Teaching About Hydraulic Fracturing in Ohio High School American Government Classrooms

A dissertation presented to

the faculty of

The Patton College of Education of Ohio University

In partial fulfillment

of the requirements for the degree

Doctor of Philosophy

Matthew S. Hollstein

May 2015

© 2015 Matthew S. Hollstein. All Rights Reserved.
This dissertation titled
Teaching About Hydraulic Fracturing in Ohio High School American Government Classrooms

by
MATTHEW S. HOLLSTEIN

has been approved for
the Department of Teacher Education
and The Patton College of Education by

Frans H. Doppen
Professor of Teacher Education

Renée A. Middleton
Dean, The Patton College of Education
Abstract

HOLLSTEIN, MATTHEW S., Ph.D., May 2015, Curriculum and Instruction, Social Studies Education

Teaching About Hydraulic Fracturing in Ohio High School American Government Classrooms

Director of Dissertation: Frans H. Doppen

Hydraulic fracturing, commonly referred to as fracking, is a controversial environmental issue in Ohio and many other states. Often, fracking and other environmental issues are regarded as topics for the sciences, neglecting the social aspects that should be addressed through social studies. The purpose of this mixed-methods exploratory study was to determine the status and barriers to teaching about fracking in Ohio high school American Government classes. An online survey was used to collect data from 62 Ohio high school teachers across three typologies: rural, suburban, and urban. This research included teachers’ perspectives, personal beliefs, and professional practices related to fracking, civics education, controversial issues, environmental education, and current events. Previous research has examined these subject areas. Currently, however, there have been no studies about teaching about fracking in the social studies.

Four major findings from this study address the status and barriers to teaching about fracking in Ohio. First, there were notable variances by typology when examining whether or not teachers taught about fracking, were concerned about it, and whether they believed fracking to be controversial. Second, respondents teaching in communities with
the greatest prevalence of fracking taught about it the most, even though they rated themselves as having the least amount of knowledge of and concern about the topic. Meanwhile, teachers with no to little prevalence of hydraulic fracking in their communities had the highest level concern and knowledge but taught about it the least. Third, across all typologies, students’ inability to navigate controversial issues was the most frequently cited barrier to teaching about fracking. Finally, civic engagement rather than civic action was primarily taught as reflected in the types of required civic activities. Being personally responsible and participatory was the predominant perception of good citizenship while being social-justice oriented was the least. The findings of this research indicate teachers had limited views of citizenship.

These findings suggest that better preparation of current and future teachers is required to address controversial environmental issues such as fracking. In order to achieve this, teachers must have opportunities to analyze and understand these issues, before they are asked to help students do the same. The data suggest that teachers taught civic engagement but did not teach civic action. Preservice and inservice teachers need to be given the opportunity to foster social-justice oriented citizenship while learning best practices for engaging in and teaching about controversial issues. Most important, to change the perception of and expectation about what citizenship encompasses, national and state social studies standards must be expanded to include environmental awareness and environmentally responsible behavior.
Dedication

To: my family: Jennifer, Grace, and Vivian, who taught me the true meaning of commitment and that we are all teachers. My parents, Robert and Alice, who taught me that we get just one shot at this life, so make the best of what you are given.
Acknowledgments

There have been many individuals who have given assistance, guidance, and encouragement throughout this process. I would like to thank those teachers who participated in this study and the members of my dissertation committee, Drs. Nancy Patterson, Geoffrey Buckley, Ginger Weade, and Frans Doppen. I would like to give very special thanks to Dr. Frans Doppen for his countless edits, guidance, and mentoring which have helped me to grow as an educator and researcher. I cannot express through words my sincere appreciation for the dedication Dr. Doppen has to his students and their success. I would also like to thank my colleagues at Columbus Alternative High School who have served as sounding boards and editors throughout this process. I am also thankful to my friends and colleagues, Jing An, Marc Behrendt, Jeff Hunter, Tony Xenos, and Bethany Vosburg-Bluem, for providing advice and support while they completed their own programs.

Lastly, I am most thankful to my wife Jennifer Cherry-Hollstein, and our children Grace and Vivian, who have supported me and kept me moving forward throughout this entire process.
Table of Contents

Abstract ............................................................................................................................................... 3
Dedication ......................................................................................................................................... 5
Acknowledgments ........................................................................................................................... 6
List of Tables ...................................................................................................................................... 11
List of Figures .................................................................................................................................... 13
Chapter 1: Introduction .................................................................................................................. 14
  Background ..................................................................................................................................... 14
  Controversial Environmental Issues in the Social Studies ......................................................... 19
Statement of the Problem ............................................................................................................... 21
Statement of Purpose .................................................................................................................... 22
Research Questions ....................................................................................................................... 23
Methodology .................................................................................................................................. 24
Delimitations ................................................................................................................................... 26
Significance ..................................................................................................................................... 26
Limitations ...................................................................................................................................... 27
Chapter Summary ............................................................................................................................ 27
Chapter 2: Literature Review ......................................................................................................... 28
  Introduction ................................................................................................................................... 28
  Hydraulic Fracturing in Ohio ........................................................................................................ 29
Civics Education .............................................................................................................................. 33
  History of civics in the Social Studies. ......................................................................................... 33
  Curricular models in civics education ......................................................................................... 36
  Teacher beliefs about good citizenship ....................................................................................... 42
Environmental education .................................................................................................................. 44
  History of environmental education ........................................................................................... 44
  Framework for environmental education curriculum. ................................................................. 48
  Environmental education in the social studies ............................................................................ 49
Civic environmentalism ................................................................................................................... 52
Current Events ............................................................................................................ 126
How often teachers teach about current events.......................................................... 127
Current events instruction.......................................................................................... 127
Section summary......................................................................................................... 130
Chapter Summary ...................................................................................................... 131
Chapter 5: Conclusions ............................................................................................. 133
Summary....................................................................................................................... 133
Recommendations....................................................................................................... 137
Suggestions for Further Study .................................................................................... 140
List of References ...................................................................................................... 143
Appendix A: Qualtrics Survey................................................................................... 158
Appendix B: Email Recruitment Tool and Initial Contact ...................................... 164
Appendix C: Informed Consent ................................................................................ 165
List of Tables

Table 3.1: Ohio Department of Education Typologies ...................................................84
Table 3.2: Participants by Typology .................................................................85
Table 4.1: Gender Distribution by Typology ..........................................................94
Table 4.2: Ethnicity of Participants .................................................................95
Table 4.3: Teaching Experience .................................................................96
Table 4.4: Level of Concern about Fracking .....................................................99
Table 4.5: Knowledge about Fracking ..........................................................101
Table 4.6: Teacher-Reported Fracking Operations .......................................102
Table 4.7: Professional Development .............................................................103
Table 4.8: Fracking in the Social Studies .........................................................104
Table 4.9: Teachers’ Perspectives about Fracking as a Controversial Issue ....104
Table 4.10: Teaching about Fracking .............................................................105
Table 4.11: Barriers to Teaching about Fracking ............................................106
Table 4.12: Comfort Level with Teaching about Fracking .............................107
Table 4.13: Purpose of the Social Studies ......................................................110
Table 4.14: Purpose of Civics Education .........................................................111
Table 4.15: Characteristic Most Vital to Good Citizenship .............................112
Table 4.16: Civic Action in the Classroom ......................................................113
Table 4.17: What Makes an Issue Controversial ..........................................116
Table 4.18: Do Teachers Address Controversial Issues ...............................117
Table 4.19: Frequency of Teaching about Controversial Issues

Table 4.20: Barriers to Teaching about Controversial Issues

Table 4.21: Approaches to Addressing Controversial Issues in the Classroom

Table 4.22: Value of Teaching about Environmental Events in the Social Studies

Table 4.23: Level of Environmental Concern

Table 4.24: Teaching about Environmental Issues

Table 4.25: Controversial Environmental Issues in the Social Studies

Table 4.26: Teaching about Current Issues

Table 4.27: Current Events in the Social Studies

Table 4.28: Teaching about Current Environmental Events

Table 4.29: Teachers’ Methods for Addressing Current Events
List of Figures

Page

Figure 2.1: Marcellus and Utica Shale Formations in Ohio ...........................................31

Figure 4.1: Geographic Distribution of Participants..........................................................97
Chapter 1: Introduction

Background

Civics education has been at the core of the social studies since its early existence. Formalized as a discipline in the early 20th century, the teaching methodology and content taught within the social studies has evolved in the United States as evidenced by the American Historical Association’s first report authored by the Committee of Seven (1899) to the most recent publication of the C3 (College, Career, and Civic Life) framework developed by the National Council for the Social Studies (NCSS) (2013). Even so, a constant of this discipline has always been the importance of civics education (Evans, 2004; Ross, 2000). Additionally, the primary responsibilities of the social studies are founded on civics education (Beard, 1929; Metcalf, 1989; Michener, 1939; NCSS, 2013).

