach to teaching teamwork. *Teaching in Higher Education, 11*(1), 33-46.

Franklin, S., Peat, M., & Lewis, A. (2003). Non-traditional interventions to stimulate discussion: The use of games and puzzles. *Journal of Biological Education, 37*(2), 79.

Greenman, G. (2003). Playing games with art. *Arts & Activities, 133*(2), 20-21.

Helser, T. L. (2003). Terminology: Four puzzles from one wordsearch. *Journal of Chemical Education, 80*(4), 414-416.

Hudson, J. N., & Bristow, D. R. (2006). Formative assessment can be fun as well as educational. *Advances in Physiology Education, 30*(1), 33-37.

Laney, M. O. (2002). *The introvert advantage: How to thrive in an extrovert world*. New York: Workman Publishing Group.

Marek, E., & Howell, B. (2006). Game time! *Science and Children, 44*(3), 48-50.

Naylor, M. (2005). Name games: Is it all in the name? Play these fun math games with your students and find out! *Teaching Pre K-8, 36*(1), 48, 50.

Okula, S. (2003). Stock market savvy. *Keying In, 14*(1), 17-26.

Rotter, K. (2004). Modifying "Jeopardy!" games to benefit all students. *Teaching Exceptional Children, 36*(3), 58-62.

Schmidt, M. (2004). *Educational resources for teachers: PowerPoint Jeopardy*. James Madison Center of James Madison University. Retrieved on December 31, 2010 from http://webcache.googleusercontent.com/search?q=cache:14IozVNVPGIJ:www.jmu.edu/madison/teacher/jeopardy/jeopardy.htm+jeopardy+powerpoint+template&cd=1&hl=en&ct=clnk&gl=us&client=firefox-a

Selvidge, E. (2006). Journey to Egypt: A board game. *Montessori Life, 18*(4), 36-39.

Smith, C. B. (2003). *Successful techniques of vocabulary*. Washington, DC: Institute of Education Sciences.

Sottile, J., & Brozik, D. (2004). *The use of simulations in a teacher education program: The impact on student development. A critical review*. Paper presented at the 2004 Hawaii International Conference On Education (HICE). Honolulu, HI.

Sweeney, R. T. (2007). How the new generation of well-wired multitaskers is changing campus culture. *Chronicle of Higher Education, 53*(18), B10-B15.

Thomas, K. M., & Austin, M. (2005). Fun with fundamentals: Games and electronic activities to reinforce grammar in the college writing classroom. *Teaching English in the Two-Year College, 33*(1), 62-69.

Watson, G. A. (2003). The versatile magic square. *Mathematics Teaching in the Middle School, 8*(5), 252-255.

Welsh, M. J. (2003). Organic functional group playing card deck. *Journal of Chemical Education, 80*(4), 426-427.

Westman, C., & Bouman, P. (2006). *Gamers go to college*. Washington, DC: American Association of Collegiate Registrars.

A Comparative Analysis of Two Methods for Guiding Discussions Surrounding Controversial and Unresolved Topics

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Abstract

Debates, a popular classroom method, elicit students' participation and critical thinking. Debates' focus of winning, at times, generates arguments. Constructive controversy, a researched-based methodological alternative, similarly facilitates students' engagement and critical thinking while also inventively diminishing arguments through cooperative negotiation (Johnson & Johnson, 2009). The author examines both methods' impact on students' engagement, students' thinking, and the dialogues' productivity. Three findings and three educationally significant insights emerged.

As any educator can attest, conflicts and controversy emerge within every school's classrooms and social settings. David Johnson and Roger Johnson (2007, 2009) made the case that teachers can harness intellectual conflict for various educational benefits. Researchers have thoroughly examined debates, which are widely popular (California's High School Speech Association's Curriculum Committee, 2004; Meany & Shuster, 2005). As the quote in the title demonstrates, however, debates can elicit antagonism and "generate more heat than light" (Hess, 2009). Johnson and Johnson (2007, 2009) characterized constructive controversy, a research-based social psychology theory, as the instructional procedures designed to produce and channel intellectual conflict to positively impact students' learning, students' engagement, and productive dialogue. This research paper is a comparative analysis of debates and constructive controversy, two approaches that compare and contrast in interesting ways.

The pedagogical basis for both debates and constructive controversy are student-led inquiry, critical analyses of evidence, and dialogic negotiation. Researchers have documented the positive learning outcomes associated with student-led inquiry (Smith & Wilhelm, 2006; Wineburg, 2001), critical analysis (Anderson & Krathwohl, 2001; Zemelman, Daniels, & Hyde, 1998), and dialogic negotiation (Laverty & Gregory, 2007; Tobin, 2000). Since American students live and will eventually participate in a democratic society, researchers argue that the thinking skills associated with debates and constructive controversy are especially important within social studies curriculums (Dewey, 1933; Hess, 2009; Zinn & Macedo, 2005). These two approaches are also philosophically quite different.

Debates are highly competitive, much like athletic contests (California's High School Speech Association's Curriculum Committee, 2004; Meany & Shuster, 2005). Using a pre-selected topic and knowledge perceived as fixed, the winning side constructs a narrative through logic and evidence that both amplifies their own position and reduces the opponents' logic and evidence, thereby diminishing that perspective (Laverty & Gregory, 2007; Meany & Shuster, 2005). Through a structured organization for the debate, participants develop strong work ethics, public speaking skills, and pride in winning (California's High School Speech Association's Curriculum Committee, 2004; Meany & Shuster, 2005). Researchers criticize debate strategies because antagonism frequently emerges as students relinquish open-mindedness in a quest for winning (Hess, 2009; Johnson & Johnson, 2007; Slaikev & Hasson, 1998; Voss & Means, 1991). Johnson and Johnson (2007) suggest this is a result of students' rigid advocacy for their original position, which they feel is misunderstood or unfairly criticized.

Constructive controversy, which focuses students' attention on the intellectual conflict surrounding a complex, relevant, and yet unresolved issue, is more of a discussion than a debate (Johnson & Johnson, 2009). During a constructive controversy unit, students select a relevant topic, actively construct a perspective through research, employ evidence and persuasive logic to express a position during a discussion, and challenge only specious evidence and faulty logic of the contrasting position (Johnson & Johnson, 2007). Through a flexible organization, students cooperatively reconceptualize the discussion, or seek common ground between two seemingly disparate perspectives and attempt to construct a third pathway (Ibid.). An exploratory activity such as this elicits students' "epistemic curiosity" based on meticulous and open-minded

examination (Johnson & Johnson, 2009, p. 41). The constructive controversy method does *not* subscribe to the premise that there is no "truth" but does hold that perspectives are both socially constructed and adaptable if new (and meaningful) evidence emerges. It does not imply that any third pathway is better than the original two or that finding some agreement is better than standing on one's principles. Nor does it suggest knowledge is less important than thinking or negotiation. During a constructive controversy discussion, students' use of knowledge forms the basis for their thinking and negotiations (Johnson & Johnson, 2009).

Key differences between the two methods include, but are not limited to, predetermined topics compared to students' selection of topic, fixed knowledge compared to students' construction of knowledge, structured debate patterns compared to a flexible discussions, and competitive (or antagonistic) debate strategies that crown winners compared to constructive discussions resulting in identification of common ground and exploration of new paths. With each difference, the former represents debates and the latter embodies constructive controversy. Contemporary research appears to support the latter. Educational researchers argue the pedagogical effectiveness of enabling students to select a consequential topic, construct knowledge, and then discuss multiple perspectives (Bransford, Brown, & Cocking, 2000; Bruner, 1990). Researchers interested in preadolescents' cognition and engagement argue exploratory, individualized, and relevant curricula using emergent, fluid methodology fits within the middle school philosophy (National Middle School Association, 2003; Wiles, Bondi, & Wiles, 2006).

This paper compares and contrasts constructive controversy strategies with typical debate-style methods within a current events unit in a 7th grade middle school social studies curriculum. This paper measures their respective impact on students' engagement, students' thinking, and the discussion's productivity.

Three findings and three educationally significant insights emerged. The three findings, based on data yielded from this study, suggest that constructive controversy more fully engaged students, more effectively challenged students' thinking, and more productively stimulated healthy discussion than debates. Three insights, based on the researcher's observations and inferences, are that constructive controversy fits particularly well within social studies curricula, coheres suitably within a middle school philosophy, and while Johnson and Johnson (2009) suggested a need for "sufficient proceduralization" (read: teacher training), this is not necessary.

To demonstrate such findings, this paper is broken down into four sections. The Literature Review examines the divergent opinions regarding teachers' roles in rousing intellectual conflict in the classroom. In this section, the researcher applies the research literature to justify his decision to employ what others might perceive to be a divisive topic and contentious pedagogy.

The Methodology section describes how data were gathered, coded, and interpreted. The researcher details specific methods employed for debates and then constructive controversy discussions. This section also specifies the debate and discussion topics.

The Findings section describes what happened during the debates and then within the constructive controversy discussions. This section reports interpreted data regarding students'

engagement, students' thinking, and the discussions productivity. To do so, the researcher compares and contrasts the two methods' impact on the three aforementioned findings.

Finally, the Discussion section examines the reasons for the success of constructive controversy, as demonstrated in the Findings section. It also explores the three previously mentioned insights, specifically those relevant to constructive controversy's connection to social studies curricula, middle school philosophy, and the relevance of teacher training. The researcher will argue these insights are quite meaningful for both secondary social studies educators and middle school teachers of any curricula seeking research-based methods to elicit students' engagement, challenge students' thinking, and guide productive discussions about contentious material.

Research Literature

Many educators perceive intellectual conflict to be divisive and educationally unnecessary for various reasons. There is a strong potential for students' stress, anxiety, and social hostility (Chiu & Khoo, 2003; Johnson & Johnson, 2009; Slaikev & Hasson, 1998). Lively discussions can result in a loss of classroom control (Parker, 2006a). High-stakes accountability demands curricular coverage over content depth (Johnson & Johnson, 2009). Students might compromise open-mindedness for "winning" when debating (Hess, 2009; Laverty & Gregory, 2007; Voss & Means, 1991). Teachers are "insufficiently proceduralized," or not competently trained to manage intellectual conflicts (Johnson & Johnson, 2009). For these reasons, few educators purposefully stimulate intellectual conflict intellectual conflicts within the classroom (DeCecco & Richards, 1974; Hess, 2009; Johnson & Johnson, 2009).

In contrast and for various reasons, many researchers and educators purposefully elicit intellectual conflict. Johnson, Johnson, and Johnson (1976) made the case that intellectual conflict can positively affect students' learning and engagement. Pearce (2002) argued structured dialogic interactions over disputed but relevant content could enhance students' criticality. Hess (2009) contended that to deprive students of this opportunity denies them skills necessary for living within a democratic society. Through discussions about controversial issues, many education researchers made the case for expanded students' empathy, recognition of diverse views, and intense engagement (Cullinan, Dove, Estice, & Lanka, 2008; Laverty & Gregory, 2007; Parker, 2006b). Dewey (1938) would characterize students' purposeful use of knowledge as an intelligent activity. Including these positive educational outcomes, researchers of both debates (California's High School Speech Association's Curriculum Committee, 2004; Meany & Shuster, 2005) and constructive controversy (Johnson & Johnson, 2005, 2007, & 2009) have similar pedagogical goals. They aim to motivate students, focus attention, facilitate high levels of criticality and cognition, improve conceptualization, enhance recognition of differing perspectives, and stimulate divergent thinking. However, as mentioned in the paper's introduction, key differences between two methods necessitate a comparative analysis.

While acknowledging the potential for divisiveness, the researcher implemented debates and constructive controversy discussions within a current events unit in a middle school classroom.

Methods

This section will contextualize the methodological implementation of debates and constructive controversy within a current events unit in a social studies curriculum. For clarity, this section contains three parts. The first part details the methods employed for data collection, coding, and interpretation. The second part describes the methods employed for the debates and the specific topics that students researched and debated. The third part details the strategies employed for constructive controversy discussions and the specific topics that students researched and discussed.

Data Collection, Coding, and Interpretation

There were two data collection steps to measure each method's impact on students' engagement, students' thinking, and the productivity of the dialogue. First, all students engaged in one of two debates, each an emergent issue within American current events. Second, the same students, one month later, took part in one of two constructive controversy discussions. During each phase, students' dialogues were videotaped, transcribed, coded, and analyzed. Twenty-three students were present during both debates and constructive controversy discussions. (Students who were not participants in a debate or a discussion watched respectfully.)

To determine students' engagement, the researcher measured participation levels by tallying each student's dialogic contribution(s). The researcher ignored the content and substance of the contributions, which were highly variable and contained within analysis of students' thinking. The researcher then compiled a graph for both the debate and constructive controversy discussion to report the percent of students who participated at least once (see figure 1). He then compiled a graph to report the frequency of students' participation (see figure 2). The researcher judged frequency of participation to be a better indication of engagement.

To examine students' thinking, the researcher coded students' answers based on three categories. The researcher scrutinized students' answers to determine if they remained rational (or seemed purposefully argumentative), used logic (or specious claims), and employed evidence (or did not). To justify these categories as indicative of students thinking, one cannot likely think clearly if one does not remain rational, one cannot likely think with clarity if one does not employ sound logic, and one cannot likely think with complexity if one does not employ evidence. The researcher then compiled a graph for both debates and constructive controversy discussions to report these three categories of students' thinking (see figure 3).

To ascertain the productivity of the debate and the constructive controversy discussion, the researcher compiled the data from the aforementioned variables. From this summative analysis, the researcher determined which method most positively stimulated a healthy discussion.

Debate-Style Methodology and Topics

Various researchers (California's High School Speech Association's Curriculum Committee, 2004; Meany & Shuster, 2005) and the Middle School Public Debate Program

(http://www.middleschooldebate.com/index.htm) encourage the teacher to select age appropriate, challenging, uncomplicated, contentious topics (without students' input) that, when possible, connects meaningfully with the curriculum. They suggest an organizational arrangement whereby one group is termed the proposition group and the other is the opposition group. The format follows a pattern, divided into five-minute segments, whereby one group follows the other multiple times. In the first section, the speakers make an argument and provide evidence. In each subsequent section, the speakers follow suit while also directly or indirectly refuting the opposing group's argument and evidence.

During the two debates, one group researched the history of and current event materials on same-sex marriage and the other researched the history of and current event materials on the death penalty. Each group deliberated the constitutionality and legitimacy of a federal law on each topic. (For purposes of brevity, a list of case law, current event articles, and internet resources is not included.)

Constructive Controversy Methodology and Topics

Johnson and Johnson (2007, 2009) created a methodology that enables students' discussions of a complex but unresolved conflict. To facilitate a productive discussion, constructive controversy employs unique strategies that advance students' criticality and reasoning skills while seeking to diminish antagonism. This methodology has six parts.

The teacher first asks a complex central theme question (i.e. "Is civil disobedience in a democracy constructive or destructive?"). To learn relevant background information, students examine various primary historical documents related to the central theme question.

Next, the teacher assigns students a position. The students individually research, organize information, and then work as a group to construct a presentation.

In the third step, students use evidence and logic to express their assigned position to the opposition group. At this time, students in the opposition group carefully listen, seek to understand the rival perspective, and, when necessary, ask clarifying questions. The opposition group then presents their perspective as the opponents listen, seek to understand the perspective, and ask clarifying questions. This step enables each group to advance their position while gaining a comprehensive understanding of the opposing position.

In the fourth step, students candidly discuss the issue. They advance their perspective, use evidence and logic to comment on the opposing position, and rebut critiques. This step enables students to better comprehend the divisions between the two divergent perspectives.

In the fifth step, students reverse perspectives and present their opponents' position (Johnson & Johnson, 2009). This step facilitates students' understandings of the evidence and logic of both positions by purposefully forcing them to think beyond their original perspective.

In the final step, students reconceptualize the issue by deliberately working beyond their original perspective. In this step, students first identify common ground between the two

perspectives and then seek to create a mutually agreed-upon new position. Reconceptualization is not a compromise but a cooperatively constructed third alternative; it is a form of political triangulation and is tantamount to intellectual invention (Arts & Verschuren, 1999). Researchers argue it to be the capstone of criticality (Anderson & Krathwohl, 2001; Johnson & Johnson, 2009). Students may not fully complete this final step. Students demonstrate completion of this final step through a detailed, evidence-based presentation of this reconceptualized third position.

Johnson and Johnson (2009, p. 41-42) asserted these methods forced students away from concurrence seeking, where groups cooperate to avoid conflict; debate, where groups compete to "win" an argument through refutation and rebuttal of evidence and reasoning; and individualistic efforts, where students independently study multiple perspectives but do not allow their initial conclusion to be challenged.

There were two groups of constructive controversy discussions, one researched the history of and current event materials on abortion and the other researched the history of and current event materials on the medicinal marijuana. Each group deliberated the constitutionality and legitimacy of a federal law on each topic. (For purposes of brevity, a list of case law, current event articles, and internet resources is not included.)

Findings

This section reports and interprets what happened during the debates and the constructive controversy discussions. (While there were two debates and two discussions, the researcher combined the numbers to comparatively analyze the two methods.) This section is broken down into three subsections: students' engagement, students' thinking, and the productivity of the methods. The researcher will compare and contrast each method's impact on the three areas. The reader will clearly see that, upon close inspection, constructive controversy appeared to more effectively elicit students' engagement, students' thinking, and a productive discussion.

Students' Engagement

To determine students' level of engagement during the debates and discussions, the researcher used the transcript from the dialogue to tally students' dialogic contribution(s). He then combined the results. As mentioned above, the researcher ignored each comment's content and substance, which were highly variable and examined within analyses of students' thinking.

Students' Participation (figure 1) represents the proportion of students who commented at least once. This percentage was quite high in both debates and in both constructive controversy discussions.

