

**Culminating Experience Action Research Projects,  
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## Introduction

As a part of the teacher licensure program at the graduate level at The University of Tennessee at Chattanooga (UTC), the M.Ed. Licensure candidate is required to complete an action research project during a 3-semester-hour course that coincides with the 9-semester-hour student teaching experience. This course, Education 590 Culminating Experience, requires the student to implement an action research plan designed through (a) the Education 500 Introduction to Inquiry course, (b) one of the two learning assessments required during student teaching, or (c) a newly-designed project not used as one of the learning assessments.

With funding through a UTC Teaching, Learning, and Technology Faculty Fellows award, the Education 590 course is conducted through the use of an online, course management system (Blackboard), allowing for asynchronous discussion and use of the digital drop box feature for submitting required papers.

The action research projects from, fall semester 2009, are presented below.

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## Table of Contents

Introduction	p. 2
Table of Contents	p. 3
Ready to Take on the World (Religions): Examining Teacher Readiness to Teach World Religions	Christopher Burns p. 5
An Inquiry-Based Lesson Plan: Incorporating Adapted Primary Literature in a High School Biology Classroom	Ashley Cross p. 30
Using Differentiated Instruction to Improve the Overall Academic Knowledge of Middle School Students	Rembert Edwards p. 51
Using Interactive Questioning Techniques to Increase High-Level Student Responses in a Catoosa County High School Social Studies Class: An Action Research Project	Jennifer Greeson p. 67
School Funding and its Effect on Teacher Perceptions	Neil Hamilton p. 79
Making Connections through Mediums: An Integration of the Visual Arts with the Language Arts	Kathy Higley p. 90
Attitudes Affect Learning	Jennifer Hixson p. 113
The Effects of Arts-Integration Strategies on Emergent Readers: Comprehending New Vocabulary	Jessica James p. 124
To What Extent and How Much Bullying is Going on in School?	Kenneth Johnson p. 148
Art in the Curriculum: Teachers' Perspectives	Jake Kelley p. 153
Teachers' Opinions on Parental Involvement Possibly Leading to Higher Student Academic Achievement, Better Behavior, and Increased Motivation	Joshua Overton p. 176

Total Physical Response and Total Physical Response – Story  
Effectiveness in Large and Small Classrooms

Nicholas Selbo  
p. 197

Ready to Take on the World (Religions): Examining Teacher Readiness  
to Teach World Religions

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Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)  
has approved this research project # 09-173.*

## Introduction to the Problem

One of the driving forces in human history, religion remains a tremendously influential force in the modern world. In the 1960s and 1970s, many scholars theorized that religion's influence would diminish over time as a result of secularization. However, events such as the Iranian Revolution, the fighting between Protestants and Catholics in Ireland, the emergence of Liberation Theology in Central and South America, the emergence of the Religious Right in American politics, and the rise of Islamic extremism around the world seem to have proved the secularization theory wrong. Thus, in spite of countless predictions to the contrary, religion continues to be a driving force in the course of human events (Casanova, 1994). Prothero describes the acquisition of religious knowledge as being "like the scene in *The Wizard of Oz* in which Dorothy opens the door to the Technicolor munchkin land, many key chapters in US and world history leap from black-and-white to color once you realize the role religion played in them" (Prothero, 2007, p. 17). Simply put, religion's influence and importance cannot be overstated.

In recent years, a growing consensus has emerged. More and more, the importance of teaching about world religions is being discussed and actions are being taken. Most importantly, all 50 states now include religion in their social studies curriculum standards. Within social studies, world geography and world history standards refer to religion most often. Some states' coverage of world religions are better than others, and, while there is certainly room for improvement, this development is undoubtedly encouraging (Douglass, 2000).

The inclusion of world religions in curriculum standards ensures that world religions are taught in public school classrooms; however, it in no way ensures that they will be taught well. Herein lies the problem. While there exists a plethora of literature espousing the importance of

teaching about world religions, and a considerable amount of resources detailing how to teach about world religions, there is little, if any, research being done on how prepared teachers are to teach about world religions.

This void in the research is troubling. After all, what good are standards if teachers lack the knowledge necessary to teach them appropriately? Given the existing available research, or lack there of, we have no idea if teachers are actually ready to teach students about the tremendously complex topic of world religions.

The goal of this project is to make a contribution that begins to fill the aforementioned void in research. It also makes recommendations and aims to initiate discussion about the issue while encouraging further research.

### Review of Literature

As previously mentioned, there exists little, if any, research examining the topic of teacher readiness to teach about world religions. Nonetheless, there does exist a plethora of literature on related topics, such as the importance and benefits of knowing about world religions, the constitutional issues surrounding the teaching of world religions, how to teach about world religions, the inclusion of world religions in social studies curriculum standards, and the lack of available teacher training.

#### *Importance and Benefits of Teaching about World Religions*

Among those espousing the importance and benefits of teaching about world religions is Prothero (2007). A Boston University professor, Prothero became concerned about American religious knowledge after giving a religious literacy quiz he developed to his freshmen students. Alarmed by the lack of knowledge displayed, Prothero was inspired to write his book, *Religious Literacy: What Every American Needs to Know—and Doesn't*. In the book, Prothero makes a

persuasive case for teaching about world religions. First, he argues that religious knowledge, especially knowledge about Christianity, is essential to understanding political discourse in the United States. Debates surrounding major issues, such as abortion and capital punishment, cannot be fully appreciated without some familiarity with the Bible. When discussing other world religions, Prothero identifies increased religious diversity in the United States, the shrinking of the world through globalism and communication—which has brought previously separate cultures in to close proximity, and the role of religion in global conflicts, such as the struggle against Islamic extremism, as reasons to teach about world religions.

Prothero also makes some strong statements about the importance of knowing something about world religions. For example, Prothero describes the current inattention to world religions in secondary schools and universities as a “failure of the highest order” (Prothero, 2007, p. 8). He also argues that individuals who have never taken a course on world religions cannot claim to be truly educated.

Rosenblith and Bailey (2007) agree with Prothero. They argue that American religious illiteracy is dangerous. In their opinion, it can lead to insensitivity and a lack of understanding among citizens. Arguing that religious education cannot be left to families, Rosenblith and Bailey identify several benefits to be gained from teaching about world religions in public schools. For one, the 21<sup>st</sup> Century holds certain realities that require some religious literacy for meaningful participation in democracy. Comprehensive religious studies would also help to enlarge students’ minds. It would also help students address the ultimate questions of life and better deal with existential questions. Finally, familiarity with the world religions would help students become more comfortable interacting in an increasingly global community.

Passe and Willox (2009) describe the teaching of world religions as a necessary disruption.



The main crux of their argument is that teaching about world religions is essential to fostering the climate of religious tolerance that has developed over the last 200 years in the United States. They also argue that it has become increasingly important in the ever-globalizing world.

Moore (2006) emphasizes the importance of understanding world religions, particularly Islam, in the post-9/11 world. According to Moore, teaching about Islam in the United States is a relatively recent phenomenon. Moore argues that all world religions should be taught in secondary schools and universities; however, he places particular emphasis on Islam, arguing that much of the misunderstanding and misinformation that has proliferated since 9/11 could be avoided if citizens were more educated. Moore is especially concerned with teaching about historical Islamic achievements and avoiding stereotypes.

### *Constitutional Issues*

Literature on the constitutional issues surrounding the teaching of world religions is also quite extensive. Leading the pack is Charles C. Haynes. Writing for the First Amendment Center, Haynes (1999) published a pamphlet titled, "A Teacher's Guide to Religion in the Public Schools." The constitutionality of teaching about world religions is one of many topics addressed by Haynes. In the pamphlet, Haynes, in very plain language, explains that the Supreme Court has roundly supported, and, even, encouraged, teaching about world religions.

Prothero (2007) also addresses constitutional issues. In fact, he identifies widespread misunderstanding of constitutional issues as being of one of the two greatest obstacles to teaching about world religions in public schools. Passe and Willox (2009) also express similar sentiments.

In a fashion similar to Haynes, Epley (2008) has focused his attention on the establishment clause. He, too, makes it very clear that the courts have supported and encouraged teaching about

world religions. Epley goes into considerable depth, examining issues such as school prayer, the distribution of religious literature, creationism, and intelligent design.

### *How to Teach About World Religions*

Recognizing that most teachers lack the knowledge and skills necessary for developing a curriculum that includes world religions, and teaches them appropriately, many scholars and authors have published articles explaining how world religions should be taught. Perhaps, most significant, is the attention paid to the issue by the Foreign Policy Research Institute (FPRI). Just months after 9/11, the FPRI brought together university faculty and 44 high school teachers from 16 states. Hay (2001) took notes and published a summary of the proceedings. The institute attendees did not question whether world religions belonged in the curriculum. In fact, they determined that world religions are an essential part of a liberal curriculum. Instead, the institute attendees discussed how world religions should be presented and taught. Ultimately, the attendees determined that world religions need to be taught in secondary schools, as well as in colleges and universities. They also determined that world religions need to be understood in context, not simply as a set of beliefs to be memorized. Curricular recommendations included using resources other than textbooks. In particular, the use of primary sources and images, such as art, were encouraged. It was also determined that developing a more effective synthesis for classrooms remains the key challenge for teaching world religions.

Other authors express similar sentiments. Douglass (2002) reiterates the point that inclusion in the standards does not ensure that the material will be taught well. She argues that an effective curricular vehicle must carry the content. Douglass encourages teachers to avoid presenting thumbnail sketches of religions. She also encourages teachers to present religions in their modern contexts, as well as in their ancient contexts. Finally, she encourages teachers to

avoid overemphasis on religious institutions and to provide appropriate coverage of lived religion.

Moore (2006), focusing primarily on Islam, also believes that world religions should be taught in secondary schools, as well as, colleges and universities. He also encourages teachers to create units that integrate religion, history, geography, political science, and other academic fields. He also believes that religious tolerance should be an integral part of any unit that includes world religions.

Weber (2006) is critical of textbooks for treating religions primarily as belief systems, ignoring the fact that they also represent social organizations. He is also critical of how textbooks teach world religions as though they are devoid of complexity and diversity. In other words, textbooks usually present world religions in a reductionist fashion. Weber encourages teachers to focus on practice, or lived religion, over ideas. He argues that over emphasizing orthodoxy ignores religion's human context. He also encourages the use of biography, and emphasis on popular, or lived, religion.

### *Social Studies Standards*

Many of the authors mentioned address the issue of world religions within curriculum standards. Most are in agreement that the standards represent a step in the right direction, but all recognize that standards do not guarantee successful instruction. Unfortunately, few have examined the standards in depth.

In 2000, Douglass conducted a study of world religions in national and state social studies standards. According to Douglass, the aforementioned emerging consensus in support of teaching about world religions represents a major step forward, but means little if it does not lead to real change. The influence of this consensus can be measured in the national and state

curriculum standards, particularly the world history and world geography standards. In the national history standards—on which most state standards are based—world religions are mentioned more than 170 times. They are mentioned more than 50 times in the national geography standards. Like many of her colleagues, Douglass identifies the lack of teacher training as a serious barrier to world religions being taught appropriately. However, she notes the fact that religion is still treated superficially within the standards, and is often ignored when it is relevant as a much more pressing problem.

### *Lack of Teacher Training*

The fact that few teachers receive training on how to teach about world religions is an issue discussed by many scholars. Prothero (2007) admits that training has improved in recent years, but believes that world religions courses should be required for all citizens, not just teachers. Douglass (2002) claims that, even though world religions are new to the curriculum, training lags behind. She argues that both preservice and inservice training are urgently needed to increase teacher comfort and knowledge. She also argues that keys to better teaching are raising the level of scholarship in curriculum and increasing the availability of instructional resources.

Weber (2006) notes that few teachers are trained in world religions and most are forced to learn on the fly. Passe and Willox (2009) propose that teachers' lack of knowledge about world religions represents one of the main obstacles in overcoming tendencies to avoid them in class. They also express concern about teachers lacking the skills required to teach the content, and argue that a single methods course intended to help develop instructional techniques is insufficient.

Rosenblith and Bailey (2007) argue that current requirements do not create highly qualified teachers. They maintain that highly qualified teachers must be informed about world religions,

varied American religious traditions, and other non-theistic traditions. They also need to be well read in the literature and history of the world's major religious traditions. Highly qualified teachers require training on how to locate and utilize available resources. Unfortunately, these are not current requirements for social studies teachers.

Providing unique insight into teacher training is Yob (1994). Yob taught a course for graduate education majors, titled "Religion and the Public Schools." Yob was, at first, disturbed by the lack of knowledge displayed by the graduate students in his class. As the weeks passed, he became encouraged by their enthusiasm. However, at the end of the course, most of the students still felt uneasy about teaching world religions in their class.

## Data Collection and Results

### *Data Collection*

#### *Subjects*

All participants were licensed Hamilton County teachers. More specifically, they were world history and world geography teachers from the four Hamilton County high schools that agreed to participate. Surveys were distributed to 13 teachers. Seven surveys were returned for analysis.

#### *Instrument*

Only one instrument, a survey, was used in the study. The survey consisted of nine items. The first item sought demographic data and was open-ended. The next seven items were close-ended questions. Of these seven items, two required simple "yes" or "no" responses, three were Likert scales, and two were multiple choice. The final item was an assessment that sought to measure teacher content mastery. A copy of the survey can be found in Appendix A.

#### *Methodology*

The survey was developed under the guidance of two professors at The University of Tennessee at Chattanooga. It was the only instrument used in the study. After the survey was completed, the principals of 13 Hamilton County, TN high schools were sent an email message requesting permission to conduct research at their respective schools. Four principals agreed to participate.

The primary researcher delivered surveys to world history and world geography teachers at the four participating schools. A total of 13 surveys were distributed. Of the 13, 7 were completed and returned. Surveys were placed in the school mailboxes of the participating teachers. Included with the surveys were instructions for completing and returning surveys. At each school, a large envelope labeled “UTC Surveys” was left with a school employee designated by the principal. Surveys were delivered at the beginning of the week and collected at the end of the week.

### *Results*

The survey consisted of nine items. Each question is included, and followed by results and analysis. Each teacher has been assigned a letter of the alphabet (A-G) that will be used when individual teacher responses are addressed.

1. How many years of teaching experience do you have? (See Figure 1.)

Teacher	A	B	C	D	E	F	G
Years of Experience	4	15	34	3	28	18	15

*Figure 1.* Years of teaching experience among participating teachers.

As indicated by the chart above, years of teaching experience varied considerable among the participating teachers. Prior to analysis, the primary researcher hypothesized that teacher experience might be a negative or positive indicator of content mastery. This, however, was not the case. When compared to the results from item nine on the survey, it is clear that, within this

small sample, teaching experience is neither a negative or positive indicator of content mastery.

2. Rate your knowledge of the following world religions using the scale below. (See Figures 2 and 3.)

a) very poor      b) poor      c) average      d) above average      e) excellent

	Very Poor	Poor	Average	Above Average	Excellent
Buddhism	0	0	5	1	1
Christianity	0	0	0	4	3
Hinduism	0	1	3	3	0
Islam	0	0	3	4	0
Judaism	0	0	4	2	1

Figure 2. Self-evaluations of knowledge of the world religions.

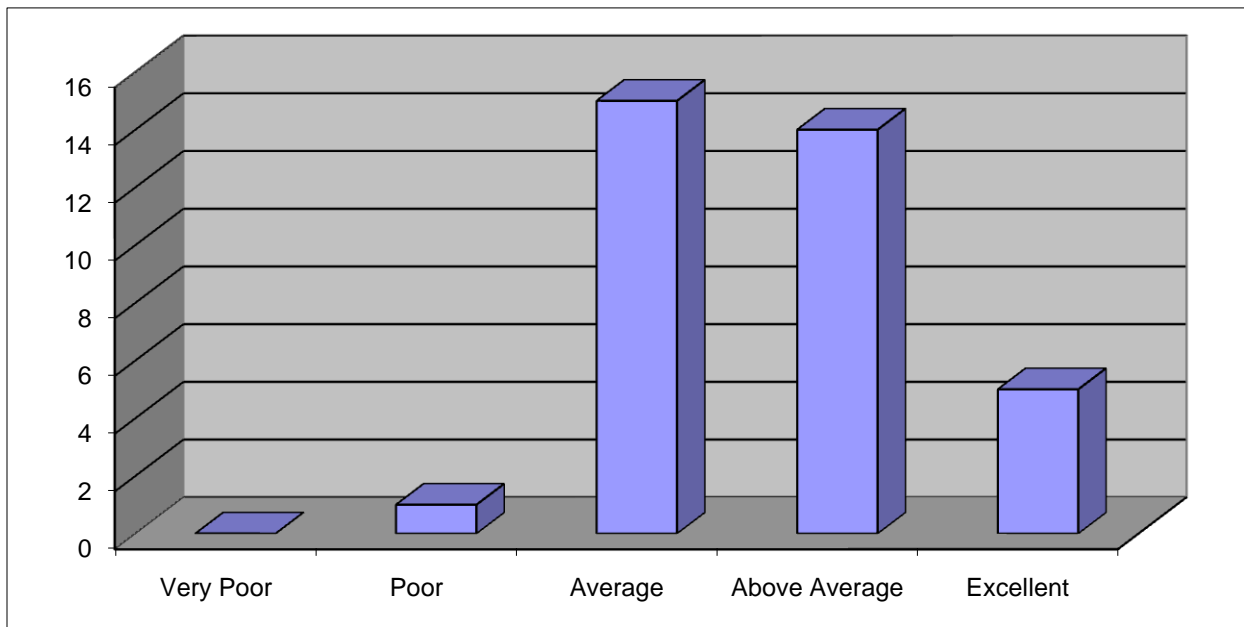


Figure 3. Chart of responses from self-evaluations of combined knowledge of world religions.

The fact that no teachers rated their knowledge of any of the world religions as “very poor” is reassuring, but not unexpected. Of the 35 responses, there was only 1 rating of “poor.” There were a 15 “average” ratings, 14 “above average” ratings and 5 “excellent” ratings.

The only set of ratings that stood out were the Christianity ratings. Teachers, as might be expected, evaluated their understanding of Christianity to be better than their understandings of the other four religions surveyed. In fact, all teachers rated their knowledge of Christianity as “above average” or “excellent.” Among the other four religions, there were only slight differences. Somewhat surprisingly, teachers did not seem to perceive any drop off in their knowledge of the Asian traditions, Hinduism and Buddhism. The analysis indicates that teachers need further training in all world religions, with, perhaps, the exception of Christianity.

3. How familiar are you with the constitutional issues surrounding the legality of teaching about world religions in public schools? (See Figure 4.)

a) unfamiliar                      b) somewhat familiar                      c) very familiar

	Unfamiliar	Somewhat Familiar	Very Familiar
Number of Responses	2	2	3

*Figure 4.* Teacher familiarity with constitutional issues.

Of the seven teachers surveyed, results were fairly evenly split. The fact that only two of the seven teachers admitted to being “unfamiliar” with the constitutional issues surrounding the teaching of world religions is somewhat encouraging. However, these two represent a substantial minority. If these results are applied to the teaching profession at large, then approximately 30% of world history and world geography teachers are “unfamiliar” with what the Supreme Court permits them to do in their classrooms. Even if these teachers are well-prepared to teach about world religions, they may still be limited by their lack of knowledge about what they can and cannot teach in the classroom. In turn, curriculum may suffer.

4. Did any of your teacher preparation courses provide information on how to teach about world religions in your classroom? (See Figure 5.)

\_\_\_\_\_ Yes                      \_\_\_\_\_ No



Yes	No
1	6

*Figure 5.* Teachers who received information on how to teach about world religions from their teacher preparation programs.

These results are rather alarming, but not surprising. The lack of emphasis on teaching about world religions in teacher preparation programs is well-documented, and addressed in the literature review. However, it is still troubling to think that teacher preparation programs are not preparing their teachers to teach about material that is found in curriculum standards.

Furthermore, when the complexity and importance of religion is considered, the omission seems even graver.

5. Have you ever taken a religious studies or world religions course? (See Figure 6.)

\_\_\_\_\_Yes                      \_\_\_\_\_No

Yes	No
4	3

*Figure 6.* Number of teachers that had taken a religious studies or world religions course at some educational level.

Given the answers to the previous question, these results are more encouraging. Still, the fact that a course on world religions is not a requirement for teachers preparing to enter the field of social studies is problematic. Again, the content appears in the curriculum standards of all 50 states. Yet, there is no mechanism in place that ensures teachers will be prepared to teach students about the material. The results from the previous question give the impression that the teachers that took a course on world religions took one because they wanted to do so. If this is the case, this is encouraging, as it indicates that a majority of teachers are interested in the material. In many cases, interest often breeds enthusiasm, which can often rub off on students.

6. If the answer to the previous question is “yes,” indicate below what type of course it was.

(Note: If you have taken more than one course, mark all that are applicable.) (See Figure

7.)

\_\_\_\_\_ middle or high school course

\_\_\_\_\_ undergraduate level course

\_\_\_\_\_ graduate level course

\_\_\_\_\_ teacher preparation course or professional development

\_\_\_\_\_ other (please indicate) \_\_\_\_\_

middle or high school course	0
undergraduate level course	3
graduate level course	4
teacher preparation or professional development course	0
other (please indicate)	0

*Figure 7.* Distribution of religious studies/world religions courses taken by participating teachers.

These results are not unexpected. The previous question revealed that only four of the teachers surveyed had ever taken a course on world religions. Thus, several teachers had taken more than one course. This is encouraging, but is largely offset by the fact that three had not taken any world religions courses. Analysis indicates that all courses taken were either undergraduate or graduate level courses. No teacher took a course at the secondary level. This is not shocking considering the fact that only a few school systems in the country have mandatory world religions courses, and they represent very recent developments. However, the fact that none of the teachers had ever taken a teacher preparation or professional development course on world religions is problematic.

7. Evaluate your level of preparedness in teaching students about world religions. (See

Figure 8.)

\_\_\_\_\_unprepared                      \_\_\_\_\_adequately prepared                      \_\_\_\_\_very prepared

	Unprepared	Adequately Prepared	Very Prepared
Number of Responses	3	3	1

Figure 8. Teacher self-evaluation of preparedness for teaching about world religions.

Analysis reveals that only one teacher felt “very prepared” to teach about world religions, while three felt “adequately prepared” and three felt “unprepared.” The fact that three of seven described themselves as “unprepared” is troubling. Teachers should be, at the very least, “adequately prepared” to teach material, particularly material that is covered in their curriculum standards. Of the three teachers that identified themselves as “unprepared,” two had never taken a course, at any level, on world religions. The one instructor that reported being very prepared had taken a total of three courses on world religions, one undergraduate and two graduate. Though not absolute, there does seem to be some correlation between preparation and courses taken.

- Examine the list of information sources below. Identify the three that serve as the base of your knowledge about world religions. Of those three, rank them with 1 indicating the most formative.

- \_\_\_\_\_high school education
- \_\_\_\_\_college/university course(s)
- \_\_\_\_\_your class textbook(s)
- \_\_\_\_\_teacher preparation or professional development course/seminar
- \_\_\_\_\_personal research
- \_\_\_\_\_television/internet news
- \_\_\_\_\_entertainment (i.e., Movies, TV, music...)
- \_\_\_\_\_personal place of worship
- \_\_\_\_\_other (please indicate)\_\_\_\_\_

The participating teachers either ignored or misunderstood the directions on this item. Only three responded appropriately. Three teachers indicated three sources of information, but failed to rank them. Another teacher marked six selections without ranking them. As a result, the

data could not be analyzed as originally intended. In order to properly analyze the data, the rankings have been ignored and the survey with six selections marked has been eliminated. The aim of this item was to identify and rank the top sources of teacher information about world religions. This is now a more difficult task. However, some insight may still be gained about sources from which teachers receive information. The results simply won't be as precise as originally intended. (See Figure 9.)

Source of Information	Number of Responses
High School Education	1
College/University Course(s)	3
Your Class Textbook(s)	2
Teacher Preparation or Professional Development Course/Seminar	1
Personal Research	6
Television/Internet News	2
Entertainment (i.e., Movies, TV, Music...)	0
Personal Place of Worship	2
Other (Please Indicate)	1

*Figure 9.* Sources of teacher information on world religions.

As the figure above indicates, all possible selections—with the exception of entertainment—were identified by participating teachers as formative sources of information. An examination of the data reveals some encouraging patterns. First, personal research seems to be the most informative and was selected by all the participating teachers. This is encouraging as it seems to indicate that the teachers care about representing the world religions appropriately and that they recognize their own deficiencies. Second, a previous survey item revealed that four teachers had taken a course in world religions. This information seems to indicate that those courses were informative and continue to influence their teaching. Thus, requiring world religion courses for social studies teachers would likely have a positive impact. Finally, only two teachers identified their textbook as one of the their three most formative information sources. This is

encouraging because it seems to indicate that most of the teachers are not satisfied with the skeletal outlines typically found in textbooks, and are branching out in an effort to improve their lessons.

9. Match the world religions on the right with the items on the left. Some religions may apply to more than one item. Some items may apply to more than one religion. (See Figure 10.)

_____	Four Noble Truths	
_____	Sunni, Shi'a, Sufi	a) Buddhism
_____	Tanakh	
_____	Rama & Sita	b) Christianity
_____	Monotheism	
_____	Paul	c) Hinduism
_____	Abrahamic Faith	
_____	Five Pillars	d) Islam
_____	Caste System	
_____	Holy Trinity	e) Judaism
_____	Yom Kippur	
_____	Eight-Fold Path	
_____	Karma	

Item	Correct Responses	Incorrect/Incomplete Responses
Four Noble Truths	7	0
Sunni, Shi'a, Sufi	7	0
Tanakh	5	2
Rama & Sita	6	1
Monotheism	1	6
Paul	2	5
Abrahamic Faith	3	4
Five Pillars	7	0
Caste System	7	0
Holy Trinity	7	0
Yom Kippur	7	0
Eight-Fold Path	7	0
Karma	3	4

Figure 10. Number of correct and incorrect responses for each item on content mastery assessment.

The purpose of the above item was to gauge teacher content mastery. Consisting of only a

few religious terms and themes, it is by no means a comprehensive evaluation. Further examination of teacher content mastery in world religions is necessary.

Analysis revealed that all of the teachers surveyed have what might be described as a rudimentary understanding of world religions. The fact that none of the teachers was able to answer all items correctly is somewhat troubling. However, those that missed only a few, typically missed items that might be described as tricky. For example, no teacher recognized Hinduism as being monotheistic. In fact, most Americans believe Hinduism to be polytheistic; however, most Hindus recognize their religion to be monotheistic, with different deities representing different aspects of the ultimate god, Brahma. This concept is not unlike the Christian understanding of the Holy Trinity, an item that all teachers correctly identified with Christianity. Paul also caused problems for many teachers. While all teachers correctly identified Paul with Christianity, only two were able to correctly identify him with Judaism.

The surveyed teachers had little trouble with concepts that were specific to a particular religion. In fact, all teachers were able to correctly identify a total of seven items. However, more troubling, was the fact that many teachers struggled with larger concepts. For example, as mentioned before, only one teacher was able to correctly identify all four monotheistic traditions. Furthermore, only three were able to identify Judaism, Christianity, and Islam as the Abrahamic Faiths. Karma also caused problems for teachers. While all seven made the connection with Buddhism, only three correctly identified the concept with Hinduism. This is especially interesting, given the fact that the tradition actually originated within Hinduism.

In conclusion, this item demonstrated that, while all the teachers have a rudimentary understanding, and are able to identify items that are specific to a single religion, many teachers struggled with the larger concepts of monotheism, karma, and the Abrahamic tradition.

## Conclusions and Recommendations

### *Conclusions*

The data previously included is indicative of several trends. First, teacher preparation programs are not properly preparing teachers to teach about world religions. Of the seven participants, only one claimed that their teacher preparation program had provided information, much less a course, on how to teach about world religions. Given this trend, it is no surprise that three of the participating teachers admitted that they feel “unprepared” to teach about world religions, while only one felt “very prepared” to teach the material. The fact that almost half of the participating teachers feel unprepared is problematic, especially given the fact that this material is part of their curriculum standards. Further exacerbating the problem of insufficient preparation is the lack of professional development. The survey revealed that none of the teachers had ever attended a professional development seminar that addressed the teaching of world religions. There may be available professional development opportunities that teachers simply ignore or decline, or cannot be released to attend.

Second, teacher readiness to teach about world religions varies considerably. Some teachers showed a relatively strong understanding of world religions, while other teachers’ understanding was considerably weaker. While there does seem to be some correlation between performance and courses taken, there does not seem to be any correlation between performance and years of experience.

### *Recommendations*

Given the fact that world religions are featured in the social studies curriculum standards, steps must be taken to ensure that the material is competently taught. In order to achieve this goal, teacher preparation programs must make changes. Specifically, teachers preparing to enter

the field of social studies education need to receive some training on how to teach about world religions.

Ideally, teachers training for a career in social studies would be required to take an undergraduate course on world religions. Such a course would increase teacher content mastery, and, thus, increase teacher confidence in teaching the material.

In addition to a content-oriented course, teachers need to learn how to teach about world religions. Most teacher preparation programs require students to complete a course on instruction specific to their field. For example, future social studies teachers take a course on social studies instruction and future math teachers take a course on math instruction. World religions need to be included in social studies instruction course, along-side the more traditional social studies subjects of United States history, world history, geography, and economics.

Constitutional issues also need to be addressed during teacher training. Too many teachers are unfamiliar with the constitutional issues surrounding the teaching of world religions. While all teachers recognize that the topic is controversial, too few understand that the Supreme Court has upheld teaching about world religions. As a result, too many teachers—fearful of getting into trouble—avoid the topic all together. This avoidance, or omission from the curriculum is tragic, not only because world religions appear in the state-mandated curriculum standards, but also because a person who knows little or nothing about world religions cannot claim to be truly educated.

Principals also need make changes. They need to encourage teachers to teach about world religions. They also need to make sure their teachers are familiar with what is acceptable and what is unacceptable, when teaching about world religions. If teachers know that their principals support their teaching of world religions, and will support them in case controversy does arise,



they will not be as hesitant to teach the material. Additionally, principals should work to provide professional development opportunities for their teachers.