Civics education and citizenship education have become synonymous given the goals of each (Center for Information and Research on Civic Learning and Engagement [CIRCLE], 2003; Patterson et al., 2012). Both civics education and citizenship education overlap in their stated goals and purpose (Patterson et al., 2012). In each case the purpose is to foster the development of engaged, informed, and active citizens (Chinn & Barber, 2010). Civics education has evolved to include the expectation that students will be active, engaged, and participatory in their civic lives. According to the National Council for the Social Studies’ (2013) C3 framework, civics is the study of how people participate in government, participate in society, and take informed actions to solve social issues. In this vein, civics education and citizenship education may be viewed in the following
ways. Citizenship education pertains to understanding the content, structure, and materials of citizenship while civics education focuses on using this understanding and putting it into action (Chinn & Barber, 2010; Patterson, et al., 2012). For the purpose of this study civics education serves as the primary term while citizenship education is considered as nested within civics education.

Civics education aims to foster the development of knowledgeable, engaged, and active citizens who will view their roles, beliefs, and actions as being essential to their democracy (Chinn & Barber, 2010; NCSS, 2010). The importance of formalizing the development of citizenship originates from the social studies’ goal to foster contemporary citizens, who understand that the responsibilities and the concept of modern citizenship have both changed over time (Committee of Seven, 1899; Evans, 2004; Hahn, 1985; Hanna, 1963). Today’s Common Core curriculum and the development of the C3 framework represent the most recent articulation of civics education and the movement towards broadening the notion of citizenship (NCSS, 2013). Consequently, “good” citizenship now also must include an awareness of and social action towards environmental issues.

Environmental education aims to educate students about the environment and any related issues that impact the environment (North American Association for Environmental Education, 2011). E.O. Wilson (2006) argues that it is impossible to separate the individual and the environment. Bill McKibben (2011) argues that the price of inaction concerning environmental issues amounts to a global disaster. Currently, a number of issues are having a dramatic impact on the environment and its inhabitants. As
new environmental issues continue to emerge and evolve, environmental education seeks to engage students in these issues by informing them about their impact on our planet (NAAEE, 2011; Tzou & Bell, 2012).

The relationship between the environment and human beings is complex. There is a great deal of current debate surrounding environmental issues and their causes (McKibben, 2011). Although a genuine concern for the environment has existed informally in societies for centuries only recently has it been formalized into a field of study (Wilson, 2006). The social studies goal of creating knowledgeable, engaged, and active citizens cannot exclude the environment (Houser, 2009). Every generation in the last 100 plus years that has embraced the social studies model has faced unique controversies and environmental issues. Embracing controversy requires an understanding of the individual, the issue, and how the two are interrelated, which speaks directly to the interrelated existence of humans and the environment.

While the human experience dictates the nature of citizenship there are numerous factors that influence citizens’ abilities to be knowledgeable, engaged, and active in their roles as contemporary citizens (Freire, 1970; Levinson, 2012; NCSS, 2010). An important component of effective civics education is awareness and understanding of economic factors (Levinson, 2012; McLaren & Kincheloe, 2007). Socioeconomic status and the economic conditions of their school constitute a significant factor in determining students’ views of the world (Levinson, 2012). Access to resources directly impacts citizens’ perceptions of their environment, social issues, and events (Levinson, 2012). The level of access an individual has to education and income directly impacts one’s
ability to be informed and participatory citizens (Freire, 1970; Levinson, 2012; McLaren & Kincheloe, 2007). However, the social studies can serve students by helping them to overcome these challenges and become engaged citizens who view environmentalism as a civic responsibility, which can foster a sense of civic environmentalism.

The challenges facing 21st century learners are very different from and more complex than the challenges faced by past generations. Today social and environmental issues have become more difficult to navigate given the volume of readily available information and the speed with which information can be shared. In addition, the reliability of information and sources can vary widely. The evolution of modern citizenship is influenced by the rapid advancements in technology, which has augmented how and when data can be accessed and consumed. An integral component of citizenship is being informed and as the access of information continues to evolve so will the responsibility of citizens to evaluate the veracity of information. These developments directly impact how students view controversial social and environmental issues.

Controversy has been a component of the social studies since its very beginning. However, the number and nature of issues that are deemed controversial have changed through time (Levinson & Brantmeier, 2006). According to Thorton (1991), the content taught in the social studies classroom is typically determined by the teacher, who acts as gatekeeper of both the formal and hidden curriculum (Journell, 2011; McLaren & Kincheloe, 2007; Thorton, 1991). However, regardless of the curricular model or current issues, it is important to recognize the role of the social studies teacher in determining not only what is taught but also how it is taught (Journell, 2011).
Numerous controversial issues have been examined and taught through the social studies (Bagenstos, 1979; Evans, 2006). Arguments about the validity of discussing controversial issues have swirled around for much of the history of the social studies (Journell, 2011; Thornton, 1991). Although controversy can range across a wide variety of disciplines, it has always been pertinent to the social studies (Hess, 2002). The use of controversial issues has proven to be a fruitful and worthwhile endeavor for both social studies teachers and students, as it allows for the critical examination of contemporary issues through the lens of the various social studies disciplines (Hess, 2004; Misco & Patterson, 2007). Examining controversial environmental issues in the social studies can serve as a model for good citizenship by raising awareness and contextualizing knowledge of and action on environmental issues as civically responsible behavior. Good citizenship may be characterized as personally responsible, participatory, and justice oriented (Patterson et al., 2012; Westheimer & Kahne, 2004).

The process of examining controversial issues in the social studies begins with the teacher (Camicia, 2008). In order to fully understand the process, a model that evaluates both the teacher’s dispositions and actions is essential (Camicia, 2008). Diana Hess (2005) and Thomas Kelly (1986) have each developed a model that is most appropriate. Hess’ (2005) model delineates four typologies to assess teachers’ dispositions related to controversy in the classroom: denial, privilege, avoidance, and balance. Denial of controversy simply denotes that the teacher denies an issue’s controversial nature. Privilege describes a state in which the teacher acknowledges the issue as controversial but privileges one position over another. Avoidance means that the teacher recognizes an
issue’s controversial nature but avoids it altogether, while balance describes a state in which the teacher recognizes the controversial nature of an issue but attempts to present multiple sides as fairly as possible. Similar to Hess’ model, Kelly (1986) focuses on teachers’ perspectives and similarly contains four components: exclusive neutrality, exclusive partiality, neutral impartiality, and committed impartiality. Exclusive neutrality requires that a teacher not present any topics deemed controversial by the community at large. Exclusive partiality introduces a perceived correct and preferable position on a topic and either consciously or unconsciously neglects to present competing opinions. Teachers who subscribe to neutral impartiality advocate that students actively engage in the discussion and debate of controversial issues. Committed impartiality refers to teachers who reveal their own position on controversial issues yet present competing perspectives. This study will present a model that integrates both Hess’ (2005) and Kelly’s (1986) model in order to offer a structure that seeks to yield a deeper understanding of controversial environmental issues in the social studies classroom.