Students' Participation
(Figure 1)
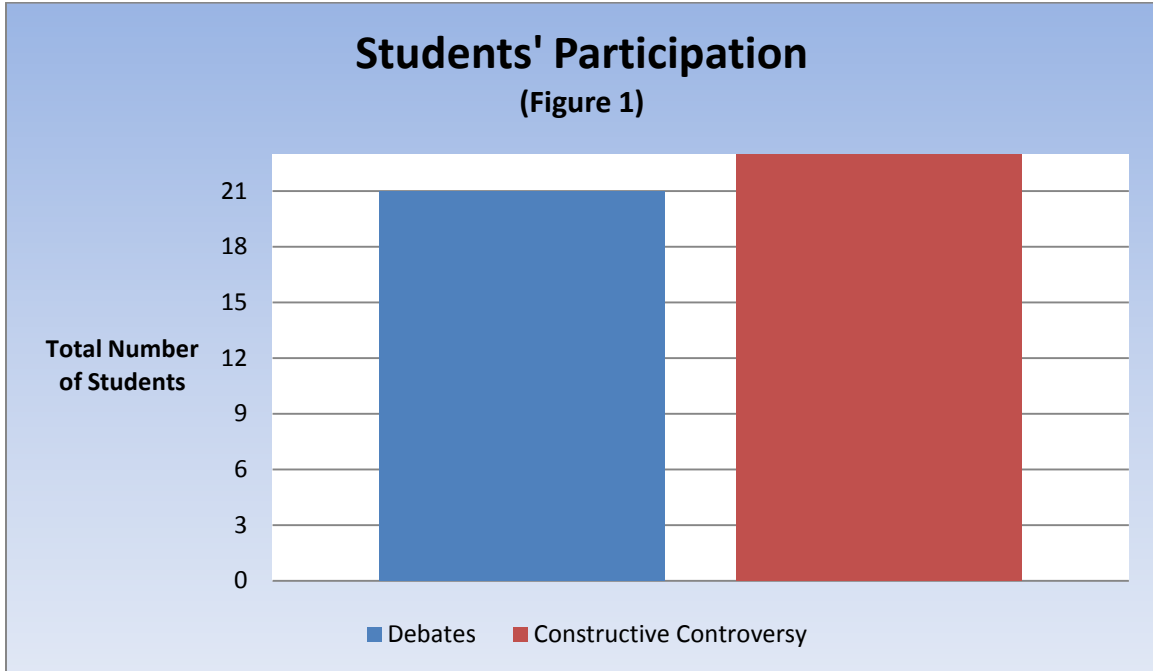
The results in Students' Participation (figure 1) demonstrate that both methods elicited high levels of students' participation. However, when one closely scrutinizes the data, a more complicated picture emerges. To participate is to contribute, but this does not reveal the level of engagement.
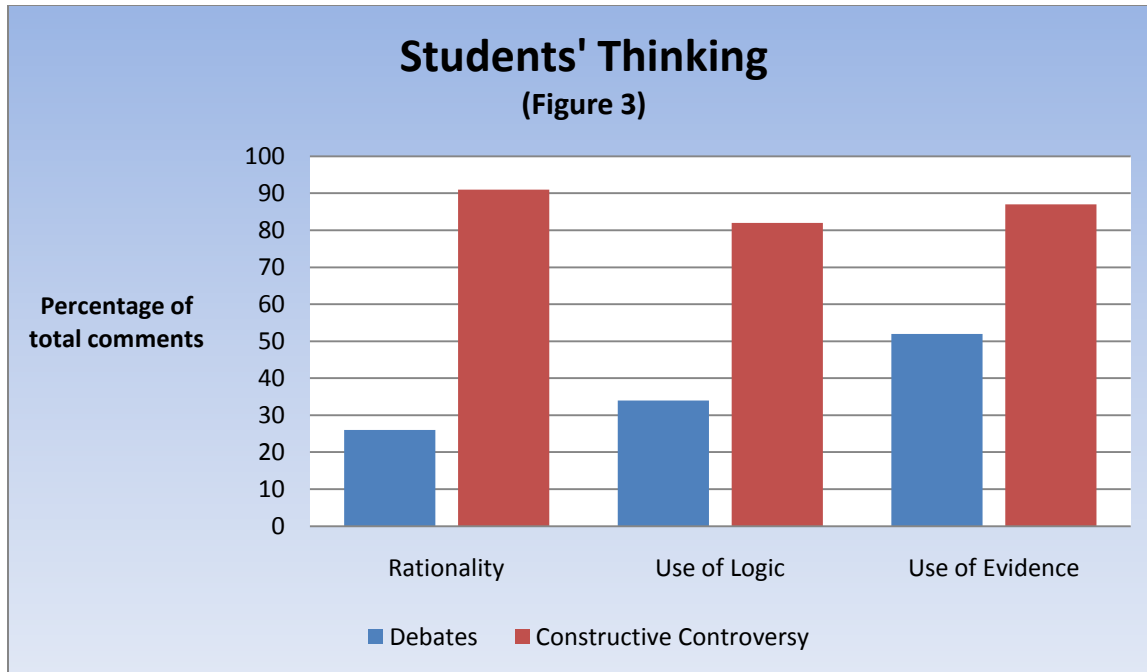
To describe a student as engaged, that student cannot simply say one thing, that student must participate frequently. Students' Engagement (figure 2) represents the number of times the students contributed. The graph reports students who contributed infrequently (0-2 times), somewhat frequently (3-5 times), and quite frequently (6 times or more). (Student totals add up to 23.)

Students' Engagement
(Figure 2)
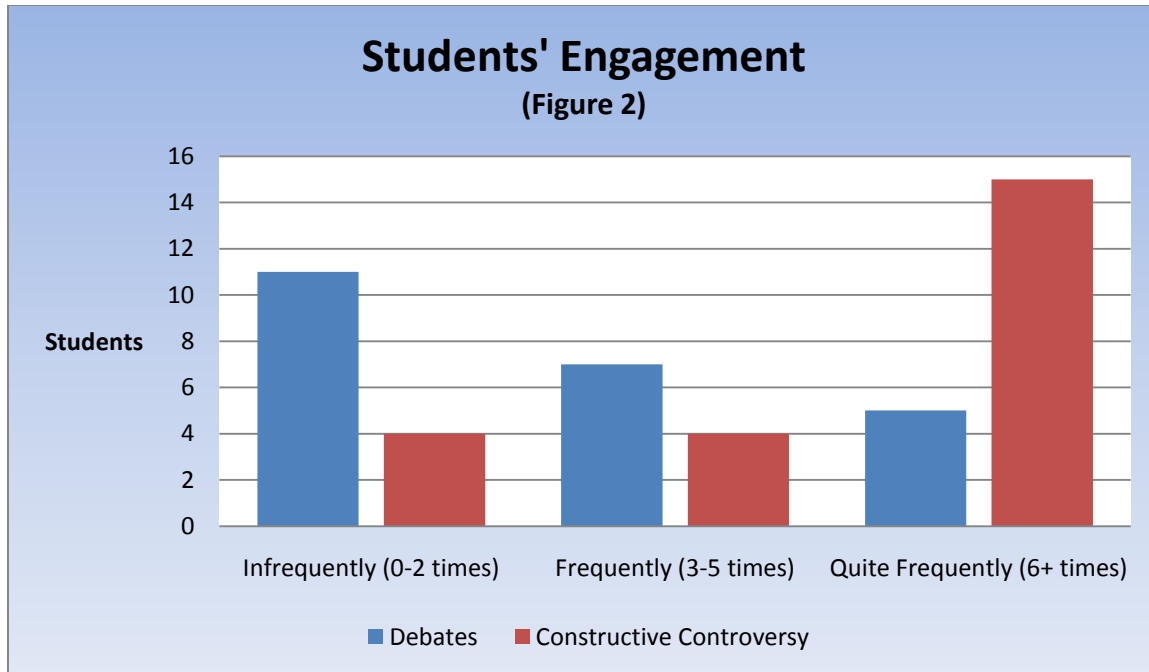
The data within Students' Engagement (figure 2) report frequency of students' participation. This is a measure of the quality of students' participation, or engagement, because it reveals the variable of regularity, which Students' Participation (figure 1) could not. The data demonstrate that more students' spoke far more frequently during the constructive controversy discussion than during the debate. In fact, three times as many students spoke "quite frequently" during the constructive controversy discussions than during the debates.   Further, more than three times as many students spoke "infrequently" during the debates than the constructive controversy discussions. The data reveal that constructive controversy more fully engaged students.

Students' Thinking

To more accurately assess how students' participated, the researcher examined their thinking. The researcher judged students' thinking in three parts: disposition, reason, and evidentiary support. In short, the researcher determined if they remained rational (or seemed purposefully argumentative), used logic (or specious claims), and employed evidence (or did not). The researcher then created Students' Thinking (figure 3), which combined data from both debates and both constructive controversy discussions, to report students' rationality, use of logic, and employment of evidence.

Students' Thinking
(Figure 3)

Percentage of total comments

Category	Debates	Constructive Controversy
Rationality	26	91
Use of Logic	34	82
Use of Evidence	52	87

■ Debates ■ Constructive Controversy

Whereas Students' Engagement (figure 2) measured the quality of students' participation (and figure 1 simply reported participation), Students' Thinking (figure 3) measured the quality of students' thinking. A cursory examination of the data reveal that during the constructive controversy discussions more than 80% of the students' comments were rational, employed logic, and utilized evidence. This graph reveals that constructive controversy methodology elicited a higher quality of students' thinking in every measurable way. Further, it was only in the "use of evidence" measure that constructive controversy methodology did not more than double the results from debate methodology.

While the data in Students' Thinking (figure 3) demonstrably indicate the success of constructive controversy to elicit all three variables, when one examines the data in the inverse it is more revealing. The data uncover that, during debates, 76% of students struggled to maintain a rational disposition, 66% of students could not sufficiently rely on logic, and 48% did not rely on evidence. The data support Hess's (2009) argument that debates can elicit antagonism and "generate more heat than light."

Dialogues' Productivity

To ascertain the productivity of the debate and the constructive controversy discussion, the researcher examined data from all three graphs. From this summative analysis, the researcher determined that in no area did the debate method better the constructive controversy method. Students' Participation (figure 1) was the only variable in which results for the debates were close to those of constructive controversy. However, closer inspection of the data (Students' Engagement, figure 2) revealed students' engagement (read: quality of participation) was still far better during constructive controversy discussions. Further, within Students' Thinking (figure 3), results from constructive controversy far surpassed results from debates

during all three measures. For these reasons, it appears that constructive controversy methodology elicited more productive dialogues than the debate-style strategy.

The findings, while certainly impressive, are not strong enough to claim conclusively that constructive controversy is a better strategy than debate. The only conclusions one can draw is that in this context, at this time, and with these students, constructive controversy appeared to be the better method for eliciting students' engagement, challenging students' thinking, and facilitating productive dialogues. The question then is why was it better?

Discussion

Reflecting upon what happened during this research, and in an attempt to explain why constructive controversy resulted in stronger student-participation, more cogent expressions of students' thinking, and a more productive discussion, the researcher offers one conclusion that has multiple (and related) parts, each based on Johnson and Johnson's (2007, 2009) research findings and Hess's (2009) claims.

The constructive controversy method cognitively challenged students to rely on rational disposition, logic, and use of evidence in ways that debates did not. Students in both debates focused on winning an argument, as most rigidly advocated for their original position. Some students tried to better the opponent through verbosity or antagonism (as evidenced in figure 3), which caused others to stop contributing (as evidenced in figure 2). Hess (2009) warned against both outcomes.

During constructive controversy, however, specious claims and argumentative statements were rare (as evidenced in figure 3). Since these two dialogic activities were with the same students and separated only by one month, it is reasonable to argue the absence of specious claims and argumentative statements during constructive controversy were results from aspects provided within constructive controversy methodology that debate methodology did not.

Johnson and Johnson's (2009) constructive controversy methodology required that students' restate the others' perspective (constructive controversy's fifth step) and work towards reconceptualization (the sixth and final step). In the fifth step, when students' reversed positions and presented their opponents' perspective, they demonstrated – as much to their opponents as to the researcher or themselves – a clearer understanding of both positions. Consequently, the emotion of the discussion appeared to lessen as students focused more on the topic, employed rational dispositions, used logic, and utilized evidence (as evidenced in figure 3). As a result, students ably reconceptualized the issue through deliberation and negotiation, each of which were extensions of rationality, logic, and evidence usage. For these reasons, constructive controversy methodology enabled students to want to participate (figure 2) and rely on more constructive forms of thinking (figure 3), which resulted in healthier and more productive discussions than those generated during the debates.

One cannot overlook, however, that debates preceded constructive controversy. Students certainly, with experience and time, would improve their ability to employ evidence. This skill is not likely dependent upon their emotional and cognitive development. Rationality and logical

thought are far more likely to be dependent upon emotional and cognitive maturation, which one month of spacing clearly did not provide (Wiles, Bondi, & Wiles, 2006). In other words, adolescents, known for their impulsivity, irrationality, and at times belligerence (Ibid.), would not likely on their own within a month release a propensity to be argumentative or avoid specious claims, given their tendencies to do both excessively during debates. Stated differently, the adolescents would not likely independently and in a month's time develop a rational disposition and employ more readily the use of logic, which the data in figure 3 indicated. For these reasons, one can reasonably assert the method for discussion likely impacted students' behaviors to a greater degree than a second contentious discussion.

While the research project focused on students' engagement, students' thinking, and the dialogue's productivity, the researcher noted other significant discoveries. Three insights emerged from the research project, specifically related to constructive controversy's connection to social studies curricula, its coherence with the a middle school philosophy, and the relevance of teacher training. These insights, while speculative, are meaningful.

Constructive controversy fits particularly well within a social studies curriculum. Citizens in a democratic society must learn to critically evaluate complex and unresolved situations using multiple data sources (e.g. Dewey, 1933; Hess, 2009; Johnson & Johnson, 2005; Zinn & Macedo, 2005). Sparking an intellectual conflict may be potentially divisive (Chiu & Khoo, 2003), there is a potentiality for students' stress, anxiety, and/or social hostility (Johnson & Johnson, 2009; Slaikev & Hasson, 1998), and lively discussions can cause teachers to lose control of the classroom (Parker, 2006a). However, students in a democratic society must also learn how to constructively engage those with divergent beliefs in a healthy discussion to dialogically negotiate new positions (Hess, 2009; Johnson & Johnson, 2005). For these reasons, constructive controversy fits specifically well within the social studies.

This research project's findings suggest that constructive controversy distinctively coheres with the middle school philosophy. Researchers interested in middle schools suggest curricula that are exploratory, emergent, content-rich, individualized, and deemed meaningful by pre-adolescents and adolescents (Lindquist, 1997; National Middle School Association, 2003). Further, middle school researchers encourage middle school teachers to employ engaging methodologies that provide variety, flexibility, and choice (Lindquist, 2002; Wiles et al., 2006). Constructive controversy fits well within middle school curricula since it enables students to actively participate, flexibly work, and purposefully select from an array of complex, contentious, and unresolved topics. These characteristics arguably enhance any students' engagement, but work especially well with adolescents and cohere with a middle school philosophy (National Middle School Association, 2003; Wiles et al., 2006).

While these findings report many positive attributes for constructive controversy, Johnson and Johnson (2009) suggest a need for sufficient proceduralization. This is not necessarily the case. While it training for competency at managing intellectual conflicts would benefit teachers, this is not always feasible. Teacher in-services are a possibility, but they may be impractical due to cost and the availability of trained professionals. It seems most realistic, therefore, for teachers to learn through experience. To gain that experience, however, teachers must take risks with the initial "test" groups. Without teachers skilled at controlling potentially

divisive classroom contexts, a host of negative results may materialize. At worst, student conflicts may emerge (or explode). Or, while less harmful initially but arguably equally unconstructive, students may become entrenched in their original perspective and compromise open-mindedness for winning an argument (Hess, 2009; Laverty & Gregory, 2007; Voss & Means, 1991). These are tangibly negative outcomes. The positives mentioned in the three findings and the first two insights, however, outweigh these potentially negative outcomes. Further, these negatives are a possibility, but not a certainty. For these reasons, this research demonstrates that an experienced teacher would likely have the skills necessary to fluidly adjust and respond to manifestations of the aforementioned negative outcomes.

In sum, the data reported in this research validate the general conceptual framework of Johnson and Johnson's (2009) constructive controversy. Further, when contrasted with findings garnered from debates, the data suggest strong attributes for constructive controversy. The reported insights speculate about where this methodology fits best. Due to its meaningful focus on democratic reasoning and criticality, secondary social studies teachers are encouraged to employ constructive controversy. Due to its methodological flexibility, ability to engage, focus on student-choice, and concentration on content adolescents deem meaningful, middle school teachers of all curricula are encouraged to utilize constructive controversy. Finally, there is not necessarily a need for compulsory proceduralization because the benefits far outweigh the (possible but not probable) detrimental results.

References

Anderson, L., & Krathwohl, D. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of educational objectives*. New York: Longman.

Arts, B. & Verschuren, P. (1999). Assessing political influence in complex decision-making: An instrument based on triangulation. *International Political Science Review, 20*(4), pp. 411-424.

Bransford, J., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academies Press.

Bruner, J. (1990). *Acts of meaning.* Cambridge, MA: Harvard University Press

California's High School Speech Association's Curriculum Committee (2004). *Speaking across the curriculum: Practical ideas for incorporating listening and speaking into the classroom*. New York, NY: International Debate Education Association.

Chiu, M. & Khoo, L. (2003). Rudeness and status effects during problem solving. *Journal of Educational Psychology, 95,* 506-523.

Cullinan, B., Dove, T., Estice, R. & Lanka, J. (2008). Becoming conscious of different perspectives. *Social Studies and the Young Learner, 20*(4), 18-21.

DeCecco, J. & Richards, A. (1974). *Growing pains: Uses of school conflict*. New York: Aberdeen.

Dewey, J. (1933). *How we think.* New York: Houghton Mifflin Company.

Dewey, J. (1938). *Experience and Education*. New York: Collier Books.

Hess, D. (2009). Teaching about same-sex marriage as a policy and constitutional issue. *Social Education, 73*(7), 344-349.

Johnson, D. & Johnson, R. (2005). Democratic decision making, political discourse, and constructive controversy. *Cooperative Link, 20*(1), 3.

Johnson, D. & Johnson, R. (2007). *Creative constructive controversy: Intellectual challenge in the classroom*. Edina, MN: Interaction Book Company.

Johnson, D. & Johnson, R. (2009). Energizing learning: The instructional power of conflict. *Educational Researcher, 38*(1), 37-51.

Johnson, D., Johnson, R., & Johnson, F. (1976). Promoting constructive conflict in the classroom. *Notre Dame Journal of Education, 7,* 163-168.

Laverty, M. & Gregory, M. (2007). Evaluating classroom dialogue: Reconciling internal and external accountability. *Theory and Research in Education, 5, 3,* 281-308

Lindquist, T. (1997). *Ways that work: Putting social studies standards into practice*. Portsmouth, NH: Heinemann.

Lindquist, T. (2002). *Seeing the whole through social studies.* Portsmouth, NH: Heinemann.

Meany, J. & Shuster, K. (2005). *Speak out! Debate and public speaking in the middle grades*. New York, NY: International Debate Education Association.

National Middle School Association (2003). *This we believe: Successful schools for young adolescents*. Westerville, OH: National Middle School Association.

Parker, W. (2006a). Public discourses in schools: Purposes, problems, and possibilities. *Educational Researcher, 35*(8), 11-18.

Parker, W. (2006b). Talk isn't cheap: Practicing deliberation in school. *Social Studies and the Young Learner, 19*(1)*,* 12-15.

Pearce, R. (2002). Case-based structured conflict: A means for enhancing classroom learning. *Journal of Management Education, 26*(6), 732-744.

Slaikev, K. & Hasson, R. (1998). *Controlling the cost of conflict*. San Francisco: Jossey-Bass.

Smith, M. & Wilhelm, J. (2006). *Going with the flow: How to engage boys (and girls) in their literacy learning*. Portsmouth, NH: Heinemann.

Tobin, J. (2000). *"Good guys don't wear hats": Children's talk about the media*. New York, NY: Teacher's College Columbia University Press.

Voss, J. & Means, M. (1991). Learning to reason via instruction in argumentation. *Learning and Instruction, 1,* 337-350.

Wiles, J., Bondi, J., & Wiles, M. (2006). *The essential middle school, 4th edition*. Upper Saddle River, NJ: Pearson, Merrill Prentice Hall.

Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past*. Philadelphia: Temple University Press.