Finally, teachers need to take the initiative. Changes in teacher training are not enough and results will not fully be realized for some time. Even if the aforementioned changes were made today, there would still a period of nearly 20 years before all teachers would have the recommended training. There needs also to be a change in attitude. Teachers need to add world religions into their curriculum. This is certainly easier said than done, but it is far from impossible. When training and professional development opportunities are lacking, teachers need to take advantage of existing resources. Information on constitutional issues can be found at the First Amendment Center's Web site, [www.firstamendmentcenter.org](http://www.firstamendmentcenter.org). Information on how to teach about religious diversity is available on Web sites, such as [teachingtolerance.org](http://teachingtolerance.org). Countless, affordable books are available for teachers who feel the need to shore up their content mastery. In particular, used college world religion textbooks serve as a good starting place. Most contain concise entries on each religion (as well as many others), are readable, and most importantly, are very affordable. For most teachers—assuming they are lifelong learners, as all teachers should be—these changes and extra efforts should not be too much to ask.

As with any institutional problem, adjustments need to be made on all levels for meaningful change to be achieved. For the long run, changes need to be made within teacher preparation programs. The changes discussed above would go a long way to ensure that all teachers enter the field prepared to teach students about world religions. For the short run, principals and teachers need to reevaluate their positions. Principals need to encourage teachers to teach about world religions, and assure teachers that they will be supported, should controversy arise. Teachers, however, are the key. Anyone who has been in a classroom knows

that teacher preparation programs do not and, in reality, cannot fully prepare you for the classroom. As a result, teachers must, as they often have to, take the initiative. Like many other things, teaching about world religions is something that will become easier with time and experience. The only way to gain experience is to try. Thus, teachers need to work to better themselves through various avenues such as personal research, collaboration, and professional development.

Though it has revealed much, this study is hardly conclusive. Because of its limited scope and small sample, it cannot be taken to be representative of the entire field of teaching. At best, it might be representative of the levels of preparation within Hamilton County, TN high schools. Thus, further research is necessary. Similar and more extensive studies need to be conducted across the country. Related topics also need to be examined. For example, a more in-depth examination of teacher content mastery would be ideal. It would also be interesting to see if there is any correlation between preparation and the type of teacher preparation program completed. Thus, the final recommendation is that more research be conducted. This is simply too important an issue to overlook.

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Appendix A—Teacher Survey

General Information

Subjects taught:

Survey

1. How many years of teaching experience do you have?

2. Rate your knowledge of the following world religions using the scale below.

a) very poor      b) poor      c) average      d) above average      e) excellent

\_\_\_\_\_ Buddhism

\_\_\_\_\_ Christianity

\_\_\_\_\_ Hinduism

\_\_\_\_\_ Islam

\_\_\_\_\_ Judaism

3. How familiar are you with the constitutional issues surrounding the legality of teaching about world religions in public schools?

\_\_\_\_\_ unfamiliar      \_\_\_\_\_ somewhat familiar      \_\_\_\_\_ very familiar

4. Did any of your teacher preparation courses provide information on how to teach about world religions in your classroom?

\_\_\_\_\_ Yes      \_\_\_\_\_ No

5. Have you ever taken a religious studies or world religions course?

\_\_\_\_\_ Yes      \_\_\_\_\_ No

6. If the answer to the previous question is “yes,” indicate below what type of course it was. (Note: If you have taken more than one course, mark all that are applicable.)

\_\_\_\_\_ middle or high school course

\_\_\_\_\_ undergraduate level course

\_\_\_\_\_ graduate level course

\_\_\_\_\_ teacher preparation course or professional development

\_\_\_\_\_ other (please indicate) \_\_\_\_\_

7. Evaluate your level of preparedness in teaching students about world religions.

\_\_\_\_\_unprepared                  \_\_\_\_\_adequately prepared                  \_\_\_\_\_very prepared

8. Examine the list of information sources below. Identify the three that serve as the base of your knowledge about world religions. Of those three, rank them with 1 indicating the most formative.

- \_\_\_\_\_high school education
- \_\_\_\_\_college/university course(s)
- \_\_\_\_\_your class textbook(s)
- \_\_\_\_\_teacher preparation or professional development course/seminar
- \_\_\_\_\_personal research
- \_\_\_\_\_television/internet news
- \_\_\_\_\_entertainment (i.e., Movies, TV, music...)
- \_\_\_\_\_personal place of worship
- \_\_\_\_\_other (please indicate)\_\_\_\_\_

9. Match the world religions on the right with the items on the left. Some religions may apply to more than one item. Some items may apply to more than one religion.

- |                         |                 |
|-------------------------|-----------------|
| _____Four Noble Truths  |                 |
| _____Sunni, Shi'a, Sufi | a) Buddhism     |
| _____Tanakh             |                 |
| _____Rama & Sita        | b) Christianity |
| _____Monotheism         |                 |
| _____Paul               | c) Hinduism     |
| _____Abrahamic Faith    |                 |
| _____Five Pillars       | d) Islam        |
| _____Caste System       |                 |
| _____Holy Trinity       | e) Judaism      |
| _____Yom Kippur         |                 |
| _____Eight-Fold Path    |                 |
| _____Karma              |                 |

An Inquiry-Based Lesson Plan:  
Incorporating Adapted Primary Literature in a High School Biology Classroom  
Ashley Mehgan Cross  
Education 590, Fall 2009  
The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 09-167.*

## Introduction to the Problem

At the university level, primary scientific literature is commonly present in a biology student's curriculum. However, its presence at the secondary level is rare. Because of the significant importance of primary research in the scientific community, the incorporation of scientific journal articles in high school biology courses could not only provide students with a foundation in scientific literacy, but provide a large glimpse into the real-life applications of the scientific concepts found in their textbooks. Prior research suggests that with aids, high school students are not only capable of comprehending scientific research articles, but such articles promote student motivation and positive attitudes towards primary literature. As will also be demonstrated in this study, primary scientific literature can be used to fulfill state curriculum standards; in this case, Tennessee standards are used.

The purpose of this research is to determine the effects of student exposure to adapted primary literature on student comprehension, motivation, and attitude. Specifically, these three components will be evaluated during the implementation of an inquiry-based lesson plan utilizing adapted primary literature.

## Review of Literature

### *Scientific Literacy*

Scientific literacy is commonly reported as a necessity in today's world. Although several definitions of a scientifically literate individual exist, these definitions usually include characteristics such as logical reasoning, critical thinking, the ability to make decisions based on evidence, and the ability to use these skills for individual and social purposes. In order to create a scientifically literate society, today's students must be taught through scientific inquiry (National Research Council, 1996; Baram-Tsabari & Yarden, 2005; Brill, Falk, & Yarden, 2004).

Furthermore, reading and understanding a scientific text can also be considered an important component of scientific literacy (Brill et al., 2004). Several researchers have hypothesized that utilizing scientific primary literature for learning may be one way of creating a scientifically literate society (Schinske, Clayman, Busch, & Tanner, 2008; Cordes, 2007; Brill et al., 2004; Gegner, Mackay, & Mayer, 2009; Yarden, Brill, & Falk, 2001; Baram-Tsabari & Yarden, 2005).

### *Primary Literature*

Primary literature is the outlet that scientists use to report their research. Specifically, primary literature refers to the research articles that are published in professional journals, technical reports, conference proceedings, patents, theses, etc. (Norris, MacNab, Wonham, & de Vries, 2009). All research articles that are published in reputable journals must go through a peer review process in which other experts in the field review, recommend modifications to, or reject the article for publishing. Journal articles usually follow a similar format with introduction, methods, results, and discussion sections (Pickles & Mappin, 2006). Typically, primary literature can be difficult to read by those outside of the field because it is written in a passive scientific language (Baram-Tsabari, & Yarden 2005).

Educators at the college level frequently incorporate primary literature into their curriculum with positive results. Exposing undergraduate students to primary literature has been shown to increase interest among students and increase student writing skills (Muench, 2000). One study also reports that the incorporation of primary literature into a science curriculum does not have to be time consuming to the students or an assessment burden to the instructor (Forest & Rayne, 2009).

Although primary literature is commonly incorporated into undergraduate science curriculums, the use of primary literature at the high school level is less prevalent. Instead, high



school students are normally subjected to secondary literature such as textbooks, popular news from the media, and review articles from popular science journals (Brill et al., 2004).

Nevertheless, several studies have been conducted to determine the learning outcomes of incorporating primary literature into the high school classroom (Schinske et al., 2008; Cordes, 2007; Brill et al., 2004; Gegner et al., 2009; Yarden et al., 2001; Baram-Tsabari & Yarden, 2005).

Yarden et al. (2001) propose, that by learning through primary research articles, high school students may develop many vital components of scientific literacy that are not present in high school textbooks. Through primary literature, students are not only capable of becoming acquainted to the rationale of a research plan, but with the language and structure of scientific communication, as well. Additionally, reading research articles exposes students to problems in specific disciplines that scientists are trying to solve, and the methods with which scientists are trying to solve them. Students are also exposed to figures such as charts, graphs, and diagrams that differ greatly from those found in high school textbooks (Roth, Bowen, & McGinn, 1999). Finally, students are familiarized with the continuation of scientific research (Yarden et al., 2001).

Public access to scientific literature is becoming an increasingly popular policy within the academic world. Several colleges and universities are placing an open policy on research articles written by their employees. This allows public access to full research articles without paying a fee (McMahon, 2008).

Accordingly, Gegner, et al. (2009) addressed the problem of high school students accessing an online journal article that goes beyond their comprehension abilities by developing a computer-based prototype for guiding student comprehension of scientific articles. The

researchers then determined the effects of utilizing a computer-based comprehension guide, while reading an online scientific journal article, on student comprehension, motivation, and attitude toward scientific journal articles and science as a career. The authors reported that high school students that utilized a comprehension aid performed better on comprehension tests, expressed more understanding of what scientists do, and reported more interest in reading additional scientific articles, than those students that did not use a comprehension aid. However, the authors found no significant difference in student attitudes concerning science as a career. (Gegner et al., 2009).

Developing a computer-based comprehension guide for every scientific journal article is not feasible, but the development of a computer-based tool for creating online annotations to an article may be practical in the future (Gegner et al., 2009). In the meantime, studies are being conducted to determine effective strategies for reading print-based research articles (Schinske et al., 2008; Cordes, 2007).

One such study was conducted to determine the effectiveness of three activities used to educate students about the function and format of scientific journal articles. Specifically, the three activities focused on the types of figures present in journal articles, journal abstracts, and the production of independent papers that resemble journal articles. After implementing the three activities, the researchers examined student attitudes through the use of end-of-unit surveys. The authors found that the majority of the participating students expressed enthusiasm in using the three strategies, as well as confidence in their ability to understand scientific journal articles (Schinske et al., 2008).

In another study involving primary literature, Cordes (2007) determined that the two major roadblocks the participating high school students faced in reading scientific journal articles were

difficult vocabulary and a lack of necessary background knowledge. Cordes recommends that preteaching vocabulary and background information, prior to allowing students to read primary literature, can alleviate these problems (Cordes, 2007).

### *Adapted Primary Literature*

In an effort to lessen the degree of comprehension difficulties high school students may face when reading primary literature, a new genre of literature was created—adapted primary literature. Adapted primary literature retains the authentic characteristics of primary literature, but adapts the content to a level more easily comprehended by high school students. Specifically, the introduction of the original article is modified to include basic background information that was not included by the original author(s). Additionally, the methods section is adjusted to only describe the main details of the method, while the amounts and compositions of materials are excluded. The results are only adjusted to omit insignificant details that go beyond the comprehension level of high school students. Annotations may also be added to figures. Finally, the discussion is modified and expanded so that it can be more easily understood by the students. Several studies have been conducted using such literature (Yarden et al., 2001; Falk & Yarden, 2009).

In the first study conducted using adapted primary literature, its creators implemented a developmental biology curriculum based on learning through adapted primary literature in a conversational model. During this conversational model, students would read each section of the article, together, in class, and then have an open discussion on its contents, with the instructor serving as the moderator. The researchers report that the participants in the study expressed that learning from adapted primary literature “was more interesting” and “was more intellectually challenging” (Yarden et al., 2001).

Another previous study examined the differences between learning from adapted primary literature and learning from secondary literature. To do this, the researchers conducted a comparison using four groups of high schools students, with different levels of background knowledge in biology, that were instructed to read an adapted scientific research article or a popular scientific article. The researchers found that there was no significant difference in the students' abilities to summarize the text of primary or secondary literature, but those students that read primary literature exhibited better inquiry skills. On the other hand, students that read secondary literature displayed a more positive attitude toward the article and better comprehension of reading the text. The researchers suggest that the differences in the students' performances are a result of the differences in the structure of the two texts. They also suggest that the most effective way of incorporating adapted primary literature into a high school curriculum is to allow students to read adapted primary literature and secondary literature on the same topic (Baram-Tsabari & Yarden, 2005).

### *Summary*

Scientific primary literature, the outlet through which scientists represent their research, is commonly used at the undergraduate level for learning purposes. On the other hand, its presence at the high school level is rare. Of course, it should be noted that this may be due to the comprehension difficulties high school students face when reading primary literature. Fortunately, studies have shown that these difficulties can be lessened through computer-based comprehension guides, the accompaniment of primary literature with secondary literature, and preteaching of vocabulary and background information. A new genre of literature, adapted primary literature, was created to adapt primary literature to a comprehension level appropriate for high school students.

Previous research has shown that, when the comprehension barriers are overcome, incorporating primary literature into the high school science curriculum can provide the following benefits:

- Increase in student inquiry skills,
- Increase in student interest,
- Increase in student confidence reading scientific articles,
- Increase in student desire to read additional scientific articles,
- Intellectual challenges for students, and
- Student exposure to real-life science applications.

## Data Collection and Results

### *Data Collection*

#### *Methodology*

*Research questions.* The intervention implemented in this study was designed to answer the following research questions:

- In what ways will implementing an inquiry-based lesson plan that utilizes adapted primary scientific literature increase student comprehension?
- In what ways will implementing an inquiry-based lesson plan that utilizes adapted primary scientific literature increase student motivation?
- In what ways will implementing an inquiry-based lesson plan that utilizes adapted primary scientific literature affect student attitude towards scientific journal articles?

*Intervention.* To answer these research questions, the researcher implemented a 90-minute lesson plan that was based on Endler's (1980) classic scientific article that examines the balance

of natural and sexual selection in a population of guppies. However, to alleviate the comprehension gap between the reading level of the article and the reading level of the high school students, an adapted version of the article was created using the strategies outlined by previous literature (Yalk et al., 2001). Specifically, the introduction of the article was modified to include basic background information that was not included by the original author. Additionally, the methods section was adjusted to only describe the main details of the method, omitting any minor details such as the amounts and compositions of materials. The results were only adjusted to omit insignificant details that go beyond the comprehension level of the students. Finally, the discussion was shortened and modified so that it would be more easily understood by the students. It should also be noted that the scientific concepts covered through this lesson plan satisfy Tennessee Curriculum standards for Biology I.

During the lesson, the students participated in a variety of activities, both collaborative and individual, to dissect the journal article and familiarize themselves with the format of scientific literature. The students were instructed to read each section of the article, and discuss any questions based on each section with a small group, and, then, an open-discussion was used to discuss each section. The teacher served as a moderator to the discussion by asking questions when appropriate. A Microsoft PowerPoint presentation was also utilized to summarize each section, and show pictures and illustrations associated with the article.

*Participants.* This study occurred in a public high school with in the Hamilton County school district in Southeast Tennessee. Based on the 2008 school year, the high school served 1,878 students, with 72.9% of those students being classified as Caucasian, 17.8% of students classified as African American, 5.5% of students classified as Hispanic, 3.5% of students classified as Asian/Pacific Islander, and 0.3% of students classified as Native American/Alaskan.

Within this context, the intervention was implemented in an Honors Biology I classroom comprised of 17 participants. The participants represented a diverse group of students in the 10<sup>th</sup> grade. Due to the nature of the course, these students can be said to be both high-achieving and highly motivated.

*Pre-assessment and post-assessment.* To determine the effect of the lesson plan based on adapted primary literature on student comprehension, a teacher-made assessment was given before and after the lesson plan. The pre-assessment was given the day prior to the lesson, and the identical post-assessment was given the day after the lesson. This assessment was composed of 12 questions intended to gauge each student's knowledge of the scientific concepts presented by the adapted primary literature during the unit (see Appendix A). The pre-assessment given before the unit served as the baseline data.

*Student survey and attitude scale.* A student survey and attitude scale were given to the participants immediately following the lesson to assess the effects of the lesson plan on student motivation and attitude. The student survey used yes or no questions, as well as open-ended questions, to collect student opinions of the lesson plan (see Appendix B). On the other hand, the attitude scale used close-ended questions accompanied by a Likert scale to assess student attitude toward scientific primary literature and student confidence toward reading and comprehending primary literature in the future (see Appendix C).

*Observational data.* To determine the effects of student exposure to adapted primary literature on student comprehension, motivation, and attitude, the teacher recorded information in a journal, as the lesson proceeded. Specifically, information on behaviors that suggested the students were or were not engaged with the activity, was recorded in the journal. Additionally,

notes were recorded, based on the informal assessment questions posed to the students throughout the lesson.

*Summary.* In summary, several data collection strategies were utilized throughout this study to answer each research question as an effort to increase the credibility of this research. The observational data, survey, attitude scale, and student assessments all served to determine the effects of student exposure to adapted primary literature on student comprehension, motivation, and attitude. Additionally, the observational data, specifically the researcher-maintained journal, was used to provide insight into the reasons this study's intervention was or was not successful.

### *Results*

#### *Pre-assessment*

To serve as the baseline data, the pre-assessment was given to the participants the day prior to the implementation of the lesson that incorporated adapted primary literature. As a group, the participants answered 5.4 of the 12 questions correctly, or an average of 45%. Scores ranged from one correct answer to nine correct answers, or 8% to 75%, respectively. Additionally, both the median and mode were 6 correct answers, or 50%.

#### *Post-assessment*

The post-assessment, containing identical questions, was given to the participants the day following the lesson. On average, the participants answered 8.9 of the 12 questions correctly, or an average of 74.2%. Scores ranged from 7 correct answers to 12 correct answers, or 58.3% to 100%, respectively. Additionally, both the median and mode were 9 correct answers, or 75%. The average score on the post-assessment increased 29.2 percentage points from the pre-assessment score. The increase in percentage points between the pre-assessment and post-assessment for all individuals was 65.5 percentage points.



### *Attitude Scale*

A Likert scale was utilized to assess student attitude towards adapted primary literature and student confidence and in reading and comprehending journal articles in the future. For 14 close-ended questions, the participants were allowed to choose a number 1 through 5, with 1 corresponding to Strongly Agree and 5 corresponding to Strongly Disagree. Figure 1 shows the average rating for each question. Most of the average scores indicate that the participants possessed a neutral attitude towards each question. However, the scores of two questions that assessed student confidence in reading and comprehending other scientific articles indicate that the participants feel confident in these abilities, after initial exposure to adapted primary literature.

<b>Question</b>	<b>Average Response</b>
<b>1. I have read scientific articles before.</b>	3.65
<b>2. I enjoyed reading the article.</b>	3.35
<b>3. The article was difficult to read.</b>	3.24
<b>4. The article was difficult to comprehend.</b>	3.41
<b>5. The article was interesting.</b>	2.82
<b>6. The article was frustrating.</b>	3.76
<b>7. The article was too long.</b>	3.06
<b>8. The article provided too many details.</b>	3.65
<b>9. I would like to know more about the subject of the article.</b>	3.65
<b>10. I feel confident in my ability to read other research articles.</b>	2.76
<b>11. I am interested in reading another scientific research article.</b>	3.47
<b>12. I would rather learn using a textbook.</b>	3.24
<b>13. I would rather learn using scientific articles.</b>	3.59
<b>14. If someone showed me another scientific research article, I think I could determine the purpose of the paper, what the scientists did, and their main results.</b>	2.24

*Figure 1.* Average responses to the attitude scale. Key: 1=strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree.

### *Student Survey*

A student survey, containing seven questions, was given to each participant, immediately following the lesson. Based on this survey, no student indicated that exposure to adapted primary literature changed the way he or she felt about biology or biology as a career choice. However, most students indicated a positive attitude change, with regard to their familiarity with scientific articles. Figure 2 shows sample responses from participants on this subject.

<b>Attitude Change</b>	<b>Before today's class I thought a scientific article was...</b>	<b>Now I think they are...</b>
Positive	"A boring research paper that talks about science."	"A paper that may be able to help me with scientific information."
None	"A paper about experiments scientists had done."	"A paper about experiments scientists had done."
Positive	"Really long and boring"	"Slightly interesting"
Positive	"I had no idea."	"A paper scientists create with all of their experimental findings and data."
Positive	"I had no idea what a scientific paper was."	"Notes of scientific research and experiments."
Positive	"Hard to understand."	"Not so hard."

*Figure 2.* Sample student responses to the student survey.

Furthermore, through the survey, all students indicated certain components of the lesson that were helpful to them. Answers included the cooperative discussions, the basic vocabulary included in the introduction, dissecting the purpose and results of the article, and the simple exposure to primary literature. The participants also indicated that the difficult vocabulary, the experimental methods, and the specific details were the least helpful components of the lesson.

### *Observational Data*

The observational data collected by the researcher indicates that the participants were all actively engaged in the lesson, with the exception of two students, who appeared to be uninterested in the material. All of the teacher-posed questions were answered by the students,

and student participation was high. Many students also had questions of their own, an indication that they were interested in the subject of the primary literature.

## Conclusions and Recommendations

### *Conclusions*

The results from the pre-assessment and post-assessment indicate that adapted primary literature can successfully be incorporated into a high school biology classroom with gains in student comprehension of important scientific concepts. However, based on the student attitude scale and survey, exposure to adapted primary literature seemed to have neither a positive nor a negative effect on student attitude and motivation. It should be noted, however, that most students did indicate a positive attitude towards their confidence in reading and comprehending scientific articles after the lesson.

Despite the lack of an effect on student attitude and motivation, I believe student exposure to adapted primary literature at the high school level is important. This study indicates that adapted primary literature can successfully be utilized as a resource in teaching important scientific concepts found in curriculum standards. Such exposure may also have long-term benefits for those students who will enroll in a higher education program that uses primary literature as a key component of its curriculum.

### *Recommendations*

Primary literature is not a popular resource at the secondary level. However, the teaching profession has placed emphasis on using diverse resources for content purposes, rather than relying on one textbook as a curriculum guide. If adapted to the proper comprehension level, primary literature can be a viable option for diversifying the high school curriculum. In addition, educators often stress the importance of providing students with a link between the concepts

taught in the classroom and the real-world. Primary literature can serve as this link between the classroom and real-life applications of the concepts found in a textbook.

Primary literature can be found and adapted for all subjects studied at the secondary level. I would recommend that, teachers should not only become familiar with the structure and importance of primary literature, but they should be instructed on how to obtain such articles. Public and higher education libraries are excellent resources for locating primary literature, but many research articles can be obtained online, free of charge. If teachers learn to utilize technology effectively, then they should be able to acquire primary literature through simple Internet searches.

Lastly, professional educators should also be exposed to research-based strategies that can alleviate the comprehension barriers high school students may face when reading primary literature. Professional development meetings would be the perfect opportunity for teachers to discuss such strategies and brainstorm innovative ways of incorporating primary literature into the high school classroom.

Incorporating primary literature into the high school classroom is not a popular goal among secondary educators. However, diversifying teaching strategies, effectively utilizing technology, and incorporating real-life applications in the science classroom, are common ideas in the education profession today. Incorporating primary literature in the high school classroom is an innovative way of accomplishing any or all three of these goals. Consequently, ample grant money is available to support further research on the effects of student exposure to primary literature in the high school classroom. The National Science Teachers Association (NSTA) is probably the most notable source of such grants in the science field.

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## Appendix A

### Pre-Test/Post-Test: Natural Selection on Color Patterns in *Poecilia Reticulata*

1. \_\_\_\_ is the process through which individuals that are better adapted to their environment survive and reproduce more successfully than less well-adapted individuals.
  - a. extinction
  - b. mimicry
  - c. natural selection
  - d. gradualism
2. The change in frequency of a trait that is based on the ability to attract a mate is called \_\_\_\_\_.
  - a. mimicry
  - b. sexual selection
  - c. polymorphism
  - d. artificial selection
3. The presence of multiple alleles for one gene within a population that usually results in different phenotypes is known as \_\_\_\_\_.
  - a. gradualism
  - b. polyploidy
  - c. polymorphism
  - d. mimicry
4. \_\_\_\_\_ refers to when one species evolves to resemble another species.
  - a. gradualism
  - b. polymorphism
  - c. mimicry
  - d. sexual selection
5. A small sample of a population settles in a location separated from the rest of the population. Since this subset of the original population carries a random subset of the population's genes, alleles that were uncommon in the original population might become common in the new population. This is known as \_\_\_\_\_.
  - a. natural selection
  - b. genetic bottleneck
  - c. the founder effect.
  - d. gradualism
6. A(n) \_\_\_\_\_ is a trait shaped by natural selection that increases an organism's reproductive success.
  - a. adaptation
  - b. polymorphism
  - c. divergent trait
  - d. convergent trait

7. An adaptation that allows an organism to blend in to its environment is known as \_\_\_\_\_.
  - a. gradualism
  - b. camouflage
  - c. aposematic coloring
  - d. mimicry
  
8. A measure of the relative contribution an individual trait makes to the next generation is known as \_\_\_\_\_.
  - a. adaptation
  - b. polymorphism
  - c. fitness
  - d. polyploidy
  
9. One would expect the number of spots per fish to change more notably over time in guppy ponds with \_\_\_\_\_.
  - a. weak predators.
  - b. a dangerous predator.
  - c. no predation.
  - d. both weak and dangerous predators.
  
10. If sexual selection increases conspicuousness and color pattern diversity in guppies, it should be expected that in the absence of predation, \_\_\_\_\_ (large or small) color spots would be found in guppies in an environment with large coarse gravel.
  
11. If high predation is present in a guppy population that lacks sexual selection, it would be expected that the color patterns of the guppies would be \_\_\_\_\_ (similar or different) to their environment.
  
12. Male guppies cannot have color patterns which are too \_\_\_\_\_ (noticeable or camouflaged), or they will be consumed by predators. On the other hand, they cannot be too \_\_\_\_\_ (noticeable or camouflaged), or females will choose other males as mates.

(Based on Jones, 2008.)



## Appendix B

### Student Survey

\*This is not a graded assignment. Do not put your name on this survey. Please respond to each statement truthfully, and, remember, there are no right or wrong answers. Thanks!

1. Before today's class I thought a scientific paper was..

Now I think they are..

2. Has exposure to a scientific research article changed the way you feel about biology?  
(circle one)    Yes    No

If yes, how has it changed the way you feel about biology?

3. Has exposure to a scientific research article changed the way you feel about biology as a career choice?  
(circle one)    Yes    No

If yes, how has it changed the way you feel about biology as a career choice?

4. What have you learned as a result of reading this article?

5. What components of this activity have been most helpful to you?

6. What components of this activity have been least helpful to you?

7. Is there anything else you would like to say about this activity or scientific research articles? If so, please write your comments here.

## Appendix C

### Student Attitude Scale

\*This is not a graded assignment. Do not put your name on this survey. Please respond to each statement truthfully, and, remember, there are no right or wrong answers. Thanks!

**Please circle the number corresponding to your response using the following scale:**

**1-Strongly Agree (SA)**

**2-Agree (A)**

**3-Neutral (N)**

**4-Disagree (D)**

**5-Strongly Disagree (SD)**

	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
1. I have read scientific articles before.	1	2	3	4	5
2. I enjoyed reading the article.	1	2	3	4	5
3. The article was difficult to read.	1	2	3	4	5
4. The article was difficult to comprehend.	1	2	3	4	5
5. The article was interesting.	1	2	3	4	5
6. The article was frustrating.	1	2	3	4	5
7. The article was too long.	1	2	3	4	5
8. The article provided too many details.	1	2	3	4	5
9. I would like to know more about the subject of the article.	1	2	3	4	5
10. I feel confident in my ability to read other research articles.	1	2	3	4	5
11. I am interested in reading another scientific research article.	1	2	3	4	5
12. I would rather learn using a textbook.	1	2	3	4	5
13. I would rather learn using scientific articles.	1	2	3	4	5
14. If someone showed me another scientific research article, I think I could determine the purpose of the paper, what the scientists did, and their main results.	1	2	3	4	5

Using Differentiated Instruction to Improve the Overall

Academic Knowledge of Middle School Students

Rembert Alan Edwards

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)  
has approved this research project # 09-152.*

## Introduction to the Problem

The focus for my study will be to determine the effects of implementing differentiated instruction in the Algebra I classroom of two, ninth-grade classes. In particular, research will be done to measure the overall increase of knowledge and the overall increase in motivational levels of the students, with regard to the subject material.

The setting for my study is a private Christian school that serves a diverse population of the greater Chattanooga area. This school currently does not offer tuition assistance to any students, so the student population consists of children from middle- to upper-class socioeconomic families. The student body is made up of two groups: those who have attended since kindergarten and those who have transferred at some other grade level. With the influx of students at each grade level, there is a continuous disparity of academic abilities at each grade level. In reality, some students have a stronger academic foundation than others. One of the most notable areas of disparity is in the subject of mathematics, especially in Algebra. When the students who are weaker academically are grouped with those who have a solid mathematical foundation, the instructional methods must be designed to meet student needs at the various levels of abilities. Currently, the instructional methods used at this school are not designed to fully meet these needs. This is not just a problem within this school, but the decline in mathematics proficiency among American students has become a national problem. Driven by these concerns, it is my desire to help end this decline. The intent of this study is to focus on the local populace, and is primarily concerned with increasing the mathematics proficiency of the student population within this school.

## Review of Literature

Most researchers, along with the U.S. Department of Education, agree that U.S.

students are lagging behind other industrialized nations in the areas of math and science.

According to a study completed by a National Mathematics Advisory Panel, formed by the U.S. Department of Education, this is a national problem for American students:

The panel researched the “best scientific evidence” for mathematics achievement and completed a report titled *Foundations for Success: The Final Report of the National Mathematics Advisory Panel*. The report centered on algebra as the central concern and pointed to the sharp decline in mathematics that begins in middle school where most students begin to deal with algebraic concepts. (Flores & Roberts, 2008, p. 305)

As a result of this study, urgency developed at the national level to increase the mathematics and science capacities of all students in America. Much of the focus has been directed toward middle school and first-year high school students, due to the fact that, when students begin learning algebraic concepts, the decline begins to magnify itself. Studies to identify the reasons for this decline have been performed at all levels, from the local and district level, to the state and national level. Action researchers across the country have evaluated individual schools and classes in an effort to identify the source of this decline. What this research has found is that there is a wide range of mathematics abilities among middle school students. Almost without exception, there is an identified need for some method of differentiated instruction, also known as individualized instruction, to help reverse this downward trend.