**Controversial Environmental Issues in the Social Studies**

In recent decades the environmental movement has started to have a deeper impact on local, regional, and global communities (Tzou & Bell, 2012). Presently, not only in the United States but around the world as well, issues of sustainable energy use, development, and freshwater are just a few of the many issues that face humanity (Bromley et al., 2011). It is of paramount importance that students be aware of relevant and pressing contemporary and controversial environmental issues (Evans, 2004; Hess, 2005).
In recent decades, environmental education has emerged as a field of study aimed at educating students about how to address contemporary environmental issues (Ceaser, 2012; Kumler, 2011; NAAEE, 2011). However, because environmental issues affect all inhabitants on our planet it is vital to appropriately mitigate their potentially negative impact (Ceaser, 2012; Tzou & Bell, 2012). Furthermore, environmental education and social studies education share the same goal of developing engaged citizens (NAAEE, 2011; NCSS 2013). Traditionally, environmental issues have been in the domain of the sciences (Ogunyemi & Ifegbesan, 2011). However, it is important to recognize that the scientific and social components of environmental issues are inseparable (McKibben; 2011; Wilson, 2006). Often, environmental issues are deemed controversial because numerous parties have invested and potentially opposite interests in their outcome. Only recently has the social studies begun to address issues of sustainability (NCSS, 2013). However, to effect lasting curricular change, social studies teachers and teacher educators must adopt the position that civics education includes environmental awareness and responsibility as a requirement of good citizenship (Kumler, 2011; NCSS, 2013). To arrive at a confluence of civics education and environmental education, there must first be an understanding of the nature of controversy and its implications (Tzou & Bell, 2012).

At present, in the state of Ohio fracking is being heralded as a solution to both the economic and environmental issues that not only face the state but the nation as well (Gjelton, 2012). Some view fracking as a cleaner and greener alternative to other fossil fuels, most notably coal (Williams, 2012). Others view fracking as controversial because
they believe the process of extracting natural gas from deep shale formations is detrimental to the environment and has a negative social impact (Belcher & Resnikoff, 2013).

In Ohio, much of the current fracking activity is centered in the eastern and southeastern region of the state (Ohio Department of Natural Resources, 2013). In parts of southeast Ohio where there has been extensive and extreme poverty throughout much of the 20th century, a new social and economic dynamic has emerged centered on social and economic conversations seeking to balance economic benefits and environmental degradation (Belcher & Resnikoff, 2013; Eller, 2008). Balancing the environmental, social, and economic aspects of this complex and often uncomfortable issue is controversial because students and citizens are required to consider multiple perspectives in order to determine what must be done.

**Statement of the Problem**

Ohio is characterized by several diverse geographic, social, and economic features that are found in no other place (Eller, 2008; Obermiller & Maloney, 2002). The correlation between Ohio and natural resources stretches far back into the state’s past. Historically, Ohio has been exposed to natural resource extraction by both internal and external players who have harvested the state’s resources, such as coal and timber, for financial gain at the economic and environmental expense of the region (Eller, 2008). Fracking constitutes a contemporary version of this legacy. It is a controversial, contemporary issue that has polarized the state and the nation. Significant tensions exist between those who argue that fracking is an unprecedented economic windfall and
national security issue while others view it as an environmental disaster with long-term consequences that will leave the state devastated, both economically and environmentally (Dolesh, 2011; Hatzenbuhler & Centner, 2012; Obama, 2013; Ohio Department of Natural Resources, 2011). A complement to fracking, the expansion of injection wells to dispose of fracking brine from neighboring states such as West Virginia and Pennsylvania has emerged as an additional controversial issue.

The C3 framework proposed by the National Council for the Social Studies (2013) has begun to address controversial environmental issues in Dimension Four which requires students to arrive at their own conclusions and carry their ideas into action. This study sought to assess the status of teaching about fracking in American Government classes and to determine what barriers might exist to teaching about fracking. In addition, this research is based on the notion of civic environmentalism, i.e. good citizenship includes an awareness of the social implications of environmental issues.

Statement of Purpose

The purpose of this research is to assess the status of teaching about fracking in American Government classes, and to determine what barriers existed that may prevent the teaching of environmental issues such as fracking. The decision to focus on the status of teaching about fracking was made because what is taught in a social studies classroom may be reflective of what social studies teachers believe to be important and because the controversial nature of fracking has a direct impact on how issues are taught in the classroom (Hess, 2002; 2005; Kelly, 1986; King, 2009; Misco & Patterson, 2007). Fracking is a pressing environmental issue that students should not only be aware of but
whose social implications they should understand as well. Hess (2002) has noted that, “social studies teachers have long been interested in the teaching of controversial public issues (CPI) because learning how to discuss divisive public topics prepares students for democratic citizenship” (pp. 11-12). An awareness of controversial environmental issues such as fracking allows students to analyze and understand the duties of an environmentally responsible citizen. Additionally, Mansbridge (1991) notes that discussing controversial issues helps students develop a deeper understanding of their own self-interests in relation to their own beliefs and local communities. Discussing controversial environmental issues also allows teachers and students to address the broad spectrum of social issues associated with fracking (Franco, Feodoroff, & Martinez, 2013; Gjelton, 2012; Lavelle, 2012; Williams, 2012). When social studies teachers fail to address controversial issues, such as fracking and its underlying causes, students may continue to frame such issues as non-controversial and marginalize their relevance. In this study, controversy serves as a term defined by the respective participants. This study used a combination of Hess’ (2005) model for assessing social studies teachers’ beliefs about the nature of controversial issues and how these beliefs impact instruction and Kelly’s (1986) model for understanding social studies teachers’ beliefs of controversy and how these beliefs play out in the classroom.

Research Questions

This dissertation seeks to answer two major research questions:

1. What is the status of teaching about fracking in American Government classes in Ohio?
2. What barriers exist that may prevent teaching about fracking in American Government classes in Ohio?

Methodology

This study was mixed method and used a survey as a means of data collection. The general population for this study constituted 9-12 grade social studies teachers of American Government. The rationale for targeting these teachers was two-fold. First, American Government is intended to teach students the necessary skills for good citizenship, and second, it serves as a transition from student to full citizenship. In order to meet these goals American Government is intended to be the culmination of the student citizenship experience, which allows them to examine topics for discussion under the guidance of a mentor. The New Ohio Academic Content Standards from ODE (2012) describe American Government as: “How the American people govern themselves at national, state and local levels of government is the basis for this course. Students can impact issues addressed by local governments through service learning and senior projects” (p. 7). In addition, the first two topics covered in the model syllabus from ODE (2012) are civic involvement and civic participation and skills. The theme of American Government and topics covered make it an ideal course for analyzing the status of teaching about an issue such as fracking.

This study was orientational as it examined data from a predetermined position of the researcher’s perspective on the topic (Patton, 2002). Given that the researcher already has a preconceived idea about the topic, reflexivity was used through journaling. However, this study focused on the teachers’ responses and the researcher’s thoughts and
beliefs did not interfere with the work conducted. Grounded theory was used to allow for and document any potential theories that may have emerged from the data (Patton, 2002).

Random sampling was used with the random number generator in Microsoft Excel. Purposeful sampling was used to select a population of American Government teachers across Ohio (Patton, 2002). The Ohio Department of Education’s (ODE) typology of school districts was used as a framework. ODE has categorized all school districts in the state into one of eight typologies: 1. Rural with High Student Poverty and Small Student Population, 2. Rural with Average Student Poverty and Very Small Student Population, 3. Small Town with Low Student Poverty and Small Student Population, 4. Small Town with High Student Poverty and Average Student Population Size, 5. Suburban with Low Student Poverty and Average Student Population Size, 6. Suburban with Very Low Student Poverty and Large Student Population, 7. Urban High Student Poverty and Average Student Population, and 8. Urban Very High Student Poverty and Very Large Student Population. However, due to the similarities that exist, three combined typologies were used: Rural (1-4), Suburban (5-6), and Urban (7-8). These three comprehensive typologies, served as a structure for this study and a means of stratification of the study’s participants. Random sampling was used until the required number of 50 teacher participants for each of the three typologies had been reached. I used non-representative sampling to ensure that I equally represented the three typology classifications in the state of Ohio, due to the distribution of typologies not being representative of the population concentration within the state. Surveys were
administered using Qualtrics data collection software. After completing data collection through a statewide survey, the data were analyzed for common themes.

**Delimitations**

This study was delimited to teachers of American Government, a course typically taught during the junior or senior year of high school. This study also excluded student perspectives as its focus was on social studies teachers’ perspectives about hydraulic fracturing. Data collection was limited to a statewide online survey due to the size and scope of the population studied, specifically the decision to examine the entire state of Ohio, as well as the limited time and resources that were available to the researcher.