Zemelman, S., Daniels, H., & Hyde, A. (1998). *Best practice: New standards for teaching and learning in America's schools*. Portsmouth, NH: Heinemann.

Zinn, H. & Macedo, D. (2005). *Howard Zinn on democratic education*. Boulder, CO: Paradigm Publishers.

"I Get Distracted By Their Being Distracted":
The Etiquette of In-Class Texting

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Abstract

The prevalent nature of cell phones in college classrooms creates positive and negative issues. Concerns about the effects of using cell phones in class led researchers to administer a questionnaire to 805 students in a college of education regarding their perceptions of in-class cell phone use. The objectives for this qualitative study were to determine participants' perceptions how cell phone use affects learning, and whether or not cell phone use in class affects professionalism.

Introduction

Across the nation, today's college students are more wired and connected than ever before (Gee, 2003; Prensky, 2006; Rideout, Foehr, & Roberts, 2010; Trilling & Fadel, 2009); the ability to surf the web for the latest news, text their roommates to make plans for dinner, and call home to let their parents know they survived Math 101, all from the same mobile device, show the pervasiveness and the prevalence of cell phones and mobile technologies for today's college student. The ubiquitous nature of cell phone technology allows this to occur with shocking regularity in multiple venues. From supermarket lines to college classrooms, students use their personal mobile devices to "live their life".

The multiple dimensions of mobile technology allow one to see just how dynamic they can be, as well as allowing one to see potentially just how distracting they might be. The following vignettes paint a portrait of two very different student uses of mobile phones in classroom situations. In an Intro to British Literature class, a student quickly opens up a web-page on his mobile device to get a brief explanation and deeper understanding of the concept his teacher is speaking about. He quickly reads the information, clicks on another link, is taken to another page where he views some more details and examines some photographs of the region being talked about. He then raises his hand to ask the professor some questions about what the professor has stated and what he has read and viewed on his mobile device. These questions deepen the class discussion, and a dialogue ensues about the topic, allowing more class members to gain a richer understanding and conceptualization of the topic. Meanwhile, in Algebra I across campus, a student tunes out the professor and opens her mobile device. She goes to Facebook and sees that two of her best friends are on. She pings them (a term for alerting a friend who is online that you want to chat with them) and carries on a conversation about what they should do that evening. She giggles as she carries on the conversation, and the students sitting on either side of her become distracted by her actions. Class ends, and she has not gained any of the new concepts for math and two of her classmates are disgruntled at her distracting behavior. In both situations student learning was affected. In one scenario students create a classroom community of dialogue and debate based on the wealth of information at one's fingertips, in the other instance, the student's use of a mobile phone in the class meant that she not only left class with no further understanding of the concepts discussed that day, but her distracting behavior also affected her peers. These scenarios are strikingly similar to actual conversations between students and the researchers for the following research project.

Cell Phones in the Classroom

In a survey of business students, Braguglia (2008) found that over half of the students use their cell phone in some manner during every college class. Some researchers compare the digital experiences of today's students to the paradigm shift caused by the advent of the printing press (Harnad, 1991). These digital natives who have been immersed in technology from childhood often talk about not being able to imagine themselves without their cell phone (Bennett, Maton, &, Kervin, (2008). It's a part of who they are, a blurring of human and machine (Thompson & Cupples, 2008). Additionally, researchers, like Prensky (2006), indicate

that one of the most important tools for current students is not the computer, but the cell phone. The possibilities of the use of cell phones in educational settings are considerable and ever changing (Braguglia, 2008). It is now possible for mobile technology to facilitate mobile education. Lehner & Nosekabelo (2002) define mobile education as a situation in which a learner gains electronic information and educational content irrespective of setting and time. According to Vavoula and Sharples (2002), learning can be considered mobile in terms of space, different areas of life, and time. Today, learning activities can be completed even when the learners and the teachers are both mobile.

Even as constructive uses of cell phones in class continue to emerge, detrimental effects of cell phone use persist (Thompson & Cupples, 2008). Negative consequences and concerns about cell phone use include poor spelling, bad grammar, and distracted attention. Additional anxiety is related to "sexting" and the breakdown of face-to-face social interactions. Such apprehensions lead some faculty members to ban cell phones from class. However, Rosenberg (2009) suggests that only concentrating on the negative results of cell phone use might be shortsighted. He warns that:

> We need to actively teach students right from wrong - regardless of technology, but perhaps more carefully because of the power of technology. Will we prevent all problems? No. But blaming the technology is not the answer. If a terribly mean-spirited, student-composed note were intercepted by a savvy teacher, you wouldn't ban the pen, would you? (p. 95).

Banning cell phones from classrooms, therefore, may be counterproductive to learning environments. It is just this conundrum and a lack of research in the discipline of education that led us to investigate the cell phone use and perceptions of students and in our college of education.

For the purpose of this study the researchers examined the attitudes, perceptions, and use of cell phones by education students within classroom settings. Further, we explored how cell phones might affect student learning. To collect this data, the research team developed and used a questionnaire.

The Study

We discovered during conversations with faculty members that there were considerable differences between the perceptions of faculty and those of students regarding the use of cell phones in class. Additionally, there was a lack of a consistent policy about cell phone use in our college and university as a whole. These two considerations guided the design of this study about cell phone use in the college classroom.

To determine the questions to include in our questionnaire, six education students were selected purposively to take part in a focus group discussion of cell phone use in education classrooms. The Metaplan Approach (Schnelle, 1979) guided the focus group discussions. This method allows a facilitator to promote effective cooperation within group discussions in which

key issues are recorded and displayed, and the participants can put forward their ideas. In this manner, each participant can have a voice in the discussion. Using the focus group findings, researchers developed a questionnaire on cell phone use that included both yes/no and open ended questions. Then the research team administered the questionnaire about cell phone use to 805 undergraduate students in a college of education in a rural regional university in the South.

Based on the literature review, one overarching research question guided this study: What are students' perceptions of texting in the college classroom? A qualitative methodology was used to answer this research question because qualitative research investigates the *why* and *how* of decision making. (Denzin & Lincoln, 2005). For this study, purposive sampling was used to focus on education students because this approach emphasizes selection of participants based on a criterion (Patton, 1990), and we wanted to investigate the perceptions of future educators regarding cell phone use in class. Based on the entire college of education class schedule, 10 sections from each department were randomly chosen to participate in this study. A total of 805 undergraduate students were surveyed from various year levels and classes in three departments in the college of education. Students were given a brief explanation about the research project and content on the questionnaire. Then they were given the opportunity to voluntarily complete the questionnaires. Those students that decided not to participate in the study were not given a questionnaire. Students that did participate signed an informed consent form and were told that all responses would be kept confidential.

Data from questionnaires were analyzed using both qualitative and descriptive methods. The descriptive data were tallied for yes/no questions and percentages were calculated. Any qualitative data from "why" and "how" questions were analyzed using the constant comparative method (Glaser & Strauss, 1967; Strauss & Corbin, 1990). Frequency tables were also created for the major themes that emerged from the data. While the frequency with which a theme is mentioned is important to give some indication of the commonality of the themes, sometimes themes that are less frequently reported are equally informative. Although all participants might not bring up a common theme, it may be articulated particularly well and with emotion by one person in the questionnaire. As often as possible, actual quotations that capture the themes particularly well were pulled from the questionnaire to illustrate in the participants' own words the points being made.

Descriptive Results

Answers to questions that had a yes/no response were tallied to determine the extent to which students use cell phones, whether they thought it was professional, and whether cell phone use interfered with learning. See Figure 1 for the percentages of the yes/no responses regarding students' cell phone use in class.

Figure 1. **Students' Perceptions/Use of Cell Phones in Class.**
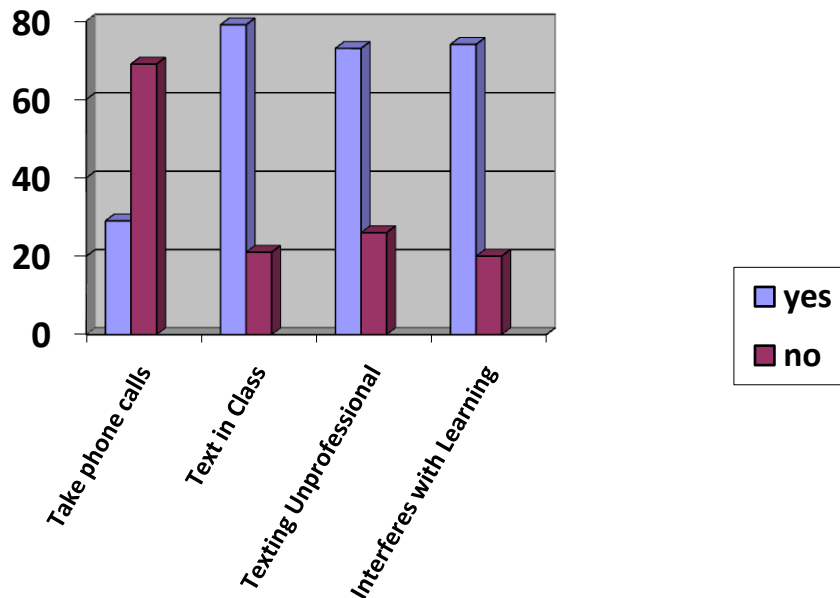
The majority of students admitted to texting for personal reasons while in class, but they seemed to have a negative opinion of this action. The questionnaire results indicate that 73 % of students consider any form of texting while in class to be unprofessional and also state that it interferes with learning.

Qualitative Results

As part of the qualitative analysis process, and using the constant comparative method of coding (Glaser & Strauss, 1967), data from open ended questions were coded in conjunction with the research question. Two overarching themes emerged along with sub themes.

Professionalism

One overarching theme evident in the data was the concept of professionalism. It is worthy of note that while 79% of the students responded that they text in class, 73% stated that texting in class is unprofessional. The fact that students believe that personal texting in class is unprofessional, but still engage in it may imply several things: that it is difficult to disengage from their phone; that class lessons are not engaging; and/or that there is a lack of an enforced class cell phone policy.

Some students perceived texting in class as rude, unprofessional and disrespectful not only to the teacher but to students in the class. Many of the student responses stated the noise other students created when texting was rude. "It's rude because classmates have their phones on and it beeps when a text comes in. I hear them text and I can tell even the professor is distracted. It's rude." Other comments made were: "I don't like the clicking or the vibrating going off," "Professors are constantly telling students to put away their phones," "Texting is disrespectful to

surrounding students and to the professor," "You're not showing respect to your teacher or to fellow peers," and "It is unprofessional because you are being rude to the teacher and wasting her time."

Impact on Learning

Another theme that emerged from the data concerned cell phones and their impact on learning. Seventy-four percent of the students responded that texting interferes with learning. Their reasons included interference with listening, distractions to learning, and possible cheating. The large percentage of affirmative answers about texting interfering with learning suggests that cell phone use in the classroom is an issue that needs definite attention in order to maximize learning in the classroom. Figure 1.2 shows a list of themes and subthemes.

Figure 1.2 Impact of Texting on Learning

Students learning is impacted:	Students learning is *not* impacted
• By not Listening	• By being multitaskers
• By Distracting	• By needing tactile stimulation
• By Cheating	• By being bored

Negative Impact on Students' Learning

To the questions, "Does texting interfere with learning," and "If so, how?" Three themes emerged from the 74 % who responded "yes" to this question: 1) Students are not listening or paying attention to the teachers; 2) it can be a distraction to other students in the class, and 3) it can be a source of cheating.

Not listening

Some students replied, "You can't listen and text at the same time," or "When I text I am not focused on what the teacher is saying; I am focused on what I am texting." Other students responded to the fact they did not think they could multitask: "You can't multitask. It's hard to learn and text at the same time," and "There is no way to pay full attention to the speaker or the activity going on while texting." These remarks indicate the difficulty some students have with attending to class content while texting.

Distracting

Many responses dealt with the distraction that texting could cause in the classroom. Students commented they might not be paying attention to the teacher or they were watching their classmate text. "I'm watching this guy or girl next to me, rather than what the teacher is talking about." Other comments were "Causes a distraction," "Students miss crucial lecture points that could be on the exam," "Could distract a person sitting next to the one who is texting," and "Texting can be distracting to other students. Also it gives the illusion that what you're texting about is more important than the class." One student summed it up with, "I get distracted by them being distracted."

Cheating

The last theme that emerged about texting during class interfering with learning is one of cheating. While it had the lowest percentage of responses stated, students were very emphatic about the possibility of cheating and texting. Some student responses were: "Students could text another student in the same class or in another class that had taken the same exam for the answer." "Cheating facilitates academic dishonesty." "If teachers let students text all the time and do not address it in class, how do they know we're not cheating on an exam?"

Negligible Impact on Students' Learning

Three main themes emerged in exploring how texting did not impact learning. The following themes emerged from the 20% of students who responded that texting does not interfere with learning: 1) Texting as Multitasking; 2) Texting as Tactile Stimulation; and 3) Texting as Boredom Reliever.

Multitasking

Many students stated that they believe they can multitask, and that texting is not distracting to them for that reason. One student stated, "People can multitask, and if you can't multitask, then it's your problem." Another stated, "If you are able to multitask, then texting doesn't interfere." Another student stated, "It enhances my ability to multitask and be alert and aware of my surroundings." One student summed it up by stating, "Because as such a busy society we have learned to be great multitaskers." Several responses revealed that one student's multitasking can be another student's distraction.

Tactile Stimulus

Some students compared texting to doodling, saying that they needed to be doing something tactile in order to pay attention. One student said, "I am the type of person that has to be doing something while I listen, so texting helps me." Another stated, "It is just like a student doodling. You can still hear everything going on." Still another student responded, "Most people I know, including me, learn more when my hands are doing something." One response was, "I'm ADHD and need something else to do. It helps me listen better."

Relief from Boredom

Many students stated that even if they text messaged, they could still pass the class—they could get the notes online or from a peer. Other responses to the question included, "I'm not learning anyway," and "Because most class lectures are posted online along with assignments, I can still pass my classes and get all the info." Other students responded, "You can always review on your own what the professor said," and "If you already know what's going on in class, why listen to it further?" Several students claimed that texting in class kept them from becoming bored, or that they did it when they were bored or to stay awake in class. One response was, "It keeps you awake instead of falling asleep." Another student responded, "Because if you decide to text in

class then you choose to not pay attention. For me, I only text when I am bored, so if the teacher sees that maybe they can change their teaching styles." One student also argued, "Sometimes class can get too boring so being on your phone can be some sort of stimulation to stay awake." Another stated, "I can listen and text at the same time. It keeps me from getting bored." Still another said, "Most of the time I text because I am bored, so I was not learning to begin with." The responses in this category were connected to the teaching that occurred in the class. If students have a passive role as learners, texting may provide the active involvement that is missing.

Using Cell Phones for Emergencies

A final thread that emerged from the data was that many students were concerned with emergencies that happen during class and require their immediate attention. One student said, "I feel much more at ease knowing I can text or call to check on my children if there is an emergency." One student stated, "If a student is waiting to hear back from a family member, it's much easier to text than to leave class to answer a call." Still another student responded, "It is quick and if it is an emergency then it is something that has to be handled." Another student pointed out, "You can text for emergencies instead of calling."

Conclusion

This study examined students' perspectives of the use of cell phones in university classrooms. The objectives for this qualitative study were to determine 1) participants' perceptions of the ways in which cell phone use affects learning, and 2) participants' perceptions of whether or not cell phone use in class affects professionalism. Results reflected the diverse attitudes towards cell phone use by 805 undergraduate education students.

From personal experience, we know students in our classes are using their cell phones. But ultimately, what does this mean for the ways we conduct our classes? Should we ban cell phone cell use in our classes all together? Should we ignore cell phone use in our classes? Or should we accept the fact that students will use cell phones in our classes and recognize the possibilities of using this technology to enhance instruction? These questions suggest a teachable moment. Students cannot be expected to act in a professional manner unless they know what "professional" is. As instructors, we model what professionalism is through our words and deeds. In addition, instructors need to communicate their expectations of professional etiquette of cell phone use from the very beginning. It may be advisable for students and instructors to collaborate and create a policy together. It would be even more effective if there were a standard policy that was used in a department and even a university, so that students understood expectations in every class.

This study also provides a teachable moment for us. The marvel of mobile technology in our classrooms need not cause fear and loathing. What we can learn from our students about the way they learn may help us deliver our instruction more effectively. Cell phones connect us to each other and to the world. It is worth our time and effort to explore the possibilities of using this ubiquitous form of technology to positively influence learning.

References

Bennett, S., Maton, K., and Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5):775-786.

Braguglia, K. (2008). Cellular telephone use: A survey of college business students. *Journal of College Teaching & Learning.* 5 (4), 55-62.

Denzin, N.K.and Lincoln, Y.S. (2005). Moments in qualitative research methods. In Alan Bryman, et al., Eds. *Encyclopedia of social science research methods*. Thousand Oaks, CA: Sage Publications.

Gee, J.P. (2003). *What video games have to teach us about learning and literacy*. New York, NY: Palgrave McMillian.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago: Aldine.

Harnad, S. (1991). Post-Gutenberg galaxy: The fourth revolution in the means of production of knowledge. *Public-Access Computer Systems Review:* 2, 39-53. Retrieved from the Cogprints website: http://cogprints.org/1580/

Lehner, F., & Nosekabelo, H. (2002). The role of mobile devices in e-learning--first expereince with an e-learning environment. In M. Milrad, H.U. Hoppe, & Kinshuk (Eds.), Proceedings of the IEEE International Workshop on Wireless and Mobile Technologies in Education, (pp. 103-106). Los Alamitos, CA: IEEE Computer Society.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage Publications

Prenksy, M. (2006). What you can learn from a cell phone. Retrieved from Marc Prensky's Website: http://www.marcprensky.com/writing/

Rideout, Foehr, & Roberts (2010). *Generation M2: media in the lives of 8- to 18-year olds.* Retrieved from the Kaiser Family Foundation website: http://www.kff.org/entmedia/upload/8010.pdf

Rosenberg, D. (2009). Plato's iPod: Can hand-held electronics be valuable tools of learning? *Independent Schools,* 58 (2), 92-95.

Schnelle, E.(1979). The Metaplan Method: Communication tools for planning and learning groups. *Metaplan.* No. 7.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques.* Newbury Park, CA: Sage.

Thompson, L. & Cupples, J. (2008). Seen and not heard? Text messaging and digital society. *Social and Cultural Geography.* 9, (1), 95-108.

Trilling, B. & Fadel, C. (2009). *21st century skills: Learning for life in our times.* San Francisco, CA: Josey Bass Publishing.

Vavoula, G.N., & Sharples, M. (2002). KleOS: A personal, mobile, knowledge and learning organization system. In M. Milrad, H.U. Hoppe, & Kinshuk (Eds.), IEEE International workshop on wireless and mobile technologies in education, (p. 152). August 29-30, 2002. Washington, DC: IEEE Computer Society.

Special Education in China

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Abstract

Despite the fact that China has a deep-rooted history of sympathetic attitudes toward individuals with disabilities, Special Education in China today is much like it was in the United States prior to the implementation of the Education for all Handicapped Children Act of 1975. There is little of the uniformity that is evident in special education programs across the United States. This paper describes the history, important laws, system, challenges, and future of special education in China.