Lee (2006) points out that students, even in the early years of schooling, kindergarten through second grade, can be taught algebraic thought processes through differentiated teaching methods. Unfortunately, many teachers are not schooled in how to think beyond the basics and how to provide such instruction. In his article, Lee highlights the teaching experiences of using Davydov’s mathematical curriculum. The Davydov curriculum was named for the Russian

psychologist and educationalist, Vasily Davydov. The curriculum focuses on how algebra really spans the entire schooling experience, kindergarten through 12th grade, and does not wait until middle school to implement algebraic concepts. The article reports on using Davydov's elementary mathematics curriculum to help strengthen his argument.

There are many studies in which researchers have segmented differentiated instruction to a select group of students. Matthews and Farmer (2008) used the approach with a group of gifted learners. The study was focused on examining the relationship among selected variables and students' scores on an Algebra I achievement test. The results indicated that the strongest correlation existed between mathematics reasoning and Algebra I achievement. The gifted status did reflect as a strong predictor of mathematical reasoning, but was not strongly related to Algebra achievement, and, hence, supports the need for differentiated instruction for gifted learners.

There is another group of researchers that produced even greater results dealing, once again, with just those who were considered academically talented. Mills, Ablard, and Gustin (1994), looked at a group of academically talented students and how an individualized learning pace curriculum greatly accelerated student gains in achievement. The gains were as high as 46 percentile points from pre- to post-testing. With this individualized learning pace, some students, as early as fourth grade, completed the pre-algebra sequence in their first year and the algebra sequence in their second year.

The need for differentiated instruction becomes even more magnified when teaching English language learners. Murrey (2008) points out that many students who are fluent in English have anxiety over their weak math skills. She goes on to say that this anxiety is doubled when the student is struggling with the language, as well. Murrey offers some helpful strategies

in her article to help assist in lessening this anxiety. One of the more popular strategies is to use tasks that have multiple entry points and that provide scaffolds that support student participation. The overall essence is to make the differentiated mathematics classroom a “safe” environment.

While most educators support differentiated instruction because of the obvious differences in ability levels among middle school students, Tomlinson (2005), a teacher of 30 years, says her support is much more internal. Tomlinson states that her “personal experience as an adolescent with a typically fragile sense of self” is her compelling support for why differentiation matters in middle grades (p. 12). She relates her own story of two very different teachers with two completely different teaching methods. One teacher, using a differentiated method, changed her life. There is little argument to be made over the differences it made in her life.

There are many studies that have been done, in specific regions, that focus on how to improve the academic proficiency of all students in the subject of mathematics. The state of Georgia initiated such a study. Tyler-Wood, Mortenson, Putney, and Cass (2000) discuss the findings of a project done in a Georgia high school that focused on determining the effects of placing academically talented students in an integrated, hands-on mathematical and science curriculum. This project, Ga-GEMS (Georgia’s Project for Gifted Education in Math and Science) covered a 2-year period. After the 2-year intervention period was complete, both groups were administered the following subtests of the ACT: Science, Math Total, Pre-Algebra/Elementary Algebra, Intermediate Algebra/Coordinate Geometry and Plane Geometry/Trigonometry. The results from the study found that the participants in the project scored significantly higher on all subtests.

Other studies have been completed on a more local level, such as the one done by two high school principals. Flores and Roberts (2008) completed an action research study in an effort to

increase the proficiency of their own students in mathematics. The study included visiting three other high schools in their area that held similar demographics to their own. Each visit started with an interview with the respective principal of each school (and, in some cases, included an assistant principal; and, in one case, the district's mathematics coordinator). In these interviews, the administrators of the schools shared policies and procedures, their school culture, and any idiosyncrasies that may have contributed to the success that their student body was achieving in mathematics.

Another group of three researchers performed a similar study, but their study included 9<sup>th</sup>- and 10<sup>th</sup>-grade students. Di Fatta, Garcia, and Gorman (2009) focused on increasing student learning in mathematics using collaborative teaching strategies. The study included 40 high school students who were enrolled in Algebra I, Algebra II, or Geometry, and covered a period of 1 semester. Each of the math classes contained interventions that included incorporating multiple-intelligence-based lessons, positive reinforcement for homework completion, and, involving the students in more regular group work. Overall, the students felt that working in a collaborative setting helped to improve their learning in mathematics, but the test scores provided mixed results. Unfortunately, these results do not contribute to a strong case for differentiated instruction, as do the previous cases presented.

This leads to the questions of what, exactly, does differentiated instruction look like, and where does one go to get such resources. Two authors have put into book form different methods that have proven effective. Hamm and Adams (2008) offers practical methods to reach every student in a K-8 classroom. They presents several research-based methods that will assist a teacher in everything from classroom management, to writing lesson plans for both math and science. They focus on methods that will raise student motivation and student competence in



these subjects. Adams and Hamm (2008), on the other hand, focus on the social nature of learning, and provides some useful suggestions for reaching reluctant learners. They state that instruction that is focused on students' interests, and building on collaborative and differentiated learning, allows students to progress from feeling like they "can't do math or science" to feeling confident in their achievement.

Still others ("The Grow Network/McGraw-Hill launches new program to provide individualized reading and math intervention," 2008), have adapted personal learning programs that help identify student strengths and weaknesses that will produce a tailor-made program for each individual student. In the fall of 2008, the state of Florida launched the MyGuide Personal Learning Program for all students in Grades 7-10, and for all students scheduled to take the state high school exit exam. This program was created by The Grow Network, a division of the McGraw-Hill companies. The program is well received by the local school systems, as expressed by Dr. Diana Greene, deputy superintendent of Marion County (FL) Public Schools:

Teachers need time-saving classroom tools that can help them differentiate instruction and provide targeted support to individual students. We are looking forward to using the MyGuide program to give teachers additional instructional support and give students a resource to help them master the skills they need to graduate. ("The Grow Network/McGraw-Hill launches new program to provide individualized reading and math intervention," 2008, p. 2285)

Strong data that support differentiated instruction is most encouraging to a researcher looking to conduct their own study. Ysseldyke and Tardrew (2007) make a strong statement in support of differentiated instruction. Their study compared participant classrooms to control group classrooms across 24 states. Not only did the research show consistent rates of gain in

achievement among the participants, but, also, significantly more students “reported that they like math, help each other with math, and like math better this year than last year” (p. 23-24). Their study concluded that the mathematical performance of the students who received differentiated instruction was significantly enhanced.

The dominant theme throughout the resources that were reviewed is that there is a growing concern with the decline in proficiency in middle and high school students in the subject of mathematics. With such a decline, many are looking for answers and methods that would be successful in reversing this downward trend. Repeatedly, these sources point to differentiated instruction as a successful teaching method. This instruction must first pinpoint where each student is in their mathematical knowledge, and, then, tailor the teaching methods to build upon knowledge.

### Methodology

This study sought to answer the following questions:

1. Does differentiated instruction increase the academic knowledge of the Algebra I students?
2. Does differentiated instruction increase the motivation level of students toward the course content?

This study included two classes of ninth-grade Algebra I students. One class acted as the control group, and received traditional instruction, while the other class acted as the study group, and received differentiated instruction. This research included a 3-week unit of study from an Algebra I course. At the beginning of the study, each class was administered a pre-study questionnaire that recorded student attitudes toward the subject of Algebra, and mathematics, in general. At the end of the study, students completed a post-study questionnaire that recorded any

changes in attitudes. Also, at the beginning of the study, students completed an anticipation guide that consisted of a list of 10 different concepts that were covered throughout the unit. Students marked beside each concept as to whether they agreed, disagreed, or were not sure about the concept. As with the questionnaire on attitudes, students completed the anticipation guide, again, at the conclusion of the study, to determine any changes that occurred in their understanding of the 10 concepts.

Throughout this 3-week period, the study group received various types of differentiated instruction. During the first week, students were each given a partner. Each day, after the students received instruction of key concepts, they would begin working with their partners on solving the different types of problems. The instructor would move about the room, recording individual student comprehension with journal entries. At the end of the week, an additional assessment of student comprehension was taken from a teacher-made quiz. During the second week, students were given tiered assignments, based on their demonstrated level of understanding. The class was divided into two groups. Students who had demonstrated mastery of the concepts during week one were introduced to new concepts and assigned higher level problems. Students who did not demonstrate a mastery of the concepts received remedial instruction, and received assignments, accordingly. At the conclusion of week two, a second teacher-made quiz was administered to assess the week's learning. During week three, students were assigned to small groups. After receiving guidelines about the key concepts, students worked within their groups to determine how to solve several sample problems covering each of the key concepts. Students used peer coaching until each student within the group felt they understood how to work the assigned problems. At the end of week three, a final assessment was

given in the form of a teacher-made test. During this 3-week period, the control group continued to receive traditional instruction, and each student worked independently on assigned work.

### Data Collection and Results

In order to address the question of whether the differentiated instruction did, in fact, increase the academic knowledge of the students, an analysis of the grades from each quiz and the unit test were reviewed, as well as an analysis of the anticipation guide. The results from quiz one, actually showed a decrease in understanding by the study group, with the control group scoring 6% higher. At the end of week two, the study group showed significant gains and scored 6% higher on quiz two. The unit test completed at the end of week three actually netted the same percent of change from the students' historical grades for both groups. When comparing the understanding of key concepts from the anticipation guide, the study group showed an increase of 8% while the increase of the control group was 9%. Based on these results, the differentiated instruction that the study group received had little to no effect in increasing the academic knowledge of the students. At certain points, it appears to have hurt their understanding of specific concepts.

In order to answer the question of whether differentiated instruction increases the motivation level of students toward the course content, a comparison of pre-study attitudes was made against post-study attitudes. This comparison showed that both groups had at least half of the students who had not experienced any change in attitude toward the subject material. The study group had 50% of the students who reported that they were neutral as to whether their attitude had changed toward the subject matter while 53% of the control group remained neutral. At the end of the study, only 14% of the study group had indicated that they had a positive attitude toward the material, which was no change from the beginning of the study. The control

group, on the other hand, indicated a 7% increase in the number of students who had a positive change in attitude toward the material. The study group also had a 7% increase in students who felt their attitude toward the subject material had declined from being neutral to having a negative attitude, while the number of negative attitudes within the control group remained constant. This data does not support the idea that differentiated instruction increases the motivation level of students toward the course content. Appendix A contains a summary of results. The pre- and post-study questionnaires are contained in Appendix B and Appendix C, respectively.

### Conclusions and Recommendations

In summary, this study indicates that providing differentiated instructional does not foster an increase in knowledge of Algebra I concepts, nor does it indicate an increase in student motivation toward the subject matter. The results from the differentiated instruction did indicate, however, that students in the study group responded to specific instructional methods better than others. From the results of this research project, the following are given as recommendations: This research would be more beneficial if it had included a longer time period, and a larger, more diverse group of students. The researcher believes this would more accurately gauge the accuracy of the research findings. The use of technology is becoming increasingly useful in differentiated instructional methods. It is recommended that additional research include the latest technologies available, when implementing the differentiated instruction methods. Some of the latest technologies, which include the TI-Nspire graphing calculator, have been useful in making algebraic and higher mathematics problem solving come alive with the ability to manipulate graphs and easily interchange variables. Because of its technological “wow” affects, students

who have otherwise been disinterested are starting to become more interested in what is going on in the classroom.

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## Appendix A

### Summary of Results

	Historical Average Grades	Quiz 1 Average Grade	Quiz 2 Average Grade	Unit Test Average Grade	Total Unit Average	Pre-Study Anticipation Guide	Post-Study Anticipation Guide	Pre-Instruction Attitude			Post-Instruction Attitude		
								Positive	Neutral	Negative	Positive	Neutral	Negative
Period 1	80.5	72.6	90.7	61.3	74.8	44	52	14%	57%	29%	14%	50%	36%
Period 4	83.8	78.8	84.3	68.4	77.1	47	56	13%	60%	27%	20%	53%	27%



## Appendix B

### Pre-Study Questionnaire

Code \_\_\_\_\_

Do NOT write your name on this paper.

Number of years I have been at [the school]: \_\_\_\_\_

1. I enjoy school.

Yes  No

2. I would rate my academic ability as:

Above Average  Average  Below Average

3. I would rate my motivation to perform well academically as:

Above Average  Average  Below Average

4. I would rate my math ability as:

Above Average  Average  Below Average

5. I would describe my attitude toward math as:

I love it  I like it  Neutral  I dislike it  I hate it

6. My daily attitude toward this class can be described as:

I look forward to it  I dread it  \_\_\_\_\_

7. The Algebra I instruction that I have received thus far this year is conducive to my learning style:

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

8. Please write a short paragraph describing your overall attitude toward Algebra I (please use the back of this paper).

## Appendix C

### Post-Study Questionnaire

Code \_\_\_\_\_

Do NOT write your name on this paper.

1) I feel that my performance over the last four weeks has improved.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

2) My attitude toward Algebra I/math has improved during the last four weeks :

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

3) My daily attitude toward this class can be described as:

I look forward to it    I dread it    \_\_\_\_\_

4) The Algebra I instruction that I have received during the last four weeks is more conducive to my learning style than previous instruction that I have received:

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

5) The Algebra I instruction that I have received during the last four weeks is the same as that which I have received previously:

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

6) Please write a short paragraph describing your overall attitude toward Algebra I (please use the back of this paper).

Using Interactive Questioning Techniques to Increase High-Level Student Responses in a  
Catoosa County High School Social Studies Class: An Action Research Project

Jennifer Lynn Greeson

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)  
has approved this research project # 09-164.*

## Introduction to the Problem

As a teacher, I ask a lot of questions. In fact, the asking of questions is one of the most commonly used teaching methods around the world (Orlich, Harder, Callahan, & Gibson, 1998). There are established relationships between teacher questioning and student achievement (Wilén, 1987). Because of the power of questions to impact student thinking and learning, questions are, perhaps, “the single most influential teaching act” (Wilén, 1987, p. 13). Questions are useful tools to develop critical thinking skills, reinforce student understanding, correct student misunderstanding, provide feedback, and enliven class discussion (Caram & Davis, 2005). There is a growing body of evidence that demonstrates that “appropriate questions, properly asked, contribute to significant improvement in student learning” (Wilén, 1987, p. 13). As a novice teacher, I am interested in finding effective questioning techniques that will help students develop critical thinking skills.

## Review of Literature

Several studies cited by Orlich et al. (1998) found that the majority of teachers ask convergent questions the majority of the time in their classrooms. Convergent questions are designed to encourage student responses to converge on a central theme, and, for the most part, elicit short answers and focus on the lower levels of thinking: the knowledge and comprehension levels. These questions are fact-based, and, usually, have only one correct answer. Convergent questions are valuable in evaluating the student’s knowledge level of specific subject matter but they are not appropriate ways of stimulating thought-provoking responses (Orlich et al., 1998).

Divergent questions, on the other hand, are designed to have students mentally manipulate pieces of information previously learned to create an answer, or to support an answer with logical reasoning (Winne, 1979), and are, thus, designed to elicit longer, and a wider array

of, responses. Divergent questions do not always have right or wrong answers, and they engage the student's higher-level thinking skills: application, analysis, and synthesis (Orlich et al., 1998). Divergent questioning requires more advanced planning, and may take a period of time to increase appropriate student responses, but being patient and using prompting techniques will eventually lead to increased student ability to respond with higher-level thinking skills (Orlich et al., 1998).

Research on convergent questions reveals that the majority of teachers use primarily convergent questions in their classrooms and that the correspondence rate is 100 percent. This means that when a teacher poses a lower-level convergent question, students respond with a lower-level response 100 percent of the time. However, research on divergent questioning correspondence rates is inconclusive. A study conducted by Dillon (1982) found that little correspondence can be observed when a teacher uses higher-level questions. Only about half of student responses corresponded to the cognitive level of the question.

In an article written by Winne (1979), 17 experiments conducted to measure teachers' question prompting techniques, as related to improving student's ability to answer divergent questions, were reviewed. Winne found that none of the experiments identified a strategy to be conclusively effective. However, Winne points out that there are three main methodological imperfections in each of these experiments. The one that is most applicable in this case is the exact treatment. Is it a behavior or technique that any teacher could easily replicate with any group of students?

In *Teaching Strategies: A Guide to Better Instruction*, Orlich et al. (1998) suggest implementing a prompting technique called "wait time." Wait time is the duration of the pauses separating speakers and includes two distinct pauses. One pause is between the teacher posing a

question and calling on a respondent. The second pause is after the student's response. In general, most teachers only allow one to three seconds of wait time. An experiment conducted by Tobin (1986) found that an ideal wait time was between 3 and 5 seconds. In extended wait time classes, the number of teacher interruptions decreased, student failures to respond decreased, and the average length of student responses increased (Tobin, 1986).

Orlich et al. (1998) also recommend using a multiple-response questioning technique. Multiple-response questioning is when a teacher poses a question, allows for the appropriate wait time, and, then, calls on three to four students to respond. The students would then respond, in that order, allowing the appropriate wait time between each respondent, and the teacher would wait until all students had responded before making any comments (Orlich et al., 1998). There was no evident experimental support of this technique presented.

The use of divergent questioning techniques should elicit longer and more varied responses, which would cut down on direct teacher instruction. I feel that, as a teacher, my job is not merely to teach students the facts, but to teach students how to use higher-level cognitive skills so that they can thoroughly process the knowledge that they gain. Research is inconclusive about the effectiveness of using any one divergent questioning strategy, but using various prompting techniques, in conjunction with divergent questioning, seems to increase effectiveness. Therefore, my action research question is: Will the use of wait time and multiple-response prompting techniques increase the frequency of high-level student responses to divergent questions?

## Data Collection and Results

### *Data Collection*

#### *Participants*

The participants in this study are 32 of the 58 students in my 11<sup>th</sup>-grade U.S. history classes in a north Georgia high school. Students in my 2<sup>nd</sup> Block class will serve as the control group for this research project. Eleven of the 20 students returned consent forms. The control group consists of five males and six females, between the ages of 16 and 17 years old. All 11 students are Caucasian.

In my 3<sup>rd</sup> Block class, 13 out of 25 students participated in the research project. There are five males and eight females, between the ages of 16 and 17 years old. Eleven of the students are Caucasian, one student is African American, and one student is Hispanic.

In my 4<sup>th</sup> Block class, 8 out of 13 students participated in the research project. There are five males and three females, between the ages of 16 and 17 years old. Seven of the students are Caucasian and one is Hispanic. One of the participants speaks English as a second language. The students are not randomly selected.

### *Procedure*

The research project took place during a 10-lesson unit covering the Great Depression, World War II, and the Cold War. During lesson three, the multiple-response questioning technique was introduced to 3<sup>rd</sup> and 4<sup>th</sup> Block classes (see Appendix A). To ensure random selection of students for questioning, I prepared a class set of student names for each block. During each lesson, one prepared divergent question was designated as a multiple-response question.

The question was asked and clarifications were given, when necessary. A wait time of 10 seconds was given, and, then, three student names were drawn. Students were then given an additional 10 seconds of wait time, and, then, were prompted to begin giving their answers in the order drawn. After the first student answered, I waited 10 seconds before nonverbally prompting

the next student to answer. After the second student answered, I waited 10 seconds before nonverbally prompting the third student to answer. After all three students answered, I asked if any students had anything they would like to add. The control group was asked the same question, however, the multiple-response questioning technique was not used.

Student responses were notated using a three point scale (1 = Low-level response; 2 = Attempt at high-level, incomplete reasoning; 3 = High-level response, complete reasoning).

Students also completed a writing component during this project in order for me to evaluate students' critical thinking skills over time. Students were asked to write five short essays during the 10-lesson unit (see Appendix B). Each essay was given as a review assignment of material covered in a previous lesson. The critical thinking essays were evaluated on a five point scale:

- 0 = No answer.
- 1 = Low-level response.
- 2 = Low-level response; many details.
- 3 = Attempt at high-level; incomplete reasoning.
- 4 = High-level response; complete reasoning.
- 5 = High-level response; exceptional reasoning.

### *Results*

I had hypothesized that, with practice and repetition, high-level student responses would increase during the use of the multiple-response questioning technique. Results however, were inconclusive. Figure 1 shows student responses to multiple-response questions.

	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 10
2nd Block	2	2	2	2	3	3



3rd Block	1, 3, 1	3, 1, 3	1, 2, 2	2, 2, 2	1, 3, 1	2, 3, 2
4th Block	1, 3, 3	3, 3, 2	1, 2, 2	3, 3, 2	3, 2, 3	2, 2, 2

Figure 1. Student responses to divergent questions using the multiple-response questioning technique.

Fourth Block had the highest frequency of high-level responses with eight, and had relatively fewer low-level responses than did 3<sup>rd</sup> Block. It is interesting to note that the 2<sup>nd</sup> Block (control group) did not have any low-level responses. Results of the writing component were also inconclusive. Figures 2, 3, and 4, below, show the scores of each essay and the class mean for each essay written. Overall, 2<sup>nd</sup> Block had a mean score of 2.94, 3<sup>rd</sup> Block had a mean score of 2.78, and 4<sup>th</sup> Block had a mean score of 2.85. Based on the 5-point scale, students, on average, scored just below a 3, an attempt at high-level, incomplete reasoning.

2nd Block	Essay #1	Essay #2	Essay #3	Essay #4	Essay #5	Mean
Class Average:	2.45	3.36	3.27	2.73	2.91	2.94

Figure 2. Second Block writing component scores for the control group.

It is interesting to note that the control group, 2<sup>nd</sup> Block, received the highest overall class average, at 2.94. It is also of significance that individual scores seemed to be quite random, and did not follow any apparent pattern, and, thus, provide inconclusive evidence that the multiple-response questioning technique was successful in improving the frequency of high-level responses to divergent questions.

3rd Block	Essay #1	Essay #2	Essay #3	Essay #4	Essay #5	Mean
Class Average:	2.54	2.77	2.77	3.15	2.69	2.78

Figure 3. Third Block writing component scores.

4th Block	Essay #1	Essay #2	Essay #3	Essay #4	Essay #5	Mean
Class Average:	2.75	2.75	3	3.13	2.63	2.85

Average:	
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Figure 4. Fourth Block writing component scores.

### Conclusions and Recommendations

One generalization that I feel comfortable in making is that the 10-second “wait time” seemed to allow students ample time to formulate their answers. However, there are several variables in this research project that warrant closer inspection. Once I implemented the multiple-response questioning technique, I soon encountered situations that I had not anticipated. First, I found that I had to rephrase or explain many of the multiple-response questions. Also, during student responses to the multiple-response technique, I found that, when students struggled with answers, I would interject and provide encouragement, or prompt students with leading questions. Based on the initial research design, I should not have prompted students, but I did not want to risk alienating or losing any student’s effort.

In hindsight, I feel that the multiple-response questioning technique would have been more successful had I included a more comprehensive modeling component. Students would have benefited greatly had I taken time to “think out loud” through some divergent questions at the beginning of the lesson sequence. Also, I should have incorporated mini-lessons on how to go about answering critical thinking questions and offer pointers and advice. After student responses to the multiple-response questions, I should have more explicitly discussed the answers, and reinforced high-level responses, while pointing out strong or weak reasoning. I could have also followed incomplete answers by reinforcing what was correct, and, then, asking more probing questions. Probing questions would help students think beyond their initial responses and help direct and develop their critical thinking skills (Caram & Davis, 2005).

Even though the data collected during this research project was inconclusive, I still feel as though the multiple-response questioning technique could be a viable questioning tool in the

high school classroom. I would like to implement this research project, once again, in my own classroom, one day, with a more comprehensive approach involving the described modeling components. I would also extend the timeframe, as critical thinking is an ability that requires time to mature.

After struggling with generating appropriate divergent questions, I would make the recommendation that teacher professional development include instruction on creating and using divergent questions in the classroom. I feel that it would also be helpful to create an Internet forum for social studies teachers to share critical thinking questions. I spent a great deal of time trying, unsuccessfully, to create and find more critical thinking questions to use in my classes. An Internet forum would provide teachers with an opportunity to collaborate with teachers all over the U.S. on the use of the divergent question, a teaching technique that is underutilized.

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## Appendix A

### Multiple-Response Verbal Questions

1. What were the advantages and disadvantages of buying on credit?
2. What caused the economic collapse known as the Great Depression?
3. If you had been president during the Great Depression, what approach would you have taken to help the economy?
4. What federal programs instituted in the 1930s and later were discontinued might be of use to our nation today? Explain and support your opinion.
5. Yesterday we learned that Congress wanted to be isolationists - they passed the Neutrality Act. Do you think that the U.S. should practice isolationism today? Why or why not?
6. Who do you think was more successful in achieving their goals between 1945-1949; the United States or Russia? Support your answer by giving examples of 'success.'

## Appendix B

### Short Essay Questions

1. How did stock speculation and buying on margin cause stock prices to rise and eventually cause the stock market crash?
2. Do you think FDR's program, TVA, helped to pull the southeast out of the Depression? Why or why not?
3. How did FDR gain the trust of the American people and change the office of the President forever?
4. Did the creation of the atomic bomb give the U.S. a military advantage or has it just created more problems? Explain your answer.
5. Explain the importance that Henry Ford's moving assembly line had upon mass production and the automobile industry. Give specific examples of how it affected the lives of Americans.

School Funding and its Effect on Teacher Perceptions

Neil Hamilton

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 09-138.*

## Introduction to the Problem

Hamilton County has had budget deficits in excess of \$20 million dollars for the past couple of years, and is expected to have another deficit of over \$16 million dollars in 2010. Due to these deficits, the district has provided retirement incentive programs to reduce staff, as well as close and consolidate several schools. These solutions, albeit necessary for fiscal responsibility, focus on cutting costs, rather than raising revenue. These cost-cutting measures affect several facets of the system. Less funding means fewer teachers are interacting with a greater number of students. Less funding means fewer administrators and support staff are employed to support both the teachers and students. I believe more students are falling through the cracks, performance-wise, due to overextended class sizes caused by resource reductions. I believe all the ramifications of school funding should be investigated for significance.

A Hamilton County high school principal informed the faculty that the high schools (rather than middle or elementary schools) would encounter the most position eliminations due to their lower teacher-to-student ratios. These eliminations would then raise the pupil-teacher ratios, thus contradicting prior research that found that lower pupil-to-teacher ratios related positively to higher student outcomes, based on a class size Tennessee experiment on which Finn and Achilles (1990) reported, where students were assigned randomly to large and small classes. Aside from some indirect factors, this project is designed to research the one main input of school funding to determine if that input has an impact on teachers' perceptions.

### *Area of Focus*

The purpose of this research is to note whether school funding has an impact on teachers' perceptions toward education. We know money and money management issues affect the entire economy. In fact, it was one of the main subjects of discussion during (and after) the last



election. We know financial management issues are a leading cause of marital dissolutions. Additionally, if children are involved in those marital dissolutions, they are also affected, and, sometimes, significantly. Would it not stand to reason that school budget deficits cause strife among its involved partners, the teachers and administration, as well as adversely impact the children involved, the students? This research could provide a step toward determining if, in fact, a lack of school funding negatively affects teachers' perceptions, and, if so, to what extent.

### *Research Questions/Hypotheses*

Do teachers perceive a lack of school funding as the cause of larger class sizes? Do teachers believe the results of this lack of school funding negatively impacts their instruction or student performance? Do teachers believe the results of this lack of school funding negatively impacts teacher morale? Would teachers recommend education as a major, based upon their current perceptions? Do students underperform because of teacher turnover, or news that their school is closing due to insufficient funds? My hypothesis is that teachers do perceive a lack of school funding to have a negative impact on class size, teacher instruction, student performance, teacher morale, and profession recommendation.

### *Assumptions*

Many assumptions will be made in this study in order to establish validity. There are several factors that may contribute to a teacher's perception, such as age, teaching longevity, administration dynamics, outside media, etc. There are also several factors that may contribute to student performance, such as parent involvement, student learning styles, etc. Thus, this study will assume that both teacher perceptions and student performance will consist of similar demographics, socioeconomics, learning styles, PTA involvement, and teacher turnover rates as that of any typical school in a similar situation.

### *Limitations*

This study will be limited to the faculty of one school in Hamilton County. It will also be limited by the responsiveness of teachers to complete the survey.

### Review of Literature

During the Clinton administration, the Federal Government provided large sums of money to schools, but it was mostly for the purpose of implementing academies, which were smaller communities grouped within a school. The academy experiment, according to a federal study, showed some signs of success. In the schools, the proportion of students being promoted from 9th to 10th grade increased, participation in extracurricular activities rose, and the rate of violent incidents declined. But the evaluation found "no significant trends" in achievement on state tests or college-entrance exams. The report does, however, say that the percentage of students planning to attend college increased in schools receiving federal money under the program (Hoff, 2008).

Ferguson (1991) noted positive linkages between school resources and student outcomes. Using a complete data set from Texas, he found that *greater investments* in teacher quality relate to higher student achievement test results. Teacher quality was measured by teacher experience, education level (i.e., master's degree), and performance on a statewide recertification exam. These factors were found to account for between one quarter and one-third of the variation among students' test scores.

Hartman (1994) examined whether high spending equated to quality education. The data showed the answer was "a strong yes." The questions explored were: (a) whether there were differences in the expenditure patterns of school districts with varying spending levels, and, if so, (b) whether those differences were in areas thought to be related to student learning. High

spending districts contrasted with their middle- and less-affluent counterparts. They employed their resources to finance lower class sizes, more teachers with greater experience and higher educational levels, higher teacher salaries, and more administrative and support personnel. These districts also had higher student achievement.

Ferguson and Ladd (1996) provided new evidence that a school's resource inputs affect a student's educational outcomes. Moreover, they advised that the effects are large enough to be relevant for policy deliberations. Using both student-level and district-level analyses of Alabama data, they concluded that teacher quality (as measured by ACT test scores and the proportion of teachers with master's degrees) and class size affect student learning. Because these variables cost money, they stated that their findings meant that money matters, as well.

Other studies reveal significant relationships between spending and achievement. For example, Fortune and O'Neill (1994) reported significant relationships between per pupil spending and student achievement in Ohio and Missouri.

Verstegen (1994), in a study investigating the determinants of student proficiency test scores, found per pupil revenue was a significant predictor. These findings of the relationship between the global resource measure (PPE) and outcomes should come as no surprise. Indeed, smaller class sizes, and, in many studies, enhanced teacher experience, are the major components of education expenditures and these resource inputs are found to contribute to outcomes for students, in the majority of production function analyses. Ferguson aptly noted, that the finding that teacher characteristics and small class sizes affect student test scores means that *money matters*, as well (Ferguson & Ladd, 1996).