Some teachers may identify controversy in different ways. They also may not fully report their beliefs and understandings. Additionally, some school districts may have an administrative leadership that imposed limits on its teachers’ academic freedom and objected to teachers’ participating in this study. Finally, the timing of the study during the summer months of June, July, and August of the academic year may have impacted data collection, as some teachers may not have been in the classrooms during this time.

**Significance**

This research contributes new knowledge about civics education, current events and controversial environmental issues in the social studies (Hess, 2002; Kumler, 2011). Although there is much scholarship on controversy in the social studies classroom, little is known about the use of controversial environmental issues (Camicia, 2008; Hahn, 1991; 1996; Hess, 2002; 2005; 2008; 2009; Journell, 2011; Kelly, 1986; King, 2009;
Misco & Patterson, 2007). This study sought to add to the emerging scholarship on controversial environmental issues in the social studies classroom.

**Limitations**

As both Hess’ and Kelly’s models contain gaps that do not fully address teachers’ beliefs, actions, and experiences, this study will introduce a new five-dimensional model for examining controversial issues. The first four dimensions will be based on Hess’ model; the fifth dimension will be based in part on Kelly’s (1986) fourth dimension of committed impartiality. The five dimensions of this new model are: denial, privilege, avoidance, balance, and balanced privilege. This model allowed for a more comprehensive interpretation and allowed the researcher to assess teachers’ views on approaching controversial issues in the classroom.

**Chapter Summary**

This study seeks to contribute to both teacher and teacher educator practices pertaining to their views on a civics education that includes environmental responsibility, controversial environmental issues, and civic environmentalism.

Chapter Two will present a review of the literature as it relates to the status of fracking, teacher beliefs about controversial issues in the classroom, environmental education, civics education, and current issues. Chapter 3 will present the methodology. Chapter 4 will present the findings of the survey while Chapter 5 will present a summary and discuss the implications of the findings, as well as offer suggestions for future study.
Chapter 2: Literature Review

Introduction

This review of the literature addresses five major areas of research related to social studies teachers’ views and practices regarding hydraulic fracturing as a controversial environmental issue. These four areas include civics education, controversial issues in the social studies, environmental education, and current events in social studies. A brief overview of the current state of fracking in Ohio will be presented at the outset.

This review of the literature addresses social studies teachers’ views and practices regarding hydraulic fracturing as a controversial environmental issue. It identifies components that inform social studies teachers’ thoughts and actions in the classroom. It seeks to present factors that lead to social studies teachers’ formation of perspectives and actions surrounding hydraulic fracturing as a controversial environmental issue. A review of the relevant literature of teachers’ beliefs about controversy in the social studies classroom will focus on the history of controversy in the social studies classroom and inform the reader how social studies teachers frame subjects as controversial.

Environmental education has been largely excluded from the field of social studies. An assessment of the literature will assess the current state of environmental education, its goals, and how it might be merged with the social studies. Civics education has been a component of the social studies since its inception. The research literature will show how the nature of citizenship and requirements of citizenship have changed over time and how these changes impact teachers’ beliefs and practices. An assessment of the relevant
literature about teachers’ beliefs about current events in the social studies will demonstrate how social studies teachers have historically used current events in the curriculum and how this use has shaped practice. This literature review will explore current environmental issues, levels of controversy, and their impact on the instructional practices of social studies teachers.

**Hydraulic Fracturing in Ohio**

Horizontal hydraulic fracturing or fracking, as it is commonly called, is a process energy companies use in order to access and harvest previously un-accessible natural gas deposits found in shale formations (Gjelton, 2012). In the horizontal hydraulic fracturing process engineers first drill down vertically and then horizontally to access deposits (Gjelton, 2012). The fracking process employs chemical combinations of fracking fluids and water that are pumped into shale formations at extremely high pressures causing the shale rock to physically crack and release the trapped natural gas (Belcher & Resnikoff, 2013; Gjelton, 2012). In some cases, it may take up to 2-4 million gallons of fresh water to frack a well one time and the average well can be fracked up to 15 times in its lifespan (EcoWatch, 2012). This is especially problematic given that fresh water access has been targeted as the next major source of conflict across the globe in the coming decades. According to Belcher and Resnikoff’s (2013) *Fresh Water Accountability Project* “the list of chemicals added to the water throughout the fracking process is extensive and concerning including diesel, rust inhibitors, proppants and antibacterial agents” (p. 2). In addition, wells produce what is called flow back water, commonly referred to as brine, which returns with the natural gas to the surface and companies must depose of the brine
which is the moisture removed from the harvested natural gas (Belcher & Resnikoff, 2013). Much of these liquids are stored in clay-lined ponds, known as wastewater ponds which, most notably in Ohio, are then pumped back into the ground into abandoned wells (Gjelton, 2012). Presently these shale formations and subsequent natural gas deposits exist at a depth of 4,000 to 8,000 feet (Belcher & Resnikoff; 2013). The process in advance of a fracking operation requires energy companies to build wells containing thousands of feet of steel and concrete pipes used in the fracking process. There is debate surrounding the age of hydraulic fracturing as a technology. Some argue that fracking first used as early as the 1940’s by so called “wildcats,” persons looking for exploratory drilling sites (Slack, 2013). Others argue that fracking is a much more recent phenomenon. The primary difference is that early vertical fracking may have included simply cracking bedrock to release oil deposits while horizontal fracking is a reasonably new phenomenon (Gjelton, 2012, Lavelle, 2012; Slack, 2013).

Ohio sits on top of two large shale formations, the Utica and Marcellus shale (US Energy Information Administration [EIA], 2011).
These two shale formations stretch from as far north as Western New York State, as far south and west as Eastern Kentucky, and as far east as eastern New York and western New Jersey (EIA, 2011). Presently, in Ohio, the fracking process has aroused much controversy. While fracking in Ohio is not as widespread as in other states such as Colorado, Pennsylvania, and Texas, Ohio has seen widespread exploration and active fracking procedures (Belcher & Resnikoff; 2013; Slack, 2013). As of March 2014, the Ohio Department of Natural Resources (2014) had approved permits for 1,123 fracking wells, and 750 of those wells were actively producing. All of these wells can be found in the eastern half of Ohio. Another recent source of controversy was Ohio governor John
Kasich’s plan to open state parks up for fracking, but in early 2014 he reversed course taking the position of not allowing the leasing of state mineral rights for fracking operations (Rowland, 2014). This may potentially frame the debate as one of the few against the many, with each side deciding which side of the argument they support and that which is most beneficial to them. Adding to the controversy between pro and anti-fracking groups are the recent comments by President Barack Obama that have framed fracked natural gas as vital to American energy security (Slack, 2013).

There are a number of issues at play surrounding the fracking debate in Ohio. Economics is a question for many, as some proponents of fracking argue that it will be an economic windfall for the state and its residents (Franco et al., 2013). Others have argued that the environmental degradation that accompanies fracking is much worse, both environmentally and economically; and is not without long-term risks. This is in addition to the fact that much of the fracking that is taking place is located in those sections of Ohio that are geographically within the boundaries of the Appalachian region of the United States (ODNR, 2014). The Appalachian region has seen decades of mineral extraction at the expense of local communities and has allowed outside groups to gain economic windfall while taking few of the environmental risks, leaving local populations with all of the environmental risks and none of the economic rewards (Eller, 2012). Much of the anti-fracking movement is found in grassroots local groups standing in opposition to the practice with support from some large national groups, such as the Sierra Club (Helman, 2013). In contrast, much of the support in favor of fracking is
offered by large energy companies that seek permits for active fracking sites (Helman, 2013).

**Civics Education**

**History of civics in the Social Studies.**

Fostering good citizenship and civics education has been an essential role of the social studies throughout its history (American Historical Association, 1899; Anderson et al., 1997; Beard, 1929; Evans, 2004; Hess, 2002; 2005). Anderson et al. (1997) noted that education in general has served as a means of providing students with civic values in order to promote political and social harmony. From the beginning of the field of social studies with the American Historical Association (1899) report from the Committee of Seven to the most recent National Council for the Social Studies (2014) *College, Career, and Civic Life Framework*, it is clear the important role that civics education has played in shaping both the field of social studies and the academic choices made by teachers. The National Council for the Social Studies believes in engaged and informed citizens who have a level of civic competency that will allow for a successful civic life by being an informed, engaged, and participatory member of society (NCSS, 2010; Risinger, 2009). While civics has always been a component of the social studies curriculum, there has not always been agreement on what civics education might look like and its actual purpose (Risinger, 2009).