A snapshot of special education in China is quite similar to what the United States looked like, with regard to special education, prior to implementing the Education for All Handicapped Children Act (PL. 94-142) in 1975. The only thing consistent about their system is the *lack* of consistency, from school to school, city to city, and province to province. This paper describes the history, important laws, system, challenges, and future of special education in China.

History

People knowledgeable about special education in China refer to the foundation of the People's Republic of China in 1949 as the start of special education services in that country. At that time, schools for the blind and deaf were founded (Worrell & Taber, 2009). However, it was not until 1980 that teacher training for special educators began, and until the 1990s when teacher training institutions were required to offer special education courses. Prior to this time, special schools focused on two disability categories, hearing and visual impairments, and these special schools were the only places where students with disabilities could receive school services. Furthermore, children with mental retardation and children with physical disabilities were largely excluded from school due to lack of personnel and resources, and children with other types of disabilities (i.e., learning disability, autism) were not even recognized as having a disability (Deng & Harris, 2008).

Despite this late start in special education compared to many western nations, China does have a history with regard to the acknowledgement of people with disabilities. There is a sympathetic attitude toward people with disabilities that is deeply rooted in Chinese society (Deng & Harris, 2008). Prior to 1949, private education was available to those few that could afford it, and Christian missionaries often served those with hearing and visual impairments (Ellsworth & Zhang, 2007).

Still, there are forces in Chinese society and culture that run counter to prospects of providing an appropriate education for people with disabilities. Confucian philosophy values an established social order, and people with disabilities have been at the bottom of the hierarchical structure of Chinese society (Deng & Harris, 2008). Furthermore, Confucius valued education for scholars but not the populous at large. The situation did not improve for people with disabilities during Mao's time, as the purpose of schooling in China was to produce laborers educated in socialism. Students with disabilities were allowed in school but given no special services (Ellsworth & Zhang, 2007). By 1987, only 55% of students with disabilities were in school compared to an overall Chinese enrollment rate of 97% (McCabe, 2003).

Important Laws

There were some important laws that have influenced the evolution of special education in China. In 1982, the newly revised constitution of China stated the country's responsibility for educating people with disabilities, the first legal mandate for the provision of special education in China. However, the firm foundation did not come until the National People's Congress adopted the 1986 Compulsory Education Law of the People's Republic of China (Worrell & Taber, 2009), mandating that *all* children are entitled to 9 years of free public education—6 years of elementary education and three years of secondary school education. Special schools were organized for children with visual, hearing and mental impairments. In 1990, the Law on the Protection of the Disabled Persons (1990) emphasized that families, work units and community

organizations must share the responsibility for caring for individuals with disabilities. In 1994, this law was strengthened by the *Ordinance of Educations for Persons with Disabilities* which required a qualification certificate system for the special education teacher (Deng & Harris, 2008). Furthermore, the Teachers' Law of the People's Republic of China (1993), and the Education Law of the People's Republic of China (1995) both call for offering educational undertakings for individuals with disabilities.

Today

As a result of the previously mentioned laws, and the obvious western influence over time, the face of special education is much different today. China is attempting to do much more in the way of educating children with disabilities. China now recognizes six classes of disability: visual, hearing, intellectual, physical, psychiatric and multiple impairments. While the prevalence of people with disabilities appears to be lower in China than other countries, this difference might be due to the fact that China still does not recognize all of the categories of disability that other countries do. For example, the predominant category of disability in the United States is Specific Learning Disability (43% of all disabilities), a category not even recognized in China (Annual Disability Statistics Compendium, 2009). In addition, China is an agriculturally based culture and the majority of people live in rural areas. Physical labor is the primary work in these rural areas where people can function productively even if they cannot read or write. Therefore, many people with disabilities (e.g. autism, learning disabilities, and mental retardation) may not even attend school in rural and remote areas (Worrell & Taber, 2009).

Learning in Regular Classroom

Because most of China's population lives in rural areas, the cost of funding special schools for most children with disabilities in these areas is quite prohibitive. Influenced by inclusion in western countries, the "Learning in the Regular Classroom" (LRC) movement gained popularity in the early 1990s (Ellsworth & Zhang, 2007). The use of this setting to serve students with disabilities has grown astronomically. In 1990, there were 105,000 students with disabilities in school and about 18% of them were placed in general education classrooms. By 2003, LRC programs served approximately 67% of all students identified with disabilities in general education classrooms of public schools (Deng & Harris, 2008).

Children with disabilities are now welcome in Chinese general education classrooms; however, services provided are at best inconsistent. Eligibility for the LRC placements consists of those students who can adapt to studies and life in public schools. At present, three categories of disability are being served in the regular education setting: visually impaired, hearing impaired, and mental retardation. The most notable achievement made by China's LRC programs is the significant increase in numbers of enrolled children with disabilities included in general education classrooms (Deng & Harris, 2008).

Still, China has several major hurdles to overcome. First is the reality of large class sizes. Typically classes have between 40 and 75 students thus making it extremely difficult to individualize instruction for those students who need it. Special schools, on the other hand, typically have about 10 students. Additionally, teacher training is problematical as well. Many teachers in ordinary schools have never had training in special education (Worrell & Taber,

2009). Students with disabilities are often ignored in the classroom and may not receive appropriate instruction, because the teachers have neither enough time nor adequate knowledge to help them (Deng & Harris, 2008; Pang & Richey, 2006).

Despite the similar appearance of the Chinese "Learning in the Regular Classroom" movement, and the United States' trend toward inclusion, there are many differences. The United States' policy is based on the philosophy of equality of opportunity and diversity from a liberal political system and a pluralistic culture, whereas China had a long tradition of a hierarchal pyramid of social relationships. Equality and decentralization are not a priority in China. The primary goal of China is to give most children with disabilities the opportunity to go to school (i.e., the right to be educated). The primary goal of inclusion in the United States is to give children the right to be equally educated. China does not require a free and appropriate education. Children with severe and multiple disabilities and many children with moderate disabilities are still excluded from public schools. In 2003, there were about 323,000 school-aged children with disabilities that were excluded from public schools (Guozhong, 2006). China's system is simpler and less systematic. The Individualized Education Program, Least Restrictive Environment, and parental involvement are not strongly emphasized in LRC. Furthermore, China emphasizes a remedial model more than an educational needs model, and it stresses identification and remediation of deficits rather than capitalizing on student's strengths (Deng, Poon-McBrayer & Farnsworth, 2001). Finally, this "Learning in the Regular Classroom' movement does not necessarily reflect allegiance to the concept of inclusion, rather it more accurately reflects a shortage of personnel, limited fiscal resources and facilities, in addition to geographical considerations (Deng & Manset, 2000).

Today's Challenges

Several challenges face Chinese special education early in this 21st century. For one, the whole-class teaching model has long been dominant in the Chinese classrooms. This model was effective in teaching the information found in the textbooks to students in the prevailing, overcrowded big size classrooms. This type of instruction was believed to better prepare students in the stiff competition for grade promotion and limited college entrances, however the challenge remains for ways in which to address learning diversity under this teaching uniformity and to practice individualized teaching for those students with disabilities (Deng & Harris, 2008). There is a lack of instructional quality and accountability with regard to students with exceptional needs.

The achievement of students with disabilities has not been required to be included in official program evaluations, and no specific evaluation procedures have been developed. In some "Learning in the Regular Classroom" schools, students with disabilities have been observed sitting alone, isolated from classroom activities, or have even remained at home, despite the fact that their names are on the registration list. This unfortunately common practice has been called "drifting in the regular classroom" (Deng & Manset, 2000, p. 3).

There are problems with the procedures used to identify and diagnose children with disabilities. There is a lack of diagnostic technology and experienced professionals. Many of the instruments used are inaccurate translations of commonly given Western instruments such as the Stanford Binet Intelligence Scale IV, or the Draw a Person Test, which are usually administered to determine whether a child has mental retardation; no attention is paid to adaptive

behavior (Worrell & Taber, 2009; Deng & Manset, 2000). In fact, there is a shortage of school psychologists in China who are trained specifically to give these instruments (Worrell & Taber, 2009).

Another problem concerns vocational education for students with disabilities. While vocational education is an emphasis in Chinese special schools, traditionally it is limited in scope: painting for students with hearing impairment, massage and weaving for students with visual impairments, and sewing for those with mental retardation. Besides representing limited opportunity, these skills are not necessarily appropriate for those living in rural area (Deng & Manset, 2000).

China does attempt to provide services that somewhat resembles the United States' concept of educating students in their least restrictive environment. China offers a continuum of services from separate schools, special classes attached to regular schools, to the Learning in Regular Classrooms policy (Worrell & Taber, 2009). However, resources, trained teachers, and special schools are extremely limited. For example, for Beijing's population of 17 million people, there is only one special school for children with mental retardation and autism in each of Beijing's seven districts (Ellsworth & Zhang, 2007).

Teachers are especially challenged in China's system. In the United States, special education teachers are more likely to be trained through university diploma/degree programs or continued education system in a more systematic and carefully designed way than in China (Deng & Harris, 2008). Furthermore, the task of implementing special education services in China is daunting. Even in the United States, with class sizes about half that of typical Chinese classes and with a paraprofessional or a second teacher assisting in inclusive classrooms, the smooth and full implementation of inclusion is still a challenge. Teachers seemed to have a much heavier instructional and management workload than their counterparts in the United States because paraprofessionals or teacher assistants are not employed thus further challenging the implementation of individualized instruction (Ellsworth & Zhang, 2007). Additionally, because of the highly competitive system of promotion by examination, educators in China are often faced with the push for higher promotion rates into colleges, while simultaneously addressing the needs of their students with disabilities. Within this competitive environment, teachers may not have enough time, energy, or professional knowledge to help students with special needs in their classrooms (Deng, Poon-McBrayer & Farnsworth, 2001).

Another challenging factor concerns transportation. In addition to the financial constraints, transportation has been an influential factor. Inconvenient transportation has meant that it is much more feasible for a child with a disability to attend a local general education school than to attend a centrally located special school even if placement at the special school would be more appropriate (McCabe, 2003).

Teacher training for special education in China is quite mixed. Even when training exists, it is noted that an understanding of theory is more highly valued that student teaching competence, and that special education student teaching experience often lasts only about four weeks (Ellsworth & Zhang, 2007). There is a push to train teachers in more flexible methods, and in addition to the traditional whole-class lecture model of instruction, a model that combines whole-class teaching, tutoring outside of class, and cooperative learning has been widely applied and is strongly recommended to all teachers participating in "Learning in Regular Classroom"

programs (Deng & Manset, 2000). That said, any training is better than what most Chinese teachers receive regarding special education. In 1991, it was estimated that even if the existing teacher-training institutes could double their graduation rate, it would take more than 1,000 years to educate enough teachers to meet the needs of just the students with mental retardation (Deng & Manset, 2000).

Finally, parental advocacy is on the rise in China. In the United States, the advocacy efforts of parents (including litigation) were a main factor in bringing about a system of free and appropriate public education, including education in inclusive settings, for children with disabilities. Today in China, parents are beginning to address the same issues that parents in the United States addressed more than 25 years ago—the right to an education for their children of different abilities (McCabe, 2003).

The Future

With all of the challenges listed, the future is still brighter for children with exceptional needs in China. Children with disabilities are becoming more and more welcome in general education settings. Programs to prepare special education teachers are developing rapidly (Ellsworth & Zhang, 2007). With increased parental advocacy and improved teacher preparation, no longer will exclusion of children with disabilities predominate in China.

References

Annual Disability Statistics Compendium (2009). Retrieved June 27, 2011, from
    http://disabilitycompendium.org/Compendium/index.htm.

Compulsory Education Law of the People's Republic of China. (1999). Chinese *Education and
    Society,* 32(3), 14-18.

Deng, M. and Harris, K. (2008). Meeting the needs of students with disabilities in general
    education classrooms in China. *Teacher Education and Special Education,* 31(3), 195-207.

Deng, M. and Manset, G. (2000). Analysis of the "learning in regular classroom" movement in
    China. *Mental Retardation,* 38(2), 124-130.

Deng, M., Poon-McBrayer, K., & Farnsworth, E. (2001). The development of special education
    in China: a sociocultural review. *Remedial and Special Education,* 22(5), 288-298.

Education Law of the People's Republic of China. (1999). Chinese *Education and Society,*
    32(3), 30-46.

Ellsworth, N. and Zhang, C. (2007). Progress and challenges in China's special education
    development: observations, reflections, and recommendations. *Remedial and Special
    Education,* 28(1), 58-64.

Guozhong, E. (2006). Inclusion of persons with disabilities in China. *Asia Pacific Disability
    Rehabilitation Journal,* 17(2).

McCabe, H. (2003). The beginnings of inclusion in the People's Republic of China. *Research
    & Practice for Persons with Severe Disabilities,* 28(1), 16-2.

Pang, Y. and Richey, D. (2006). The development of special education in China. *International
    Journal of Special Education,* 21(1), 77-85.

Teachers' Law of the People's Republic of China. (1999). Chinese *Education and Society,*
    32(3), 19-29.

Worrell, J. and Taber, M. (2009). Special education practices in China and the United States:
    What is to come next? *International Journal of Special Education,* 24(3), 132-142.

Teacher Stressors and Potential Remedies from Pre-service Teachers' and
Cooperating Teachers' Perspectives

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Abstract

This study investigated specific teaching events which participants, pre-service and cooperating teachers, found stressful. Although participants agreed on the top four stressful teaching events, e.g., student discipline problems, time management, dealing with unmotivated students, and lecturing; they disagreed on remedies. Reducing class size and payment for student teaching were indicated as priorities by cooperating teachers and pre-service teachers, respectively. The implication of the results for teacher training and teacher recruitment and retention are discussed.

This study investigated the type of stressors cooperating teachers and pre-service teachers experience in the classroom as well as the remedies they perceive for alleviating stress.   Almost 15 years ago, the U.S. Department of Education reported that 34% of teachers would not choose their current career if given the chance to decide again (1997). In addition to dissatisfaction with their salary, teachers attributed their discouragement to stress, not having the support, time, or knowledge to adequately handle stress. This concern seems to persist. In a more recent study, Marley (2009) reported that 44% of teachers had suffered from stress-related illness, suggesting that teaching may be a high stress profession. Other studies also indicted that 25-50% of beginning teachers resign during their first three years of teaching (Fleener, 2001); while 33% quit the profession during their first year (Roulston, Legette, & Womack, 2005). The effects of a stressful working conditions and low satisfaction with the teaching profession often lead to poor teacher recruitment and retention (Ridley, Hackett, Reese, & Griffith, 2002); and when unresolved stress becomes too intense in magnitude, victims may experience psychological problems (Gary & Freeman, 1988, p.6).

Clinically, Humphrey & Humphrey (1986) defined stress as "Any factor acting internally or externally that makes it difficult to adapt and that demands increased effort from the person to maintain a state of equilibrium within himself and with his external environment" (p. 2-3). In other words, the demand stress puts on individuals exceeds their resources and coping skills. Griffith & Brem (2004) also suggested personal stressors to include internal thoughts, beliefs, and feelings that make it difficult to function, situational stressors that involve specific events (e.g., concern about student fighting), and external stressors (e.g., pressure from outside sources, such as parents). Given these definitions, stress is not universal; what causes stress in one person may be easily accommodated by another. Stress is not limited to cooperating teachers who are currently working. According to Greer and Greer (1992), the highest risk for stress may come at the beginning of educators' career during pre-service experience potentially making candidates ineffective and stunting their professional growth (Wadlington, Slaton, & Partridge, 1998).

Supporting the foregoing, an earlier study by Fogarty and Yarrow (1994), Abebe and Kitterman (2006) indicated, "Pre-service teachers irrespective of their degree of experience were significantly more stressed by their relationship with pupils than by the evaluation of the cooperating teacher" (p. 55). Furthermore, Abebe and Kitterman reported that pre-service teachers believe their experience in the classroom is more stressful than what the cooperating teachers perceive it to be. However, the sources of pre-service teachers' stressors vary. Classroom management, formal observations, and social and emotional problems of students were perceived as primary stressors of pre-service teachers (Clement, 1999). Yet, in another study, discipline problems, time management, and selection of lesson content were found to be most stressful (Rieg, Paquette, & Chen, 2007). Regarding remedies, according to Abebe and Kitterman (2006), both pre-service teachers and cooperating teachers perceive class size reduction and fewer lessons planning to be possible remedies for some stressful classroom events.

To summarize, teacher stress is a recognized phenomenon. What is not well investigated is whether or not veteran teachers and pre-service teachers experience similar stressors or if they have similar perspectives on what moderates their stress. The current study surveyed both cooperating and pre-service teachers to answer these questions. Stressors and stress remedies

were dependent variables; age, stress level, teaching level, geographic location, teaching field, and experience made up the predictive variables.

Method

Participants

Participants of the study were current pre-service teachers (*n*=42) and their respective K-12 certified cooperating teachers (*n*=40) in two metropolitan cities and their surrounding county schools, covering rural, urban, and suburban communities. The study was conducted during Fall 2009. Sixty four surveys were mailed to cooperating teachers, and 40 completed surveys were returned, which is a 62% return rate. Likewise, 64 surveys were mailed to pre-service teachers, and 42 completed the survey, a 65% return rate.   Based on their experience, effectiveness, and degree earned, cooperating teachers were selected by their respective school administrators to mentor pre-service teachers for a full semester.

Instrument

A questionnaire, Rating Pre-service Teacher Events for Stress, was used to assess teacher stress and potential remedies. Developed in 1980 and modified in 1985 by Robert Wright (New Mexico State University), the questionnaire was adapted and modified (Abebe 1993) by permission to assess cooperating teachers' experiences with stress. The modified version was field tested and implemented in 2000 (Abebe, & Kitterman, 2005).   Other modified questionnaires for assessing pre-service teacher stressors were cited in: Miller and Fraser's (2000) modified version of the Academic Stress Questionnaire (ASQ) originally developed and used at the University of Wales; and Kaldi's (2009) modified version of the perception of pre-service teacher stress originally used by Bember, Brown, and Ralph (2002).

The survey assessed teachers' stress on a Likert scale ranging from 1 (low stress) to 5 (high stress). Stressful sample items are, "Time management" or "Discipline Problems". The second part of the questionnaire assessed teachers' perceptions of remedies. Teachers rated such stress remedies as "Expelling disruptive students from class" and "Class size reduction" on a Likert scale ranging from 1(very poor) to 5 (excellent). Demographic information (e.g., age and gender) was also collected.

Procedure

Pre-service teachers were informed during an all-day seminar at the beginning of the semester about the survey, the procedures, and the benefits of participating. In turn, they were directed to inform their respective cooperating teachers about the study. Both groups received a letter along with the survey describing the voluntary and confidential nature of the study and instructions for completing and returning the survey. No identifying information was sought and participants were provided a stamped, self-addressed envelope for returning the completed survey. Both the cooperating teachers and their mentees (pre-service teachers) completed the survey during the same semester. The responses were analyzed using the Statistical Package for Social Sciences (SPSS).