Moreover, there are clear relationships between funding and achievement emerging from the recent body of production function research. These studies provide further evidence that money matters in producing educational outcomes (Verstegen & King, 1998).

## Data Collection and Results

### *Description of Intervention*

This research study hopes to show a causal relationship between school funding and teachers' perceptions, in that teachers perceive inadequate school funding to have a negative impact on class size, teacher instruction, student performance, teacher morale, and profession recommendation. This proposal should provide a determination as to whether a teacher's perceptions could be enhanced simply by the choice of school (funded or insufficiently funded) in which he or she is employed.

### *Description of Project Membership*

The membership of this project consists of a sampling of middle and high school teachers from a local Hamilton County school. Teachers from this school were asked to complete a survey within a 2-week timeframe, then place their completed survey in a folder marked "completed surveys," located next to the sign-in table. The responses were voluntary, confidential, and anonymous.

### *Identification of Variables and Statement of Null Hypothesis*

The two main variables are school funding and teacher perception. Adequate school funding is defined as having enough financial resources to continue business, as usual, for consecutive years. This includes maintaining established teacher to student ratios that have existed previously, as well as continued proper maintenance of the facility, itself. Teacher perception is defined by the way a teacher perceives education to be impacted by financial

resources, whether positively or negatively. My hypothesis, in the null form, would be stating that there is no relationship between school funding and teacher perception.

### *Research Design*

This research study is designed to determine if there is a causal relationship between school funding and teacher perception. This will involve an evaluation of completed teacher surveys. Since the resultant surveys are confidential and anonymous, they should be free from outside bias, and reflect the individual teacher's own perceptions. Thus, the results should provide an authentic accounting.

### *Data Collection*

Data was collected through the use of a survey. A Likert scale survey (with two short answer questions) was distributed. Teachers were requested to respond within a couple weeks. Teacher responses were voluntary, confidential, and anonymous. Completed surveys were placed in a folder next to the sign-in table, and collected at the end of each day. By the end of the timeframe, a total of 57 surveys were completed, collected, and analyzed.

### *Data Analysis and Interpretation*

Of the 57 total surveys completed, 33 were completed by middle school teachers, 19 were completed by high school teachers, and 5 were completed by teachers who taught both middle and high school students, according to question 1 of the survey. The results of questions 2 through 8 are listed in Figure 1.

From a percentage perspective, 47% of teachers strongly agreed that their class size is larger this year than last year, as compared to the 39% of teachers who strongly agreed that their class size is larger this year than 2 years ago. It seems teachers have perceived class sizes to have

gotten bigger and bigger. Another trend seemed to develop as teachers progressed from question 4 to question 7. Of the respondents, aside from those who selected “Not Applicable,”:

- 42% strongly agreed the larger ratio was due to budget cuts.
- 60% strongly agreed the larger ratio negatively impacted their instruction.
- 66% strongly agreed the larger ratio negatively impacted student performance.
- 74% strongly agreed the larger ratio negatively impacted teacher morale.

Questions 2 through 8	Strongly Agree	Neither Agree nor Disagree	Strongly Disagree	Not Applicable
2. My class size is bigger this year vs. last year.	27	20	9	1
3. My class size is bigger this year vs. two years ago.	22	24	10	1
4. I feel the larger student to teacher ratio is due to budget cuts.	14	10	9	24
5. I feel the larger student to teacher ratio negatively impacts my instruction.	21	11	3	22
6. I feel the larger student to teacher ratio negatively impacts student performance.	23	10	2	22
7. I feel the larger student to teacher ratio negatively impacts teacher morale.	26	8	1	22
8. In today’s economic climate, I would recommend education as a major.	31	14	12	0

*Figure 1.* Survey results for questions 2 through 8.

It should be noted that the percentage of strongly agree responses increased greatly, and the strongly disagree responses decreased steadily, as respondents moved from question 4 to question 7. In fact, aside from teachers who selected “Not Applicable,” for questions 5, 6, and 7, less than 9%, 6%, and 3%, respectively strongly disagreed in their responses. Based on these results, a determination can be made as to the existence of a causal relationship between teachers’ perception of large class sizes and their negative impact on teacher instruction, student performance, and teacher morale. The correlation of whether teachers perceive these larger class

sizes to be due to a lack of school funding is slightly weaker. One of the more interesting results was in response to question 8. Even though 74% of teachers had strongly agreed that the larger student to teacher ratio negatively affected teacher morale, 54% would still strongly recommend education as a major for those thinking about entering the profession. This observation may lead one to deduce that, either the teachers surveyed believe that the school funding issue is only a short term concern, or that the negative impact on teacher morale is still not great enough to warrant ill regard toward the profession.

Questions 9 and 10 were short answer, opinion questions. The results and their corresponding percentages fell into four categories, which are listed in Figure 2.

Question 9	Answers (classified into categories)
9. What is the biggest issue, concern, or consequence of the school district's budget cuts in your opinion?	52% - less school support/resources 32% - class sizes too large 13% - lower quality of programs 3% - poor teacher morale
Question 10	Answers (classified into categories)
10. If you were the Superintendent, what one thing would you do to address a budget deficit?	68% - reduce Central Office salaries 14% - raise taxes/fees 9% - reduce school week/year (extend day) 9% - cut bus transportation & other waste

Figure 2. Survey responses for questions 9 and 10.

For question 9, 52% of teachers perceive the biggest issue, concern, or consequence of the school district's budget cuts to involve less school support/resources. Less school support/resources, in this context, is defined as having fewer supplies and personnel, as well as older, outdated equipment in the schools. Thirty-two percent of teachers listed greater class size as their biggest concern. For question 10, it is clear that the majority (68%) of teachers perceive there to be excessive salaries in the Central Office. One final observation to be noted by question 10 is that 86% of teachers still list cost-cutting measures as the one thing they would do to address a budget deficit, while only 14% of teachers focused on raising revenue.

## Conclusions and Recommendations

This study can have several implications. First, even if a significant causal relationship exists between school funding and the negative impact on class size, teacher instruction, student performance, and teacher morale, teachers are still strongly recommending education as a chosen profession. Second, teachers definitely perceive there to be some excessive salaries among Central Office personnel. Third, teachers may decide to review a school district's financial viability when weighing options of employment among different districts. Parents of prospective students may also review a school district's financial viability and student-to-teacher ratios when weighing options of whether to send their child to a school in that district. Finally, school districts may begin recruiting more grant writers and business partners in order to acquire [more] external funding. However, further studies still need to be done to determine the actual extent to which these teachers' perceptions truly reflect reality concerning student performance.

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Making Connections through Mediums:  
An Integration of the Visual Arts with the Language Arts

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Education 590, Fall 2009

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has approved this research project # 09-131.*

## Introduction to the Problem

A focus on school reform from the No Child Left Behind Act has forced many American schools to become text-oriented and language-driven; however, the language arts are broadly defined as including all of the various methods in which learners make meaning, which include art, music, drama, math, and movement, as well as the traditional reading, writing, speaking, and listening. Students can benefit from having opportunities to transform their knowledge from words into other media (Lynch, 2007). Since the arts incorporate all aspects of one's life including social, philosophical, psychological, and historical, they are "not separated from life," (Brown, 2006, p. 172) but are an integral part of life.

In past decades, the school system looked at reading as a process of viewing and decoding the text. Art took the form of drawing simple images and learning easy strokes. Today's educators are held accountable for their students' understanding and progress. Teachers must teach to the test and students are forced to learn at an astonishing pace. They are under pressure to perform on tests, and perform well. This pressure can have a reverse effect on a child's learning process by decreasing their creativity and expression.

The position of the arts, throughout human history, implies that they should occupy an essential place in literacy. The first tools humans used to express thoughts and feelings were the nonlanguage arts. They danced and painted images to express their inner thoughts and emotions. They did not read and write. These are the same nonverbal arts (innate language) that children use from birth, onward. Preschoolers' pretend play, such as using lipstick to draw, is an example of the dominance of the arts in communication (Cornett, 2006).

Many learners are limited to reading, writing, speaking, and listening to process ideas without the arts; however, this curtailed literacy curriculum leaves many students struggling

(Cornett 2006). Children who struggle with reading, as indicated by McVicker (2007), are often reported as saying that they do not read for pleasure. Cornett (2006) says that, if language arts are the only effective communication of thoughts and emotions, then a program cannot be considered balanced.

From the researcher's observation, children today are growing up and being bombarded with interactive images on television, the Internet, and video games. If children are being constantly exposed to multiple forms of media, why not shift the emphasis in the classroom literacy curriculum towards a more "visual text." With these thoughts in mind, the researcher will evaluate the position of the arts to influence learning of literacy and language arts concepts. The purpose of this action research is to describe how the visual arts can be integrated into the language arts curriculum, more specifically, the traditional language arts of reading, writing, speaking, and listening.

## Review of Literature

### *Why Arts-Integration is Important*

Arts-integration is also known as arts immersion and arts infusion, although they all share the same philosophy, which is to increase and inform the strategy repertoire of teachers. If executed within a classroom framework which places artful teaching at the forefront, an off-the-rack lesson can be changed into a designer lesson. An "arts-based literacy instruction can qualitatively change teaching and learning" (Cornett, 2006, p. 234). In the schools of Reggio Emilia, Italy, the arts are included as a part of the curriculum for young children, instead of a separate study as a way for them to experience problem solving (Kostelnik, Soderman, & Whiren, 2007).

The arts have revealed great results for engaging diverse learners in high-poverty schools. The arts provide cognitive, affective, and social contributions to learning, and add necessary, omitted ingredients to the literacy curriculum. In addition, the arts have been shown to contribute to the development of creative problem-solving and communication skills, as well as increasing self-esteem (Cornett, 2006).

Reading and writing demand the personal creation of meaning. The visual arts add avenues to expression of ideas and feelings. As Cornett (2006) points out, we know *more* than we can say with words. Instruction in reading, writing, speaking, and listening is improved by adding the unique capacities the arts provide. The meaning that is created through the arts involves the same “before-during-after” stages as the writing process does. They both involve processes such as data gathering, experimentation, drafting, revising, and editing.

According to Lynch (2007), “weaving the arts throughout the regular classroom curriculum supports learning in several ways” (p. 37). When the arts become a vehicle for classroom learning, the child is immersed intellectually, emotionally, and physically in the learning process. Arts integration requires the child to assume accountability for learning because they must decide what is essential and what is not. It helps create the child’s Zone of Proximal Development (Lynch, 2007).

Elementary level students gain greatly from an arts-integrated approach. Significant effects on personal learning, including increased self-confidence, perseverance, and motivation, occur with student participation. Arts-integration is a pedagogical approach which highlights knowledge transfer and focuses on experiential and creative learning. A joy of discovery is created in the classroom, which enables further exploration, investigation, and inquiry. Educators often refer to this as creativity, which leads to other important areas in one’s life (Brown, 2007).

The arts can also advance gifted students' academic and creative abilities, according to Smutny (2002). Gifted students can be challenged to perform more complex tasks, simply, by teachers designing experiences that are tied to their unique needs and abilities. When art is integrated, critical thinking is enhanced, analytical thinking is stimulated, and awareness of motivation is sharpened (Smutney, 2002).

McVicker (2007) says that comic strips, as a visual aid, can provide a "perfect vehicle for teaching children reading strategies" (p. 85). Since children are comfortable with cartoons before they enter school, comics can open the door to reading for the challenged student. Comics offer a visual element for a child to comprehend the text, and visuals assist with literacy development. This can be a turning point for those who are struggling readers. Comics can provide teachers with a type of teaching strategy for the classroom.

#### *The Arts and Language Arts*

A research study by Begoray and Morin (2002) stated that the new English language arts curriculum documents are moving away from the traditional reading and writing of print material, and moving toward an expanded concept, which includes the traditional reading, writing, listening, and speaking, but also viewing and representing. Viewing is a process of comprehending visual media such as diagrams, symbols, drawings, and painting. McVicker (2007) says that "attention to viewing as a language art has become paramount in today's classrooms" (p. 85), due to instructional texts in elementary level containing pictorial representations. Begoray and Morin say that representing allows students to communicate information and ideas through a variety of media. The use of sign systems, such as visual design, which has been, in the past, to be the purview of the arts, is moving into the language arts. This expansion will encourage the implementation of new approaches.

Begoray and Morin (2002) conducted a summer institute for classroom teachers and art specialists on integrating the arts into language arts. The survey asked if any changes had been made to the participant's English language arts teaching over the past year that involved the arts, and which had arisen from their involvement in the institute. Of the teachers surveyed, about 23% of the surveys were returned. All respondents reported an increase in the use of the arts in their language arts classrooms, as well as in other curricular areas. The teachers discussed how their philosophy and teaching strategies had grown. They were offering expanded possibilities to their students with texts. The students were also showing a higher comfort level and more confidence in language arts. They found the new expanded lessons enjoyable, fun, and motivational (Begoray & Morin, 2002).

According to Cowan (2001), "the learning process is energized when the arts become an integral part of the lesson. Everyone actively participates; everyone enters the conversation" (p. 12). Working with kindergarteners, Cowan built literary interpretations and developed comprehension skills by integrating literacy instruction with the arts, or, in simple terms, using art print to tell a story. After reading a story, she would move into other forms of communication, always addressing the five W's of the story (who, what, when, where, and why). Once the students could think of a print-based story in terms of the five W's, the students would begin to prepare simple images. The students associated types of lines with aggression or gentleness. She realized that the children could use writing and art as complementary thinking and symbol systems. By students "reading" the pictures, they were helped to read the written words. They could use the visual literacy skills to understand written text. This also would help the students as they expressed themselves in written form. The drawings they made aided the students in finding the words they needed to tell their stories verbally or in writing. They began

learning to read and write stories from the drawings that were going on in their heads. The visual art skills also helped the student to develop a plot, to sequence, and to use action verbs. Cowan (2001) concluded that (a) a different emphasis on the arts and visualization occurred at different stages of their literacy development, and (b) literacy growth was in relation to the children's perceptions of what helped them to read and write.

Williams (2007) says that "visual images may be more accessible to younger children" (p. 637), who often look before they speak. Children with less developed text-reading skills may access broader literacy if offered activities centered on visual literacy. Visual representations can play an important role in cognitive processing by contributing significant information outside what is presented in the printed text.

Williams (2007) conducted a project using her second grade class. She presented a painting, and initiated a conversation with her students about what they saw, and, then, wrote questions about the painting. She used a K-W-L (What I know; What I want to know; What I learned) approach to reflect what they knew and wanted to know. Using these strategies helped the students move from describing the picture to actually constructing a meaning from it. Students came to comprehend how the conventional definition of reading could be expanded to something other than words. She observed more interest in students' self-selected reading and discussion quality during guided reading. According to Williams, incorporating visual literacy into a primary grade classroom will demonstrate how responsive young children can be to an expanded view of literacy. The children's unexpected stories created from their paintings are a reminder that reading is not neutral, but "highly individual, filtered through a personal, social, and cultural context" (Williams, 2007, p. 641). Children should be given more exposure to visual images, as doing so provides a way to develop their critical thinking.



Albers and Cowan (2006) found, in a study they conducted with elementary students, that using imagery as a representational form has its effects on the nature of students' written language. As the students represent meaning in a visual context, they develop a desire to write a more descriptive text. Once students become more efficient at this process, they develop new insights into the creating, writing, and composing processes. When students learn how language is read, they can also learn how an image is read.

### *Other Aspects*

Albers and Cowan (2006) believe that learning to write well can be one of the most difficult areas in the language arts (English). Many students have a difficult time finding topics on which to write. To help students overcome the "blank-page" syndrome, the writing should be a personal selection and grounded in personal experience. The writing should also be presented from a semiotic perspective. By its very nature, an arts-based approach to writing brings strength to the writing process. As students' imagery increases, and they become more active in the writing process, their ability to analyze information increases.

According to Shaw, Baggett, L. Daughenbaugh, R. Daughenbaugh, and Santoli (2005), the visual arts strengthen and reinforce interdisciplinary connections and allow learners to use "problem-solving skills that correlate with standardized achievement tests" (p. 21). Teachers do not have to be artists to use visual arts with other skill areas, such as language arts. Activities integrating classroom instruction with hands-on experiences provide a rich learning environment for children.

## Data Collection and Results

### *Data Collection*

#### *Purpose*

The purpose of this action research/project is to examine how visual arts activities support and enhance student comprehension relating to language arts standards. The goal of this study has been to determine knowledge in relation to key concepts tied to the language arts standards prior to implementing visual arts activities. Also, during the implementation, information discovered will determine if the standards were effectively covered, and if students were able to connect with material to support better comprehension.

### *Location*

Subjects were from one kindergarten class at a Hamilton County public elementary school. For purposes of anonymity, the school will be known as the Testing School. The Testing School was chosen because of its close proximity to UTC. Additionally, the graduate student was completing the field placement on site. The Testing School is a Title 1 school and values meeting students' individual needs.

### *Instruments*

The instruments used during this research project consisted of a pre-test, a post-test, and a Student Observation Tool.

The pre-test and post-test were read to each student, individually, by the researcher, who recorded each the student's responses. Please refer to Appendices A and B to view the pre-test and post-test.

The Student Observation Tool was used by the researcher to document and assess the involvement and participation levels of the students, as well as their comprehension of the concepts. Please refer to Appendix C to view the Student Observation Tool.

### *The Respondents*

Out of the parental consent forms distributed, 18 out of 23 were returned. One student did not receive parental permission to participate and four did not return the permission form to participate. One student who received permission to participate was absent for both the pre-test and the post-test; therefore, 17 out of 23 students planned to participate.

### *Methodology*

This study was conducted in one kindergarten classroom, using visual arts activities which were integrated with the language arts curriculum, building upon literacy and language arts standards. The study was conducted in the classroom over a 4-week period. Students were tested on their knowledge of concepts before implementation, and after completion, of the activities. The research gathered targeted concept knowledge, involvement, participation, and clarity of objectives after strategy implementation

### *Recruitment and Selection Plan*

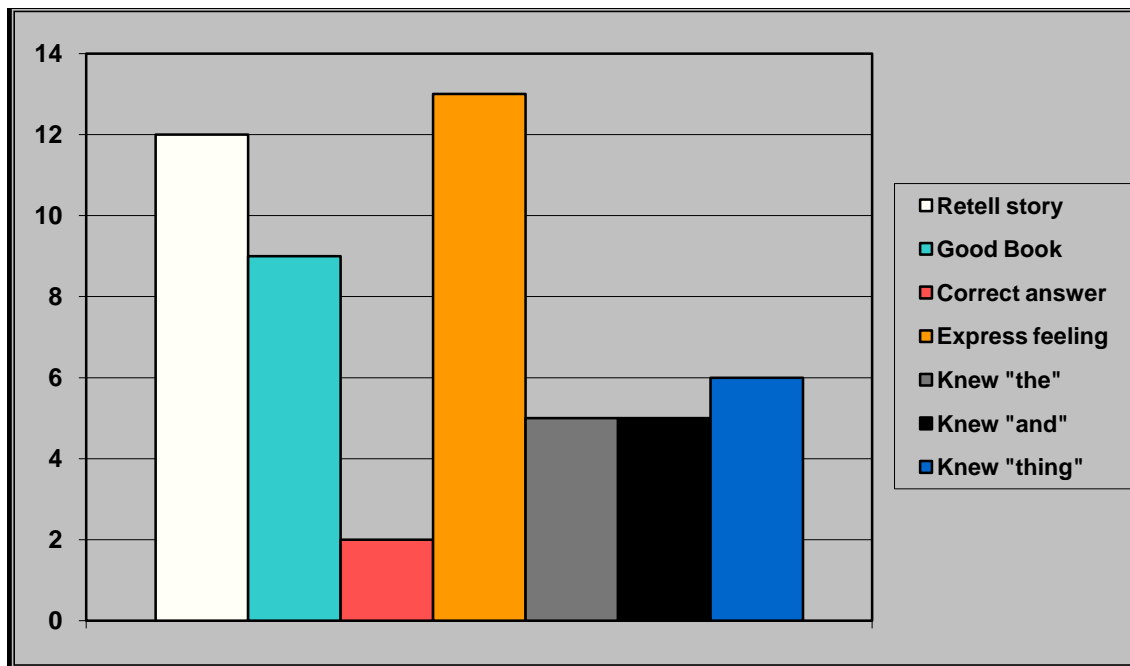
This research consisted of three separate language arts lessons that implemented visual arts activities in one kindergarten classroom. The objectives and goals were predetermined through a collaborative effort between the researcher and the cooperating teacher at the Testing School. All lessons were conducted and completed during the normal school hours.

### *Results*

Prior to the first lesson, a pre-test was administered by the researcher to evaluate the students' comprehension. The researcher recorded each student's responses individually, exactly as they were dictated by the student. To view the standards that were covered for each lesson, and the activities that accompanied each lesson, please refer to Appendix D.

After the final lesson, the same post-test was administered to the students in the same format as the pre-test. The pre-test results were as follows (see Figure 1):

- 12 out of 15 students were able to retell a story;
- 9 out of 15 students gave an answer for what they thought a good book required;
- 2 out of 15 students were able to give a correct answer as to what made a good book;
- 13 out of 15 were able to express a feeling;
- 5 out of 15 could recognize the site word “the;”
- 5 out of 15 could recognize the site word “and;” and
- 6 out of 15 could recognize the word “thing.”



*Figure 1.* Pre-test results, based on a total of 15 kindergarten students in one classroom.

One question on the pre-test and the post-test asked students if they liked to read or be read to. All students responded yes for both pre-test and the post-test.

After the final lesson, the same post-test was administered to the students, in the same format as the pre-test. The post-test results differed from the pre-test results in that a higher number of questions were answered correctly. The post-tests results revealed the following information (see Figure 2):

- 11 out of 14 students could retell a story;
- 10 out of 14 students gave an answer for what they thought a good book required;
- 10 out of 14 students were able to give a correct answer as to what made a good book;
- 11 out of 14 were able to express a feeling;
- 10 out of 14 could recognize the site word “the;”
- 6 out of 14 could recognize the site word “and;” and
- 6 out of 14 could recognize the word “thing.”

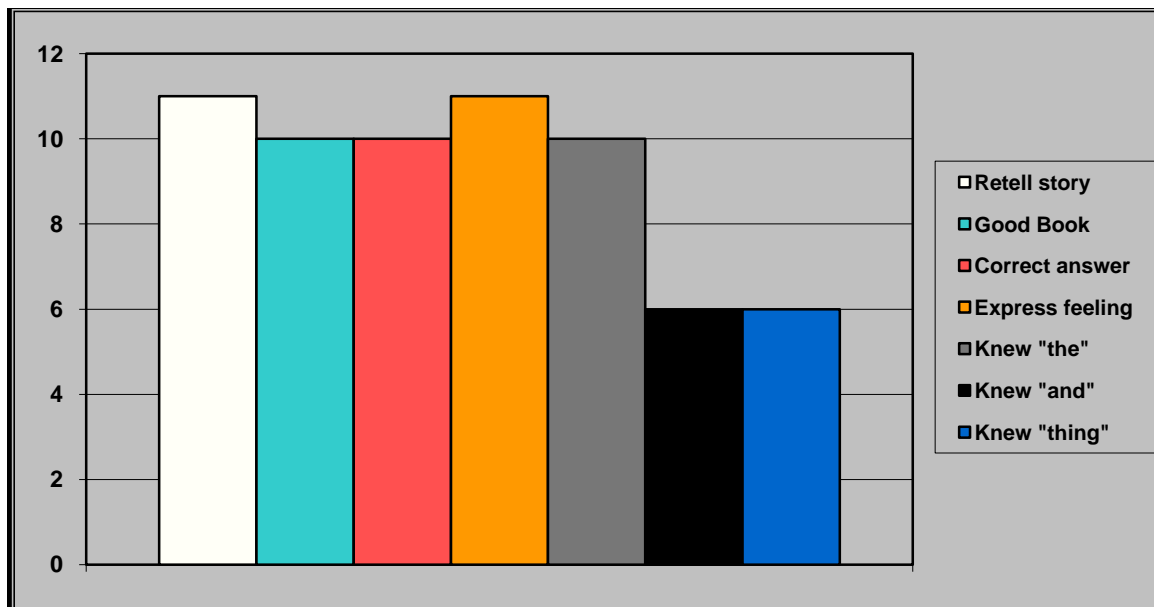


Figure 2. Post-tests results, based on a total of 14 kindergarten students in one classroom.

The post-test asked one additional question that was not reflected in the pre-test. Students were asked if the art activities helped to increase their understanding. The researcher realized during the assessment that students, as a whole, did not understand the question.

The researcher completed a Student Observation Tool following the last lesson. The findings were, as follows, regarding Observation Question 1: Students were engaged and stayed on task as they completed their artwork. With regard to Observation Question 2: Students showed enthusiasm and excitement about their creations and clamored for the teacher’s attention.

In response to Observation Question 3: Students showed interest in viewing the work at their table. Finally, for Observation Question 4: Students showed excitement when they were asked to state their feelings to the teacher, and appeared to know exactly what they wanted to say.

The following grade level expectations and assessments implemented by the State of Tennessee for kindergartners were successfully met during the project:

- Language Content Standard

- 1.1.2: Employ a variety of strategies to decode words and expand vocabulary.

- 1.1.6: Read high frequency words.

- Communication Content Standard

- 1.2.1: Develop critical listening skills essential for comprehension, problem solving, and task completion.

- 1.2.1: Use appropriate listening skills.

- 1.2.2: Listen attentively to speaker for specific information.

- 1.2.3: Understand and follow simple two-step oral directions.

- 1.2.4: Summarize what has been heard using the logical sequence of events.

- Communication Content Standard

- 1.2.2: Develop critical speaking skills essential for effective communication.

- 1.2.9: Retell a story, describing the plot, characters, and setting.

- Writing Content Standard

- 1.3.2: Employ a variety of strategies to generate story ideas.

- 1.3.1: Brainstorm ideas with teachers and peers, use graphic organizers independently and/or in group, draw pictures to generate ideas, and use a variety of resources to gather information.

1.3.3: Add descriptive words and details to writing.

- Logic Content Standard

1.5.1: Develop an understanding of sequential events.

1.5.1: Arrange three items or events in sequential order.

- Literature Content Standard

1.8.4: Identify basic literary elements.

1.8.6: Identify the characters, setting, and events of a story.

### Conclusions and Recommendations

#### *Conclusions*

The overwhelming results of the research conclude that integration of the visual arts and language arts is an effective teaching approach to use in elementary school classrooms. If the interdisciplinary lessons are prepared well, students should be able to see the interrelatedness of the subject areas. The idea behind the nonlanguage arts, which were the first tools to aid humans in expressing their thoughts and feelings, is that the arts can give life to learning, especially literacy learning.

Using arts-integration to teach the language arts involves the whole child and all children. Through the visual arts lessons, it is hoped that students will increase their reading and listening skills, as well as write with creativity and clarity. Children are given choices and will have to assume greater responsibility for their own learning. The desirable goal is to combine these factors together into a project that will allow the students to see their own progress, and enjoy the process. Continued integration may lead to forming stronger partnerships between art teachers and language arts teachers, as well as using the other “arts,” which could be used as interventions

such as dance, music, and theater. Teachers, as well as the students, will benefit from a greater sense of learning.

### *Recommendations*

As a result of this action research project, it is clear to the researcher that learning is enhanced by the integration of the arts in the classroom. Children need avenues in which to express themselves, especially those who may not be as vocal or expressive as others. Art, in any form, whether it is drawing, painting, sculpting, photography, or any other means, allows a child to be creative, therefore increasing their higher order thinking skills.

In today's world, students are interacting daily to a diverse set of visual images through personal computers, movies, video games, and other technology. Images are continually created and evolving at an overwhelming speed, and children who cannot read the texts will be falling behind their peers. With the fast pace and the amount of material that must be covered, teachers will have to expand the boundaries of their teaching style to allow for the new literary forms, as seen in the classroom. It is worthy to note that this way of teaching may not always lend itself to incorporation in the daily lesson, due to time restraints.

It is this researcher's desire that The University of Tennessee at Chattanooga will prepare the future educators to embrace the arts as a mutual partner with the classroom content. These changes may well emerge with considerate reflection on the contemporary practices taking place in the classroom today, which are primarily written language.

As Wolf (2006) so succinctly stated, "for it is in multimodal and multimedia aesthetic opportunities guided by creative and caring adults that they may find their own medium and learn to see themselves as artists" (p. 20).

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Appendix A

**Student Pre-Test for Kindergarten**

(Teacher assisted)

1. Can you retell a story? \_\_\_\_\_

2. Do you like to read or be read to? \_\_\_\_\_

3. What do you think is needed for a good book?  
\_\_\_\_\_

4. Write or illustrate a feeling? \_\_\_\_\_

5. Can you circle the word I say?

a      the    line    you

he    be    and    so

one    thing    it    she

Appendix B

**Student Post-Test for Kindergarten**

(Teacher assisted)

1. Can you retell a story? \_\_\_\_\_

2. Do you like to read or be read to? \_\_\_\_\_

3. What do you think is needed for a good book?

\_\_\_\_\_

4. Write or illustrate a feeling? \_\_\_\_\_

5. Can you circle the word I say?

a	the	line	you
he	be	and	so
one	thing	it	she

6. Did the art activities help you to understand these questions?

\_\_\_\_\_

Appendix C

**Making Connections Through Mediums**  
**Student Observation Tool**

Date: \_\_\_\_\_

Art activity: \_\_\_\_\_

1. Were the students engaged during the activity?

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2. Did they discuss their drawings?

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3. Did they ask questions about other student's drawings?

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4. Did they fully understand the concepts?

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## Appendix D

### Targeted Language Arts Standards:

#### **Language Content Standard 1.1.2:**

Demonstrate an emerging understanding of basic English usage, mechanics, spelling, and sentence structure.

#### **Communication Content Standard 1.2.1:**

Develop critical listening skills essential for comprehension, problem solving, and task completion.

#### **Communication Content Standard 1.2.2:**

Develop critical speaking skills essential for effective communication.

#### **Writing Content Standard 1.3.2:**

Employ a variety of strategies to generate story ideas.

#### **Logic Content Standard 1.5.1:**

Develop an understanding of sequential events.

#### **Literature Content Standard 1.8.4:**

Identify basic literary elements.

#### **Arts Activities Employed:**

##### *Week 1:*

- The teacher performed a visual demonstration of main idea/details with a zip-lock bag filled with the contents of items to use in writing a letter.
- Students chose the correct title from 3 titles given by the teacher.
- These items were charted on a word splash.
- The teacher read a book to the students without revealing the title of the story.