Civics education traces its heritage directly to the origins of the social studies and the social sciences that comprise the various disciplines of the field (Anderson et al., 1997; Bagenstos, 1979; Evans, 2004; Risinger; 2009). According to Thornton (2008)
civics education encompasses all of the things that deal with how people live together. According to the National Council for the Social Studies’ (2013) *College Career, and Civic Life Framework*, civics is the study of how people participate in government, participate in society, and make informed actions to solve social issues. These two ideas coincide, yet draw from very different historical perspectives, one from the totality of the social studies field and the other from the contemporary view. In addition these notions draw from the historical framework of the social studies created by Barr et al. (1977) delineating social studies as citizenship transmission, social science tradition, and reflective inquiry. Regardless of the historical placement, the importance of civics education is undeniable.

Early civics education was intended to foster a sense of citizenship among the masses of people in need of a basic education. According to the American Historical Association’s Committee of Seven (1899) the best way to achieve this was to create an educational model that would educate the masses in the history of United States. Civics, therefore, also was viewed as a way to educate citizens who would be loyal to the United States (Wesley, 1937). Civics education has evolved to include the expectation that students will be active, engaged, and participatory in their civic lives. Exactly what this looks like, however, has changed. At one point, civics education was the understanding of current events (Evans, 2004). It was suggested that all high school social studies experiences culminate in an *Issues of Democracy* class that allowed students to become civically engaged through the examination of issues (Wesley, 1937). Civics has long been seen as an essential component of the high school curriculum (Evans, 2004).
Typically, a civics course is placed on the students’ schedule during the junior or senior year of the high school curriculum to allow them to be as close to full-fledged citizenship as possible. This idea of a capstone course was intended to allow for students to graduate and enter directly into society with all of the knowledge, tools, and loyalties needed to be civically engaged and participatory citizens (Ross, 2000; Thornton, 2008; Washington & Humphries, 2011).

Civics education has changed over time to reflect the expanding notion of citizenship (Levinson & Brantmeier, 2006). One component of civics education that has been a constant is the knowledge of how to operate in one’s surroundings. What the term ‘surroundings’ exactly means is vague, given that at certain points it meant a general understanding of the United States, while today this may mean understanding how one interacts and operates in both the civic and natural world (Evans, 2004; Houser, 2009). This notion of the expansion of citizenship naturally inspires one to ask what being civically engaged looks like. Originally civics education might have meant simply being aware of current events while today it may require someone to not only be informed but also able to identify and carry out the appropriate action (Evans, 2004; NCSS, 2013; Thornton, 2008). These ideas are encapsulated in Patrick and Vontz’s (2001) four central facets of democratic citizenship: civic knowledge, cognitive civic skills, participatory civic skills, and civic dispositions. These four components indicate a framework for what civic education students should be able to do. The literature indicates that the history of civics education shows an ever evolving field within the social studies that reflects the greater social and political movements of the time.
**Curricular models in civics education.**

As civics education has evolved, so have the various curricular models. Civics education has predominantly involved the study of current events for preparing students for a civic life that requires them to navigate the difficult questions and issues that citizens might face daily while citizenship education’s primary focus has been upon the content, structure, and materials of citizenship (Chinn & Barber, 2010; King, 2009; Patterson, et al., 2012). Achieving this requires civics education students be engaged, able to form opinions, and take action with respect to a particular issue (Hess, 2002).

This dissertation focused on four curricular models that are especially relevant to the examination and study of controversial environmental issues. They are Levinson and Brantmeier’s (2006) community of practice model, Kunzman’s (2006) use of reasonable disagreement, Houser’s (2009) ecological citizenship, and the National Council for the Social Studies’ (2013) C3 framework for education. All of these models are beneficial for understanding the field of civics education and improving its practice.

According to Levinson and Brantmeier (2006), civics education in the United States has been pushed to the periphery in schools because of the need to be economically competitive, focus on educational basics and increased accountability. Yet, it is clear that in the United States, civics education plays an integral role in the social studies (Patterson et al., 2012). Levinson and Brantmeier (2006) argue that communities of practice (CoP) can be used as a curricular model for guiding meaningful and responsive civics education. CoP is defined as a group of people coming together for a common goal (Lave & Wenger, 1991). CoPs allow students to take ownership of issues
and practice full citizenship in a controlled setting (Hess, 2008; Levinson & Brantmeier, 2006). Hess (2008) notes the importance of democratic and authentic models of civics education. Using CoPs requires teachers to relinquish some control and can sometimes be inauthentic.

Wenger (1998) argues that CoPs require teachers to foster a sense of ownership in students. When teachers create these types of engagement, they and their students will feel they are connected to the learning process. This may be achieved through activities such as service learning projects, in which students and teachers collaborate to foster awareness of a particular democratic ideal (Hess, 2002; Levinson, 2003). This model is dependent upon what Levinson (2003) and Levinson and Brantmeier (2006) call expert teacher citizens who possess the knowledge and skills required for fostering effective civics education. Levinson and Brantmeier (2006) recommended that schools create CoPs that foster unbroken chains of connection between 9th graders through to alumni, which showcases authenticity because of the extended connections. Social studies courses cannot operate in isolation and be expected to teach the ideals of democratic citizenship while the remainder of the environment does not follow the same protocol. Schools must reflect what they teach, and if democratic citizenship through CoPs is important, schools must make a full commitment to ensure that issues of power and those holding power and subjected to power accept changes of traditional roles.

Kunzman (2006) argues the merits of reasonable disagreement in civics education. He states that it is essential for students to be able to both understand and apply the skills necessary for reasonably disagreeing with another’s point of view.
(Kunzman, 2006). He argues that disagreement “is an inescapable feature of the human condition” (p. 166). The basis for Kunzman’s model of reasonable disagreement derives from Patrick & Vontz’s (2001) four components of civics education: civic knowledge, cognitive civic skills, participatory civic skills, and civic dispositions. This framework allows students to be what the National Council for the Social Studies (2010) calls active, engaged, and participatory citizens. In a democracy, it is essential for stakeholders to be able to disagree, allowing the democratic process to take shape and foster cooperation and effective citizenship (Hess, 2002; 2008; King, 2009). As Kunzman (2006) writes, “reasonable people will often disagree about how to live and we can recognize others’ views as reasonable while still disagreeing with them” (p166). The focus of this model includes fostering understanding of disagreement that is constructive and evaluative (Kunzman, 2006; Patrick & Vontz, 2001).

An essential component of this model includes the importance of civic virtue. According to Kunzman (2006), virtues are important because they are the basis upon which citizens frame all civic activities (Costa, 2013; Damon, 2011). It is important for students to understand that disagreement does not end the conversation but rather is simply an evolution of dialogue that must be worked through to achieve understanding (Hess, 2008). Reasonable disagreement allows teachers, students, and other stakeholders in the academic community to engage in conversations that foster creative ways of achieving understanding in the face of disagreement (King, 2009). It is imperative that students learn to understand for understanding’s sake while informing their own civic virtues and foundational beliefs (Costa, 2013). This model is predicated upon open and
effective dialogues facilitated by veteran teachers who remind students that one must separate private commitments and civic responsibilities (Kunzman, 2006). It is essential in the reasonable disagreement model that students are taught that the discovery of understanding is only the beginning of the greater understanding of civic responsibility for all participants.

The traditional scope of civics education has typically only dealt with the world humans have created, believe they exist in, and can control (Houser, 2009; Wilson, 2006). Houser (2009) argues that while social studies has fulfilled its mission of educating students for citizenship through civics education, the field has fallen short by being unresponsive to environmental issues. Traditionally, the social studies has not included environmental awareness as a component of civics education (Houser, 2009; Kumler, 2011). Ecological philosophy stresses the importance of the link that exists between the individual and the greater environment (Louv, 2008). McKibben (2011) argues that humans have separated themselves from the environment, causing a disconnect with the natural world. This disconnect causes persons to not view their actions or lack thereof as being able to bridge the gap between civics and the environment.