Results

Pre-service teachers (*n*=42) and cooperative teachers (*n*=40) were asked to rate a set of classroom events that may be a source of stress for them and possible remedies for the events. Descriptive statistics were calculated to summarize cooperative teachers' and pre-service teachers' ratings of their stressors in the classroom and what they considered as stress remedies. Table 1 presents the means for Pre-service teachers' and Cooperating Teachers' Ratings of Stressors in the classroom hierarchically, one being a high stressor. Both the pre-service teachers and cooperating teachers reported being stressed by student discipline problems, time management, unmotivated students, lecturing, university/college supervisors' visit, pre-service teacher-parent relationship, inconsistent student behavior (performance), and cooperating teachers' demands.

Table 1.

Mean Ratings of Stressors by Pre-service Teachers and Cooperating Teachers

Stressors	Pre-service Teachers (*n*=42)	Cooperating Teachers (*n*=40)
1. DISCIPLINE: Student refuses to do what he/she is told to do (is sarcastic, loud, moves about without permission, or is abusive to other students).	3.64 (1.14)	4.10 (1.17)
2. TIME MANAGEMENT: Finding time for effective presentation, making assignments, announcements, grading papers, meeting deadlines or other paperwork.	3.64 (1.08)	3.68 (1.10)
3. UNMOTIVATED STUDENTS: In spite of the pre-service teacher's efforts to challenge all students, they continue to be non-participating and unmotivated.	3.45 (.97)	3.60 (1.22)
4. LECTURE: Presenting content material to noisy, apathetic and uninterested students.	3.12 (1.17)	3.60 (1.28)
5. SUPERVISOR'S VISIT: University or college supervisor who takes notes when observing teaching to evaluate teaching ability, checks lesson plans, or reviews journals.	2.74 (1.25)	3.55 (1.24)
6. PRE-SERVICE TEACHER/PARENTS RELATIONSHIPS: Interacting with parents in the area of student discipline, grades or attendance.	2.83 (1.12)	3.30 (1.18)
7. INCONSISTENT STUDENT BEHAVIOR: Student who vacillates from a display of enthusiasm, shows feeling of inadequacy or depression same period of day.	2.88 (.94)	3.20 (1.24)
8. COOPERATING TEACHER: Insists that pre-service teacher teaches cooperating teacher's lesson plans; is concerned about procedures; is not in total agreement about student being placed in his/her room.	2.74(1.42)	3.05 (1.50)
	Mean (SD)	Mean (SD)

Note: 1=Low Stressor and 5=High Stressor

Independent samples t-tests were conducted to test for differences between pre-service teachers and cooperating teachers ratings of stressors. Pre-service teachers and cooperating teachers are in agreement as to the sources of their stress. There were no differences between the two groups, except for university supervisors' visits that showed significant difference, $t(79)=-2.952, p.=.002$. University supervisors' visit (e.g., taking notes and checking lesson plans) appears more stressful for cooperating teachers than pre-service teachers.

Participants rated the remedies they find useful for addressing stress they encounter in the classroom. They indicated that reducing class size, paying pre-service teachers, increasing physical security, expelling disruptive students from the classroom, doing fewer lessons planning and grading, and increasing college supervision visits would reduce their stress. Table 2 presents the mean ratings of stress remedies by participants.

Table 2

Means of Stress Remedies Rated by Pre-service Teachers and Cooperating Teachers

Teacher Suggested Stress Remedies	Pre-service Teachers (*n=42*) Mean (SD)	Cooperating Teachers (*n=40*) Mean (SD)
Class size reduction	3.93 (1.22)	4.15 (1.02)
Payment for services for student teaching.	4.05 (1.17)	3.201 (.44)
Increasing physical security (from fights, gangs, violence).	2.86 (1.12)	3.60 (.98)
Expelling disruptive students from class	3.36 (1.03)	3.05 (1.24)
Do less lesson planning and grading of assignments.	3.45 (1.17)	2.40 (1.15)
Increase the number of visits by college supervisors.	2.17 (.96)	3.05 (1.11)

Note: 1=VERY POOR remedy and 5=EXCELLENT remedy

Independent samples t-tests were conducted to test for differences between pre-service teachers and cooperating teachers ratings of stress remedies. There were significant differences for payment for pre-service teachers [$t(75)=2.918, p.001$], security [$t(79)=-3.193, p=.001$], less lesson planning and grading [$t(79)=4.100, p=.001$], and increasing university supervisors' visits [$t(77)=-3.862, p=.001$). Pre-service teachers saw getting paid for student teaching and doing less planning and grading as remedies for stress more than cooperating teachers; while cooperating teachers indicated increasing physical security, class size reduction, and an increase in college supervisor's visit would reduce stress. However, both groups agreed that expelling disruptive students from class reduces stress.

A Pearson's *r* was conducted among stressors at an alpha level of .01 (two tailed). Discipline problems were related to many of the classroom activities. Significant positive

moderate correlations were found between discipline problems and the following classroom events (stressors), unmotivated students ($r=.682$), lecture ($r=.559$), university supervisors' visit ($r=.601$), and pre-service teacher-student parent relations ($r=.537$). Some classroom events seem to be associated with lecturing related stress for teachers. Significant positive correlations were found between lecture and student lack of motivation ($r=.463$), pre-service teacher-student relationships ($r=.453$), inconsistent student behaviors ($r=.549$), and cooperating teachers ($r=.506$). Time management issues also showed a significant positive correlation with lecturing ($r=.469$) and inconsistent student behavior ($r=.476$). Other significant positive correlations found were between student lack of motivation and pre-service teacher-student relationship ($r=.410$), inconsistent student behavior and pre-service teacher-student relationship ($r=.635$), and university supervisors' visit and pre-service teacher-student relationships ($r=.538$).

Correlation results are found in Table 3.

Table 3

Intercorrelations among Teachers' Stressors

Stressors	Discipline	Time Management	Luck of Motivation	Lecture	Univ. Super. Visit	Pre-service teacher-student relation	Pre-service teacher-Parent Relation	Inconsistent Student Behavior	Cooperative Teacher
Discipline	--	.314**	.682**	.559**	.601**	.422**	537**	.375**	.222*
Time Management		--	.238*	.469**	.244*	.292*	.232*	.476**	.313**
Lack of Motivation			--	.463**	.367**	.410**	.410**	.373**	--
Lecture				--	.383**	.453**	.453**	.549**	.506**
University Supervisor visit					--	422**	538**	.348**	.294**
Pre-service teacher-student Relationships						--	.353**	.635**	.272**
Inconsistent student behavior							--	--	.409**
Coop Teacher									--

*$p < .05$, **$p < .01$*

It appears student discipline problems permeate teachers' experiences in the classroom. Student discipline problems interfere with lecturing; and dealing with discipline problems in the presence of a university supervisor and cooperating teacher is stressful for pre-service teachers. In addition, addressing student discipline problems with students' parents seem to result in a

strained relationship between the pre-service teacher and parents. Further, when time management is an issue for pre-service teachers (a stressor), so is dealing with unmotivated students and student-teacher relationship.

A Pearson's *r* was conducted among stress remedies at an alpha level of .01 (two tailed), and results indicated that there was a moderate positive significant correlation between reducing class size and increasing physical security (*r*=.516) and reducing class size and pullout services (*r*=.343) for dealing with stress. Those who said reducing class size reduces stress also said that increasing physical security and reducing pull out services, which they saw as disruptive, reduces stress. A low positive relationship was found between payment for student teaching and less lesson planning and grading for reducing stress (*r*.390); and between paying pre-service teachers and the need for less university supervision (*r*=.408). Those who said payment for student teaching reduces stress also said that less planning and grading and less university supervision reduce stress.

The next question to be answered was whether or not there is a relationship between the type of stressors and remedies. A Pearson's *r* was conducted among stress remedies at an alpha level of .01 (two tailed), results indicated that there was a moderate relationship between college supervisors visit (stressor) and reducing college level supervision (*r*=.307). Moderate positive relationship was also found between preparing for the unexpected (stressor) and reducing pull out services (*r*=.305), preparing for the unexpected and more college supervision (*r*=.303), and pre-service teacher-student parent relationship (stressor) and parent involvement (*r*=.319).

To determine whether stress level, type of stress, and stress remedies differed as a factor of age and years of experience, a series of independent sample tests (one tailed) were conducted. Results showed that pre-service teachers reported higher stress than cooperating teachers as a factor of age and experience, *t* (80), 2.877, *p*. 002.

Discussion

This study investigated pre-service teachers' and cooperating teachers' stressors in the classroom as well as remedies they may deem useful for dealing with stress. Discipline problems were found to be primary stressors for both pre-service teachers and cooperative teachers, which is consistent with the literature (Male, 2003). The literature shows that classroom discipline is regarded as one of the major problems teachers face (Lewis et al., 2005). In another study, 90% of teachers said that the greatest challenge they face was student behavior problems (Feyten & Hine, 1998). Discipline problems not only results in stress for teachers, it also affects their teaching; teachers have to attend to discipline problems that cannot be ignored, rather than focusing on educating students (Abidin & Robinson, 2002). It is not surprising then that teachers in this study found lecturing to be stressful.

It is also not surprising that pre-service teachers' relationship with students' parents is correlated with parent involvement; good pre-service teacher-parent relationship encourages parent involvement. It is also possible that discipline problems may put teachers and parents at odds, which may discourage parent involvement. Most importantly, the relationship between parent involvement and student academic achievement is well understood. For example, in a

meta-analysis of 41 studies examined by Jeynes (2005), parent involvement, as a whole, was found to have a relationship with a child's academic achievement, and this was true for both boys and girls and children from majority as well as ethnic minority groups.   Overall, pre-service teachers at all levels, elementary, middle, and high schools, reported "parent involvement" as a remedy for stress, except those in rural areas. This may suggest that challenges do exist for those pre-service teachers assigned to the urban and suburban settings.

Discussion

In this study, teachers reported that not only student discipline is stressful, it is also related to problems with teaching and learning (e.g., lecturing). One area that needs to be explored for addressing student discipline problems and at the same time reduce teacher stress is consulting with other professionals who have expertise in dealing with student behavior problems. Given that discipline problems are most stressful for teachers, it appears teachers need more support from other professionals, such as school psychologists, social workers, and school counselors to address discipline problems.

One model that is currently used for addressing academic and behavioral needs of students, Response to Intervention (RtI), is a three-tier data-based approach for addressing behavior problems. First, students are screened for behavior problems, and effective research based education and interventions are implemented in the classroom. For students who do not respond positively in Tier I, a more intensive small group or individual intervention, Tier II and III, follow (Fairbanks, Sugai, Guardino, and Lathrop, 2007). The mental health professionals (e.g., school psychologists) can be extremely helpful to teachers in the RtI process.

Participants in this study found time management stressful, which was corroborated by other researchers (e.g., Rieg, Paquette, & Chen, 2007). It may be helpful to pre-service teachers if teacher training institutions as well as school districts offer time management skills training. Regarding remedies for relieving stress, pre-service teachers and cooperating teachers agreed that reducing class size and expelling disruptive students from the classroom would reduce their stress. Given the current economic crisis, the likelihood of reducing class size is nonexistent; and expelling students is not a good option for the individual student and society in the long run. Expelling students increases the likelihood of school dropout and involvement with the justice system (Tobin and Sugai, 1999). Instead, better support in the form of effective counseling would have a positive outcome for teachers and students. For instance, school psychologists can conduct functional behavior analysis to understand the function of student behavior problems and design school wide, classroom wide, group, or individual intervention as indicated.

In addition, pre-service teachers saw getting paid for student teaching, doing fewer lessons planning and grading, and increasing university supervisors' visits as remedies for stress more than cooperating teachers. On the other hand, cooperating teachers indicated increasing physical security would reduce their stress more than pre-service teachers. These differences may be due to experience; cooperating teachers may have learned the importance of physical security from experience, and they may also be more efficient in lesson planning and grading because of their experience.   For the pre-service teachers, getting paid for student teaching offers them the financial freedom to devote more time to student teaching, which also may reduce stress. In

other words, getting paid for student teaching will lessen the need for another paying job during student teaching.   As far as university supervision is concerned, pre-service teachers may want more of it for guidance due to familiarity with the university supervisors. After all, the university supervisors are professors which pre-service teachers have studied under. Moreover, university supervisors are supposed to be a positive influence in the classroom rather than add to the stress of the pre-service teacher or the cooperative teacher (Wadlington, Slaton, and Partridge, 1998).

Furthermore, because pre-service teachers reported higher stress level than cooperating teachers and difficulty keeping a positive relationship with other staff members; it is important that there is a support system for them in place during student teaching as well as during the first few years of their teaching experience. Mentoring, pairing a new teacher with effective and experienced teacher, is an example of a support system for new teachers (Boreen et al., 2009); and pre-service teachers may benefit from similar support. The cooperating teacher is in effect a supervisor, an evaluator, and the pre-service teacher may not always feel comfortable to disclose stressors for fear of negative evaluation.

Implications

This study highlights pre-service and cooperating teachers' assessment of stressors in the classroom and what they think can reduce their stress. Results of the study update the dated literature in this area; and it makes a unique contribution, because it compared pre-service and cooperative teachers' self-reported classroom experience. The information gleaned from this study can inform teacher training   and school districts. Despite some limitations, such as self-report is suspect to social desirability and the sample is relatively small, the study has important implication for teacher training institutions and school districts; it raises a few critical questions: For example, are cooperating teachers prepared or trained to effectively mentor pre-service teachers into the profession? As suggested by the pre-service teachers' wishes for fewer lessons planning and grading, do they fully understand the expectations for the role of the teacher? Will pre-service teachers benefit from targeted education prior to student teaching for dealing with student discipline problems, time management, and stress management? Future research may want to answer such questions.

References

Abebe, S., & Kitterman, J. (2006) Student teaching and stress. *Eastern Education Journal, 35*(1), 55-60.

Abidin, R. R., & Robinson, L. L. (2002). Stress, biases, or professionalism: What drive teachers' referral judgments of students with challenging behaviors. *Journal of Emotional and Behavioral Disorders, 10*(4), 204-212.

Bember, I., Brown, M., &Ralph, C. (2002). Gender-related causes of stress in trainee teachers on teaching practices in the School of Education, University of Manchester, UK. *Westminister Studies in Education 12*(2), p175-86.

Boreen, J., Johnson, M.K., Niday, N. & Potts, J. (2009). Mentoring Beginning Teachers (2nd Ed.). Portland, ME: Stenhouse Publishers.

Clement, M. (1999). Reducing the stress of student teaching. *Contemporary Education, 99*, 20-26.

Fairbanks, S., Sugai, G. Guardino, D., & Lathrop, M. (2007). Response to intervention: Examining classroom behavior support in second grade. *Exceptional Children*, *73*, 3, 288-311.

Feyten, C.M., & Hines, R.A. (1998). Exposing future teachers to the realities of emotional and behavioral disorders. *The Educational Forum, 62,* 4, 347-352.

Fleener, C. (2001). Lower teacher attrition rates: One measure of evidence for effectiveness of professional development schools. *ATE Newsletter, 34*(2), 1.

Fogarty, M. & Yarrow, A. (1994). Pre-service teacher stress and the practicum: An action research project, pp. 1-17. ED 375 142.

Gray, H. & Freeman, A. (1988). Teaching without stress. London: Chapman.

Greer, J. & Greer, B. (1992). Stopping burnout before it starts: Preventing measures at pre-service levels. Teacher Education and Special Education, 15(3), 168-174.

Grifith, J. A. & Brem, S. K. (2004). Teaching evolutionary biology: Pressures, stress, and coping. *Journal of Research in Science Teaching, 41*(8), 791-809.

Humphrey, J. N. & Humphrey, J. H. (1986). *Coping with stress in teaching*. New York: AMS Pres.

Jeynes, W. H. (2005). A Meta-Analysis of the Relation of Parental Involvement to Urban Elementary School Student Academic Achievement. *Education, 40*, 3, 237-269

Kaldi, S. (2009). Pre-service teachers' perceptions of self-competence in and emotions/stress about teaching in initial teacher education. *Educational Studies, 35*(3). 349-60

Lewis, R., Romini, S., Qui, X., & Katz, Y. (2005). Teachers' classroom discipline and student misbehavior in Australia, China and Israel. *Teaching and Teacher Education 21*: 721-41.

Male, D. (2003). Challenging behavior: The perceptions of teachers of children and young people with severe learning disabilities. *Journal of Research in Special Educational Needs, 3(3)*, 162-171

Marley, D. (2009). Sick leave due to stress doubles. *The Times Education Supplement* (London), Issue 4842, p. 3.

Miller, D. & Fraser, E. (2000). Stress associated with being a pre-service teacher: Opening out the perspective. *Scottish Education Review, 32*(2), 142-54.

Ridley, S., Hackett, M., Reese, R., & Griffith, J. (2002). Teacher stress in the schools: An examination of the relationship between resilience, retention, and reform in an urban elementary school. Paper presented at the annual conference of the American Educational Research Association, New Orleans, LA.

Rieg, S.A., Paquette, K.R., & Chen, Y. (2007). Coping with stress: An investigation of novice teachers' stressors in the elementary classroom. *Education, 128*(2), 211-217.

Roulston, K., Legette, R., & Womack, S.T. (2005). Beginning music teachers' perception of the transition from university to teaching in schools. *Music Education Research,7*(1), 59-82.

Tobin, T. & Sugai, G. M. (1999). Using sixth-grade school records to predict school violence, chronic discipline problems, and high school outcomes. *Journal of Emotional and Behavioral Disorders, 7*, 1, 40-53.

U.S. Department of Education. National Center for Education Statistics (1997). Job satisfaction among America's teachers: Effects of workplace conditions, background characteristics, and teacher compensation (NCES Publication No. 97-471). Washington, DC: Marianne Perie and David P. Baker.

Wadlington, E. M, Slaton, D., & Partridge, M. E. (1998). Alleviating stress in pre-service teachers during field experiences. *Education, 119*(2), p. 335

Wright, R. (1985). An examination of student teaching as a potential source of professional stress. A paper presented at the Rocky Mountain Educational Research Association. New Mexico State University, Las Cruces, New Mexico.

The Development of Criminal Justice Program in Georgia High Schools

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Abstract

The criminal justice program for high school curriculum, approved in Georgia in 2005, has grown rapidly and gained widespread support from students and school administrators.   The purpose of this study was to examine the implementation status of the program by surveying school principals and interviewing criminal justice teachers. Results of the study showed that program collaboration between P-12 schools and higher education institutions was still missing. Many transition channels remained to be opened.

Introduction

In recent years, many states such as Texas, Florida, New York, Nebraska, and California have developed a number of criminal justice and public safety courses in their middle or high school curricula. The development is based on the Law-Related Education Act of 1978 which calls for school students to be knowledgeable about laws, the criminal justice system, and fundamental and constitutional rights of citizens (Law Courts Education Society of BC, 2007). These criminal justice and public safety courses provide students an opportunity to explore practices for possible future careers in law enforcement and the legal system. Additionally, they can serve as a crime prevention and deterrence mechanism against school crime and violence (Bartsch & Cheurprakobkit, 2002; Cheurprakobkit & Bartsch, 2000; Crews & Counts, 1998; Hughes, 2004; Pereira & Rodriquez, 1997). In Georgia, the competency-based curriculum framework for Private Security and Protective Services was approved in 2004, authorizing criminal justice courses to be offered in middle and high schools to include (1) Foundations of Public Safety and Criminal Justice; (2) Introduction to Law Enforcement and Patrol Operations; (3) Constitutional and Criminal Law; (4) Criminal Investigation and Forensics; and (5) Law Enforcement Internship, in consecutive order. As the program is relatively new in Georgia, many questions remain unanswered. Therefore, a study of the implementation of criminal justice program in Georgia would help identify critical issues to be addressed for program improvement.