- Students responded by discussing the main idea and details.
- The teacher placed the comments in a graphic organizer to show the main idea and details.
- Students were then instructed to draw a picture to represent the main idea of the story.
- The teacher assisted the students in developing a title for their story.
- Students then discussed the details of their drawings with a partner.
- Collaborating partners took turns naming one or two details about their partner's picture.

*Week 2:*

- The teacher read a book to the students emphasizing specific site words and explaining the elements which make up a good story. The items were then visually represented on the board.
- Students were then instructed on how to complete a two box graphic organizer with main character and setting. A large box at the top of the page showed a picture from the book and the two boxes underneath were for the students to complete.
- The teacher explained how the author had ideas in his head before he illustrated the book.
- Students were then instructed to think of how they would illustrate their character. They had to think, draw, and then color.
- The teacher reminded the students that the character felt an emotion and then acted on it.
- Students had to decide on their emotion and the action that happened from it and write it with the teacher's assistance.
- Students worked in collaborative pairs to take turns naming the emotion and action they sometimes felt.

*Week 3*

- The teacher began the lesson by completing a KWL chart. Students then responded to questions regarding sequencing.
- The teacher read a book to the students and handed out illustrated sentence strips randomly to the students.
- The teacher re-read the story and requested the correct sentence strip and illustration be brought up and displayed in correct order on a large graphic organizer.
- The students then discussed the order to reinforce the sequence of events from the story.
- Students then color, cut, and glued pictures depicting the life cycle of a caterpillar in correct sequence.
- The teacher modeled to the students how to draw 3 events they perform each day at school on a paper divided up equally into three sections.
- Students were then to pick 3 events they do during their school day and draw the picture.
- The teacher assisted the students in explaining their events in writing.



Attitudes Affect Learning

Jennifer Hixson

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)  
has approved this research project # 09-143.*

## Introduction to the Problem

The idea for this project developed after spending just a few days with high school students in a Spanish classroom. I began to observe the students and notice there were a few students who were excited about learning the language and the Hispanic culture. They desired to improve the language and use it in their lives. They would willingly participate in songs, games, worksheets, and activities that the teacher had prepared for them. There were other students who had no desire to learn Spanish, or to do well in the class. They were not willing to participate in activities, and seemed not to care how their grades were affected by this. These students performed poorly on tests and other graded work. What factors determine a student's grades? Is it high-quality teaching, a challenging curriculum, and expensive technology? Or, is it, simply, a desire to learn?

I began to question if there is a correlation between the attitudes of students and academic performance. If a person chose to analyze the grades of students, and questioned them about their school attitudes, what would they find? This research project will evaluate the attitudes of students, and their correlation to academic performance.

## Review of Literature

A person's attitude can affect all areas of life. Many people have humble beginnings, but, with the right attitude, have risen to become successful, powerful people. Teachers struggle each day with lack of motivation from students. Teachers can try intrinsic and extrinsic motivation techniques, but, if students are apathetic to learning, teacher efforts are in vain. Some students persist in the face of failure while others quit as soon as the going gets rough (Dweck, 1999). A teacher can spend their whole career trying to figure out what makes students want to learn.

Dweck performed and reported research about student attitudes and grades from a 2006 study. Dweck believes that success in schools is a state of mind, not natural intelligence of the child. She reported that academic eagerness is a skill that can be taught by schools and parents:

Some students believe that their intellectual ability is a fixed trait. They have a certain amount of intelligence, and that's that. Students with this fixed mind-set become excessively concerned with how smart they are, seeking tasks that will prove their intelligence and avoiding ones that might not. The desire to learn takes a backseat.

(Dweck, 2006, p. 34)

This attitude can cause setbacks in school for children from an early age. It is an attitude that can be altered before students feel they have no hope of success.

Other students have an attitude of achievement. They know they must work hard to accomplish their goals. This attitude may come from their home environment, parents, or within the students, themselves:

Other students believe that their intellectual ability is something they can develop through effort and education. They don't necessarily believe that anyone can become an Einstein or a Mozart, but they do understand that even Einstein and Mozart had to put in years of effort to become who they were. When students believe that they can develop their intelligence, they focus on doing just that. Not worrying about how smart they will appear, they take on challenges and stick to them. (Dweck, 1999, p. 60-61)

If students begin a school or class with a positive attitude, they are more likely to do well academically. They are more willing to put in the extra effort for homework, studying for tests, and completing assignments, so they may reap the benefits of a well-deserved grade.

In a study conducted by a mathematics teacher from the University of Plymouth, it was reported that most students have preconceived notions about taking mathematics classes. The teacher tried several different mathematics teaching strategies in a local high school. He also measured the attitudes of the students:

I found no evidence that the teaching approaches recommended for the strategy had an adverse effect on the pupils' attitudes to mathematics. In fact there was an indication that, over the cohort, their attitudes had improved. A notable feature of the responses was that pupils believed that they personally attached more importance to success in mathematics than did their friends. (Wilson, 2008, p. 15)

Many students feel self-conscious about grades. If they perform exceptionally, their friends will think they are “nerds” or “goody-goody.” If they perform poorly in school, their friends will call them “stupid.” A student’s attitude can determine if they will do well in school.

According to a recent research study performed at the University of Central Florida, learning is determined mostly by the student:

Knowledge results from continuous phases of understanding which involve engagement of the learner with information and people, and invention and exploration lead to passage from one stage to another, characterized by new structures which did not exist before in the subject’s mind or in the external world. (Binkley-Henry, 2003, p. 2)

Each year, as students progress, they must be challenged with new materials to enhance their learning experience. If students start out in their early grades with a poor, self-defeating attitude, it will likely carry over to their middle and high school career. “Researchers reported that a negative attitude limits performance, saps motivation, and inhibits learning. These factors, in turn, will also affect students' grades” (Congos, 2008, p. 1). If a student believes he/she will

not do well in math, that student already has a negative attitude toward math. Negative attitudes discourage, limit, and, even, prevent learning, positive change, and growth.

## Data Collection and Results

### *Data Collection*

#### *Subjects*

The students that were surveyed were a mixture of boys and girls grades 9 through 12. The students are from a Title I, zone-magnet school. All student participation was voluntary in this study. A survey was given to 12 students in a Spanish II class.

#### *Methodology*

*Student Survey* (see Appendix A).

*Student grades.*

*Teacher observations.*

#### *Procedure*

I introduced the research study to my Spanish II class and explained the procedure to them. After obtaining parental and student permission, I administered the survey. I collected the data that I needed from the projects, tests, and quizzes from the teacher's online grade book, using student code numbers. I gathered all the data to see if there might be a parallel with attitude and academic achievement.

### *Results*

The results of this study will be divided into four categories that are different for each of the five questions in the survey. Responses for the five questions are presented in Figures 1 through 5.

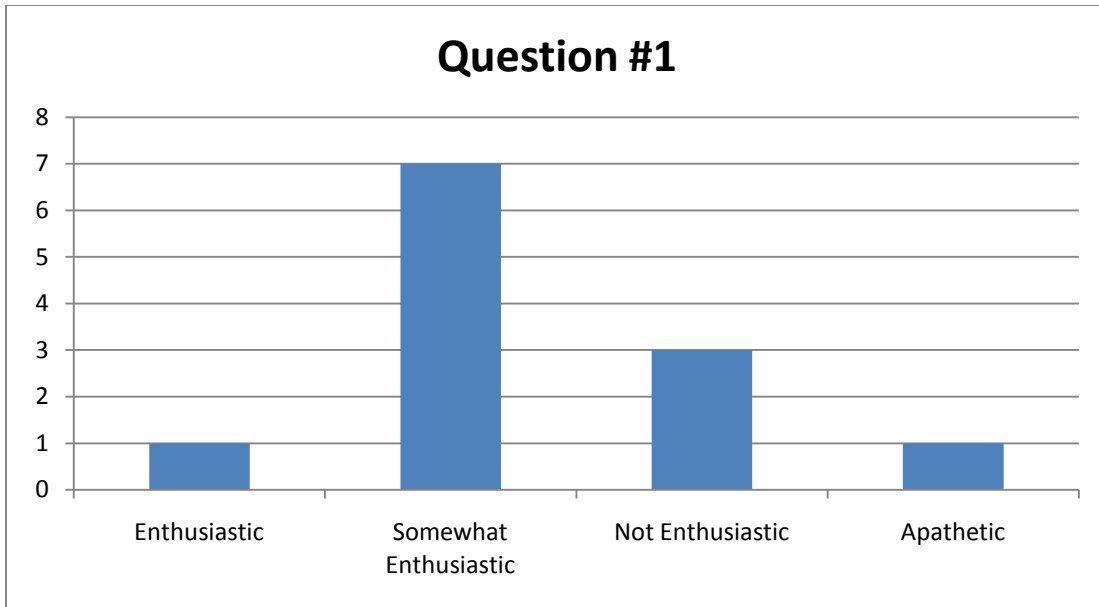


Figure 1. How enthusiastic were you about taking this class?"

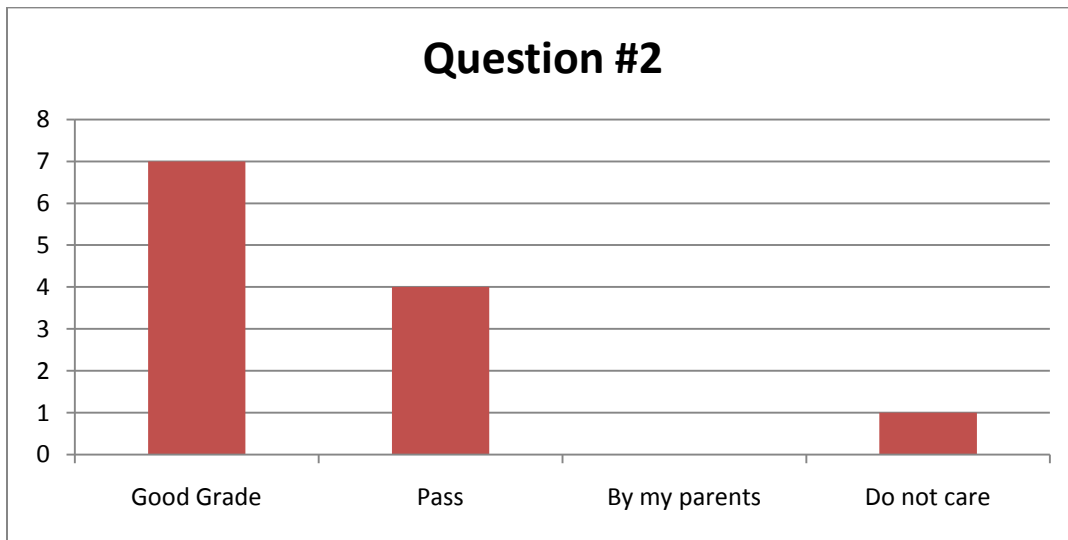
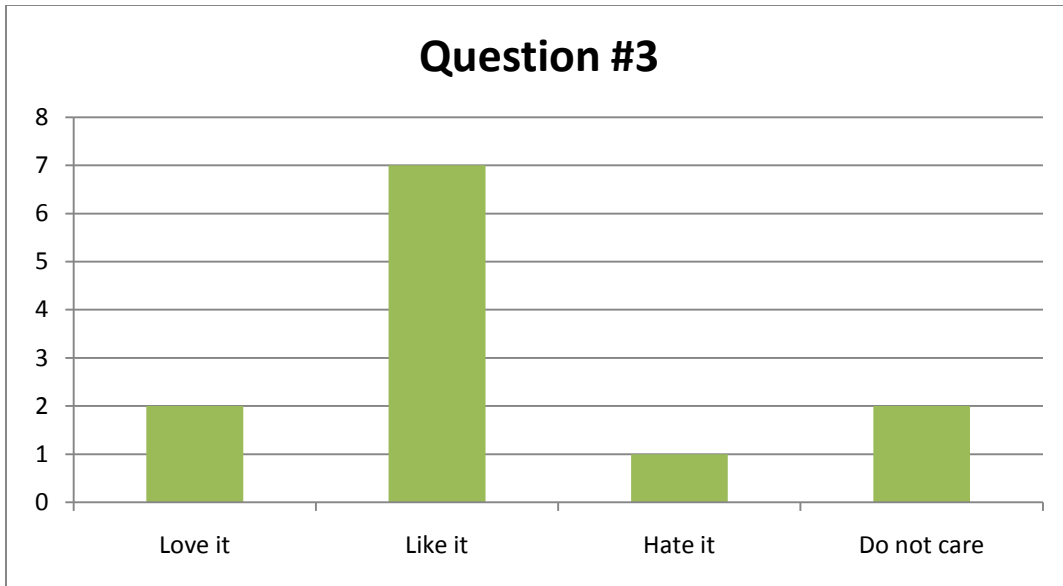
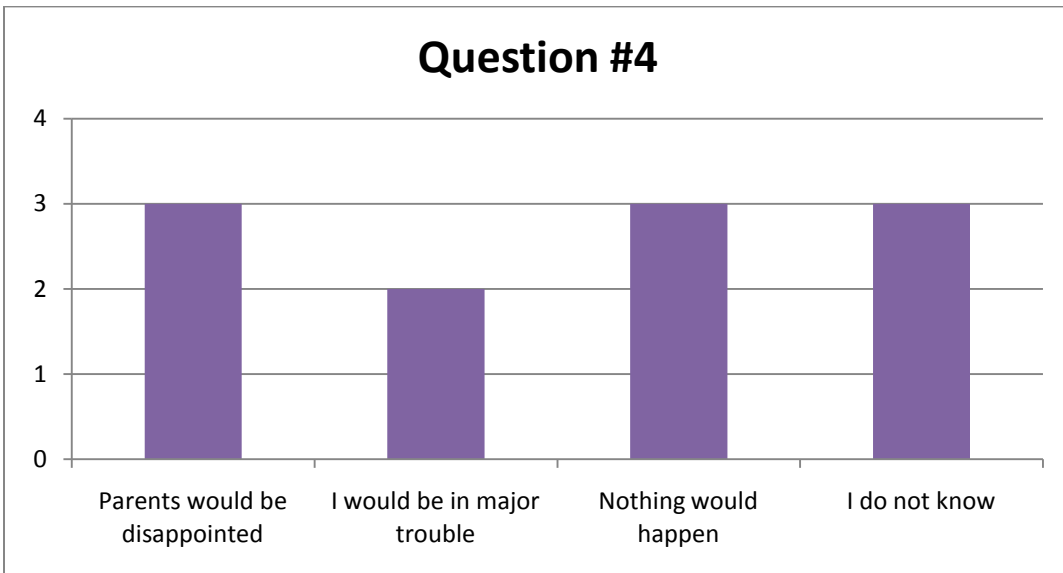


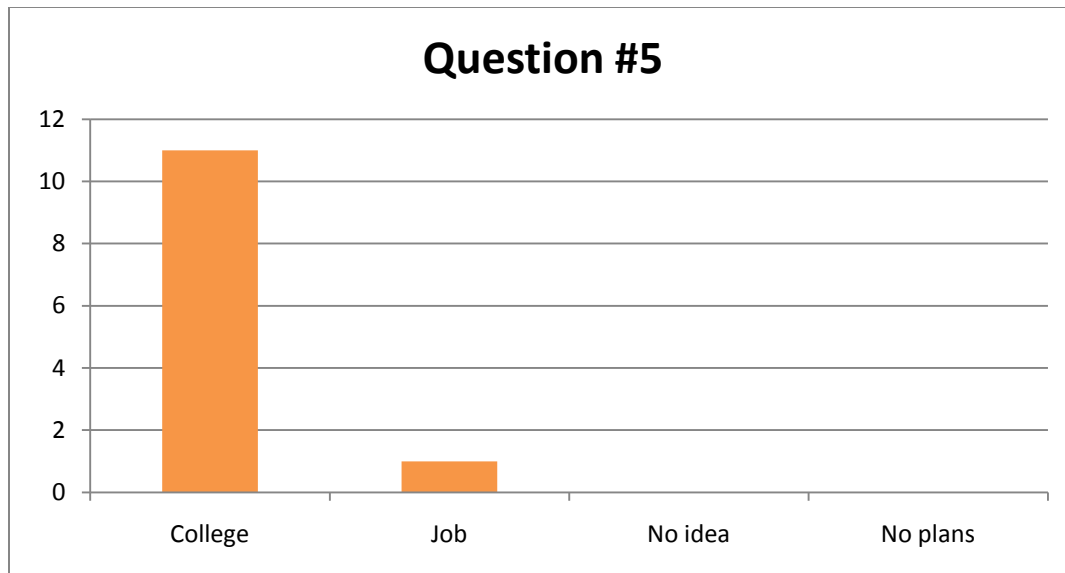
Figure 2. What motivates you in this class?



*Figure 3.* What is your general attitude toward school?



*Figure 4.* If you failed this class, what would happen?



*Figure 5.* What are your plans after high school?

The grades of the students who were surveyed ranged from B+ to F in the Spanish II class. The one student who chose “very enthusiastic” about taking the Spanish II class was the student with the highest grade. The student who chose not to go college and to get a job was the student with the lowest average in the class. That same student also chose “Hate school” on their survey. Many of the students who were neither apathetic nor enthusiastic about school had a class average of C.

### Conclusions and Recommendations

#### *Conclusions*

There is a correlation between a good attitude and a good grade. The results are not as clear as I would have predicted, but they are there. Before actually analyzing the data, I would have predicted that several students would choose “Hate school” and “Not enthusiastic about this class,” etc., and their grades would be the very lowest in the class. However, most of the students said they were “Somewhat enthusiastic” about the class and they “Like school.” Those answers were the most surprising to me.



As I observed the students on a daily basis, I would expect them to have poor attitudes towards the Spanish II class, and school, in general. Most students will act a certain way around their peers, but, when asked their own opinion, will tell how they really feel. Many of the students in the class did not want to work, and acted like they did not care about their grades. Some of the surveys surprised me with the seemingly “good” attitudes of the students.

### *Recommendations*

I feel that this research project can help teachers and school systems with student motivation and attitudes. Teachers should start in the early grades to try to inspire students to have a good attitude at school. They can try to make learning fun and exciting, and try to engage the students and parents, in any way possible, because parents play an important role, as well. Teachers could replicate this study with each class. If the students are old enough to take a survey, the teacher could assess their attitudes, then compare them with students’ grades to see if their students also have a relationship between good attitudes and good grades.

School administration can use this study to bring a good curriculum and challenging technology into our classrooms. A positive learning environment can improve students’ attitudes and make them want good grades and a successful school career. School administration can use the results of this study to engage parents in their child’s academics. If parents can work with children at home, and encourage them to do well in school, the students would have a more positive attitude toward learning. A positive attitude towards learning should be the goal of every parent, teacher, and administrator.

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Appendix A  
**STUDENT SURVEY**

1. How enthusiastic were you about taking this class?
  - a. Very enthusiastic
  - b. Somewhat enthusiastic
  - c. Not enthusiastic
  - d. Did not care either way
  
2. What motivates you in this class?
  - a. Motivated to get a good grade
  - b. Motivated to pass
  - c. Motivated by my parents
  - d. Do not care if I pass
  
3. What is your general attitude towards school?
  - a. LOVE it
  - b. Like it
  - c. Hate it
  - d. Do not care (apathetic)
  
4. If you failed this class, what would happen?
  - a. My parents would be disappointed
  - b. I would be in major trouble
  - c. Nothing would happen to me
  - d. I do not know
  
5. What are your plans after high school?
  - a. College
  - b. Job
  - c. No idea
  - d. No plans

The Effects of Arts-Integration Strategies on Emergent Readers:

Comprehending New Vocabulary

Jessica James

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)  
has approved this research project # 09-132.*

## Introduction to the Problem

No Child Left Behind (NCLB) (Ed.gov, n.d.) initiatives require that the National Assessment of Educational Progress monitor and assess the reading abilities of rising elementary students. Although fourth-grade reading scores are on the rise, compared to those from 1992, there are still many concerns surrounding the fact that fourth-graders are often unable to comprehend meaning from text (Biemiller & Boote, 2006). In a pressurized attempt to raise reading scores, numerous arts-integrated programs are being replaced with various new reading intervention programs. For example, many kindergarteners in Hamilton County are currently being pulled out of their classroom language arts curriculum in an attempt to boost early comprehension skills, including phonics, phonemic awareness, fluency, and vocabulary.

The researcher spent 2 years as a reading intervention assistant, and was able to implement the current reading intervention curriculum in grades K-5. During this time, the researcher recognized that the curriculum was somewhat successful in supporting struggling readers' experiences with phonics, phonemic awareness, and fluency. However, the researcher became concerned with the vocabulary element of the reading intervention curriculum. Over the course of 2 years, the researcher noticed that students were unable to comprehend new vocabulary from the intervention program. Furthermore, it was detected that numerous reading intervention students were discouraged about reading.

## Review of Literature

The opportunities for learning in, and through, the arts are numerous, as studies (Rabkin & Redmond, 2004) continue to recognize the effects of arts-integration on academic achievements. This collection of literature distinguishes the critical need for repositioning the

arts in education, while recognizing oppositional barriers that keep the arts nestled away in the margins of elementary schools.

### *Current Issues in Education*

The NCLB was reenacted in 2001. Since then, many educators and researchers have agreed that the NCLB initiative has shifted the focus of many classrooms, as high-stakes testing and Adequate Yearly Progress (AYP) have become the main concern. While NCLB states that the arts are a core subject, many school districts have redirected resources toward improving literacy and math scores on standardized tests, leaving the arts behind (Rabkin & Redmond, 2004).

### *Arts-Integration*

#### *Why Arts-integration?*

Considerations for arts-integration should begin by reviewing the definition of Arts Integration. It is, as Cornett (2006) states:

An instructional approach in which teachers strongly feel that art-forms such as drama, dance, music, and visual art should be an integral part of literacy instruction – because they are essential means of constructing meaning. (p. 2)

Despite critical high-stakes testing and concerns about AYP, numerous elementary schools have fully implemented and adopted an arts-integrated curriculum. Common concerns stem from the notion that arts-integrated lessons are not conducive to student achievement on standardized test scores, and that proponents of arts-integration are merely concerned with the advancement of arts education (Malone, 2008). However, studies (Rabkin & Redmond, 2004) revealed that successful arts-integration programs were highly focused on student achievement, and viewed testing as pivotal to their mission.

The following studies clearly state that students learn better and faster when they are able to connect emotionally and delightfully to the text. Rabkin and Redmond (2006) found numerous explanations for the power of arts-integrated lessons, and suggested that aesthetics were “as integral to thought and learning as logic is” (p. 60). Additional supporters (Cowan, 2008; Cornett, 2006; Mason & Steedly, 2006) have agreed that language arts without the arts is limited to reading, writing, speaking, and listening, thus overlooking two of the most profound elements of the language arts: visually viewing and visually representing. According to Cornett (2006), language arts instruction should not only be based on the six language arts as defined by the National Council of Teachers of English, but should never overlook any one element. “Such a limited model leaves many students mute – especially the ones who struggle” (p. 3).

#### *Impact of Arts-integration*

Arts-integration allows educators to “teach a specific set of thinking skills rarely addressed elsewhere in the curriculum” (Winner & Hetland, 2008, p. 29) and is particularly valuable in stimulating disadvantaged learners (Deasy, 2008; Mason & Steedly, 2006). The power of arts-integration has been illustrated in studies (Rabkin & Redmond, 2006; Schwartz & Pace, 2008), revealing stories of disruptive or withdrawn students that become actively and productively engaged. According to Rabkin and Redmond (2006), arts-integrated lessons are progressing in recognition, as educators seek to create meaningful learning experiences that also have a positive impact on student behavior and motivation.

#### *Plan of Action*

It was the researcher’s proposal that these implications become the basis for designing a method to study the effects of arts-integration on beginning readers, particularly their ability to comprehend new vocabulary. Based on the literature, the researcher wanted to further identify a

correlation between arts-integration strategies and the attitudes and beliefs of early childhood learners.

### *Arts-integrated Language Arts Unit*

The unit was shaped around the 2001 Caldecott Honor book, *Click Clack Moo, Cows That Type*, by Doreen Cronin and Betsy Lewin. Each lesson provided kindergarten students with the opportunity to become engaged in enjoyable discussion surrounding a wide array of content. The students were introduced to a selection of literary elements, including main idea, setting, plot, characters, and author/illustrator. However, there was a central focus on the students' ability to comprehend and adopt several vocabulary words from the story.

### *Intervention Goals*

The researcher wanted to implement an arts-integrated unit that went beyond the ordinary process of highlighting new vocabulary in a text and stating the meaning of the word. Furthermore, she wanted students to make connections to their own lives, while learning new vocabulary words that were embedded in music, visual art, and dramatization. The researcher chose three vocabulary words from the literature selection and designed arts-integrated lessons that provided students with numerous opportunities to comprehend and use the new words.

The first goal was to increase vocabulary comprehension, particularly word knowledge, by 85%, given that individual kindergarteners had little to no knowledge of the three words. The second goal was to increase students' ability to use new words correctly in a sentence. The final goal was to increase student participation, morale, and motivation for learning to read.

## Data Collection and Results

### *Data Collection*

The collection of data in the kindergarten classroom began with an informal teacher



survey, designed to collect individual student information (see Appendix A). The survey provided the researcher with insight on each individual type of student, their reading abilities, difficulties, and attitudes and beliefs about learning. Next, the researcher administered the DIBELS Word-use Fluency test to participating students. The DIBELS scores were used to formally weigh students' ability to use new vocabulary words in a sentence. Then, the students were given a pre-test that determined whether individual students had any prior knowledge of the three vocabulary words (see Appendix B). The same test was later used as a post-test to determine any deviations of vocabulary knowledge. Student responses on both the pre-test and the post-test were graded and analyzed, with careful considerations for correct context and true understanding of new words. Finally, kindergarten students were asked to answer several survey questions, designed to measure individual attitudes and beliefs about learning (see Appendix C). The student survey was administered both before and after the unit in order to measure variations in student interest and attitude towards learning, particularly reading.

### *Purpose*

The purpose of this study was to determine the effects of an arts-integrated language arts curriculum on beginning readers' ability to comprehend and adopt new vocabulary. The researcher further investigated students' attitudes and beliefs about learning, and determined how such beliefs and attitudes were affected by the implementation of the arts-integrated lessons. The following research questions gave focus to this study:

- To what extent does the implementation of arts-integrated strategies affect the comprehension and acquisition of new vocabulary among beginning readers?
- How does the implementation of arts-integrated strategies affect beginning readers' existing beliefs and attitudes about reading?

### *Participants*

The arts-integration study took place in a kindergarten classroom at a rural elementary school. The results are based on 15 student-participants that represent a diverse array of learning ability among students ranging from 4 to 6 years old. The researcher requested that several additional members participate in the study, including the primary teacher, students' parental guardians, and the principal.

### *Methodology*

The researcher assessed the effects of an arts-integrated language arts unit through the careful analysis of both qualitative and quantitative methods. The researcher obtained quantitative and qualitative data for the purpose of this study. Qualitative research methods were used by the researcher to learn more about the individual reading abilities of students through teacher survey-interviews, student survey-interviews, and direct observation of student learning. Student survey-interviews and teacher survey-interviews provided the researcher with additional insight on individual student beliefs and attitudes towards learning to read. Field observation notes were used to document direct observations throughout the study. This convergence of qualitative data, combined with quantitative data, such as DIBELS Word-Use Fluency scores and the vocabulary pre-and post-test results, provided the researcher with a basis for further analysis and conclusion.

### *Statement of Resources*

- Language arts unit materials including all arts-integrated lesson materials (see Appendix D),
- Teacher survey-interviews,
- Student survey-interviews (pre-and post-)

- Vocabulary knowledge test (pre- and post-)
- DIBELS benchmark assessment for Word-Use fluency, and
- Field observation journal.

### *Time Commitments*

This study was conducted over the course of 3 weeks during the researcher's first student teaching placement.

- Week 1 – Arts-integrated unit preview vocabulary pre-test student survey-interviews, teacher survey-interviews, administer DIBELS benchmark-Word-Use Fluency.
- Week 2 – Continue arts-integrated unit direct observation.
- Week 3 – Wrap-up arts-integrated unit vocabulary post-test student survey-interviews direct observation.

### *Results*

Kindergarten students significantly gained new vocabulary knowledge compared to pre-test scores. Results show considerable gains in students' ability to respond accurately to questions about the word meanings, and there was a corresponding amount of students that were able to use the word correctly in a sentence. Several students were unable to respond correctly, or respond at all, during pre-testing. Figures 1 through 3 indicate that those same students improved greatly in their ability to comprehend the new words.

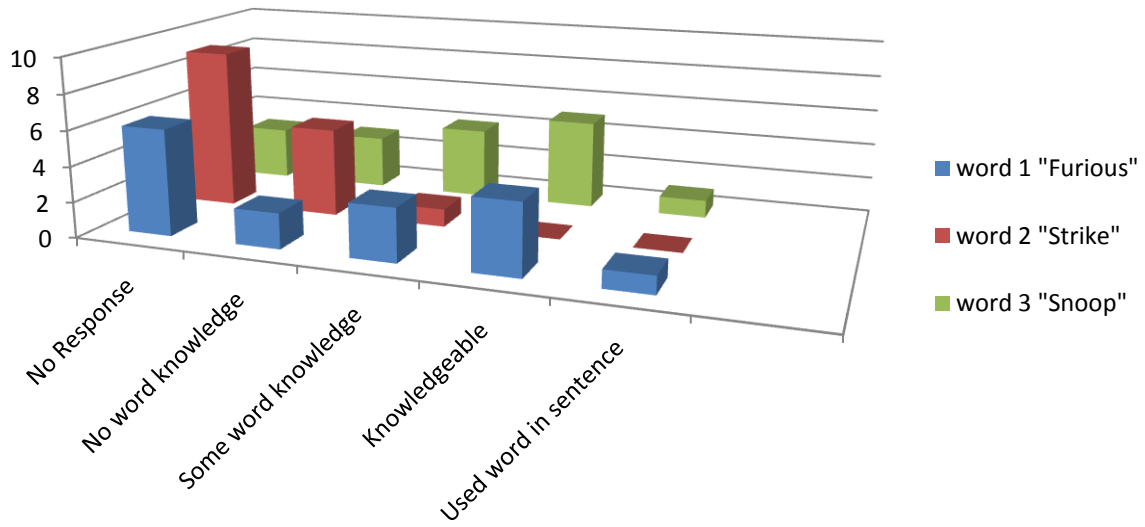


Figure 1. Pre-test knowledge and use of new vocabulary before an arts-integrated unit.