Houser (2009) argues that because civics educators seek to develop empowered citizens who possess the knowledge and information necessary for dealing with pressing issues, environmental issues are a natural extension of civics education. The understanding is that humans must not view environmental issues as simply environmental issues with potential social implications, but instead should see them as
socio-environmental issues that need to be addressed as do other pressing issues in society (Houser, 2009). As humans have continued to reshape and impact the environment on earth, we have created a place full of issues that are akin to those faced by social studies educators and progressives of the early 20th century (McKibben, 2011; Wilson, 2006). Houser argues the solution is a “transcendent ‘self-realization’ [and] that there needs to be a paradigm shift from a social-industrial to a socio-ecological worldview” (p. 200). To foster this transition requires a curricular model that centers on deep ecology over shallow ecology where the focus shifts from exclusively humans to include all inhabitants of the planet (Houser, 2009). Citing Walter Parker’s (1996) four conceptions of democratic citizenship of liberal democracy, participatory democracy, associative democracy, and multicultural democracy as the foundation for a truly inclusive citizenry, however, Houser (2009) argues that we need to add a fifth conception of ecological democracy. In this curricular model, ecological citizenship is not the focus but operates on the preposition that humans do not function independent of, above, or apart from nature but instead recognize their role as being part of a greater ecological matrix and the responsibility civics education has to all stakeholders.

The National Council for the Social Studies (2013) College, Career, and Civic Life Framework (C3) is a curricular model with the expressed purpose of preparing students who know how to be civically active. The importance of being active in civics education, as a process and not just a unit of study, is significant for encouraging students to become civically minded citizens (Camicia, 2008). The C3 curricular model allows students to learn from teachers who are experts (Levinson & Levine, 2013). Levinson and
Levine (2013) argue that because schools are founded with the expressed purpose of creating active, informed, and engaged citizens, the C3 framework makes all of those things possible across the entire social studies curriculum.

The C3 framework is heavily influenced by the Common Core Standards and is framed around four dimensions: developing questions and planning inquiries, applying disciplinary concepts and tools, evaluating sources and using evidence, and communicating conclusions and taking informed action (NCSS, 2013). In much of the current literature on civics education, action is the most important step in fostering true civic awareness and knowledge (Camicia, 2008; Chinn & Barber, 2010; CIRCLE, 2003; King, 2009; Patterson et al., 2012). The social studies content areas contained in the framework are civics, economics, geography, and history (NCSS, 2013). The C3 framework is touted as a truly comprehensive social studies approach to fostering informed and active citizens who know how to evaluate a problem, determine a solution, and take action to solve the problem (Levinson & Levine, 2013). Allowing students to be active and engaged in the democratic process is widely considered to be the most effective method of encouraging active citizenship (Camicia, 2008; CIRCLE, 2012; Hess, 2002; Patterson et al, 2012). Levinson and Levine (2013) argue that the service learning component of the C3 framework is beneficial to students because it allows social problems to be viewed as solvable. Louv (2008) and Wilson (2006) argue addressing problems in one’s environment and then taking action to solve such problems fosters a sense of connectedness between the individual and the community, creating a sense of collective civic responsibility.
Teacher beliefs about good citizenship.

What social studies teachers believe to be good citizenship has not been researched in a manner that offers up a large amount of scholarship (Patterson et al., 2012). Teachers are the gatekeepers of the social studies classroom, directly impacting what gets taught (Camicia, 2008). According to Kunzman (2006) social studies teachers serve as democratic models for good citizenship. However, given the sparse research, what this model might look like is difficult to determine. Civics education aims to develop capable, active, and engaged citizens; who are willing to address contemporary issues (Camicia, 2008; Hess, 2002; 2005; 2008; King, 2009). It is clear a duality exists in the social studies between demonstrating what good citizenship is and how one might put these beliefs into practice (Chinn & Barber, 2010). Furthermore, a central tenet of the social studies is to foster empowered citizens who possess all of the civic virtues necessary to become good citizens (Kunzman, 2006). The Civic Mission of Schools report and Patterson et al. (2012) both note the value of civics education, but only 40 states in the United States have civics education as a primary component of the school’s curriculum (CIRCLE, 2003). Most of the research that exists on citizenship education focuses on the students’ perspectives (Anderson et al., 1997; Patterson et al., 2012).

Two primary state level studies by Anderson, Avery, Pederson, Smith and Sullivan (1997) and Patterson, Doppen and Misco, (2012) examined teachers’ perspectives on citizenship education in the last two decades. National surveys have been conducted at various points, but given the response rates and limitations of large scale
surveys without follow up interviews, only a cursory knowledge of social studies teachers dispositions was gleaned (Anderson et al., 1997; Fontana, 1980).

Anderson et al. (1997) examined both social studies teachers in the state of Minnesota and nationally, through surveys. Their study determined social studies teachers fell into one of four categories: cultural pluralists (teach for all and be inclusive), communitarians (community and civic involvement), legalists (rules of law and individual rights), and shared beliefs (tolerance and controversial issues). It found that personal opinions and regional political issues contributed to teachers’ views of the social studies. However, this study focused on teacher beliefs and did not focus on teacher actions in the classroom. The findings of Anderson et al. (1997) were consistent with previous studies by Fontana (1980) and People for the American Way (1989). Ultimately, these studies revealed social studies teachers’ beliefs about critical thinking and controversial issues were central to and the primary purpose of social studies education. In addition, teachers’ personal beliefs continued to have the greatest impact on their views of citizenship (Anderson et al., 1997; Fontana, 1980; People for the American Way, 1980).

Patterson et al., (2012) examined social studies teachers’ conceptualizations of good citizenship and used Westheimer and Kahne’s (2004) continuum of personally responsible, participatory, and justice oriented citizenship. Based on a larger online survey, Patterson et al., (2012) interviewed nine teachers. Four framed their conception of citizenship as being personally responsible, two saw it as being participatory, and three framed it as being justice oriented. The interviews indicated a disconnect between what
these teachers believed and actually did in the classroom (Patterson et al., 2012). The findings indicate the power that teachers as gatekeepers have on the curriculum and their students, especially with respect to what type of citizenship learning students will experience (Patterson et al., 2012). Given the limited research that exists and that only two major studies have been devoted to this topic, further research is needed.

Levinson and Levine (2013) note that accomplished social studies teachers allow their students to practice their citizenship not just in the classroom but also in the world outside of the school walls. Many social studies teachers see the field as knowledge transmission and do not view the other components of being active and aware as important (Patterson et al., 2012; Westheimer & Kahne, 2004). These findings resonate with Ross’ (2000) notion that high stakes testing, which focuses on knowledge transmission, has contributed greatly to the decline of civics education and fostered civic illiteracy. The literature showcases two fundamental issues for civics education: teachers’ notions of good citizenship impact the types of experiences students have and how they will eventually come to view good citizenship and the social studies is primarily a knowledge transmission discipline that severely limits civics education (Levinson & Levine, 2014; Patterson et al., 2012; Ross, 2000).

**Environmental education.**

**History of environmental education.**

Environmental education is a way to effect real change in a world besieged by numerous issues that threaten our planet, such as climate change, access to fresh water, population growth, pollution, land use, and human sprawl. Today, environmental
education has been included in various curricular models and is a tool to combat global ecological stresses (Short, 2010). Globalization is causing existing environmental issues to be exacerbated, further impacting local, regional, and global environments (McKibben, 2011; Palmer, 1999). The goal of environmental education is to foster the development of citizens who are conscious of their environment and who have the required tools and knowledge to be able to deal with contemporary and developing environmental issues (Meyer, 2002). The impact of human beings on the global environment is felt more today than in previous generations (Meyer, 2002). This is due to industrialization, modernization, and the progressive lengthening of human life spans which have directly contributed to rapid population growth that have placed stresses on the environment (Simmons, 2003). As human populations grow and continue to utilize more of the world’s resources, humans must find ways to alleviate existing pressures and adequately deal with emerging pressures (Kumler, 2011; McKibben, 2011).