Review of Literature

Law-Related Education (LRE) Programs

The Law-Related Education (LRE) Act of 1978 is based on a philosophy that it is important that the public learns about the law which is a crucial element of society in the U.S. LRE is defined as education to equip non-lawyers with knowledge and skills pertaining to the law, the legal process, and the legal system that people need to function effectively in our pluralistic, democratic society based on the rules of law (American Bar Association, 2003). LRE has gained widespread support throughout the country and the practice of LRE was described as developing a love for the law (Developing a love for the law [Abstract], 1990).

School-Agency Partnership as LRE Program

Initial criminal justice programs in middle schools and high schools were originally in the format of school-agency partnership operations. A school-police partnership program exposed students to all aspects of criminal justice system, including safety, law enforcement, corrections, conflict resolution and the court system (DeJong, 1993; Pendleton, 1990). A school-attorney partnership program placed emphasis on U.S. Constitutions linking legal issues to students' personal lives (Repa, 1990). A school-university partnership program prepared high school students to pursue tertiary education in the field of criminal justice after high school graduation (Johnson, 1998; Treese, 2010).

Criminal Justice Program for Career Preparation

Some criminal justice programs helped prepare and motivate interested high school students to work in law while other programs focused on the preparation for protective services careers (Johnson, 1998; Treese, 2010). A high school in Florida offered a series of four criminal justice courses (Introduction to Criminal Justice; Patrol Operations and Field Investigations; Theory and Practice of Investigating Forensic Crime Scene; and Juvenile Delinquency and Crime Prevention) to students who also had the opportunities to engage themselves in extracurricular activities, such as a criminal justice club, charitable volunteers, and producing a monthly criminal justice newsletter (Johnson, 1998). An Ohio high school criminal justice program carried a practical orientation. It was developed to prepare students to get ready to serve in the legal field at time of high school graduation (Ohio State Department of Education, 2002).

Criminal Justice Program and At-Risk Students

Review of the literature showed that at-risk students resulted in positive outcomes after the students completed the LRE programs. Participated students gained positive experiences and attitudes, including better understanding and appreciation of the purpose of law, reduced tendencies toward delinquency, fewer disciplinary problems in school, decreased associations with delinquent peers, improved self-control, improved attitudes toward authority and personal responsibility, enhanced communication skills, and improved school attendance (Law Courts Education Society of B.C., 2007). Similarly, a 5-year evaluation study of nine career academies of at-risk students was conducted by Manpower Research Corporation (Kemple & Snipes, 2000) to examine the effectiveness of this delinquency prevention program. Findings indicated that dropout rates in career academies were reduced by nearly one-third. Students attended school more and completed more courses to earn college credit. The program also provided students opportunities to set their goals and reach their academic and professional objectives that they could not attain otherwise.

Criminal Justice Program and Crime Prevention/Deterrence

Repa (1990) suggested to link criminal justice issues to different aspects of students' lives and claimed that understanding the criminal justice system would inspire the younger generation for good citizenship. In tracing the development of school violence in the U.S., Crews and Counts (1998) found that offering criminal justice courses helped reduce the amount of school violence among teenagers. Pereira and Rodriquez (1997) found that the behaviors of high school students who completed courses in criminal justice program were less destructive than those who did not. The study of Hughes (2004) on juvenile violence yielded similar results.

Criminal Justice Program Implementation

Ninety-nine percent of the high schools in the U.S. did not offer criminal justice courses in their school curricula (Gadek, 2010). However, many examples of excellent program could be cited from those high schools that did offer the program. A four year criminal justice magnet program attached to a high school in Texas provided students with the academic preparation to pursue a college criminal justice degree and practical preparation to start a career in the legal

field (Treese, 2010). Another outstanding criminal justice program was located in Ohio by employing Integrated Technical and Academic Competency (ITAC) approach (Ohio State Department of Education, 2002). Students in the program were ready to serve the community when they graduated from high school.

Bartsch and Cheurprakobkit (2002) and Cheurprakobkit and Bartsch (2000) surveyed all Texas middle and high school principals about criminal justice programs in their schools. Results of the studies disclosed that almost all criminal justice teachers in Texas schools had law enforcement backgrounds. It was found that the three courses most often taught were Introduction to Criminal Justice, Crime in America, and Criminal Law. These studies also found that the main problems facing their schools included difficulties in recruiting qualified teachers, identifying good textbooks, and looking for appropriate class schedules.

In summarizing the review of literature, it was found that criminal justice programs in middle schools and high schools were at their initial stage of development in the U.S. Only a few empirical studies were conducted on criminal justice curriculum issues in schools. In the State of Georgia, while potential interests in high school criminal justice program exist, systematic planning has to be done to lead the way to constructive program development. Therefore, the focus of this study is on examining important program issues such as college credit transferability, teaching certification program, and the need for training support and academic assistance in the criminal justice program in Georgia high schools.

Research Questions

This study is designed to answer the following research questions: (1) Are there needs for high school criminal justice programs as perceived by teachers and principals? (2) What do high school teachers and principals perceive to be teacher related issues in criminal justice programs? (3) How do teachers and principals perceive the development of criminal justice programs in Georgia high schools? (4) What supports do teachers and principals perceive as needed for criminal justice programs in high schools?

Methodology

Research Design

A mixed methodology of quantitative and qualitative approaches was designed in this study. "Considering the breadth and magnitude of much of educational research, it is not surprising that a single study may require mixed methods." (Wiersma & Jurs, 2005, p. 277) High school principals in Georgia were surveyed and selected teachers in the criminal justice program were interviewed to solicit their perceptions of the program development. The use of a mixed approach presented a more holistic picture of status and quality of this new high school program.

Participants

All of the 135 high school principals from 14 school systems in Metropolitan Atlanta Area, Georgia, were invited to participate in the study. Sixty-four principals responded with a 47.4 % return rate. Of the 64 participating principals, 57 provided with demographic information for reference. Thirty-nine principals (68.4%) were males and 18 (31.6%) were females. In ethnicity, 47 principals (82.5%) were Caucasians and 10 (17.5%) were African Americans. Most of the principals (27 or 47.4%) earned their Education Specialist degrees and 14 principals (24.6%) were holding Master's degrees. Sixteen principals were holders of doctoral degrees. About half of the principals (28 or 49.2%) had 6-15 years of experience as school principal while 21 of them (36.8%) had 1-5 years as principal and 8 (14%) had 16 or more years as principal. To gain a deeper insight about the criminal justice program, the researchers invited criminal justice teachers of the most substantially developed programs to participate in person-to-person interviews. They were highly recommended by the school principals as the ones who knew the criminal justice program best. As a result, five criminal justice program teachers volunteered to participate in the interview as part of the data collection process of the study.

Survey Instrument

The quantitative survey instrument was researcher-constructed to survey principals' perception of the criminal justice program. Questions in the survey were focused on five areas. The first area was related to whether the school offers any of the approved criminal justice courses. The second area was about criminal justice teachers and their actual and perceived qualifications. The third area examined principals' perceptions about criminal justice program related issues such as enrollment, course pre-requites, and college credits. The fourth area was associated with problems schools are facing in offering criminal justice courses. The fifth area related to the support schools need for program continuation. Varied data collection techniques were employed to include checking, rank-ordering, Likert Scale and open responses to suit the nature of different questions. The original instrument was piloted with a group of five school principals to examine its validity in contents, format and language. Principals' constructive comments and recommendations for improvement were incorporated into the revised version of the instrument.

In addition, seven open-ended questions were used for interviewing the criminal justice teachers about the criminal justice program in their schools. These seven open-ended questions relate to: (1) their background and initial involvement in the criminal justice curriculum; (2) the number of criminal justice instructors; (3) training received for offering criminal justice courses; (4) students' attitudes toward the criminal justice curriculum; (5) former criminal justice students seeking a criminal justice degree in college; (6) student satisfaction with the current criminal justice program; and (7) the most crucial support instructors need from school administrators. These open-ended questions helped solicit substantial qualitative data in support of the findings of this study.

Findings

Analysis of Quantitative Data

Findings from data analysis indicated that 17 participating high schools (about 27%) offered the five state approved criminal justice courses to students. Most of the schools (15 of 17) offered Foundations of Public Safety and Criminal Justice, Introduction to Law Enforcement and Patrol Operations, Constitutional and Criminal Law, and Criminal Investigation and Forensics. Law Enforcement Internship was the least available course to students, with only six schools (9.4%) offering the course.

Regarding the criminal justice teachers in high schools, findings of the study showed that the majority of the criminal justice teachers (20) were full-time school teachers. There were only seven police officers and two volunteers who helped teach the criminal justice courses. The principals also reported 23 out of 30 criminal justice teachers were certified. Other non-certified teachers would be certified eventually.

Findings from Table 1 showed the principals' perceptions of development of the criminal justice curriculum. Twenty-nine principals (60.4%) believed that the approved criminal justice courses should be given college credit. Over half of the principals agreed that prerequisites needed to be specified for taking criminal justice courses (28 principals or 58.4%). A majority of them believed that the criminal justice program was steadily developing as seen by the rise of student enrollment in the criminal justice courses (20 principals or 86.9%).

Table 1. Principals' Perceptions of Criminal Justice Program Issues (N=64)

Questions	Agree/ Strongly Agree	Disagree/ Strongly Disagree
Criminal Justice courses should be given college credit.	29 (60.4)	19 (39.6)
Pre-requisite is needed for Criminal Justice courses.	28 (58.4)	20 (41.7)
Student enrollment is on the rise.	20 (86.9)	3 (13.0)

Participants' responses to the difficulties schools were facing in offering criminal justice courses are shown in Table 2. The three most serious issues were the difficulties in finding qualified teachers (M=2.87), scheduling for classes (M=2.22), and finding appropriate textbooks (M=2). Other issues such as lack of support from parents, school board, and students were not as critical.

Table 2. Principals' Perception of Difficulties in Offering Criminal Justice
        Courses in School

Difficulties	Mean Score
Finding a qualified teacher	2.87
Scheduling for classes	2.22
Finding appropriate textbooks	2.00
Designing lesson plans for the courses	1.74
Lack of interest from students	1.60
Lack of support from school board	1.49
Lack of support from parents	1.45
Lack of support from school administration	1.32

Note: 1 to 4 scale
        (1=Not Difficult, 2=Difficult, 3=More Difficult, 4=Most Difficult)

Principals' perceptions of support needed for the criminal justice program were analyzed: a state-wide promotion of the criminal justice curriculum (M=3.40), development of teaching certification programs (M=3.17) and recruitment for qualified criminal justice teachers (M=3.17). Other supports recommended by the principals included workshops on program setup (M=3.00), lesson plan development (M=3.00), program marketing strategies (M=2.96), and program evaluation (M=2.88). (See Table 3.)

Table 3. Principals' Perceived Need for Support of the Criminal Justice
        Program in School

Support	Mean Score
State-wide effort to promote the CJ curriculum	3.40
Develop a teaching certification program for CJ teachers	3.17
Programs to help recruit qualified CJ teachers	3.17
Workshop on how to set up the CJ program	3.00
Workshop for helping teachers develop lesson plans	3.00
Workshop for promoting the CJ program	2.96
Workshop on how to evaluate the program's effectiveness	2.88

Note: 1 to 4 scale
        (1=Not Beneficial, 2=Somewhat Beneficial, 3=Beneficial,
         4=Most Beneficial)

Analysis of Qualitative Data

        Although only five high school criminal justice teachers participated in the interview, the data were very informative given the fact that two of these teachers were involved in the development of the criminal justice curriculum that was approved by Georgia's State Board of Education. Data showed that all of these criminal justice teachers had previously worked in law enforcement (one of them was a former probation officer) with high teaching credentials (one

with Ph.D. degree, two with Master degrees, and two pursuing Master degrees). Most of the high schools had only one criminal justice teacher. One high school had two. Teachers anticipated future student enrollment in the criminal justice program to rise with a great demand for teachers. Although only 17 high schools in Georgia offered criminal justice courses at this time, teachers could identify an approximate 100 high schools in Georgia working on incorporating criminal justice courses into their curricula. One high school, with the largest criminal justice program enrollment (265 students) in Georgia, had to turn down at least 200 students a year due to seat limitations. Teachers were surprised to find out that many colleges and universities in Georgia did not know about the existence of the growing criminal justice programs in high schools.

In teacher preparation, most teachers stated that there was no formal training provided to them. The teachers received training from various sources depending on resource availability and accessibility. Professional development was actually received through informal discussions and shared experiences with other colleagues through sessions offered by professional organizations like the Georgia Association of Public Safety Instructors. Training activities included one-on-one mentoring and online program on lesson planning and assessment.

Most teachers described student attitudes toward the program to be positive and exciting. Student participation in program activities was enthusiastic. Most first year students continued with the second and third year courses because of "hands-on and real-life" activities, including guest speakers, field trips, videos, current events, exercises and scenarios. Many students, particularly those in urban areas, expressed their interest in pursuing their criminal justice degrees at higher education institutions and choosing careers in the legal profession and the criminal justice field.

Most teachers were satisfied with the development of the criminal justice program in Georgia. They saw evidence of increasing growth of the program and increasing support from parents and school administrators. Some teachers believed that the program could be improved in many areas, including: (1) addressing the sequence requirement of the courses to ensure a logical flow of intellectual development; (2) helping new teachers to improve and more quickly prepare themselves for the classroom environment; (3) positioning the program with criminal justice career orientation; (4) integrating technology into the criminal justice program; and (5) addressing the scheduling issues so that criminal justice classes can be more readily accessible to students.

Finally, teachers anticipated support from administration to strengthen the quality of the program by understanding the program not as a dumping ground for troubled students and also by providing financial support for purchasing needed equipment and covering field trips' expenses. Teachers particularly mentioned that block scheduling, used quite often in high schools, was not of much benefit to the criminal justice program. Another concern raised by the teachers was the lack of support in placing students in internship in public and private agencies, because of potential liability issues. To address this internship issue, a suggestion was to assign a contact person to bridge the gap between schools and professional organizations to facilitate internship placement.

Discussions and Conclusions

The findings of this study indicated that the high school criminal justice program was increasingly popular and had gained continuous support from students, parents and school administrators since its initial approval in 2004-2005. Although the law enforcement internship course proved to be somewhat problematic due to the legal liability concern, most schools now are aware of the issue and are able to place students at various internship sites.

Principals' responses in this study are consistent with those of the 2000 and 2002 studies of middle and high schools in Texas (Cheurprakobkit & Bartsch, 2000; Bartsch & Cheurprakobkit, 2002). In this study, almost all criminal justice teachers in high schools were former law enforcement officials and that the three main problems in offering the criminal justice program were similar to the previous studies. It is clear that criminal justice programs in different states faced similar difficulties in initial implementation.

Despite the increasing popularity of the criminal justice program in many high schools, the findings of this study revealed that a number of higher education institutes were unaware of the existence of the criminal justice program. Educators from P-12 schools and higher education institutes can launch a joint state-wide effort in promoting the most needed criminal justice program in Georgia.

Most importantly, the results of this study indicated strong potential collaboration between high school administrators and college/university faculty. High school principals and criminal justice faculty of higher education institutions could collaboratively address the issues and concerns of school's criminal justice program (i.e., a teaching certification program, recruiting qualified teachers, workshops on developing lesson plans and criminal justice programs, college credit transfer, and even the internship placement). Since the findings show that students' retention rates in the criminal justice program and students' interest in pursuing their degrees and careers in the field of criminal justice were high, such collaboration would greatly help with student transferability from high schools to colleges.

To conclude, findings in this study not only revealed the rapid and continuing growth of the criminal justice curriculum in high schools of Georgia, but also indicated critical areas of the program that needed improvement. The issues and concerns disclosed in this study are common among new programs and can be effectively addressed through proper academic channels and both formal and informal collaboration of the stakeholders. Future research could examine the following perspectives: (1) Can teachers without law enforcement background be effective criminal justice instructors in high schools? (2) What are the essential elements in the development of a rigorous criminal justice program? (3) What is the relationship between criminal justice program offering and school crime and violence?

References

American Bar Association. (2003). *A guide for practitioners and policymakers: Essentials of law-related education.* Chicago, IL: Division for Public Education. The National LRE Resource Center.

Bartsch, R. A., & Cheurprakobkit, S. (2002). School problems and learning about crime and criminal justice systems: Principals' views. *Educational Studies, 28*(3), 275-285.

Cheurprakobkit, S., & Bartsch, R. A. (2000). School crime and education: Is there a need for criminology/criminal justice courses in the high school curriculum? *Journal of Security Administration, 23*(2), 1-12.

Crews, G. A., & Counts, M. R. (1998*). Tracing the development of school violence in the United States.* Paper presented at the annual meeting of the Academy of Criminal Justice Sciences, Albuquerque, NM.

DeJong, W. (1993). *Building the peace: The Resolving Conflict Creativity Program (RCCP)* (ERIC Reproductive Document: ED379562).

Developing a love for the law [Abstract]. (1990, Fall). *School Safety*, 26-28. (ERIC Reproductive Document EJ419895)

Gadek, R. M. (2010). *High school classes needed for a criminal justice college*. Retrieved January 10, 2011 from http://criminaljusticeonlineblog.com/archives/high-school-classes-needed-for-a-criminal-justice-college/

Hughes, M. (2004). How schools of social work perceive and are responding to juvenile violence: A national survey. *Social Work Education, 23*(1), 63-75.

Johnson, L. (1998). Preparing students for criminal justice careers. *FBI Law Enforcement Bulletin, 67*(9), 21-24.

Kemple, J. J., & Snipes, J. C. (2000*). Career academies: Impacts on students' engagement and performance in high school.* San Francisco, CA: Manpower Demonstration Research Corporation.

Law Courts Education Society of BC. (2007). *Guidelines for preparing law-related education (LRE) programs for at-risk students.* Retrieved November 11, 2008 from http://www.lawcourtsed.ca/lre_guideline/.

Ohio State Department of Education. (2002). *Criminal justice [Fastack Specialization Integrated Technical and Academic Competency (ITAC)]*. Columbus, Ohio: Author. (ERIC Reproductive Document ED472431)

Pereira, C., & Rodriquez, K. (1997). Linking violence prevention and good social studies: Research and development. *Social Education, 61*(5), 282-287.

Pendleton, M. (1989). Police-teacher partnership guide. (ERIC Reproductive Document ED342696)

Repa, B. K. (1990). On the inside looking in. *Social Education, 54*(6), 363. (ERIC Reproductive Document: EJ419148)

Treese, P. (2010). *Criminal justice*. Retrieved January 10, 2011 from http://www.sbac.edu/~nhs/cj/criminalj.htm

Wiersma, W., & Jurs, S. G. (2005). *Research methods in education.* (8th ed.). Boston, MA: Allyn and Bacon.