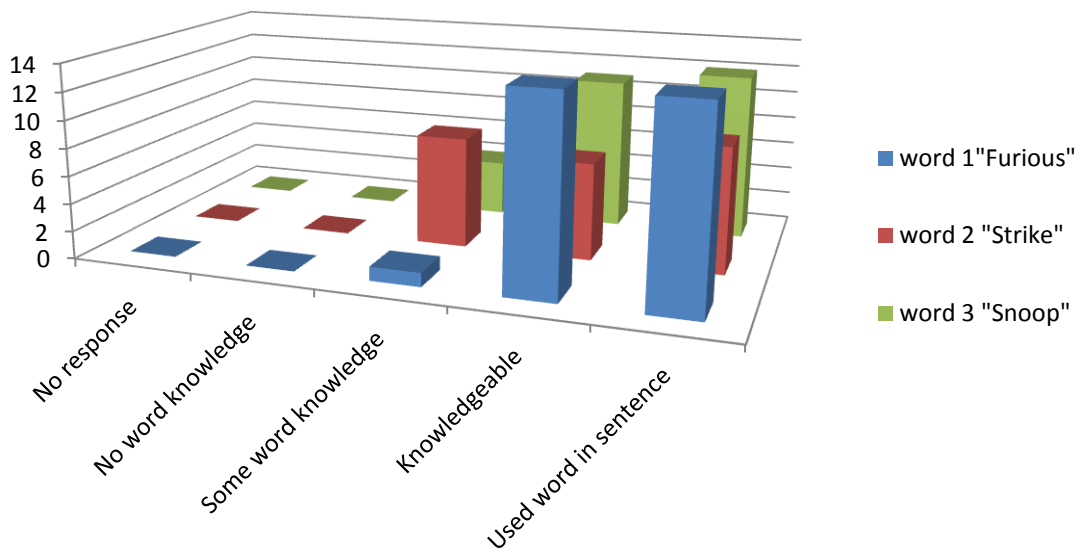
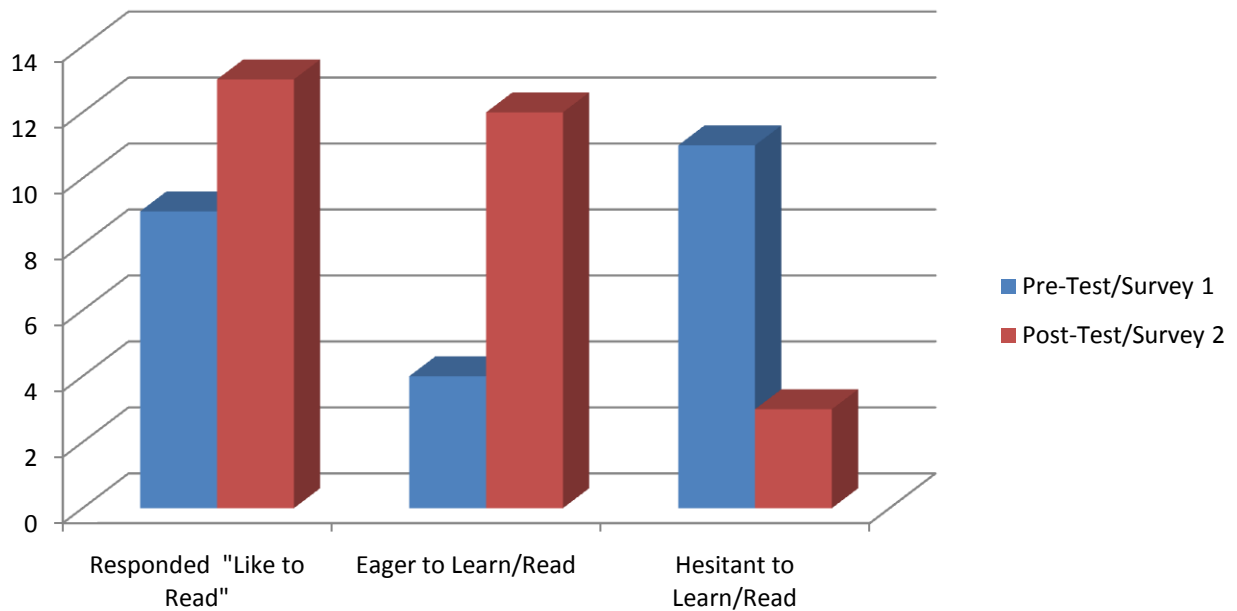


Figure 2. Post-test knowledge and use of new vocabulary after an arts-integrated unit.



*Figure 3.* Impact of an arts-integrated unit on student morale and motivation to read.

## Conclusions and Recommendations

### *Conclusions*

This study provides further support for the arts in education. Language arts instruction in the early childhood classroom is more important today than ever before. Despite various approaches to reading instruction, it is clear that many students respond well to language arts lessons that evoke them to make connections, ask questions, and use their imaginations, as well as their senses, to better comprehend meaning from new words. Beginning readers are better able to learn through arts-integrated lessons that stimulate critical thinking skills, and, most importantly, provide students with an invigorating and enjoyable environment for learning to read.

### *Recommendations*

While the researcher realizes that rigorous reading intervention programs are beneficial to struggling readers, and are critical in boosting skills such as phonics, phonemic awareness, and fluency, she feels that vocabulary instruction should be embedded in creative, meaningful experiences that provide students with an enduring impression.

### *Implications for Further Study*

The researcher is interested in further investigating the impact of arts-integration on comprehension skills, other subjects, and learning factors, such as behavior. Over the course of the study, it was found that the arts have a powerful impact in the classroom. While some educators are uncertain of art's ability to transform a struggling reader into a target reader, supporters are making room for arts-based lessons that not only generate better readers, but increase scores and learning in other subjects, such as math and science. Arts-integration proves to benefit elementary instruction in many ways, and has been linked to various other elements of the classroom, such as improved behavior, interest, and overall attitude towards learning.

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Appendix A  
Teacher Survey

Student Code \_\_\_\_\_

Grade \_\_\_\_\_ Age \_\_\_\_\_

Student's Reading Level \_\_\_\_\_

1. Student would best be described as a(n)-*please circle one*

At-risk student

Not-at-risk student

2. Does student receive any type of reading intervention at this time?- *please circle one*

Yes

No

If yes-How long has student received reading intervention?

\_\_\_\_\_

Please describe methods of  
intervention. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Does student enjoy reading?- *please circle one*

Yes

No

Why do you feel that student does/does not enjoy reading?

\_\_\_\_\_

\_\_\_\_\_

4. How does student act/react during reading instruction?- *please circle all that apply*

Enthusiastic

Apathetic

Eager

Unresponsive

Bored

Upset

Angry

Confident

Uncertain

Scared

5. Please provide further detail based on students actions/reactions in last question.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Appendix B  
Kindergarten  
Vocabulary Pre-test/Post-test

Student Code \_\_\_\_\_

(1) Researcher says – *“I’m going to tell you a word and I want you to tell me, what you think the word means. The word is, **Strike**.”*

Student’s exact response:

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Researcher says – *“Can you use the word **Strike** in a sentence?”*

Student’s exact response:

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(2) Researcher says – *“I’m going to tell you a word and I want you to tell me, what you think the word means. The word is, **Furious**.”*

Student’s exact response:

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Researcher says – *“Can you use the word **Furious** in a sentence?”*

Student’s exact response:

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(3) Researcher says – “*I’m going to tell you a word and I want you to tell me, what you think the word means. The word is, **Snoop.***”

Student’s exact response:

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Researcher says – “*Can you use the word **Snoop** in a sentence?*”

Student’s exact response:

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Appendix C  
Kindergarten  
Student Survey/Interview

Student Code \_\_\_\_\_ Age \_\_\_\_\_

(1) Researcher says – *“Do you like to read?”* Yes or No

Student’s exact response:

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If No, Say – *“What is it about reading that you do not like?”*

Student’s exact response:

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(2) Researcher says – *“Do you ever read at home with your parents, grandparents or other family members?”*

Student’s exact response:

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If Yes, Say – *“What books do you like to read? Why?”*

Student’s exact response:

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Researcher says – *“You are in Kindergarten now and you are about to learn how to read! Do you think that is will be kind of hard or kind of easy to learn to read? Why?”*

Student’s exact response:

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Appendix D  
Language Arts/Arts-Integration Unit

Click Clack Moo, Cows That Type  
Week 1 Lesson 3

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Grade: K  
Language Arts/Arts Integration  
Jessica James

Standards:

GLE0001.1.1 Demonstrate an emerging understanding of basic English usage, mechanics, spelling, and sentence structure.

GLE0001.1.2 Employ a variety of strategies to decode words and expand vocabulary.

GLE0001.2.1 Develop critical listening skills essential for comprehension, problem solving, and task completion.

Essential Questions:

- How can key words make us understand a story better?

Key Words

- Strike
- Furious
- Snoop

Materials

- Click Clack Moo, Cows That Type, by Doreen Cronin and Betsy Lewin
- Key terms and matching clip-art pictures printed out on small cards
- Chart Paper or White board
- Watercolors and paint brushes
- White cardstock for painting scene from story
- Individual cutouts of key words for students to cut and paste to drawing
- Construction paper and crayons

Activating Strategy

1. Do a picture walk with book before re-reading. Ask students if they have ever seen or heard a real “clickety-clack” typewriter. Build knowledge of type writer.
2. Have students discuss the illustrator of the book and the medium that she chose to illustrate the book with – watercolor. Let students describe the illustrations. Did she use crayons or a paintbrush to create the illustrations? Are the brushstrokes soft or hard? What colors does she use?

3. Ask students if they can predict what is happening in the story without reading the words. Ask them if they feel that the words in the book help them to understand the story better? We know that pictures help us to see what is happening in the book, but what do words do?
4. Write three key terms on board and post definition pictures – discuss meaning of words. Instruct students to listen carefully during reading for key words. Read book aloud with emphasis on new vocabulary.

### Teaching Strategies

1. Instruct students to divide into three groups. Group 1 should act out the first key word, i.e., *Furious*. Groups should rotate until all students have had a chance to act out all three key words.
2. Students should return to their tables to find a key word in their seat. Students may begin by pasting the key word onto the construction paper. Next, students should use the key word to create a drawing or a scene from the book on colored construction paper. The drawing should represent the key word. *For instance, if students get the word snoop, then they may want to draw a scene from the book where the animals were all snooping around the barn. They could also choose to draw a picture of their brother snooping in their room.*
3. Next, students should think back to their discussion on the book's illustrations. Have them use watercolors to create their very own illustration.
4. Staple the vocabulary drawing on construction paper to the watercolor illustration.

### Summarizing Strategy

1. Ask students to look at their drawing and their key word. Have them generate a sentence using their word to describe their drawing. Go around and dictate each student's response.

### Extension

2. Reread story and listen carefully for key terms. As story unfolds, have students suggest synonyms for key terms.

To What Extent and How Much Bullying is Going on in School?

Ken Johnson

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)  
has approved this research project # 09-119.*

## Introduction

Bullying is an act of demoralization that can take place anywhere in the world. There are many different types of bullying: physical, psychological, and, now, in our technological society, cyber. These acts of bullying can affect students academically, as well as socially. The action research that will be taking place involves finding out how many students are being bullied in school and educating people with this information. Also, the research will be trying to find out what kinds of bullying are taking place in schools today.

### *Area of Focus*

This research will focus on the amount and types of bullying that are taking place in high school. The problem that this research is addressing is the nature and extent of bullying that takes place in the school setting. This study took place in my classroom. The purpose of this study is to educate people on how much and what kinds of bullying are going on in school systems.

### *Research Questions*

The students who took the survey were answering questions about their school life and bullying. There were a variety of question types, consisting of simple yes and no questions, and more in-depth open-ended questions. The open-ended questions allowed the students to elaborate on, or give an example of, the types of bullying that they suffered, used, or witnessed on one of their peers. The purpose of this research is to find to what extent and how much bullying is taking place in a high school.

### *Assumptions*

The students will examine bullying, and realize they have been bullied or are bullying other students. The students will over exaggerate their answers and make a true story seem more make believe. Also, some students will not take the survey seriously; therefore, the answers to

the survey will not be totally accurate. Some students will answer the survey honestly, and their data will prove to be beneficial for both students and faculty.

### *Limitations*

The limitations in this study are few. One must realize that not all students will be totally honest when taking the survey. Other than the honesty factor in the survey, the information that will be collected can be used for the greater good of educating people about bullying.

### Review of Literature

Bullying is a problem that exists in almost every school in the United States. Bullying is defined as someone who is cruel and/or overbearing to people whom they feel are smaller, either physically or mentally. Basically, “two of the main reasons people are bullied are because of appearance and social status” (Nemours Foundation, 2007, p. 1). Even with these two points, “bullying is a common experience for many children and adolescents” (American Academy of Child and Adolescent Psychiatry, 2001, ¶ 1). The topic of bullying arises in many conversations with teachers. Even though some research shows that “bullying tends to peak in middle school and decline throughout high school” (Peckham, 2007, p. 73), one must understand that, “for generations, victims have carried invisible scars or nursed open wounds” (Toledo, 2008, p. 10).

First, look at the statistics of bullying that takes place in schools. It is common to see that “negative acts [are] not identical” (Bond, Wolfe, Tollit, Butler, & Patton, 2007, p. 78). It is expected that, “30 percent of teens in the United States (or over 5.7 million) are estimated to be involved in school bullying as either a bully, a target of teen bullying, or both” (National Youth Violence Prevention Resource Center, 2007, ¶ 1).

Also, people need to take into account the number of students who do not admit to being bullied, or being a bully, themselves. Bullying happens more with male students than with



female students, even though “female youth are more likely than males to report being the targets of rumors” (NYVPRC, 2007, ¶ 2). Furthermore, students who are bullies in school can sometimes be found to have problems in their future. In some studies of students “60% of those characterized as bullies in grades 6-9 had at least one criminal conviction by age 24” (NYVPRC, 2007, p. 437).

Some research has been done about children not attending schools because of bullying. By “some estimates, 160,000 children skip school each day because of intimidation by their peers. The National Center for Educational Statistics reports that 77 percent of middle and high school students in small mid-western towns have been bullied” (Coy, 2001, p. 2). When students come to teachers with a problem, teachers need to be prepared. This is another way to show the student that is being bullied asking the teacher for aide so that something will be done. It is important to understand “the developmental course of peer victimization” (Bond, Wolfe, Tollit, Butler, & Patton, 2007, p. 78).

Some schools more because that they have had in schools. Lately, a noticeable “emphasis has been placed on implementing bullying prevention programs in public schools” (Beale & Hall, 2007, p. 8). A new problem that schools are trying to prevent is cyber-bullying. These bullies “use e-mail to send harassing and threatening messages to their targets” (Beale & Hall, 2007, p. 8). A major problem with cyber-bullying is that “it is almost impossible to prove who actually used the account to send the offending message” (Beale & Hall, 2007, p. 8). This new, interactive way of bullying is by creating “Web sites that mock, antagonize, and harass others. Voting or polling booths offer users the opportunity to create Web pages that allow students to vote online for “ugliest,” “fattest,” “dumbest,” and so on, boy or girl, at their school” (Beale & Hall, 2007, p. 8).

In conclusion, there are many different types of bullying that are occurring in schools across the United States. Also, “research has documented the fact that children experience bullying differently” (Espelage & Holt, 2006, p. 799). The purpose of this action research is to provide more evidence of bullying in schools.

## Data Collection and Results

### *Description of Intervention*

After the data was collected and analyzed, the information will be available for students and teachers, as well as administrators, to view about the topic of bullying. Hopefully, the people in authority will view these results and take the proper action in order to lessen bullying. Furthermore, this survey might show students that telling teachers, rather than keeping it to themselves, can allow the right information to go to the right people in order for the precise actions to take place. This will set up a way for students to contact teachers about what kinds of bullying and how much bullying is taking place at school.

### *Description of Project*

The research will be focused on students in high school on the ninth-grade level. The age range will be from 14 to 16 years of age. The sample will consist of 100 students, approximately 50 of each gender, who will be given a survey that will contain questions about bullying in school, and the action that was taken after the incident.

### *Variables and Null Hypothesis*

The dependant variable would be the effects of bullying that have occurred on students. The independent variables would be the extent and types of bullying. If students answered the survey honestly, then the data can be shown to authority figures so that the necessary precautions

can be taken in order to eliminate or reduce bullying in school. This would, in turn, cause the school to have a better climate and learning environment.

### *Research Design*

The research is descriptive, and covers the extent and what types of bullying are taking place in school. The researcher will provide a survey, with yes and no questions for students. The survey will also have three open-ended questions. The students will fill out the survey, to the best of their ability, and then turn it in. The students will have approximately 10 minutes to complete the survey (more time will be allowed for those who need more time). The researcher will then collect the surveys from the students for analysis of the data. The focus of the survey is to get good data on the extent and type of bullying that is taking place in school.

### *Instrumentation and Data Collection*

The students will be given the surveys at various times of the day. The students will answer all questions to ensure some form of validity. One aspect that might cause a problem with the reliability of the research is the fact that the students filling out these surveys are in high school. Students will range from the ages of 14 to 16. Therefore, the reliability will be in question. However, with the amount of students completing surveys, the survey should show some consistency that will create validity to the research questions. The survey questions are: Have you ever been bullied? Have you ever bullied someone? Do you know someone who has been bullied? Have you ever witnessed someone being bullied? Did you tell anyone about the bullying that took place? If you told someone, who was it? Do you know of your school's bullying policy? If so, is it working? Do you feel that if you were bullied, the teachers would address and resolve the situation? What was the type of bullying, if any, that occurred in the situation? These

questions will give the researcher an idea of how much and what kinds of bullying are taking place in school.

### *Data Analysis and Interpretation*

This research is a descriptive study because it will show how much and what kind of bullying is taking place in schools. The students completed the survey after being in school for approximately 2 months. The purpose of this time frame was for the students to have time (not encouraged) to either bully someone or to be bullied. Outcomes of the answers are as follows.

When students were asked about being bullied, 46 out of 100 students said, yes, they had been bullied. This could imply that nearly half of the students who are in school have been bullied, at one time or another. The students were not asked to tell what kind of bullying took place when they were bullied. However, there are many different types of bullying that can and do take place in school. Of the 46 students that were bullied, they might have experienced verbal, physical, sexual, cyber, and many other different types of bullying. The interpretation that can be made about these numbers could also mean that the students might have experienced one or any combination of the bullying types.

Next, students were asked if they had bullied someone? After being asked this question, 29 of the students said, yes, they had bullied someone. The interesting part about this question is that, even though so many students answered no to this question, they might have bullied someone and not even known it. If one student plays a prank on another student, it is a form of bullying. These little pranks, and comments that students make to one another, can really get to someone. After a while, when enough students have made different comments to one another, then problems can start to arise with the student who is being bullied.

The next question that was asked of the students was if they had known someone who had been bullied? Of the 100 students were surveyed, 82 percent of them said, yes. This is a staggering number. More than three-fourths of the 100 students know someone who has been bullied. After counting the surveys, and realizing that so many students know someone has been bullied, hopefully some consequences have been distributed to the correct person. None-the-less, after the results of this question, it is apparent that there is some kind of bullying that is taking place in school.

Furthermore, the next question that students were asked was if they had seen someone being bullied? The survey results showed that 75 out of 100 students have, at one time, witnessed someone being bullied. The follow up question to this was whether they told someone about the bullying that took place. For the same 100 students, this was a 50-50 split. The results of these two questions are that 75 out of every 100 students have seen someone being bullied. However, only 50 percent of the time, will students tell about the bullying that took place.

If so many students are being bullied, who are they telling? According to the results of the survey, students who witnessed bullying, or were being bullied, told their teacher. Of the 50 people who answered, yes, to the question about telling someone about being bullied, 21 out of the 50 students went to their teacher. This means that 42 percent of the time, students are reporting the bullying to their teachers. Next, the student's choice was the parent. Of the 50 students that were bullied or witnessed someone being bullied, 18 of them told their parents. This means that 36 percent of the students told their parents about what happened or what they saw at school.

Furthermore, for the same question, 11 students answered the question with some difference. Ten out of 50 students only told a friend about what happened. This shows that, in

some cases, the authority figure is not aware of the situation, because 20 percent of the time students are only telling their friends. One student listed on their survey that they told everyone. This student told the school principal, their parent, and God. This one student which represents 2 percent of those who answered, yes, to one of the questions, told everyone they could about the situation that was at hand.

Then, students were asked if they knew of their school's bullying policy? The students were not asked if they knew what the rules were about the bullying; they were only asked if they knew their schools bullying policy. Over half, 54 out of 100 students, knew about the school's bullying policy. Again, the students did not have to answer the specifics about their school's policy, only if they knew of the school's policy.

Furthermore, the students were asked if they thought the school bullying policy was working. This question received a few different answers. Only 35 out of 100 students said, yes, they felt that the school's policy on bullying in school is working. Twenty-three students said, no, they did not feel that the school's policy towards bullying was having an effect on bullies. Forty-two out of 100 students said they did not know if the bullying policy is working. This shows that nearly half of the students who took this survey either did not understand the question or did not know about the bullying policy.

Next, the students were asked that, if they were bullied, did they think the teachers would address the situation. Of the 100 students who took this survey, 77 of them said, yes, they felt that the teachers would address the situation about bullies. This is an encouraging numbering, that shows that over three quarters of the students felt secure enough about their teachers to address the situation, and, hopefully, proper action would have taken place.

The final question on the bullying survey asked what type of bullying took place? Of the 100 hundred students, 31 said they received, issued, or heard verbal bullying occur. Twenty-one of the students said they received or issued verbal and physical bullying. On a sad note, two students said they received or issued sexual and physical abuse in bullying. One student said that they received or issued sexual bullying. The remainder of the students chose not to answer the question, either for personal reasons, or they had not seen any of the acts of bullying.

### Conclusions and Recommendations

The results of this study can be used in order to educate people on the amounts of bullying that are taking place in public schools. This study can help teachers, as well as principals, become more aware of what is going on in the classrooms, as well as in the hallways of school. In order for people to be able to help prevent bullying from taking place, or to stop bullying where it exists, people need to become aware of what is taking place. Hopefully, if people become more aware of what is going on in the schools, then they will be able to take the precautionary methods necessary to help prevent this form of harassment. Since the research had these results, schools can be made aware of what is taking place in their hallways and classrooms. Even though this is only one research project that took place in one school, these results could be a good foundation for other schools to view, and take the necessary precautions.

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Art in the Curriculum: Teachers' Perspectives

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## Introduction

The many benefits of an art education to students of any age have been widely documented. A solid foundational understanding of the visual arts has been linked with higher-order thinking skills, greater self-confidence and self-assurance, higher math scores, and greater academic achievement in all subjects (Cesarone, 1999). A phenomenon that has received less attention is that of the arts-based, or interdisciplinary art, curriculum, and its effects on academic achievement and student learning, as well as its effects on the non-art teacher's daily curriculum. Although this study will include academic fluctuations associated with cross-curricular art programs, its main purpose is to shed light upon the teachers' opinions of such a program.

In the past decade, there has been a renewed interest in art education, as many schools have incorporated art production into more traditional parts of their curriculum, such as math, science, and history. Support for art across the curriculum has been widely documented, and, as it is a controversial subject, has been met with some disdain. Advocates for art across the curriculum argue (with the help of statistical data) that schools that offer more comprehensive and integrated art programs boast lower dropout rates and higher graduation rates. Research has also shown that arts education has had a measurable impact on at-risk-youth in deterring delinquent behavior and truancy problems, while also improving overall academic success (Israel, 2009).

Although it is apparent that art is beginning to be recognized throughout the nation as an important part of any curriculum, and is being taught in accordance with national and state standards across the country, little research has been done with the aim of uncovering the often overlooked opinions of the teachers who, like it or not, are expected to integrate art into their often well-established curriculums. Therefore, the purpose of this study is to gain some insight

into the opinions of those teachers whose attitudes regarding the issue are crucial to the reception (by the students and the parents) of such an endeavor.

### Review of Literature

Interdisciplinary education, as defined by the Consortium of National Arts Education Associations (2002), “allows students to identify and apply authentic connections between two or more disciplines and to understand essential concepts that transcend individual disciplines” (CNAEA, 2002, p. 1). As one of the national content standards for the visual arts is making connections between the visual arts and other disciplines, art classrooms are expected to integrate content being studied in other classrooms into their curriculum, not only to support such material but also to allow students to approach it from a new, and, often, refreshing angle. Advocates for a cross-curricular or interdisciplinary approach to art and education, in general, such as the Consortium of National Arts Education Associations, argue that such a methodology is pertinent to today’s students because:

An interdisciplinary focus promotes learning by providing students with opportunities to solve problems and make meaningful connections within the arts and across disciplines. Interdisciplinary curriculums encourage students to generate new insights and to synthesize new relationships between ideas. The CNAEA recommends that art specialists seek a balance between disciplinary and interdisciplinary learning emphasis in their classrooms and in their work with other teachers in schools. (CNAEA, 2002, p. 3)

The Consortium of National Arts Education Associations has stated in a flyer, issued in 2002, and entitled, *Authentic Connections: Interdisciplinary Work in the Arts*, that they support: Quality interdisciplinary learning in all disciplines that is student centered, maintains the integrity of each discipline, increases depth of understanding and student achievement,

aligns with established learning standards, provides a balance between the disciplines being studied, incorporates multiple intelligences and learning modalities, sets clear expectations for student work, encourages formative and summative assessment, develops higher order thinking skills and problem solving, involves community resources in and out of school, respects and encourages multiple solutions to problems, acknowledges and is sensitive to the diversity of learners and society. (CNAEA, 2002, p. 4)

In conjunction with providing students with a fresh perspective on any given subject, the Deci and Ryan (1985) text on intrinsic motivation and the arts suggests that interdisciplinary art programs can also help to motivate students by providing them with alternative approaches to the content being studied. “When inquiry into a particular theme is the mastery objective, let students select from varied media to meet this objective. This promotes differentiated learning, as each individual chooses how to best meet the same lesson objectives” (Deci, & Ryan 1985, p. 1).

The integration of fine arts and core subjects is something Tuttle, director of Arts Education and Comprehensive Curriculum for the Arizona Department of Education, calls a beneficial pairing. “Kids that are artistically motivated incorporate those talents into different core-learning areas that help them go deeper in their learning and make more connections.” She goes on to assert that students with an integrated fine arts education can better recall important facts and topics during a test, and retain what they've learned longer (Javier, 2009, ¶ 11).

U.S. Department of Education Secretary Arne Duncan voiced his advocacy for the arts as a core curriculum in August 2009, saying:

The arts can help students become tenacious, team-oriented problem solvers who are confident and able to think creatively. These qualities can be especially important in improving learning among students from economically disadvantaged circumstances. However, recent National Assessment of Educational Progress (NAEP) results found that only 57 percent of eighth graders attended schools where music instruction was offered at least three or four times a week, and only 47 percent attended schools where visual arts were offered that often. (Duncan, 2009, ¶ 4)

The visual arts allow teachers to differentiate learning, and, thus, provide students with a variety of learning styles with which to gain ownership of their work. More choices in the classroom equal greater autonomy, and, thus, a more organic and effective transfer of important content matter, not only from teacher to student, but as it promotes self-motivated exploration of a subject, from student to student, as well. Deci and Ryan (1985, p. 238) state that intrinsic motivation engages learners. Self-directed learners are driven by intrinsic motivation. They question, intuit, improvise, play, take risks, reflect, revise, and defer, as needed, to meet their own goals. These kinds of behaviors promote engagement. Perhaps the most important benefit of exploring a wide variety of content through the visual arts is the inherent flexibility of such a methodology to reach the wide variety of different learning styles found in most every classroom.

Of course, advocates for art education argue that the visual arts promote problem solving and creativity in students, but, as Zimmerman (2009) cautions, “In the past, creativity and art talent often were viewed as being synonymous. Recent studies have demonstrated that traits associated with creativity are not necessarily those associated with art talent” (2009, p. 394).

Others have also voiced their concern for this phenomenon:

Perhaps there is also an *art room giftedness*. Students with talent will shine when they are assigned an art project that falls within their skill sets. However, there is no guarantee that these exemplary students will be problem-solvers, divergent thinkers, collaborators, or risk failure by testing a new art material or technique. (Renzulli, 2000, p. 97)

However ominous these finding may sound, they do not, nor are they designed to, diminish the importance of art in the educational setting. Zimmerman's findings simply claim that those students, who are naturally gifted in the visual arts due to nature or nurture, and produce visually satisfactory work, are not necessarily challenging themselves creatively or solving problems in any new and profound way. These students may simply be relying on natural talent, and, thus, are not necessarily getting the most out of these projects in which, to them, success comes naturally. Zimmerman (2009) concludes his study by asserting that, "more research is needed to determine if and how exceptionally creative art students differ from those who are considered talented in art and what implications this may have for art teaching and learning" (Zimmerman, 2009, p. 394).

Perhaps the most significant change to educational protocol in the past decade, and, arguably, in the history of modern education, is the No Child Left Behind (NCLB) Act of 2001, set into motion by President George W. Bush. NCLB is the latest federal legislation that enacts the theories of standards-based education reform, which is based on the belief that setting high standards, and establishing measurable goals, can improve individual outcomes in education. The Act requires states to develop assessments in basic skills to be given to all students in certain grades, if those states are to receive federal funding for schools. The Act does not assert a national achievement standard; standards are set by each, individual state.

How does the NCLB Act affect the arts? In late 2003, The Council for Basic Education surveyed elementary and secondary school principals, in Illinois, Maryland, New Mexico, and New York, about the state of the liberal arts curriculum in their public schools. Their responses reveal that school curricula have undergone profound changes since 2000—some encouraging, others worrisome. Mathematics, reading, science, and middle- and high-school social studies are on the rise. The arts, foreign language, and elementary school social studies are, by contrast, in decline. The fact that declines in these latter three subjects seem most pronounced in high-minority schools affords special cause for concern (von Zastrow, 2004).

As principals across the nation are reacting to the three simultaneous pressures of standards, accountability, and budget restraints, it is more and more common for public schools to place emphasis on the more traditional, and easily-tested, classes, such as math, science, and social studies, at the expense of the arts which, in this context, are increasingly viewed as ephemeral, difficult to measure, and less important to the basic needs of the students:

No Child Left Behind may well contribute to a significant danger that has not received the attention it deserves. At a time when school budgets are under extraordinary stress, the exclusive focus of the law's accountability provisions on mathematics, reading, and eventually science is diverting significant time and resources from other academic subjects. (von Zastrow, 2004, p. 9)

Von Zastrow's (2004) study showed that there were increases in instructional time and professional development for reading, writing, mathematics, and science:

- About three-quarters of all principals reported increases in instructional time for



reading, writing, and mathematics. Similar proportions reported increases in time for professional development in these three areas.