There is much disagreement about when environmental education formally began in the United States. Some believe it began with the “Dust Bowl” era in the 1930’s because it was the first time that Americans were forced to deal with the impact of their actions on the environment (McCrea, 2006). Others believe that environmental education began with the Belgrade Charter in 1975 or the Tbilisi Conference in 1977, where the broad goals of environmental education were discussed by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) (McCrea, 2006; Potter, 2010). Regardless of their origins, environmental education programs are growing (Tzou & Bell, 2012). The global importance of environmental education is seen in the outlined
values of the Tbilisi declaration which focuses on concerns, skills, actions, and changes, by citizens (Potter, 2010). The United States Congress passed the National Environmental Education Act of 1990, giving the U.S. Environmental Protection Agency (EPA) the responsibility of providing national leadership regarding environmental education (Potter, 2010). Since the passage of this act, the EPA has spent almost $100 million dollars towards this effort (Potter, 2010).

Environmental education in the United States has been predominantly framed in the sciences and has been led by the North American Association for Environmental Education (NAAEE) which focuses on five main topics: awareness, knowledge, attitudes, skills, and participation. The North American Association for Environmental Education was formally founded in 1971 and was originally called the National Association for Environmental Education (McBeth & Volk, 2010; McCrea, 2006). Much of the early work in environmental education focused on environmental literacy, while responsible action was an associated component in many early programs (McBeth & Volk, 2010; McBeth et al., 2008; Wilke, 1995). NAAEE (2011) defines the goals of environmental education as to “teach children and adults how to learn about and investigate their environment and to make intelligent, informed decisions about how they can take care of it” (para.1). The history of environmental education is murky as the terms ‘environmental education’ and ‘environmentalism’ have not always enjoyed a positive review by the general population (Ogunyemi & Ifegbesan, 2011). In 1935, Wisconsin was one of the first states to require that preservice teachers have preparation in natural resources conservation of natural resources (McCrea, 2006). The Conservation Education
Association of the United States was founded in 1953 to further assist educators in the field of conservation education. In 1969, the United States Congress passed the National Environmental Policy Act, aimed at formalizing federal environmental policies (McBeth & Volk, 2010; McCrea, 2006). However, in the public’s mind the event most identified with environmental education’s history was April 22, 1970, the first Earth Day (McCrea, 2006).

A recent development has been the creation of eco-pedagogy, in which Paulo Freire’s critical pedagogical approach to education was applied to environmental and non-human earth inhabitants beginning shortly after the 1992 Rio Earth Summit in Rio de Janeiro, Brazil (Kahn, 2010). This transition is in line with the overall growth of the environmental education movement around the world, as the early 1990’s saw an explosion in environmental awareness with the celebration of the 20th anniversary of Earth Day in the United States (Kahn, 2010; McBeth & Volk, 2010; McCrea, 2006). From the early 1990’s onward there have been numerous changes and movements aimed at fostering environmental education but very few of these movements have established roots in the discipline to become a component of the official social studies curriculum (Bromley et al., 2011; Ceasar, 2012; McBeth & Volk, 2010; Ogunyemi & Ifegbesan, 2011). Currently, the New Ohio Academic Content Standards contain sections devoted to sustainable action and awareness while similar standards can be found in many other states (ODE, 2013).
Framework for environmental education curriculum.

The present framework for environmental education in the United States is typically part only of science education with a small portion nested in the New Ohio Academic Content Standards (Kumler, 2011; ODE, 2013). Much of the environmental education curriculum centers on individual awareness and action (NAAEE, 2011; Short, 2010). Encouraging student action, through informed and direct interaction with their local environment to impact change, is a primary directive of NAAEE’s (2011) initiative. Much of the focus of environmental education centers upon local issues and local action (McBeth & Volk, 2010). Kumler (2011) and Ceasar (2012) argue that an individual focus is a shortfall of the current model as it does not do enough to direct collective action on the part of students and community. Lang (2009) notes when environmental education is a sub-topic, with limited visibility and associated actions, it tends to be viewed as limited and supplemental (Lange, 2009). According to Short (2010) “two essential foci persisting through our 40 years of evolution have been (a) sound, research-based, educational methodologies engaging learners as active participants, and (b) the development of an environmentally literate and active citizenry capable of thinking critically about environmental issues to work toward improvement or maintenance of environmental conditions” (p.8). Although there exists a robust collection of information on the usefulness of environmental education, there is limited information on the confluence of environmental education and the social studies. Issues such as reductions in sea ice, a thinning ozone, increasing global temperatures, increases in greenhouse gas emissions, and water scarcity are just a few of the major issues facing the planet that all
have social implications (Solomon et al., 2007). For many non-science oriented persons, these may appear to be issues for science to address, but these are issues that face all persons, regardless of level of education, wealth, gender, or any other classification (Powers, 2004).

*Environmental education in the social studies.*

Social studies education and civic engagement are defined by the National Council for the Social Studies (1994; 2010) as providing help to students to “make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world” (p. 3). At first glance, the goals of the social studies curriculum and those of environmental education may appear to be very different. However, upon further review, it is clear that the goals of these two disciplines have a strong connection (Schug, 2000). The goal of democratic education is to facilitate the development of citizens who are informed decision makers and who possess the ability to make choices for the well-being of one’s community (Dewey, 1954).

Incorporating environmental education in social studies is reasonable, especially considering that there is a convergence of goals between these two disciplines (Lange, 2009).

Environmental education in the social studies is a relatively new movement which has started to gain more traction in the field as issues of climate change, habitat loss, and weather fluctuations have pushed it to the forefront. The primary goal of the social studies is to facilitate the development and growth of citizens who will become active and engaged members of local, regional, and global communities (NCSS, 2010). C3’s
geography inquiry section lends itself well to the evaluation of environmental issues and suggests opportunities for social studies students to take appropriate action (NCSS, 2013). Barry (2006) noted the biggest impediment to social studies teachers and environmental education/awareness is that many students are aware of issues but unclear of the connections between social, political, and economic issues.

According to Basile and White (1999) there are numerous ways to address environmental issues in social studies, such as through place-based learning, requiring students to examine their local environment. Bromley, Meyer, and Ramirez (2011) examined how environmental education was represented in social studies textbooks from 1970 to 2008. They found that representation of environmental education has steadily increased since 1970. The increases were due to issues such as globalization and increased environmental awareness (Bromley et al., 2011). They argue that the reconnection between humans and the environment has led to changes in how the social studies views the role of citizens and their responsibility to the environment.

Kumler (2011) and Tzou and Bell (2012) examined similar issues. Kumler (2011) examined social studies’ classroom curricula, while Tzou and Bell (2012) studied the curriculum in an environmental education course. Both of these studies involved a science component, but what was different in Kumler’s (2011) study was a collaboration between social studies and science classroom teachers to help students understand land use as an extension of citizenship. In contrast, Tzou and Bell (2012) examined the use of borders in environmental education, in a traditional geographic sense as well as individuals’ ability to create social and spatial borders.
Cline and Van Leuvan (2009) examined rainforest as a way of merging civic and environmental responsibility. In this model, the work of one student who sought to have an environmental impact through civic and environmental action served as a model for civic action while promoting the ecological and biological diversity of the rainforest through place-based inquiry. Their study begins with the essential argument that all educators must ask their students why the rainforest is disappearing. Economic issues and concerns are at the forefront of many headlines surrounding rainforests and are a wonderful means by which there can be an integration of social studies and environmental education through a critical dialogue. Ceasar (2012) examined the confluence of social, political, economic, and environmental issues through the use of community gardens in New Orleans. According to Ceasar (2012) community gardens offer the ability to effect lasting change on multiple fronts of the social and environmental experience of civic participants. In all of these examples, active and participatory endeavors require students to directly engage with problems and attempt to solve them in real world settings.

Schug (2000) presents examples of economic issues that may be examined in a social studies classroom while simultaneously incorporating an environmental perspective. His examples of issues showcase the intersection of economic and environmental issues include population shift and its economic and environmental impact. Current projections suggest that the world population will exceed 10 billion by the year 2050. Using this projection, teachers can educate social studies students about the economic and environmental impact of humans on a global scale (Schug, 2000).
Comprehending these numbers may be difficult for some students, but if teachers encourage discussion about the effects that humans have on the environment, especially at a local level, this will allow for a more globally focused discussion (Schug, 2000). Economic factors directly associated with environmental factors include food use, water consumption, land use, natural resource use, pollution, and the need for employment of a growing population. Schug (2000) suggests that by co-framing economic issues with environmental education, one can better present material that is relevant to the students and the social studies.