The Use of Electronic Portfolios in an Elementary Mathematics Methods Class

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Abstract

This article describes how one midwestern university developed and sustained electronic portfolios to evaluate preservice teachers' achievement of objectives for a math methods course and required field experience. Additionally, the authors share the template and scoring rubric they have implemented in their courses. Feedback from preservice teachers enrolled in the methods courses/field experience suggests that the electronic portfolio is beneficial in encouraging reflective practice, enhancing technology skills, and understanding instructional methods that may be applied in future classroom teaching. Moreover, the instructors identify other positive aspects associated with the assignment such as increased retention of course material and motivation toward learning content with understanding.

Traditionally, many preservice teachers tend to view mathematics assessment as quizzes and tests along with grades for homework exercises. According to the National Council of Teachers of Mathematics Assessment Principle (National Council of Teachers of Mathematics, 2000, p. 22) assessment should "support the learning of important mathematics and furnish useful information to both teachers and students." Rather than administering a test at the end of instruction, assessment should be viewed as an integral part of teaching. Gathering information about students' mathematical understandings and misconceptions can be done through many alternative forms of assessment, such as interviews, performance tasks, and portfolios. In a content-specific methods course it is essential that teacher educators provide meaningful opportunities for learning about effective instructional strategies, including assessment methods, if the expectation is for new teachers to be able to apply the methods in their own instruction (Liebars, 1999).

Background

In education, portfolios were first unveiled as an assessment method for determining student learning in K-12 schools. More recently, universities have implemented portfolios in an effort to document their students' learning for accreditation purposes (Bullock & Hawk, 2001; Wetzel & Strudler, 2006). This accountability has led to the incorporation of performance products, such as electronic portfolios, into many teacher preparation programs (Bullock & Hawk, 2001).

An electronic portfolio, also referred to as an e-folio, is a purposeful collection of work (Sosin & Pepper-Sanello, 2008). The individual's progress and achievements, which are captured electronically, are exhibited for one or more areas of expertise. Shulman (1998) recommended, "Portfolios include not only the documentation of teaching, but the documentation of student learning. In the ultimate nirvana, the very best teaching portfolios will consist predominantly of student portfolios." Portfolios have become useful partners in testing and evaluating skill sets of teachers. In teacher preparation programs, portfolios may be used to document a preservice teacher's acquisition of knowledge and teaching as well as his/her ability to teach (Bullock & Hawk, 2001). Preservice teachers may create a teaching portfolio that contains evidence of their knowledge, skills, abilities, and dispositions of their teaching at various stages of development.

Electronic portfolios can be Web based or formatted using other digital media such as a CD. E-folios in education represent a teaching candidate's accomplishments by showcasing teaching, learning, and reflective artifacts (Costantino & Lorenzo, 2002). The electronic portfolio broadens the typical paper-pencil format by including artifacts that may potentially blend audio, video, graphics, and text. In addition, hypermedia links can be used to connect specific content standards to various artifacts.

There are many benefits associated with the electronic format. First, the e-folio allows preservice teachers to demonstrate their technological competence (Costantino & Lorenzo, 2002). With an electronic format, the portfolio becomes more widely accessible and is easy to duplicate. When reviewing the e-folio, the audience experiences a multimedia presentation rather than passively reading about a preservice teacher's accomplishments (Wyatt & Looper,

2004). Wolf and Dietz (1998) found that hiring personnel favored the use of electronic portfolios, citing such benefits as better representation of candidates' perspectives, practices, and teaching talents.

In portfolio development, reflection is the key component (Bullock & Hawk, 2001, p. 31). Reflection helps a preservice teacher both discover and document their changing views and knowledge of teaching. In a survey of midwestern K-12 principals, nearly 57% indicated they would like to view a portfolio artifact with evidence of reflection on teaching experiences in a teaching candidate's portfolio (Strawhecker, Messersmith & Balcom, 2007).

As early as 1933, Dewey (1985) proposed the importance of reflective thinking that is paramount in the education of preservice teachers. Reflection should be an integral part of a teacher's preparation and practice and needs to be experienced throughout the entire learning and teaching process (Holm & Horn, 2003). Dunn (2005) contended that the process of engaging in critical reflection requires a paradigm shift as well as causes a considerable amount of disequilibrium on the part of preservice teachers, but that this is necessary for the broadening of their vision for teaching mathematics in diverse classrooms. In order to develop into an effective teacher, teachers need to become more thoughtful about their practice (Bullock & Hawk, 2001). Having preservice teachers reflect on their experiences is extremely important for developing strong teachers of mathematicsa, and for helping those teachers abandon ineffective teaching methods they experienced as students during their elementary years. McIntyre, et al (1996) also asserted that increased practice in field experiences *without* reflection failed to lead to professional growth.

In addition to preservice teachers' reflection on their field experiences, reflection is also important in terms of what preservice teachers learn in their course work. McDiarmid (1990) noted that purposeful experiences paired with reflection opportunities could help preservice teachers attend to key learnings and establish a more immediate need for knowledge. Soto-Johnson, Iiams, Oberg, Boschmans, and Hoffmeister (2008) found that active reflection helped preservice elementary teachers reinforce their conceptual understanding of mathematics and articulate their teaching intentions for their future classrooms. Moreover, McCarthy's study (2008) suggested that preservice teachers' views of reflection in their mathematics classes were positive and valuable to future instruction.

<center>Context</center>

The university committed to renewing the teacher education program in the late 1990's. Seven key "rocks" guided the development of the renewed program, with one of the guiding rocks labeled as Field-Based Programs. Support from a tri-partite team (comprised of faculty from K-12 schools, Arts and Sciences, and Teacher Education) led to what is now known as the Math Methods Field Experience, a hands-on, school-based experience involving work with elementary-aged children and hosted by one local partner school. Two other co- requisite courses are taken concurrently with the field experience, the methods course and also a mathematics content course. The methods course/field experience is taught and supervised by teacher education faculty, with faculty from the math department responsible for instruction of the content course.

For the preservice teachers, this mathematics "block" typically represents their first field experience working directly with children. For this reason, pairs of preservice teachers work with pairs of children on approximately 10 Fridays throughout the semester. The small group design more readily provides opportunities for preservice teachers to focus intently on what the child says, thinks, and does with regard to mathematics. With larger groups of children, preservice teachers with limited classroom management skills may focus more on management issues rather than on the mathematical thinking of children.

In two separate half hour sessions, preservice teachers partake in grade-specific math partner games with first grade students and later third grade students. The math methods instructors provide materials and directions for the partner games while the preservice teachers prepare and practice the games outside of class.

As one preservice teacher directs the math game session, the other takes extensive notes in an attempt to document students' understandings and misconceptions. These observations are recorded on designated field note forms that include important glossary terms, specific to each mathematical concept. In addition to taking notes, the preservice teacher captures digital pictures of events to support his/her notes. Midway through a session, the preservice teachers switch roles and a second math game is introduced to the pair of children.

As the semester progresses, preservice teachers begin to work individually on the required math methods e-folio. The template and scoring rubrics for the e-folio are found in Appendix A; the first page of the assignment showcases a preservice teacher's philosophy about teaching mathematics that was written on the first day of class. For the next three pages, the preservice teachers compose their "artifact write-ups" for each of four specified areas of study: Early Number Sense, Problem Solving, Basic Facts, and Effective Teaching Methods. The format for artifact write-ups include: 1) pictures of a child involved in the mathematical process and/or a student's work sample from the session; 2) a paragraph describing the context in which the artifact was created, including the math concept being studied and relevant details about the activity; 3) a paragraph describing how the artifact shows what the student understands and does not understand in regard to a particular math concept. In this paragraph, preservice teachers are to demonstrate command for two different glossary terms. Over the past five years, the e-folio assignment has evolved so as to allow authentic assessment of many of the course and field objectives, including: develop awareness of methods of teaching mathematics in a diverse classroom setting; identify and use problem solving strategies appropriate to various problem situations; understand the importance of a developmentally appropriate curriculum with activities in mathematics which make children curious about learning; develop meaning for the operations by modeling and discussing a variety of problem situations related to the operations (basic fact development); understand the role of technology in teaching mathematics; understand the importance of using manipulatives to teach mathematical concepts; reflect on individual teaching practices to improve instruction and guide professional growth; and select or develop appropriate methods of classroom assessment.

Methods

The researchers began with the following question:

What is the meaningfulness of the e-folio assignment from the perspective of the preservice teachers?

Qualitative data were collected after grades were posted at the conclusion of the Spring 2009 semester and again at conclusion of the Summer 2009 session. Of 57 students, 25% were emailed a short series of five reflective questions with regard to the e-folio experience in Math Methods I. The students included in this sample were purposefully selected based on their reflective capacity demonstrated throughout the semester. In addition, unsolicited comments were also collected via university-required teaching evaluations from the three sections of Math Methods students.

Findings

At the conclusion of the semester, preservice teachers were asked to reflect on five questions pertaining to the e-folio assignment. The length of the individual responses varied, but the overall sentiment of the feedback was very positive. A sampling of the responses collected from the past two semesters are included in Appendix B.

One such finding uncovered through the responses related to a course objective, "Understand the importance of a developmentally appropriate curriculum with activities in mathematics which make children curious about learning." Through reflection and exposure to the various resources used in the field preservice teachers gained perspective on the impact curricular materials have on student learning as well as insight into differentiation of instruction. In addition, the preservice teachers also revisited the various teaching methods presented throughout the semester as they reflected on an individual choice for the *Effective Teaching Method* section of the e-folio. This reflection allowed for more purposeful thinking about the use of manipulatives, technology, mathematical games, and children's literature while encouraging the abandonment of ineffective teaching methods from their past (Bullock & Hawk, 2001). The above findings solidified the alignment between course objectives and the assignment.

With the Every Day Counts Partner Games (Gillespie & Kanter, 2005), preservice teachers easily selected an alternative method of assessment aligned with the NCTM Assessment Principle (NCTM, 2000). Many preservice teachers observed and documented the performances that transpired during a mini-session. Additionally, the preservice teachers gained invaluable experience asking questions to determine what a child understands or does not understand. By collecting artifacts over time, the preservice teachers also acquired perspective on how a math portfolio works. The capstone of these assessment experiences had preservice teachers analyzing children's mathematics work collected over a semester.

During the final weeks of the semester, preservice teachers shared a short presentation of their e-folio as a celebration of their learning and accomplishments. Viewing the assignment

from this vantage seemed to help most of the preservice teachers relax and share. The methods instructors reported a boost in preservice teachers' confidence in their readiness as a future teacher of mathematics during the e-folio presentations. For many preservice teachers, being in the role of "teaching" their peers made a drastic difference in how they viewed themselves. For preservice teachers, presenting their e-folios verbally and electronically appeared to enable them to crystallize and strengthen their thinking. These presentations were positive experiences both on the part of instructors, and more importantly, for the preservice teachers.

Discussion

Preservice teachers' involvement in the development of their math methods e-folios provided many benefits. Findings included those observed by instructors, as well as written comments from preservice teachers. In general, the math methods e-folio experience has enabled preservice teachers to gain better command of the concepts and related terminology presented in the course. With a relevant context in which to apply their math methods learning, the preservice teachers had many more opportunities to grapple with the complex concepts of number sense, basic facts, and problem solving. This growth in understanding was evident in class discussions as well as on preservice teachers' performance on the final exam. Another lifelong benefit included the opportunity for the preservice teachers to develop and use higher level thinking skills. This occurred as they evaluated the children's work, which comprised much of their e-folios, and as they synthesized their knowledge of key concepts and terminology in the accompanying artifact write-ups. Moreover, both content and methods instructors have noted an increase in preservice teachers' motivation toward learning since the e-folio assignment has been implemented.

As instructors, the additional data gathered via student comments allowed a further analysis of the effect of the e-folio assignment from a student's perspective, which addresses the research question of this study. The instructors learned that most of the course objectives and goals of the assignment were also apparent to the preservice teachers, such as reflecting on individual teaching practices, selecting appropriate methods of assessment, and developing an awareness of methods of teaching mathematics in a diverse classroom setting. Instructors were able to evaluate which course objectives were omitted, including the specific use of technology or manipulatives. This came as a surprise as each weekly session involved a concrete model and on occasion, the use of computers or calculators. Interestingly, some other relevant teaching skills surfaced, which included the role of communication during mathematics, lesson planning to include appropriate objectives and communication with parents to report student progress. Lastly, the most common challenge shared by the preservice teachers dealt with technological issues. In the future, this is expected to improve the findings are communicated with the instructors of the sophomore – level education class, which focuses on technology skills.

Conclusion

Preservice teachers' written feedback summarized the impact of the e-folio assignment and solidified the observations documented by the course instructors. One prominent theme from the comments pointed to the role of reflection, which is consistent with one of the objectives for the course. Holm and Horn (2003) contended that reflection be integrated into a

teacher's preparation and continually practiced. Additionally, the comments from the preservice teachers reiterated how specific assessment methods are utilized with the children and several comments speculate about how these strategies will be beneficial to their practice in the future. If the expectation is for new teachers to be able to apply various methods in their own teaching, it is important that teacher educators provide meaningful opportunities for learning about the methods (Liebars, 1999).

With regard to preservice teachers' futures, instructors have witnessed an increase in scores on the final exam for the course, which is believed to be correlated with the meaningful, higher-level work they do with the e-folio assignment. Furthermore, preservice teachers have begun a professional portfolio in that they have documented a beginning philosophy about teaching elementary school mathematics coupled with analyses of student work in a desired, electronic format (Wolf & Dietz, 1998).

The development of the e-folio assignment for the Math Methods course and field experience has evolved over the past five years. This model may be easily adapted for use in other content-methods courses in teacher preparation. With two course instructors, there was the opportunity to collaborate on a regular basis and modify small aspects of the assignment over time to get to this current stage of development with the e-folio. Therefore, an e-folio in the beginning stages of development may warrant more areas of concern and fewer noticeable benefits for preservice teachers. Another potential limitation includes instructor bias, as we are the primary investigators describing the e-folio's implementation based partially on our observations. Finally, the e-folio assignment has prescribed artifacts and formatting; however, other forms of portfolios in education typically allow for more student choice. This has potential to skew preservice teachers' views of the potential uses of portfolios in an elementary classroom.

As a follow-up study, teacher educators who use portfolios as a type of assessment could conduct research to determine whether or not portfolios are used in K-12 classrooms of former preservice teachers. Additionally, research methods used on a larger scale could be utilized to further analyze the impact of the e-folio assignment on preservice teachers' beliefs and/or learning.

Appendix A
e-folio Template

Early Number Sense   Problem Solving   Basic Facts   Teaching Methods
Initial Philosophy Statements   Concluding Philosophy Statements

Initial Philosophy Statements

(date written)

1. I believe
Therefore as a teacher of mathematics I will

2. I believe
Therefore as a teacher of mathematics I will

3. I believe
Therefore as a teacher of mathematics I will

Concluding Philosophy Statements

(date written)

1. I believe
Therefore as a teacher of mathematics I will

2. I believe
Therefore as a teacher of mathematics I will

3. I believe
Therefore as a teacher of mathematics I will

1

Early Number Sense   Problem Solving   Basic Facts   Teaching Methods
Initial Philosophy Statements   Concluding Philosophy Statements

Early Number Sense

Artifact   (date collected)
Artifact Title:
Child's Name:
Grade Level:

During this activity …

This artifact shows …

2

Scoring Rubrics

Initial Philosophy Statements Rubric	Proficient	Progressing	Beginning
Visual Appeal	*DATE has been changed Spring 2009 * NAME has been changed to first and last name	*Missing one criterion from the level 2 performance.	*Missing both criteria from the level 2 performance.
Statements	* All Statements are numbered and typed exactly as on back of Personal Data Form (with the exception of spellchecking/word omission)		* Statements have been modified.
Conventions	*Almost no grammatical, spelling, or punctuation errors. (2 or less)	*A few grammatical, spelling, or punctuation errors. (3)	Many grammatical, spelling, or punctuation errors. (4 or more)

Instructor-Approved Artifact	Proficient	Progressing	Beginning
Visual Appeal – must have an appropriate artifact (refer to the Portfolio power point)	* Headings have been correctly modified * Artifact and Artifact Write-Up ne page * Photographs are date stamped * Artifact is neatly displayed	* Two of the criteria for Visual Appeal are met	*** Inappropriate artifact is displayed** **OR** * None of the criteria for Visual Appeal are met
Conventions	*Almost no grammatical, spelling or punctuation errors (2 or less)	*A few grammatical, spelling, or punctuation errors. (3)	*Many grammatical, spelling, or punctuation errors. (4 or more)
Artifact Collection (During this activity…) *Use language at an acceptable level for that of a Math Methods student **4-6 sentences**	**Specifically describes the context in which this artifact was created, including the math concept being studied and **relevant details from the activity.**	*Somewhat describes the context in which this artifact was created, including either: - **math concept** being studied - **relevant details** from the activity	*Inadequate description of the context in which this artifact was created, fails to address: - **math concept** being studied - **relevant details** from the activity
Analysis of Artifact (This artifact shows…) *Use language at an acceptable level for that of a Math Methods student **4-6 sentences**	*Specifically describes what can be seen about the student's understanding or lack of understanding within this artifact. * Analysis paragraph is validated by details found in Field Notes	*Somewhat describes what can be seen about the student's understanding or lack of understanding within this artifact. (Strays from what is seen in the actual artifact.)	*Does not describe what can be seen about the student's understanding or lack of understanding within this artifact. (Does not refer to artifact.) * Analysis paragraph cannot be validated through Field Notes
Word Choice in Analysis of Artifact (This artifact shows…)	• Properly uses (**Bolds and underlines**) exactly 2 *Instructor-Approved Glossary Terms* in the Analysis paragraph (demonstrates clear understanding of each term) * Analysis paragraph is validated by details found in Field Notes	*Properly uses (**Bolds and underlines**) 1 *Instructor-Approved Glossary Term* in the Analysis paragraph (demonstrates clear understanding of the term)	*Did not properly use *Instructor-Approved Glossary Terms* * *Instructor-Approved Glossary Terms* not bolded/underlined * Analysis paragraph cannot be validated through Field Notes

Concluding Philosophy Statements Rubric

	Proficient	Progressing	Beginning	Beginning
"I Believe …" statements	**All 3 belief statements are specific to Math instruction,** are complete and aligned with TE311 instruction	**2 of the 3** belief statements **are specific to Math instruction,** are complete and aligned with TE311 instruction	**1 of the 3** belief statements **is specific to Math instruction,** is complete and aligned with TE311 instruction	**None of the 3** belief statements **are specific to Math instruction,** are complete and aligned with TE311 instruction
"Therefore, as a mathematics teacher I will…" (actionable)	All 3 statements are complete, actionable and aligned with TE311 instruction	2 of the 3 statements are complete, actionable and aligned with TE311 instruction	1 of the 3 statements is complete, actionable and aligned with TE311 instruction	None of the 3 statements are complete, actionable and aligned with TE311 instruction
Terminology and Language Usage			Uses terminology and language at an acceptable level for that of a student who has nearly completed Math Methods.	The use of terminology and language is NOT at an acceptable level for that of a student who has nearly completed Math Methods.
Growth from Initial Philosophy Statements			Considerable growth between *Initial Philosophy Statements* and *Concluding Philosophy Statements*	Very Little growth between *Initial Philosophy Statements* and *Concluding Philosophy Statements*
Typing of Statements			All Statements are typed exactly as on the TE311/13 Concluding Philosophy Statements (with the exception of spellchecking/word omission)	Statements have been modified.
Conventions			A few grammatical, spelling, or punctuation errors. (1 or less)	Many grammatical, spelling, or punctuation errors. (2 or more)

Appendix B
Math Methods Preservice Teachers' Survey Responses to Questions
1) What do you believe was the purpose of the Math Methods e-folio?