- Close to half reported increases in instructional time for science, and even larger proportions projected such increases over the next two years. (von Zastrow, 2004, p. 9)

The study also uncovered major declines in other subject areas, especially in high-minority schools:

- 25% of all principals surveyed reported decreases in instructional time for the arts; 8% reported increases.
- 33% of all principals anticipated future decreases in instructional time; 7% anticipated increases.
- 36% of high-minority school principals reported decreases in instructional time for the arts; of these 36%, well over a third reported large decreases. By contrast, only 11% reported increases, and a mere 1% reported large increases.
- 42% of high-minority school principals anticipated future decreases in instructional time for the arts; over a third of these 42% expected large decreases. Ten percent anticipated increases, and only 1% anticipated large increases. (von Zastrow, 2004, p. 10)

Many principals have trouble finding sufficient time in the school day to accomplish all their academic objectives, especially as they face the need to increase student performance in mathematics and reading. As one elementary principal reported, “In our particular building plan, we allocate 90 minutes a day to reading and writing....You don’t have a lot of time for...other things” (von Zastrow, 2004, p. 18). The shortage of funds may worsen problems caused by the shortage of time. In a recent national survey, elementary and secondary principals

overwhelmingly cited insufficient funding as the most daunting challenge they confront. This challenge can become particularly acute in poor and high-minority schools—the Education Trust reports that many of these schools still receive less per-pupil funding than do their low-minority counterparts. Add to these obstacles the growing numbers of federal, state, and district mandates schools must satisfy, and principals are left with limited room to maneuver as they make curricular decisions (von Zastrow, 2004).

In supporting arts education, researchers and educators make a powerful appeal to common sense: The arts also offer at-risk children a reason to go to school and become fully engaged in learning. One elementary principal participating in CBE's study described how enhanced arts education programs had helped him transform his school—once the district's lowest-performing—into the school with the district's highest reading scores in the first, fourth, and sixth grades. “The arts are the hook,” he concluded. “You have to give the kids something that they can come to school for” (von Zastrow, 2004, p. 22). The tendency to sacrifice time for the arts to extend time for mathematics and reading may ultimately prove counterproductive, especially for students at greatest risk of becoming disengaged from school (von Zastrow, 2004).

According to the majority of literature, advocacy, not only for a strong arts program in schools, but, also, for the integration of the arts into other content areas, is strong. Studies have provided an abundant range of positive correlations between significant art programs and higher academic performance over all, as well as within traditionally unrelated areas of content. However, little research has been conducted with the sole purpose of gaining insight into teachers' perspectives concerning interdisciplinary art programs. As with those very attitudes and opinions that determine the quality, and, thus, reception of such educational endeavors, it is the primary objective of this study to gain insight into those teachers who, prepared or not, are

expected to implement what could potentially be such an involved and intimidating teaching methodology, and to determine if they share in the enthusiasm of so many less entrenched in the actual education of our nation's youth.

### Data Collection and Results

In 2005, Magnet Schools of America selected this school as the best museum magnet school in the country. The school has also been awarded the title, "national school of excellence," for the past 4 years, and is a model for emerging and established schools across the country and abroad.

Takahisa and Chaluisan (1995, cited in King, 1998)) define a museum school as an educational facility that is "collaboratively designed and implemented through a partnership between a school district and at least one museum in order to implement 'museum learning' with at least one of the following three application activities: object creation, exhibit creation, and museum creation" (King, 1998, p. iv). The school's academic program is built around four cross-curricular modules that incorporate weekly class expeditions to partner museums. Each quarterly module focuses on a school-wide theme culminating in an "exhibit night." Teachers use a backwards-planning method, and work to engage students in a system of inquiry aimed at fostering intellectual curiosity and real-life discovery.

### *Methodology*

Copies of a 11-question survey (see Appendix A) were distributed to the individual mailboxes of all the teachers, regardless of subject area or grade level, at the public elementary school (pre-K-3<sup>rd</sup> grade) in Hamilton county (Chattanooga, TN). It was made clear that, by completing the survey, participants would agree to allow the researcher conducting the survey to utilize the information provided as a basis for a study concerning the content of the

questionnaire. Those teachers who chose to participate in the study were asked to return the completed surveys to a private mailbox allocated to the researcher, located in the main office.

The questionnaire was designed to survey the participants' attitudes and opinions concerning the integration of the visual arts at their school. The first question, which was optional, asked the participants to state the subject or grade level that they taught. Questions 2-9 on the survey could be answered with the following pre-written multiple choices: (a) agree, (b) neutral, or (c) disagree; or (a) always, (b) sometimes, or (c) never; depending on the nature of the question. Questions 10 and 11 could be answered in a narrative format, as they were open-ended.

The first question was pertinent in that it would demonstrate the variety of perspectives involved in the research, and the transcendental nature of the opinions and attitudes elicited for the study. Question 2 was aimed at determining the extent to which each teacher integrated the visual arts into his/her curriculum. Questions 3-11 were designed to approach the teacher's opinions of the value of integrating the visual arts and arts-related field trips into their curriculums. Eleven completed surveys were returned to the researcher via the aforementioned procedure. The results of the survey were then translated numerically into Microsoft Excel and analyzed by the researcher.

### *The Respondents*

The respondents were provided 3 weeks to complete the survey. There were a total of 11 surveys completed and returned. Most of the surveys were completed and returned within the first week. All of the teachers at the school are labeled as highly qualified in the education field. The survey was not completed by anyone who was not a full-time teacher at the school.

### *Results*

Question 1 asked teachers to state the subject/grade level he/she taught. Teachers from a variety of academic perspectives completed the survey. Teachers were from Kindergarten, first grade, third grade, fourth grade, Spanish, and exceptional education, as well as unidentified areas. Question 2 on the survey, aimed at uncovering the degree to which the various teachers at the school utilized the visual arts, in their daily classroom activities, generated the following results: 6 teachers out of 11 (54.5%) stated that they always integrate the visual arts while 5 out of 11 (45.5%) said they sometimes integrate the visual arts into their curriculum (see Figure 1).

Degree to which participants integrate the visual arts into their curriculum

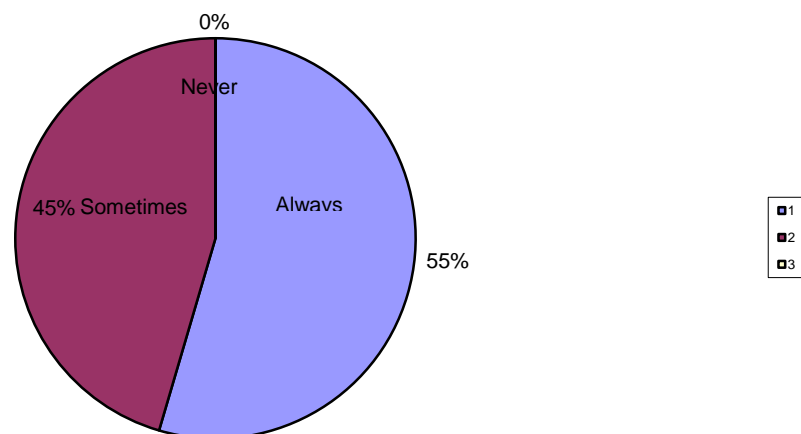


Figure 1. Degree to which participants integrate the visual arts into their curriculum.

With regard to question 3, which asked teachers if they believed the visual arts deepened their students, understanding of the content to which it was applied, the results were unanimous. All of the participants agreed that the visual arts, when used as a teaching tool, strengthened student understanding. In response to question 4, which asked if teachers thought the visual arts helped to engage students in learning various content matter, all but one participant (90.9%)

agreed that the visual arts promoted student engagement in the learning process. One participant was neutral on the issue (see Figure 2).

Participants who believe that visual art integration helps to engage students

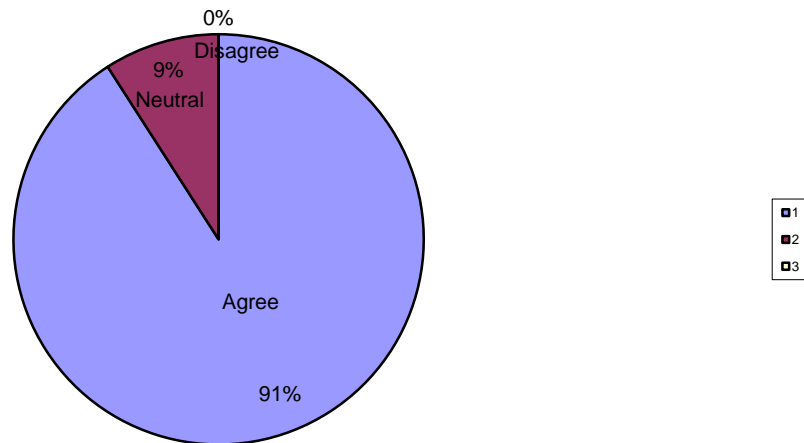
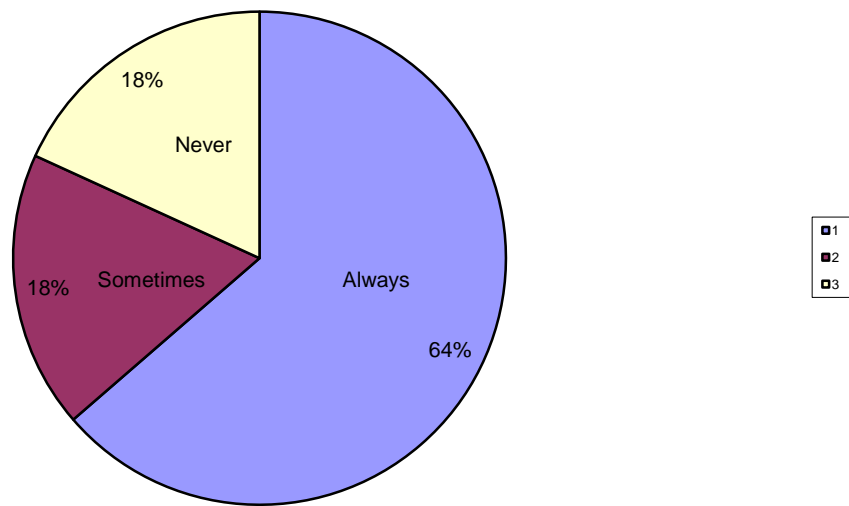


Figure 2. Participants who believe that visual art integration helps to engage students.

Question 5 asked teachers if they thought integrating the visual arts into their curriculum took away from valuable class time that could have been better utilized in a more direct approach to teaching their subject matter. All of the participants stated that the visual arts were a relevant teaching tool, and, therefore, did not waste class time, but, rather, enhanced it. Question 6 asked teachers to disclose the degree to which they took advantage of the many field trip opportunities provided to them by the very nature of the museum magnet educational model. Seven teachers out of the 11 surveyed (63.6%) answered that they always took advantage of such opportunities. Two teachers (18.2%) said that they sometimes utilized field-trip learning expeditions, and two participants (18.2%) stated that they never take full advantage of the class trips afforded the teachers at the school, both of which disclosed that they were not home-room teachers, and, therefore, such trips were not an option during their teaching periods (see Figure 3).

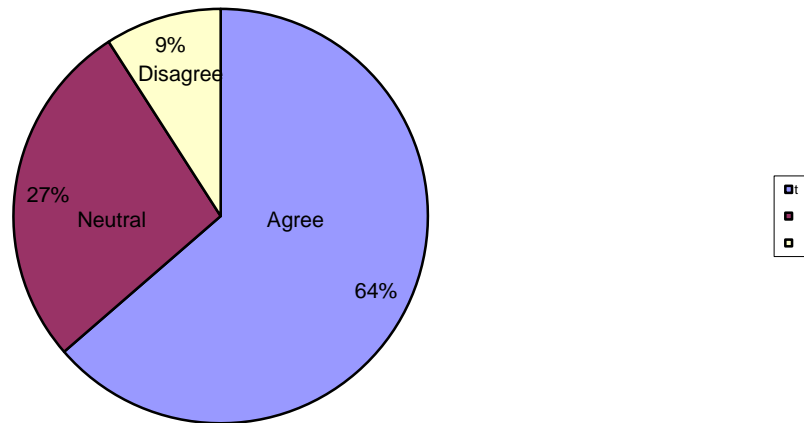
Degree to which participants take advantage of arts related field trips



*Figure 3.* Degree to which participants take advantage of arts-related field trips.

Question 7 asked the participants if they believed the parents of their students utilized these same, outside educational opportunities as the school. Seven out of the 11 teachers surveyed (63.6%) believed that the parents of their students did, indeed, take advantage of this unique opportunity to share in the learning experiences of their children, while 1 teacher (9.1%) disagreed. Three participants (27.3%) remained neutral on the issue (see Figure 4).

Participants who believe parents of students utilize local educational opportunities



*Figure 4.* Participants who believe parents of students utilize local educational opportunities.

Teacher participants were in 100% agreement when asked (in question 8) if they believed that the content taught in their classrooms was reinforced and enhanced when parents took their children to the participating learning facilities (Chattanooga Zoo, Chattanooga Aquarium, Hunter Museum of American Art, etc.) independently, outside of class. Participants were also in 100% agreement in response to question 9, which asked if they believed their students' overall grades benefited from the school's cross-curricular art program. They unanimously supported their school's efforts to integrate the arts across the curriculum.

Question #10 asked participants to "describe any benefits or advantages that you feel are inherent to a cross-curricular art program." The teacher-participants responded with a variety of academic benefits they believed to be a result of the school's implementation of such an educational philosophy. The list of benefits and advantages included enhanced problem-solving skills, learning appreciation, academic interest and knowledge retention, the application of inherent learning and teaching differentiation, cross-curricular connections made, increased



educational depth, hands-on learning opportunities, and the enhancement of critical thinking skills.

When asked, in question 11, to list any disadvantages teachers feel to be inherent to an integrated arts program, two participants answered with concerns of added expenses. One mentioned the time consumption involved, and one voiced the concern that some students may not enjoy making art. However, the majority of the participants (63.6%) believe that there are no disadvantages to an integrated arts program, such as the one implemented at the school.

### *Conclusions and Recommendations*

#### *Conclusions*

As indicated by the data, it is apparent that the teachers who participated in the study support the integration of the visual arts into their curriculums. The results of the second survey question show that, despite the various subjects and grade levels in which they teach, a majority of the participants (54.5%) always practice art integration in their classrooms, while the remainders of the participants do so intermittently. It is also clear that the teacher participants believe that the utilization of the visual arts as a tool for differentiating teaching methods, and catering to a variety of learning styles, is an effective way to increase student engagement, motivation, and over all academic success.

The data also suggests that, when given the opportunity, most of the teachers at the school take advantage of the school's affiliations with the various participating educational facilities. The participating teachers' opinions of such educational opportunities is positive, in that they believe these class trips emphasize, enhance, and reinforce what is being taught in the classroom. The teachers also believe that, when the parents of their students also utilize these

local educational facilities and opportunities, learning is reinforced and the quality of education provided to the students is enhanced.

The results of the survey show that, despite some concerns over added expenses and the amount of class time involved, the teachers at the school do not believe that integrating the visual arts into their classroom curriculum is detrimental to their students. In fact, every teacher involved in the study offered at least one benefit that they believed was a direct result of integrating the visual arts into their classroom. Many participants offered more than one benefit they associated with this model, including enhanced problem-solving skills, learning appreciation, academic interest and knowledge retention, the application of inherent learning and teaching differentiation, cross-curricular connections made, increased educational depth, hands-on learning opportunities, and the enhancement of critical thinking skills.

#### *Recommendations*

As existing literature and data consistently support the many faceted benefits of the implementation of a strong visual arts program in public schools, and the results of this particular study suggest a positive teacher response to the integration of the visual arts into other areas of the curriculum, it is apparent that the visual arts are an integral, and widely-supported, element in the quality education of our nation's youth. In response to concerns of added expense to what may already be limited school funding, there are many options afforded public schools, with regard to the supplementation of the arts. These include both public and private grants devoted to art education.

It should also be noted that, although the visual arts are easily enhanced and made even more relevant to "real world" application with access to technology, such as computers and the

Internet, the majority of educational art projects could be implemented with the most basic and relatively inexpensive of materials.

Despite the proven academic benefits associated with the integration of the visual arts into school-wide curriculums, especially in lower-income schools with at-risk students, many principal may be hesitant to develop such a program because of concerns over their teachers' abilities to implement such a specific teaching method. In response to this legitimate concern, perhaps professional development should be made more readily available to support schools and teachers interested in learning how to better implement the visual arts into their curriculum.

Many museum magnet schools have a full time staff person whose role is, not only that of "museum liaison," but, also, that of "grant writer." Hiring an experienced grant writer, who is familiar with the nature of fine arts funding opportunities, would allow schools to take full advantage of available financing, and, thus, maintain or improve upon what is widely agreed to be an invaluable educational component. As educators and parents alike are realizing the full extent of the role the fine arts play in holistic education, it is becoming increasingly important that the arts are afforded the attention and support they so obviously deserve, not only for the sake of the children and families to which they cater, but, also, for the well-being and success of the schools in which we entrust our future as a nation.

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## Appendix A

### Faculty Survey

1. I teach \_\_\_\_\_.
2. I integrate the visual arts into my curriculum.
  - a. Always
  - b. Sometimes
  - c. Never
3. I believe the visual arts deepen my students' understanding of the subjects we study.
  - a. Agree
  - b. Neutral
  - c. Disagree
4. I believe that integrating the visual arts into my curriculum helps to engage my students.
  - a. Agree
  - b. Neutral
  - c. Disagree
5. Integrating the Visual arts takes away from valuable class time and is not relevant to the subject I teach.
  - a. Agree
  - b. Neutral
  - c. Disagree
6. I take advantage of the opportunities [the school] provides to take my students to local museums and educational facilities (aquarium, zoo, etc.).
  - a. Always
  - b. Sometimes
  - c. Never
7. I believe that the parents of my students utilize these same educational opportunities for their children.
  - a. Agree
  - b. Neutral
  - c. Disagree



Teachers' Opinions on Parental Involvement Possibly Leading to Higher Student Academic  
Achievement, Better Behavior, and Increased Motivation

Joshua Overton

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)  
has approved this research project # 09-121.*



## Introduction

Parental involvement in the classroom and school is a topic that has been the subject of extensive research. A vast amount of literature on parental involvement in the school and classroom has demonstrated that it can increase student academic achievement, reduce behavioral problems, and increase students' motivation or career aspirations (Hill, Castellino, Lansford, Nowlin, Dodge, Bates, & Pettit, 2005; Brannon, 2008; Lawson, 2003; Grolnick, Ryan & Deci, 1991; Sheldon & Epstein, 2002). While a vast amount of literature exists on the topic of positive effects of parental involvement in the school and classroom, this information dwarfs the literature that is present over teachers' views of parental involvement in the classroom.

In fact, parental involvement in the classroom and school is such a current popular topic that 17 states currently have grants available for schools or programs that can directly involve parents in their child's education. Additionally, 15 states have policies that encourage, expect, or direct employers to enable parents to attend school functions (Christie, 2005). While state and federal support is increasing for parental involvement in the classroom, and the inclusion of parents will likely increase, it would be of great interest to determine teachers' opinions, beliefs, and views on both the negative and positive aspects of parental involvement.

It is because there is a vast amount of literature present over the positive effects of parental involvement, and that there is relatively little information present over teachers' opinions of parental involvement, that I have chosen to conduct this study. I hope to answer several questions with this study. Do teachers believe that parental involvement actually benefits students? What types of parental involvement are most beneficial to the student? How many times per year do teachers involve parents in their classrooms? This is just a sample of the

questions that I hope to answer in an effort to develop a better understanding of teachers' perceptions of parental involvement, and the benefit it may have on students.

### Review of Literature

Parental involvement in the school and classroom has demonstrated the ability to increase student academic achievement, deter student misbehavior, and increase student motivation and aspirations (Hill et al., 2004). Additionally, Brannon (2008) argued that parental involvement could directly result in students attaining higher levels of academic achievement, and improve the students' overall attitude, especially as it pertains to homework. Lawson's (2003) survey of teachers demonstrated that 11 out of 12 teachers viewed parental involvement as necessary to ensure student success. Additionally, Brannon (2008) stated that, "Parents are their children's first and most important teachers" (p. 56). Similarly, David, a teacher surveyed in Lawson's (2003) study stated:

Parental involvement is essential in order for teachers to do their job effectively, because, after all, parents are the first teachers; and, with their input, then we could improve on what we do. Because, we just pick up the ball later after the first five years of life. (p. 105)

Parental involvement can also vary by definition, depending on the study, source, or individual. Parental academic involvement, according to Hill et al. (2004), included volunteering in the school, developing quality relationships between teacher and parent, types of parent—teacher contact, and the involvement by the parent in the child's homework. Meanwhile, McNeal (2001) and Singh, Bickley, Trivatte, Keith, Keith, and Anderson (1995) identified parental involvement as the transmission of parental academic aspirations to their children, parent participation in school activities with teachers, and parent involvement in the child's homework.

In addition, Lawson's (2003) survey of teachers demonstrated that, if parents believe school is important and take an active role in their child's education, then the child will likely place higher value on school and academics; whereas, if little importance or value is placed on school, then the child will likely mirror their parents' attitude. Finally, Freeman and Karr-Kidwell (1998) viewed parental involvement as the number of times teachers specifically assigned homework that required parental assistance. While the definition of parental involvement may vary between researchers, teachers, and administrators, the findings of how parental involvement can impact students is nearly synonymous.

Hill et al. (2004) found that parental academic involvement subsequently lead to higher student academic achievement, which, in turn, lead to better behavior by students. Additionally, Jeynes (2005) discovered that schools, regardless of students race and socioeconomic status, experienced higher academic achievement when parents were involved in the classroom, in some manner. Also, Sheldon and Epstein (2002) found that, through constant communication with parents, conducting orientations for new parents, and conducting workshops for parents, student behavior in the school subsequently improved.

A surveyed teacher in Lawson's (2003) study stated that when children have an inadequate home environment, they often come to school unprepared, which directly results in misbehavior. Also, Sheldon and Epstein (2002) discovered that proper parenting, and volunteering by the parent in the school, eventually leads to better behavior by students whose parents volunteered. In support of those findings, Samples (2009) found that parents who attended school workshops, and/or worked in collaboration with the school, had children who attained higher state test scores.

Parent involvement in the classroom has also demonstrated the ability to increase student motivation. Hill et al. (2004) found that parental involvement in the school and in academic areas eventually increased students' educational and career aspirations. Additionally, Grolnick, Ryan, and Deci (1991) found that, when parents were involved in the school, student motivation increased. These increases in motivation, eventually, lead to higher academic achievement by the students. Additionally, Gonzalez-DeHass, Willems, and Holbein (2005) found that, when teachers involved parents in the classroom, students' motivation in particular subjects, such as reading, increased. In the same study, students were found to be more confident and comfortable in their abilities, and were more likely to internalize the importance of an education, when parents were involved in the classroom. Parental involvement has been shown to significantly increase academic achievement, enhance student motivation, and improve behavior of students in Grades 4 through 8. However, it should be noted that parental involvement, at any grade level, might influence better behavior, heighten academic achievement, and increase motivation.

While research suggests that parental involvement can influence a child's academic success, behavior, and motivation, the views of teachers on how much parental involvement is appropriate, why some parents may not participate in their child's school, and what constitutes parental involvement, may differ significantly. According to Molland (2004), many parents do not participate in their child's school because they feel intimidated or socially out of place. Additionally, Dunlap and Alva (1999) found that factors, such as the overall language of the educational field and not fully understanding the educational system, could prevent some parents from becoming involved. Many parents do not become involved with the school or their child's education simply because they have never received proper encouragement or support from the school or teachers (DePlanty, Coulter-Kern, & Duchane, 2007).

In relation to the most important aspects of parental involvement, DePlanty et al. (2007) found that teachers viewed the need for parents to ensure students completed their homework as most important. Meanwhile, the same teachers viewed the parents' presence in the school as less important, as long as the parent emphasized the importance of education, while at home. Ultimately, the teachers believed that parental involvement, volunteering in the school, and observing the child's classes, were least important when compared to assisting with the child's homework. Additionally, Seda (2007) had a similar view on homework completion being the most important aspect of the parent-teacher collaboration. However, Seda mentioned that parents often become frustrated or discouraged because homework, assignments, or activities rarely mention the parent, and, often, appear to be structured so they can be completed without the parents' assistance.

One possible reason parents do not volunteer in the classroom is because not all teachers are adept in communicating with parents the way they communicate with children. In fact, this lack of communication can discourage some parents from volunteering or assisting in their child's education (Seda, 2007). One justification as to why teachers do not reach out more to parents, or attempt to initiate contact, is because teachers believe they lack the sufficient time to do so (Deplanty et al., 2007). An additional reason why teachers do not reach out to parents is because of varying levels of teacher efficacy. As teacher efficacy varies, so does the level of contact with parents (Deplanty et al., 2007). Lawson (2003) discovered that, as parental involvement increased, teacher and professional efficacy improved.

In the Dunlap and Alva (1999) study, of the teachers interviewed, a majority believed that parents could support the school, and provide assistance, by supporting teachers in matters of discipline and reinforcing educational values. However, this did not directly relate to parents

volunteering, or participating in the school or classroom. In addition, many teachers were reluctant to allow parents to “barge into their classrooms—with the potential for criticism” (Scott, 2007, p. 49). This reluctance often inhibits parent—teacher contact. In the DePlanty et al. (2007) study, it was discovered that teachers viewed parents attending parent—teacher conferences as being a significantly important factor of parental involvement. In contrast, the same teachers viewed the parents’ participation in the school or classroom as one of the lesser important involvement activities. The same teachers also viewed talking to the students’ parent as the least important activity.

Additionally, DePlanty et al. (2007) and Seda (2007) found that teachers viewed parental assistance in the completion of homework as being the single most important form of parental involvement. In contrast, Dunlap and Alva (1999) found that teachers viewed parental support in matters of discipline as being the most important form of parental involvement. It was also discovered by DePlanty et al. that many teachers viewed their schedule and workload as non-permitting when it came to initiating continuous parental contact.

In summary, many teachers feel as if they lack sufficient time to properly encourage the parent to participate in classroom activities. Therefore, these same teachers feel that parents can ensure their child a solid education by supporting the teacher or principal in matters of discipline and/or ensuring the child completes his/her homework. It is obvious that teachers vary significantly in their view of parental involvement. While the research on parental involvement, when observed in its entirety, clearly demonstrates the ability to benefit the student academically and behaviorally, and increase motivation, teachers’ views on what is beneficial or what constitutes parental involvement, vary significantly.

Overall, parent participation, according to most of the literature, demonstrates the ability to assist students in academic success, motivation, and behavior. There have been countless studies that have displayed similar results (Hill et al., 2004; Brannon, 2008; Lawson, 2003; Sheldon & Epstein, 2002; Grolnick, Ryan, & Deci, 1991). However, there have been relatively fewer studies that have examined teachers' perceptions regarding parental involvement in the classroom (Lawson, 2003; DePlanty et al., 2007; Seda, 2007; Dunlap & Alva 1999). Additionally, the studies that focus on teachers' attitudes as related to parental involvement in the classroom, possibly leading to increases in academic achievement and motivation, and improvements in student behavior, are the minority, when compared to studies focusing on the benefits of parental involvement. Overall, this study is designed to determine teachers' attitudes, as related to parental involvement, and to determine if teachers' attitudes and opinions correlate with a majority of the data, which implies that parental involvement in the classroom or school increases students' academic achievement and motivation, and improves behavior. The study will also focus on what areas of parental involvement teachers believe are most important.

## Data Collection and Results

### *Methodology*

Copies of a single, 10-question survey were distributed to teachers at a suburban middle school in Hamilton County, Tennessee. Along with each survey a single, brown envelope, which was sealable, was provided for the teacher to return completed survey. After the teacher had completed the survey and placed it in the envelope, the teacher took the envelope to the school office where a basket was present for the drop-off of the envelope. The envelopes were retrieved by the researcher. All questions on the survey could be answered as either yes/no or by multiple choice (A, B, C, or D format).

The surveys were used to analyze teachers' opinions and/or attitudes toward parental involvement in the classroom or school. The beginning question on the survey asked how many years the teacher had been teaching in a classroom. This question was used to develop a baseline on work experience, and provided the ability to compare and contrast teachers' opinions from varying degrees of experience. The next three survey questions were yes/no questions, which requested the teachers' beliefs of parental involvement in the classroom or school, which could lead to improved student behavior, increased motivation, or higher academic achievement.

The fifth question asked if teachers believed they lacked sufficient time, because of their regular duties, to contact parents and involve them in the classroom. The next two questions asked what the teacher believed was the single most important component of parental involvement, and if they believed some parents were afraid or intimidated to become involved in the school or classroom. Finally, the last three questions directly asked about parental involvement. The questions asked, on average, the number of times per year parents volunteered in the classroom or school, the number of times the teacher directly communicated with parents, and the number of times the teacher assigned homework that required some help or participation from the parent. The data from the surveys was placed in SPSS for analysis.

### *The Respondents*

The respondents were provided two weeks to complete the survey. There were a total of 14 surveys completed and returned. Most of the surveys were completed and returned within the first week. All of the respondents were teachers in a middle grades setting (grades 6-8). All of the teachers at Red Bank Middle School are labeled as highly qualified in the education field. The survey was not completed by anyone who was not a fulltime teacher at Red Bank Middle School. The survey s located in Appendix A.



## *Results*

Of the 14 respondents, three teachers possessed 0-5 years experience in the classroom, three teachers had 6-11 years teaching experience in a classroom, three teachers had 12-17 years of classroom experience, and five teachers possessed 18 or more years teaching experience. With regard to teachers' opinions of parental involvement in the classroom and school actually leading to better student behavior, higher academic achievement, and increasing motivation, all teachers were in agreement that parental involvement was a strong influencer. Of the 14 respondents, 100% indicated that parental involvement could lead to higher student motivation, higher student academic achievement, and better student behavior.

With regard to teachers possessing busy schedules and lacking sufficient time to contact and involve parents, 11 respondents or 78.6%, indicated that they did lack sufficient time to contact or involve parents in their classroom. Of the 11 teachers, four possessed 18 or more years of teaching experience. Additionally, three teachers possessed between 6-11 years teaching experience. In contrast, of the respondents, three indicated that they did have an adequate amount of time to contact and involve parents. Of the three respondents, one had 0-5 years experience, one had 12-17 years experience, and one had 18 or more years of teaching experience.

The results regarding the most important, single component of parental involvement were mixed. Three teachers (21.4%) indicated that volunteering in the classroom was the single most important component of parental involvement. Two of these teachers had 0-5 years of teaching experience, while the other respondent had 12-17 years of experience. Meanwhile, three teachers believed that assisting with, and ensuring the child completes homework, is the most important component of parental involvement. Two of these teachers had 18 or more years of teaching experience. Seven, or 50%, of the respondents, indicated that supporting the teacher in matters of

discipline was the most important component of parental involvement. Of these seven teachers, three had 6-11 years of experience and two had 18 or more years of teaching experience. Finally, only one teacher (7.1%) indicated that attending parent—teacher conferences was the most important component. This teacher had 18 or more years of teaching experience (see Figures 1 and 2).

Of the 14 respondents, 13, or 92.9%, indicated that they believed some parents were intimidated to become involved in the school or classroom. Meanwhile, just one teacher believed that parents were not intimidated at all. This teacher had between 6-11 years of teaching experience. When asked the number of times parents volunteer in the classroom, the majority of teachers, nine or 64.3%, responded with never. Five teachers indicated that parents volunteer in their classroom 1-3 times per year. No teachers responded with 4-6 times per year or 7 or more times per year. Fifty percent of the respondents that indicated that parents never volunteer in their classroom had either 0-5 years experience or 18 or more years of teaching experience.

**Most important single component of parental involvement**

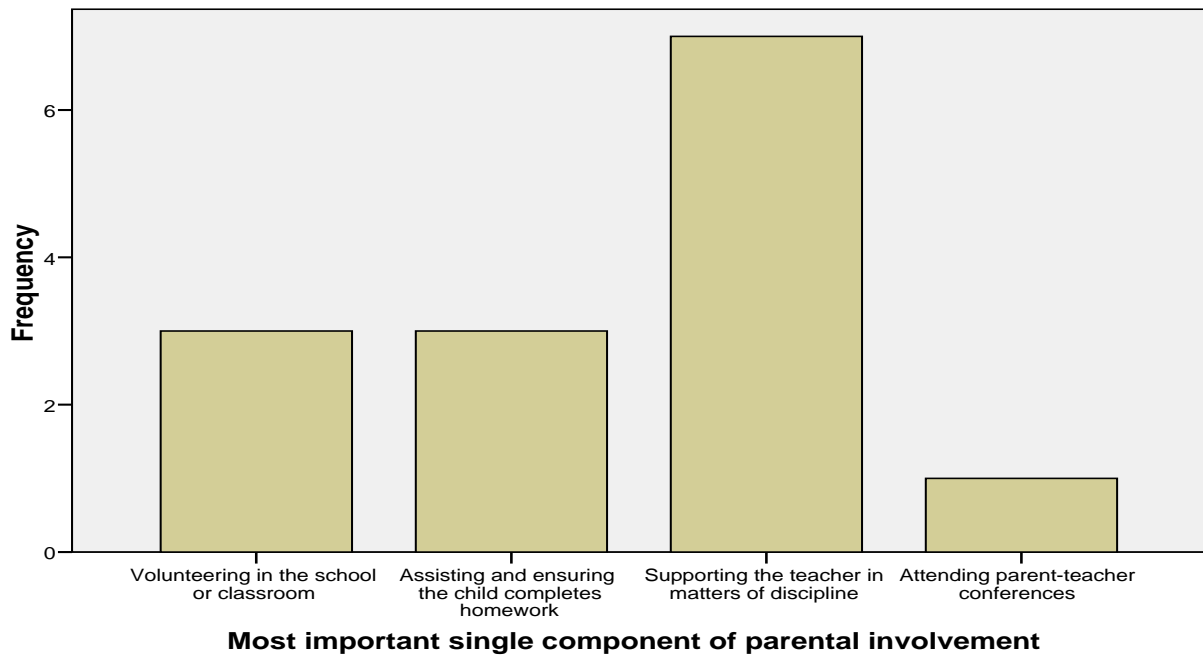
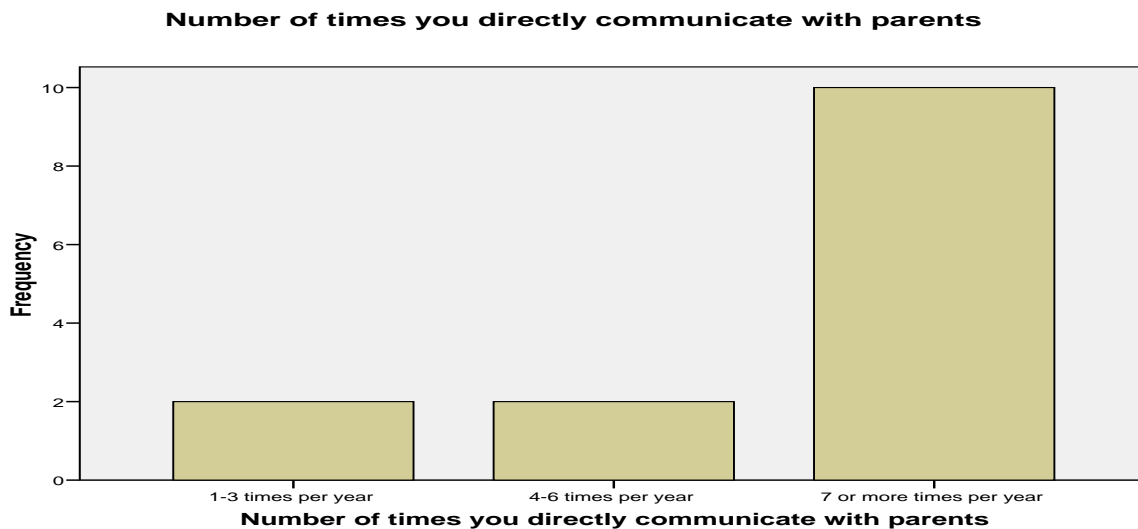


Figure 1. Teachers' opinions as to the most important single component of parental involvement.

		Most important single component of parental involvement				Total
		Volunteering in the school or classroom	Assisting and ensuring the child completes homework	Supporting the teacher in matters of discipline	Attending parent-teacher conferences	
Number of years teaching in a classroom	0-5 years	2	0	1	0	3
	6-11 years	0	0	3	0	3
	12-17 years	1	1	1	0	3
	18 or more years	0	2	2	1	5
Total		3	3	7	1	14

Figure 2. Most important component of parental involvement by number of years teaching.

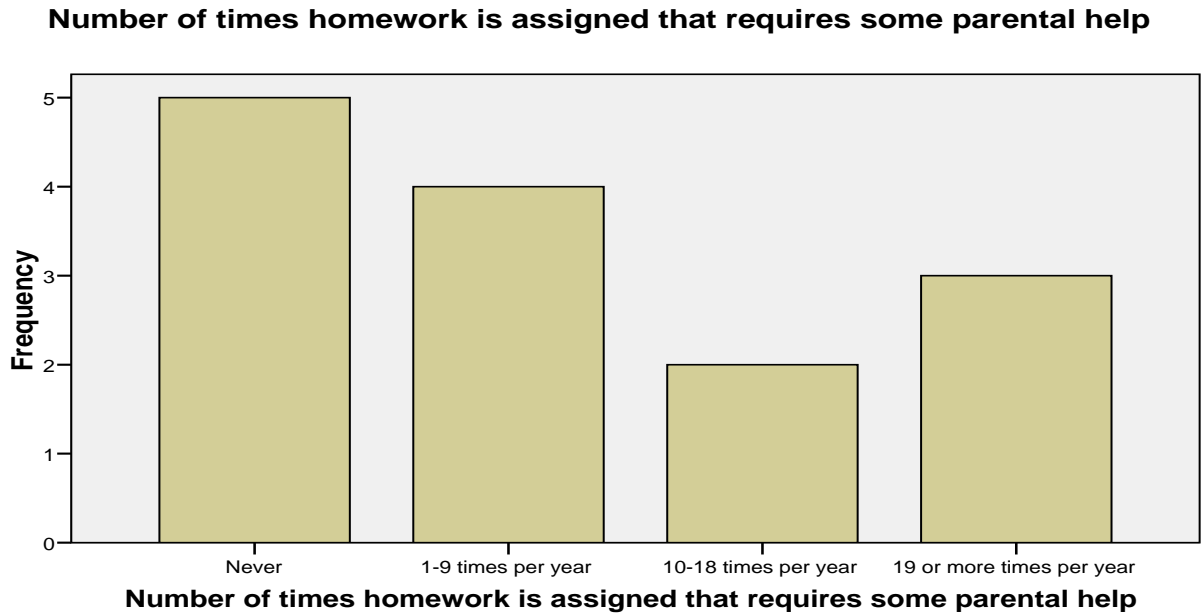
When asked the number of times he or she directly communicated with parents, the results were mixed. Two teachers (14.3%) indicated that they communicated with parents 1-3 times per year. Also, two teachers indicated that they directly communicated with parents 4-6 times per year. Finally, 10 teachers, or 71.4% of the respondents indicated that they communicated with parents 7 or more times per year (see Figure 3). Additionally, none of the respondents indicated that they never directly communicated with parents, on a yearly basis. The teachers that indicated they communicated with parents the most were teachers with 12 or more years experience teaching.



*Figure 3.* Number of times teachers directly communicate with parents during a school year.

The last question on the survey asked the number of times homework was assigned that required some parental help. Five teachers (35.7%) indicated that they never assigned homework that required the help of a parent. Four teachers (28.6%) responded that they assigned homework 1-9 times per year that would require some parental help. Only two teachers (14.3%) responded that homework was assigned 10-18 times per year that required collaboration between the parent and child. Three teachers (21.4%) assigned homework 19 or more times per year for the parent

and child to complete together (see Figure 4). The only notable correlation between years of teaching experience and the assigning of homework that required some parental help was that teachers with 0-5 years experience never assigned homework that required the help of a parent (see Figure 5).



*Figure 4.* The number of times homework is intentionally assigned by teachers that requires some parental help.

		Number of times homework is assigned that requires some parental help				Total
		Never	1-9 times per year	10-18 times per year	19 or more times per year	
Number of years teaching in a classroom	0-5 years	3	0	0	0	3
	6-11 years	1	1	0	1	3
	12-17 years	0	2	1	0	3
	18 or more years	1	1	1	2	5
Total		5	4	2	3	14

Figure 5. Number of times assigning homework for the parent and child to complete together, based on years teaching.

## Conclusions and Recommendations

### *Conclusions*

As the data indicated, 11 of the 14 teachers had 6 or more years experience teaching in a classroom. Therefore, the majority of the sample included teachers with a significant amount of experience dealing with students, parents, and daily office duties and procedures. When comparing teacher responses, all teachers stated that parental involvement in the classroom or school could lead to higher student academic achievement, better behavior, and increased student motivation, regardless of the amount of teaching experience. However, many of these teachers believed they lacked sufficient time to contact or involve parents in the classroom. This is an obvious hindrance when trying to improve parent—teacher relations, as well as benefit students academically, behaviorally, or motivationally. It is also interesting that 64.3% of the respondents indicated that parents never volunteered in their classroom, but these same individuals believed that parents volunteering could benefit the child’s education.

When analyzing what teachers believed was the most important component of parental involvement, a majority of the respondents indicated that supporting the teacher in matters of

discipline was most vital. This belief may change, depending on the type of school at which one is teaching and/or the number of years of experience. Many of the teachers indicated that they communicated with parents 7 or more times per year. This figure could help parents become less intimidated to become involved in the classroom or school, (92.9% of the respondents believed that parents are intimidated). Better and increased communication will, likely, benefit all parties involved. Finally, nine of the teachers surveyed assigned some homework throughout the year that required some parental involvement. This type of homework could, possibly, build connections and strengthen bonds between the teachers, students, and parents.

When observed in its entirety, much of the data collected is in accord with previous research. Research indicates that parental involvement can benefit the child significantly, which is a held belief among teachers at the school. Additionally, many teachers, as in the Deplanty et al. (2007) study, indicated they lacked sufficient time to involve parents. Additionally, Dunlap and Alva (1999) and Freeman and Karr-Kidwell (1998) found that parental involvement was viewed as either supporting the teacher in matters of discipline or assigning homework for the child and parent to complete together, which were two major components identified by teachers at the school, with regard to parental involvement.

Overall, the results were similar to past findings when teachers were interviewed or surveyed. While many teachers support parental involvement, the view of what constitutes parental involvement varies. However, it does appear that teachers are in agreement that they do lack time to involve parents. Also, teachers do believe parental involvement can benefit students in academics, behavior, and motivation. Teachers also believe that some parents are intimidated to become involved. Neither the lack of time nor the intimidation by parents can be beneficial to

the child's education, especially if parental volunteering is as beneficial as results show and teachers believe.

### *Recommendations*

Perhaps, for future studies, results of public schools could be compared to that of private or magnet schools. It would be interesting to see if teachers still held the belief that supporting the teacher in matters of discipline is one of the most important forms of parental involvement. Additionally, since many magnet and/or private schools require parental involvement, it would be beneficial to see the number of times parents volunteer in the classroom or school as compared to that of a public middle school. Also, in future studies one could inquire further about the possible time limitations placed on teachers that restrict or limit their opportunities to involve parents.

Furthermore, one could observe the number of open houses offered by schools in a select area, members of PTA's, and socioeconomic statuses. All of these variables could be compared and contrasted to develop a deeper understanding of the motivational or inhibiting factors associated with the parent—teacher relationship and involvement in the school. For a more longitudinal study, one could observe the emphasis placed on parental involvement in college level courses for future teachers, and compare that with the number of times parents volunteer in their classrooms. While the consensus is that parental involvement does benefit students, there is a lack of strategies for involvement at many schools. There also needs to be an overwhelming desire and mandate to involve parents in their child's education, and encouragement for them to take an active role. This could, seemingly, benefit all parties involved, as indicated by teachers, for higher student academic achievement, increased motivation, and better behavior in the classroom and school.



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## Appendix A

### Faculty Survey

- 1.) How many years have you been teaching in a classroom?  
A.) 0-5 years B.) 6-11 years C.) 12-17 years D.) 18 or more years
  
- 2.) Do you believe that parental involvement in the classroom or school leads to better student behavior?  
A.) Yes B.) No
  
- 3.) Do you believe that parental involvement in the classroom or school leads to higher student motivation in academic areas?  
A.) Yes B.) No
  
- 4.) Do you believe that parental involvement in the classroom or school leads to higher student academic achievement?  
A.) Yes B.) No
  
- 5.) Do you believe you lack a sufficient amount of time to contact parents and involve them in the classroom or school?  
A.) Yes B.) No
  
- 6.) What single component of parental involvement do you believe is most important? (Circle only one.)  
A.) Volunteering in the school or classroom  
B.) Assisting and ensuring the child completes homework  
C.) Supporting the teacher in matters of discipline  
D.) Attending parent—teacher conferences

7.) Do you believe that some parents are intimidated or afraid to become involved in the school or classroom?

A.) Yes B.) No

8.) On average, how often do parents volunteer in your classroom?

A.) Never

B.) 1-3 times per year

C.) 4-6 times per year

D.) 7 or more times per year

9.) On average, how many times per year do you directly communicate with parents?

A.) Never

B.) 1-3 times per year

C.) 4-6 times per year

D.) 7 or more times per year

10.) On average, how often do you assign homework that requires some parental help?

A.) Never

B.) 1-9 times per year

C.) 10-18 times per year

D.) 19 or more times per year

Total Physical Response and Total Physical Response – Story

Effectiveness in Large and Small Classrooms

Nicholas Selbo

Education 590, Fall 2009

The University of Tennessee at Chattanooga

*The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 09-137.*

## Introduction and Background

Total Physical Response (TPR) is a foreign language teaching method designed by Dr. James Asher of San Jose University in 1977 (Asher, 1996). This teaching method looked at the way children learn their first language, and applied this same premise to the learning of a second language. Children listen to simple directions given by their parents, and perform those simple actions, later on, also, saying those words, and building larger, and gradually more complex, sentences.

Children are given exclusive attention by their parents, in terms of language learning. Parents talk to their children constantly, and the interaction is nearly one-on-one. TPR teaching methodology is generally thought of as working best with a small class size, but whether this is due to one-on-one attention, or discipline issues, is yet to be seen. Language institutes often limit the number of students per class to a very manageable six to eight, such as in the Center for Accelerated Language Acquisition (2006). In today's public education sector, this is an impossibility. In an average high school, foreign language class sizes range from 20 to the Tennessee legal limit of 35, according to the TSBA Legal References (n.d.). Using some styles of teaching, then, becomes difficult, due, mainly, to classroom management issues. TPR is highly interactive – having the teacher speak to each child, or small groups, means that some children will be left out, and may become behavior problems in the classroom.

It is with this problem in mind that the researcher proposes otherwise. Having taught using TPR and TPRS for 2 years, the researcher has noticed that the effectiveness of the method is not necessarily lost when using it with larger class sizes. The benefits of using TPR and TPRS with small classes are obvious and immediate, but this researcher proposes that TPR and TPRS are equally effective in large (26+ students) and small (15 students or less) class sizes.

## Review of Literature

TPR is based on three main assumptions. These assumptions, also being found in Dr. Asher's 5<sup>th</sup> Edition, are summarized below.

First, the same processes occur when a person learns their second language as when they learn their first language. This is based on listening being the primary factor in language learning. A child will follow directions before speaking, "Don't jump on the sofa," or "Put the spoon down." Children are able to perform tasks based on spoken directions, also hinting that there is an intimate relationship between physical motion and language. Eventually, a child will begin to produce these spoken sounds spontaneously, for example, children often begin with simple power words such as, "no" or "give me."

The second assumption is that students acquire language through motor/music/art skills, which are essentially right-brained (Iwata, 2005). This is the opposite of most left-brained language learning activities, such as learning grammar rules, memorizing vocabulary, and building sentences following models.

Third is the assumption that children learn best in low stress situations. Therefore, the teacher will try to create an environment where mistakes are acceptable, especially early in the learning process, and begin to correct more, as the student progresses.

TPR/TPRS has become a methodology which succeeds where other methods have failed, by constantly refreshing information, employing vocabulary usage methods, and engaging the student's mind, at every turn. While traditional methods often bore students, TPR/TPRS has been shown to be successful in varying classrooms (Cantoni, 1999). TPR/TPRS has proven highly effective across languages and cultures. English learners in Japan, studying college Spanish as their third language, showed a three- to four-fold increase in vocabulary comprehension, as

compared to their non-TPR/TPRS counterparts (Redfield, 1986). In another study, the researcher concluded that alternative methods applied more to the right brain, such as singing songs, and movement-oriented TPR are equally effective, but more effective than traditional methods, especially at the age of the subjects, which was kindergarten (Omari, 2001).

## Data Collection and Results

### *Data Collection*

#### *Methodology*

The researcher utilized three study groups. The first group was a class of 29 students enrolled in Chinese I at a Hamilton County high school. This first group was to be the Large Class, as, even with some absences or unexpected dismissals, this class would still qualify as a large class by the researcher's definition. The second study group was a small class learning Chinese, also for the first time, on Sunday's at a local college. A control group was drawn from another Chinese I class at the high school, which was moderate in size, with 21 students enrolled. The groups were then labeled: Large Class, Small Class, and Control Group. These groups were chosen for their accessibility to the researcher, as well as their motivation levels to learn the language. Per the researcher's experience, motivation is a strong indicator in foreign language learning success. Each group is made up of about 90 percent students who elected to study Mandarin Chinese. In the Small Group, there was one student whose parents were forcing him to learn Chinese. In the Large Group, there were three to four students who were bumped out of Spanish I class into Chinese I, due to over enrollment.

The researcher taught 30 minutes of TPR and TPRS two times to the Large Class and the Small Class before assessing each new set of vocabulary. There were three total sets of vocabulary with a total of 30 assessed vocabulary words, generally following the text *I Love*



*Learning Chinese* by Zhang Yuehua (2007). The Control group was taught the vocabulary using traditional methods for an equal amount of time.

The Large Group and Small Group were given their first quiz assessment after the second, 30- minute TPR-TPRS session, while vocabulary was still fresh. The Control Group given each quiz assessment immediately after the second covering of the material. This was repeated with each assessment.

This occurred for a total of 4 weeks. Each week concluded with a TPR/TPRS quiz, and the final week, week four, concluded with a TPR/TPRS test. The TPR/TPRS test was a summary of the previous 3 weeks of vocabulary and the sentence structures in which they were used (see Appendix A for assessment instruments). All groups were also formatively assessed during this time (see Appendix B for formative assessment field notes).

The three quizzes each had a matching section where the researcher pronounced each vocabulary word in the left column three times. The students then drew a line to the picture showing the meaning of that particular word. In the second section of the quizzes, the researcher read a story to the students which contained all of the vocabulary. The students were then to use their knowledge of the sentence structures, as they had heard them and used them during class, to decipher the meaning of the story. They then answered true and false statements about the story. In the week four test, the students had a similar matching section. There was also a story with true and false statements, which the researcher read to the students. The test also had a final section of four pictures showing a story. The students were to view the pictures and write their own story, using the vocabulary they learned. Sentence patterns, syntax, and meaning (more important in Mandarin Chinese and TPR) were graded, while correct spelling of Pinyin (Chinese Romanization) was not graded.

## Results

The assessments were gathered, graded, and averaged to obtain the data set displayed in

Figure 1.

	Small Class	Large Class	Control Group	Small/Large <i>t</i> - Test Results
Quiz 1 class average 13 possible pts	10.833	11.192	10.652	0.639
Quiz 2 class average 13 possible pts	12.111	12.333	11.421	0.573
Quiz 3 class average 14 possible pts	10.666	12.571	10.500	0.014
Test class average 18 possible pts	14.461	14.000	13.125	0.625
Group Total Averages	12.011	12.524	11.424	

Figure 1. Quiz and test data.

The researcher expected to find a near perfect match between the averages of the Large Class and the Small Class, with the possibility of the Small Class performing slightly better than the Large Class, but not showing any statistical significance. As the data shows, the Large Class

outperformed the Small Class on three out of the four assessments, while the Small Class had the highest test average.

It is also interesting to note that the classes receiving TPR/TPRS teaching scored better than the Control Group on each assessment.

In comparing the results of the original data sets using the  $t$  test per the standard of deviation, it was found that, for a 95% confidence level, the scores must fall above 2.447 (Harris, 2003). In every case, the scores fell below 1.0. The results are considered to be the same at the listed confidence intervals because  $t$  table value 2.447 is greater than  $t$  calculated. The assessments for the Small Group and Large Group, when compared using the  $t$  test, were as follows: Quiz 1: 0.639, Quiz 2: 0.573, Quiz 3: 0.014, Test: 0.625. Each of these is well below the  $t$  table values, and, therefore, is statistically the same.

## Conclusions and Recommendations

### *Conclusions*

The hypothesis was stated as total physical response and total physical response story being equally effective in large (26+ students) and small (15 students or less) class sizes. The results of the assessments, when compared statistically using the  $t$  test, show the Small Group and Large Group performed similarly. If the null hypothesis was stated as TPR/TPRS as a teaching methodology works more effectively with small classes than large classes, then the results would have to state this as entirely wrong. Simply reviewing the averages of the classes' assessments shows how closely they performed after eight, half-hour sessions of TPR/TPRS each. As the data above is presented, there is a strong case for applying TPR/TPRS to any class size.

There were a large number of variables present, which may have skewed results, and the researcher would like to make clear that the collected data might have been influenced by outside factors out of the control of the researcher, such as students' personal lives prior to classes. With a small sample size, even a single student performing below their level, due to a fight, family problem, or sickness, could affect the study results.

This researcher would also like to point out that classes were taught as similarly as possible. That being said, throughout the day, teaching does become more refined. The Large Class was a fourth block class, after the teacher had taught the material two previous times that day. Students are also more awake and aware at this time of day (12:45 p.m. to 2:15 p.m.). The Control Group was a second block class. The Small Class was taught on the Sunday following the week of a particular assessment, from 2:00 p.m. to 4:00 p.m. The first block class data was not utilized for this study, due to the early hour and its population being unsuitably small.

### *Recommendations*

While the data collected in this study shows there to be no significant difference in student achievement when taught by TPR/TPRS methods in small classes versus large classes, it should also be noted that the study size was small, and a larger study group would provide more reliable data.

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Appendix A  
Assessment Instruments

In order as they appear below:

TPR/TPRS Quiz 1 – 1 page

TPR/TPRS Quiz 2 – 1 page

TPR/TPRS Quiz 3 – 1 page

TPR/TPRS Test – 2 pages

名字\_\_\_\_\_

TPR/TPRS Quiz 1

Match the pinyin & characters with the picture with a line.

zhàn qǐ lái  
站起来

dūn zuò  
蹲坐

zǒu  
走

zuò xià  
坐下

kuài kuài de zǒu  
快快地走

mǎn mǎn de zǒu  
慢慢地走

zhǐ yí zhǐ  
指一指

shuō  
说



Tell whether each statement is True or False based on the story your teacher reads to you.

1. 女孩走到男孩那里。 \_\_\_\_\_
2. 男孩叫 Joey. \_\_\_\_\_
3. 女孩叫 Elizabeth. \_\_\_\_\_
4. 女孩蹲坐说, “你好” \_\_\_\_\_
5. 男孩站起来说, “再见” \_\_\_\_\_

名字 \_\_\_\_\_

TPR/TPRS Quiz 2

Match the pinyin & characters with the picture with a line.

pèngpèng  
碰碰

zhuǎn yí zhuǎn  
转一转

méiyǒu  
没有

tíng  
停

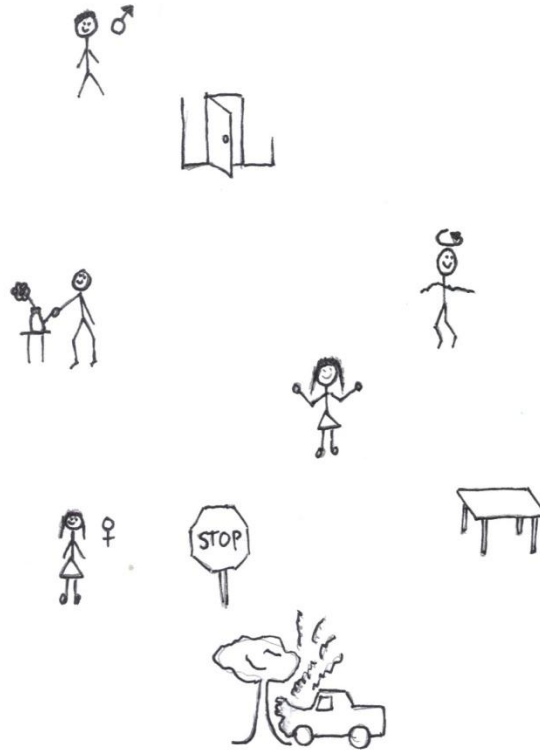
mén  
门

zhuō z i  
桌子

nánhái  
男孩

nǚhái  
女孩

zhuàng  
撞



Tell whether each statement is True or False based on the story your teacher reads to you.

1. 一个男孩走到门。 \_\_\_\_\_
2. 男孩没有停。 \_\_\_\_\_
3. 女孩的鼻子撞倒了门。 \_\_\_\_\_
4. 男孩哭了。 \_\_\_\_\_



名字\_\_\_\_\_

TPR/TPRS Quiz 3

Match the pinyin & characters with the picture with a line.

shū  
书

gěi  
给

kū le  
哭了

gāoxìng  
高兴

yǐ zi  
椅子

xiě zì  
写字

kàn shū  
看书

xièxie  
谢谢

bú kè qì  
不客气



Tell whether each statement is True or False based on the story your teacher reads to you.

1. 一个男孩儿坐在地上看书。 \_\_\_\_\_
2. 一个女孩儿坐在椅子上写字。 \_\_\_\_\_
3. 男孩儿跑到女孩儿那里。 \_\_\_\_\_
4. 男孩儿给女孩儿书。 \_\_\_\_\_
5. 女孩儿不高兴。 \_\_\_\_\_

名字\_\_\_\_\_

TPR/TPRS UNIT Test

Match the pinyin & characters with the picture with a line.

zhǐ yì zhǐ  
指一指

shuō  
说

zhàn qǐ lái  
站起来

nǚ hái  
女孩

tíng  
停

méi yǒu  
没有

kū le  
哭了

gěi  
给



Tell whether each statement is True or False based on the story your teacher reads to you.

一个男孩儿蹲坐在椅子上看书。一个女孩儿坐下在地上写字。男孩儿站起来跑到女孩儿那里。男孩儿说：“你好，我给你书。”女孩儿很高兴说：“谢谢。”

1. 一个男孩儿坐在地上。\_\_\_\_\_
2. 一个女孩儿坐在地上。\_\_\_\_\_
3. 男孩儿站起来慢慢地走到女孩儿。\_\_\_\_\_
4. 男孩儿给女孩儿书。\_\_\_\_\_
5. 女孩儿很高兴。\_\_\_\_\_

Based on the pictures, write a story telling what is happening. Write your story in phonetic sounds based on the pinyin you have learned.



Appendix B  
Researcher Formative Assessment Field Notes

10-4-09 College – a full class. Students enjoyed moving about. Some asked if we can continue this. All but one student remained on task.

10-6-09 Chinese I classes: Students seemed interested in the activity level of the TPR method, they perked and most tried to follow along with the actions. Teacher sought at least 80% understanding before moving on to the next TPR method set. Students showed greatest mastery in the listening/card flash game. The competitive pointing portion was interesting. Students tried hard to beat each other, but there were many mistakes.

10-11-09 College – Some absences today. Class went smoothly as did assessment.

10-13-09 Chinese I Classes: Students showed interest in story, but could not get 80% comprehension. Guessing comprehension was closer to 60%. Some students don't pay attention though.

10-18-09 College – a full class today. Some Parents come to listen to class as well.

10-20-09 Chinese I Classes: The control group had a large number of absences of the students who typically score lower.

10-25-09 College - Some absences. Students are very active. Could be due to the nice weather. One of the best students in the class was absent today.

10-26-09 Chinese I Classes: students seem bored with this style of assessment.... Monday morning? Again they found the story section very difficult, but seemed most interested in it. There was much complaining by some at having to write their own story. Many others cheered at the opportunity to write it in their own invented Chinese Romanization.