- I believe the purpose of it was to help us understand the terms and to reinforce the concepts we learned while in class.
- The Math Methods e-folio shows your work with a student using all the tools and strategies you learn from class. It helps the student with hands-on learning. True learning occurs as you are the teacher and also because as the teacher you learn about teaching strategies and what concepts the student is learning.
- I think the e-folio was used to help us reflect on the learning or absence of learning that was happening with our students and to analyze the strategies (our students) used.
- I believe the purpose of the Math Methods e-folio is to learn to observe and interact with your students at the same time.
- I believe the purpose of the e-folio was to help Math Methods students learn how to describe and analyze their experiences in the classroom. Basically, this gave us a chance to reflect on how the sessions went, what the students did and didn't understand, or what we could have done better. The e-folio gave us a way to do some evaluation, so that we can do better in the future.
- I believe that the Math Methods e-folio is multipurpose. The e-folio demonstrates the depth of understanding that was attained by the Math Methods students. This is a helpful assessment tool for both the students and the instructors. It can also be a useful addition to the students' educational portfolio. Preparing the e-folio helps the Math Methods students to organize their thoughts and relevant data that they have collected. It also aids the education students in learning how to assess elementary students and in assessing themselves. The Math Methods e-folio is a necessary tool for this course.
- I believe that the e-folio was a tool for us to reflect on what we were teaching, how the child was learning, and to have a closer look at where our children were skill wise. Concentrating on one area really caused me to look deeply at those three things (Early Number Sense, Problem Solving, Basic Facts).
- I believe that the purpose of the Math Methods e-folio was to encourage us to reflect on the different mathematical concepts that we were learning, and to review on the different methods that the children use. It also helps us to look at the differences in learning styles among children.

2) What did you learn by completing your Math Methods e-folio?

- I learned how to plan better for my student so I could show their true potential and understanding of the concepts. For me as the student I learned about problem solving and letting children brainstorm for themselves. At times I thought some of the problems were too hard for our students. To my amazement I was wrong and I didn't give the students enough credit. One main thing I took from that is always making sure to plan on how to extend and challenge the student with the activity. It is always best to be over planned.
- I learned what each term meant and how I used it (through) working hands on with a child. I learned the importance of having objectives for lessons.

- The e-folio helped me to reflect on each skill the students were learning. It was nice to be able to look at exactly what they did or didn't know and be able to extend or bring down the material. The e-folio overall was a very important reflection tool.
- I found that the more I took notes and began writing, the more I understood my math buddies. It felt like as I analyzed their understanding, I could tailor the games to them. Essentially, working on the e-folio helped me to focus on my buddies and learn how to teach to the individual child, which I think is incredibly important.
- I learned a great deal while preparing my e-folio. Preparing this e-folio taught me how to prepare for lessons, how to manage time, what and how to assess, and the value of both written and spoken communication skills.
- I learned by completing it that it helps to look back and reflect on what I have been learning. By having an artifact, I learned that sometimes the best reflection comes with a visual to help refresh my memory.
- I approached the e-folio presentation with some trepidation. However, my concerns quickly faded once the presentations started. I do believe that a quick presentation of one's e-folio is a great learning and communication tool for us as Math Methods students. The sharing was as beneficial to us as it is to elementary students learning mathematics.

3) *How might you be able to use these skills as a "real" teacher in the future?*

- I know now that there are resources for me to use as a teacher and that I can plan and carry out lessons for young children.
- First I think having a math portfolio for students helps the teacher really analyze where the child is at on their concepts and then plan so we can help children grow in their math skills. Second, I think it is awesome to be able to show the parents their child's knowledge and growth.
- The math methods e-folio really made me think about skills in which I will use when I become a "real" teacher. For instance, in the e-folio, I looked at the students and reflected on what they could or couldn't do. I assessed their progress and the activity as a whole. The reflection aspect of the e-folio can also be expanded when I become a "real" teacher as I will take the information I gained from the student and plan activities that will further enhance the student's learning. The e-folio also instilled in me the knowledge in which to create belief statements about my teaching. This will be very vital as it will help guide my teaching.
- As a teacher I will use these skills to analyze and reflect on my students after observations in the classroom. These skills will help me to assess their needs and to differentiate my teaching practices.
- The skills that I learned in Math Methods I will help me in the future as a real teacher because I will be able to observe my students while interacting with them. Then I will be able to concisely summarize it and keep track of their progress, not only in math but across the spectrum.
- In the future, I will be able to use these skills by reflecting on the different lessons that I taught that day, and to notice and document the different styles of learning and levels of improvement.
- Preparing this e-folio taught me how to prepare for lessons, how to manage time, what

and how to assess, and the value of both written and spoken communication skills. All of these newly acquired skills will be utilized by me when I am a preschool teacher.

4) *What was the most difficult part of the Math Methods e-folio?*

- The most difficult part was knowing if I was using the terms correctly. It was sometimes hard to put into words what I was seeing the child do.
- I think this was a fairly easy assignment. There is just so much information obtained from our field visits that it is hard to know what to include.
- Technology was my primary difficulty when preparing the portfolio. What should have been an easily maneuverable template became a nightmare for me. I don't know how the instructors could improve this; this was due to my weakness in technological knowledge. However, I did attain more knowledge in this area through the trial and error method.
- The most difficult part of the e-folio was in describing the artifact and using the math methods terms. I had problems staying within the current section when picking the terms that went best with the learning strategy of that artifact.
- The only thing that was difficult was getting information to fit into the format. One problem I had was that when I pasted a picture into the document I had to reformat everything to make it fit. I learned to type all my information in first and then paste in my pictures.
- Some of the topics were difficult on the second half as I was limited to the activities I could write on and I did not get good information in which to complete my portfolio. This was probably the most frustrating part of the assignment.

5) *Is there anything else you would like to share with regard to the e-folio?*

- I think the e-folio was a good learning tool. It allowed me to see where my math buddies were developmentally and where they needed work. It also allowed me to reflect a little on how I could have changed my teaching style to better suit the students I was working with.
- The e-folio seemed like it would be a lot of work, but when I sat down and did it, it was easier than I thought it would be. I also liked the sessions where we took time to peer-review our portfolios.
- I enjoyed this assignment and think its a great tool for showing future teachers the various mathematical skill levels and situations they will come across. It really helps for reflection and analysis of students after observation.
- Just that a portfolio not only shows what the student can do, but (may) also show the successful strategies used by the teacher. Also that I think students could design their own format with guidance on what needs to be included.

References

Bullock, A., & Hawk, P. (2001). Professional portfolios for practicing teachers. *Phi Delta Kappa Fastbacks*, 7-38.

Costantino, P., & De Lorenzo, M. (2001). Electronic portfolios: An option. In *Developing a professional teaching portfolio* (pp. 47-55). Boston: Allyn and Bacon.

Dewey, J. (1985). *How we think*. New York: Dover Publications.

Dunn, T. (2005). Engaging prospective teachers in critical reflection: Facilitating a disposition to teach mathematics for diversity. In R.S. Kitchen and A.J. Rodriguez (Ed.), *Preparing mathematics and science teachers for diverse classrooms: Promising strategies for transformative pedagogy* (pp. 143-158). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Gillespie, J. & Kanter, P. (2005). *Every day counts partner games*. Wilmington, MA: Great Source Education Group.

Holm, L., & Horn, C. (2003). Bridging the gap between schools of education and the needs of 21st-Century teachers. *Phi Delta Kappan*, *84*(5), 376-80.

Liebars, C. (1999). Journals and portfolios:Alternative assessment for preservice teachers. *Teaching Children Mathematics*, *6*(3), 164-9.

McCarthy, D. (2008). Communication in mathematics: Preparing preservice teachers to include writing in mathematics teaching and learning. *School Science and Mathematics*, *108*(7), 334-40.

McDiarmid, G. W. (1990). Challenging prospective teachers' beliefs during early field experience: A quixotic undertaking. *Journal of Teacher Education, 41*(3), 12-20.

McIntyre, D.J., Byrd, D.M., Foxx, M.S. (1996). Field and laboratory experiences. In J. Sikula, T.J. Buttery, & E. Guyton (Eds.), *Handbook of research on teacher education* (2nd ed., pp. 171-203). New York: Macmillan.

National Council of Teachers of Mathematics (2000). *Principles and standards for school mathematics.* Reston: National Council of Teachers of Mathematics.

Shulman, L. (1998). Teacher portfolios: A theoretical activity. In N. Lyons (Ed.), *With portfolio in hand: Validating the new teacher professionalism* (pp. 23-37). New York: Teachers College Press.

Sosin, A., & Pepper-Sanello, M. (2008). Justifying electronic portfolios in literacy teacher education. *Journal of Reading Education*, *33*(2), 21-7.

Soto-Johnson, H., Iiams, M., Oberg, T., Boschmans, B., & Hoffmeister, A. (2008). Promoting preservice elementary teachers' awareness of learning and teaching mathematics conceptually through "KTEM". *School Science and Mathematics*, *108*(8), 345-54.

Strawhecker, J., Messersmith, K., & Balcom, A. (2007). The role of electronic portfolios in the hiring of K-12 teachers. *Journal of Computing in Teacher Education*, *24*(2), 69–75.

Wetzel, K., & Strudler, N. (2006) Costs and benefits of electronic portfolios in teacher education: Student voices. *Journal of Computing in Teacher Education*, *22*(3), 99-108.

Wolf, K., & Dietz, M. (1998). Teaching portfolios: Purposes and possibilities. *Teacher Education Quarterly*, *25*(1), 9-22.

Wyatt III, R., & Looper, S. (2004). *So you have to have a portfolio: A teacher's guide to preparation and presentation* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Lustick, D. (2011). *Certifiable: Teaching, Learning, and National Board Certification.* Lanham, MD: Rowman & Littlefield.

In his book, *Certifiable: Teaching, Learning, and National Board Certification (2011),* author and researcher David Lustick addresses the critical issue of National Board certification at perhaps the most important juncture in its young history. Lustick presents a thoughtful examination of National Board certification based largely on his rather impressive national study of candidates seeking National Board certification in Adolescence and Young Adult (AYA) Science. The primary focus of his study was to answer what seems to be a straightforward question: "What are candidates learning from National Board certification?" Lustick's book reveals that what appears to be a simple question is not simple at all.

In the introduction, Lustick identifies his intended audience to be quite broad, including educational researchers, educational policy-makers, and any K-12 teachers interested in learning about National Board certification. Although this is a worthy aim, I question whether the entirety of this book would be compelling reading for all of these audiences. For example, although educational researchers may be interested in the extremely detailed chapters on methodology and the quantitative analysis of the research, I believe the majority of readers will be content to skip over these chapters and move on to others more relevant to their needs. Nonetheless, this book has something for everyone if the reader is willing to skip around from time to time.

In Part I of the book, Lustick provides context for National Board certification. He offers background on the almost 25 years since the National Board was created in 1987, and also lays bare the problems inherent in identifying exceptional teaching in a profession that has largely shunned any attempts to distinguish performance of its members, either exceptional or otherwise. Part II offers the reader a detailed description of Lustick's comprehensive mixed-methods study, which examines National Board certification as professional development and attempts to determine its effects on teacher learning. The final section, unquestionably the best part of the book, focuses on the significance of Lustick's findings and implications for the future of National Board certification. In these chapters, Lustick addresses the implications of his research findings for teacher quality, some ways to improve National Board certification, and most importantly, the future of the Board, appropriately titling the final chapter "The Future of the National Board: Relevancy or Obscurity?"

One of the most interesting chapters in the book presents brief case studies of five different teachers seeking National Board certification. Most eye-opening was the end-of-chapter summary, which helps the reader begin to understand some of the constructivist and student-centered philosophies underlying the National Board Professional Teaching Standards (NBPTS).

In the largest part of his book, Lustick devotes separate chapters and generous detail to the study's methodology (Chapter 4) and both the quantitative evidence (Chapter 5) and the qualitative evidence (Chapter 6) that answer his research question about candidates' learning from National Board certification. Although Lustick apologizes repeatedly for the "messy"

nature of his research, the fact is that his study and educational research in general is a necessary endeavor that needs no apology.

A strong point of the research section was Chapter 6, devoted to the qualitative evidence of Lustick's study. Unlike the preceding chapters on methodology and quantitative analysis, which many readers will find heavy and plodding, the qualitative analysis brings the research to life. Lustick uses interview transcripts to build on his quantitative conclusions. Here, for example, is a quotation by a teacher from Florida, discussing how her own assessment practices have changed as a result of the National Board certification process.

> I know I've changed the way I correct papers after having to go through that process. There is that one section in your portfolio where you had to put in student work and your comments. I pulled some student work and I started looking at it and it was just full of misconceptions. This was a physics worksheet and I said, "My God, these would have just gone right by me if I hadn't taken the time to sit down and read every word that they wrote.". . . So I correct papers with just a real eagle eye now. I read everything that they write. To me that was the biggest eye opener I've had in a long time. (p. 150)

Clearly, the teacher's words are illuminating, offering a first-hand perspective regarding what the candidates have learned.

Many readers will find the most valuable part of the book to be the final section, which includes the last three chapters. In Chapter 7, Lustick constructs his conception, based on his own research, of the types of learning that take place as a result of National Board certification. He proposes that the learning of a National Board candidate falls into one of three distinct categories of learning: dynamic, technical and deferred. Lustick's research makes a convincing case for this categorization. Anyone who has come across a Board-certified teacher who describes the process as one big hoop-jumping exercise will immediately relate to the inherent differences between what Lustick characterizes as dynamic learning versus technical learning.

In Chapter 8, Lustick offers insightful, creative, and pragmatic ideas for improving National Board certification: moving to an electronic portfolio system, for example, and including a standard that would acknowledge and accept direct instruction approaches in addition to the many standards espousing a student-centered focus. Another intelligent proposal he makes is to encourage the National Board organization to improve its business model by removing politics and dependence on outside funding. In one of my favorite quotations from the book, he perceptively states: "To become a truly nonpartisan, nongovernmental entity, the National Board needs to wean itself off the federal government teat and establish a more sustainable and independent means of funding its work" (p. 197). As usual, he follows this conclusion with several practical ideas on how that mission might be accomplished. In the final chapter, Lustick states that the National Board organization is at an important crossroads. He argues quite accurately that National Board certification has been devalued and perhaps marginalized in the eyes of today's education policy-makers largely because it fails to focus its assessment process on high-stakes testing and accountability, which have been at the heart of educational reform since No Child Left Behind was adopted in 2001.

Overall, Lustick's book is a worthwhile read for anyone interested in the history or future of National Board certification. Although I would have liked to see more discussion of the resistance to National Board certification by rank-and-file members of the profession, I give him credit for pointing out several vital issues facing the profession, including the education system's myopic view of student achievement as the only worthy measure of teacher quality. More importantly, he keenly observes that in the immediate future, members of the profession will need to make a critical choice: to remain an egalitarian occupation where excellence is decided by outsiders, or to take ownership and responsibility for policing our own profession by embracing the duty of distinguishing the best in our ranks from the worst and everything in between. If we choose the latter, Lustick's work suggests that the National Board has an important place in that challenging but vital task.

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Rosselli, H., Girod, M., & Brodsky, M. (Eds). (2010). *Connecting teaching and learning: History, evolution, and case studies of teacher work sample methodology*. Lanham, MD: Rowman & Littlefied.

   This book presents an historical and current look at the work of H. Del Schalock (1929-2006) an influential professor and researcher who for 45 years was a leader in the field of teacher education and promoted the importance of standards based education as well as the influence of the teacher on student achievement. The late Dr. Del Shalock, a professor at the Teaching Research Institute at Western Oregon University, is described as a visionary who over the course of many years and funding through various federal grants (mostly Title II grants) brought together groups of teacher educators, government leaders, and others interested in school improvement to design and research teacher education curricula particularly the effectiveness of teachers decision-making and planning on student learning and achievement. David Imig and Scott Imig write in the forward to this book that, "In personal conversations and during professional presentations he [Schalock] insisted that university-situated teacher education would not survive unless it was more carefully coupled with student learning. Teacher Work Sample Methodology (TWSM), he asserted, was the means to that end" (p. xiv). TWSM is a performance based assessment used in teacher education at several universities and in some states to evaluate beginning teachers for licensure. This book is edited by Del Schalock's colleagues and includes chapters authored by him and his son Mark Schalock (also a research professor at the Teaching Research Institute at Western Oregon University). Chapters include case studies authored by colleagues from other universities who collaborated with him over the years to promote and examine the use of performance-based assessment in teacher education. In many ways this book serves as documentation of his work in teacher education and his considerable influence as a researcher.

   The editors have organized the book into five parts, Context and Evolution, Practice, Research, Policy, and Reflections. The book provides the reader with the historical context for the longstanding issues surrounding research in teacher education and the vision of researchers like Del Schalock who devoted their work to addressing the connection between teacher effectiveness and student outcomes. Several chapters in the book describe the adoption of the TWSM (by universities and states outside of Oregon) and how it has evolved through the years as one of the assessments of teacher preparedness for obtaining a license to teach. The book contains chapters that address a range of interests. For instance Girod and Girod contribute a chapter about using web-based simulations to prepare pre-service teachers. Fredman, McKean, and Dahlem describe the use of TWSM as a performance-based measure for beginning teacher promotion and tenure, and a chapter by Buchanan and Johnson discuss their use of TWSM data to revise and improve the Early Childhood Education program at George Fox University. Those involved in teacher education who seek empirical findings about the use of a performance-based assessment to rate teacher education candidates will find this book a wealth of information in the case studies that report empirical findings about the use of TWSM within teacher education

programs and its use in some state teacher licensing decisions. The final chapter, co-authored by Del Schalock and Mark Girod describes the next steps that teacher educators need to do to continue to empirically demonstrate the connections between how teachers think about teaching and learning, what they actually do in their classroom, and student achievement or outcomes. Girod states, "Del Schalock has. . . left as part of his legacy, an invitation, a blueprint, and a challenge to the profession to carry out what is now needed to establish a solid, empirical, support and a comprehensive theoretical framework for teacher education" (p. 223).

In this current climate when legislators and others in the public policy realm are increasingly demanding accountability from traditional university teacher education programs to produce competent teachers who are capable, who make solid data-based decisions about student learning and achievement and who are able to challenge their students and differentiate curricula to meet the needs of each student, this book provides the profession with an historical perspective, current state of the field, and future challenge to empirically study the use of performance-based assessments with teacher education candidates as well as beginning teachers. Empirical studies focused on the use of performance-based assessment such as the TWSM may provide those in teacher education with a solid research based focus in order to improve teacher candidates' performance in the assessment, planning, teaching, and evaluation process of their students.

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