All of these examples showcase the confluence of environmental education and social studies in both the curriculum and action. It is from these examples and present curricular models that one realizes that much of the current use of environmental education in the social studies remains to be formalized in state and national standards.

**Civic environmentalism.**

Civic environmentalism is the confluence of civic action and environmental awareness with the expressed goal of fostering change socially, politically, and environmentally (Morris, 2008). Civic environmentalism recognizes the need to achieve lasting change when dealing with environmental issues, it must be achieved through the civic action of individuals and collective political consciousness, each of whom possess the requisite environmental understanding and skills necessary to achieve such change (Reid & Taylor, 2003). Civic environmentalism offers a comprehensive approach to environmental, social, political, and economic issues and is a holistic approach to solving such problems (Reid & Taylor, 2003; Shabecoff, 2000).
Civic environmentalism has been described as a place-based education that combines legal, governmental, and political aspects of civic engagement, with environmental and sustainable practices that aim to solve local issues (Morris, 2008). Framing civic environmentalism as such may seem limiting to some (Reid & Taylor, 2003). The social studies incorporates civic engagement through NCSS’ (2013) C3 curriculum. This curriculum encourages informed, active, and engaged citizens who address local, regional, and national issues and civic environmentalism. This aligns with not only these goals but also the NAAEE’s (2011) goals for environmental education (Potter, Morris, 2008; Reid & Taylor, 2003; Schug, 2000; Shabecoff, 2000).

According to Reid and Taylor (2003) civic environmentalism evokes the work of John Dewey and focuses on conservation efforts which may limit its scope and ability to effect lasting change. Civic environmentalism in needed to contradict traditional Western philosophical thought centered upon a duality between environmental or non-environmental (Reid & Taylor, 2000; Shutkin, 2000). Reid and Taylor (2000; 2003) argue for an ecology of public intelligence based on the idea that through collective consciousness and efforts we can achieve dramatic and lasting change. This notion of collective consciousness allows for civic environmentalism to be inclusive of all citizens (Morris, 2008; Reid & Taylor, 2003). Dewey advocated all citizens effect change through democracy education and that the public good was of the utmost importance (Alexander & Dewey, 1987; Dewey, 1965; 2008). Civic environmentalism creates a convergence of the responsibility of our civic roles and the environmental life, which is not exclusive but
is instead one unified view of the ecological experience (Louv, 2008; McKibben, 2011; Reid & Taylor, 2003; Wilson, 2006).

**Section summary.**

Civics education’s goal is to develop engaged, participatory, and active citizens capable of identifying problems in the civic space, followed by appropriate action (Levinson & Brantmeier, 2006; NCSS, 2013; Risinger, 2009). Similar to civics education, environmental education aims to develop informed citizens who care about their environment and possess the skills and knowledge necessary to effect change (NAAEE, 2011; Palmer, 1999; Short, 2010). While the history of environmental education in the United States is of shorter duration than that of the social studies, both offer histories intended to develop similar citizens. The literature suggests a confluence of both goals and intended outcomes. Both include curricular models that require active engagement of real world problems (Ceasar, 2012). Little is known about teachers’ perspectives on the intersection of civics and environmental education and more research is needed to fill this gap.

**Current Events**

**History of current events in the Social Studies.**

The study of current events in the social studies has been a constant since before its formal inception (Camicia & Dobson, 2009; Evans, 2004; Hess, 2008; Oliver & Shaver, 1966). As social studies has evolved, various events have taken place that have altered the discipline. Almost a century ago John Dewey (1929) argued that it was the duty of citizens to be informed and participatory in their democracy to ensure that it
operated in the best interest of all its members. As the father of democratic education, he advocated an informed and participatory civic collective through the study of current events (Dewey, 1965; Pass, 2007). This requires social studies education to ensure students are aware and active in their citizenship through the examination of events outside of the classroom (Deveci, 2007; NCSS, 2013). The most recent evidence of this duty can be found in the NCSS’ (2013) C3 curriculum which requires students to be knowledgeable of current events.

Deveci (2007) has argued that through the study of current events the social studies is able to foster the development of democratic individuals who are able to effectively navigate all of the diverse requirements placed upon them. In addition, the study of contemporary and sometimes controversial events allows students to enact the reality of citizenship (Camicia, 2008; Hess, 2002; 2005; 2008; King, 2009). Camicia and Dobson (2009) recognize that the study of current events furthers the understanding of the dynamic nature of citizenship, because it requires students to evaluate alternative arguments concerning public issues. King (2009) suggested that reasonable disagreement, such as what might be fostered through examining current events, prepares students for the demands of citizenship. A large portion of the research concerning current events use suggests it fosters effective citizenship (Camicia, 2008; Camicia & Dobson, 2009; Hess, 2008; King, 2009).

Deveci (2009) found one of the most important components of current events in the social studies is the context in which social studies teachers introduce and discuss current events in the classroom. This is especially important, as noted by King (2009), as
it matters not only how materials are presented but also how they are received by students (Camicia, 2008). Deveci’s (2009) study revealed that although current events have been used for a very long time, the context in which ideas are presented and what students do with this knowledge has changed over time (Evans, 2009; Hess, 2002; Kelley, 1986).

As the social studies has evolved there has always been the requirement to examine the social aspect of citizenship (Beard, 1929; Thornton, 2008). The use of current events has changed as social movements have come and gone, requiring a reevaluation of what to teach and how to teach it, such as e.g. World War II, the Cold War, or Civil Rights (Ross, 1997; Thornton, 2008). Nash, Crabtree, and Dunn (1997) have argued that there has always been controversy surrounding instruction in the social studies but that the ebb and flow of the discipline regarding what to teach and how to teach has changed. Beard (1929) argued that part of this flow involved the ability of history centered social studies curriculums to be more inclusive. Bagenstos’ (1979) examination of Harold Rugg’s textbook series indicated that Rugg believed it was the lack of examining current events that spawned many of the problems of the 1920’s and 1930’s in the United States. Critical examination of current events allows for detailed and in-depth construction of opinions and skills for evaluation of these events (Camicia & Dobson, 2009; Hess, 2002; Kelley, 1986; King, 2009). The literature on the history of current events in the social studies indicates there is not a question of whether current events were used but rather how they were used (Barr et al., 1978; Deveci, 2007).

What has changed the social studies and the use of current events in the classroom has been the development of new technologies and processes which have enhanced
access to materials and information in addition to potential filters that might skew information (Bolick, 2004; Levinson, 2012). As current events have changed and the level of access has changed, it has notably become the duty of social studies teachers to be the informed among colleagues and serve as models of critically informed citizens (Libresco, 2003). Additionally, Camicia and Dobson (2009) suggest that having critical and informed citizens allows for issues of social justice to be better addressed. The study of current events in the social studies also allows students to find relevance in social studies subjects (Luckhardt, 2014).

**Teacher beliefs about the use of current events.**

Teacher beliefs about current events in the social studies are important. Libresco (2003) argues that it is vital contemporary social studies teachers “model the behavior of ‘wide-awake citizens, who inform themselves about and act on issues everyday’” (p.274). However, an issue for many teachers in the modern world of assessments and curricular requirements has become how much freedom and time they possess to actually spend on current events instruction (Biser, 2008). Lipscomb and Doppen (2013) found that while there are pressures related to high stakes testing, many teachers are still finding ways to integrate current events instruction in the classroom. Current events instruction can achieve five goals: student engagement, deep understanding, critical thinking, appropriate behavior, and democratic behavior (Biser & Freidman, 2008; Haas & Laughlin, 2000; Sperry, 2006). Haas and Laughlin (2000) surveyed 598 social studies teachers who were members of the National Council for the Social Studies and found that 95 percent supported the use of current events instruction. However, Haas and Laughlin (2000)
noted “a number of teachers at the high school level indicated the limited amount of time available for them to prepare materials for student use in class due to rapid changes in ongoing events and the complex nature of the issue” (p. 24). In contrast, McCoy (2008) found that when social studies teachers were told they were required to use current events instruction they became innovative in the application of materials. Furthermore, McCoy (2008) noted varying the type of instruction and making current events instruction more covert allowed teachers more flexibility in their courses.

According to Pass (2007) one of the unique characteristics of current events instruction is the ability to teach ethics, which she notes is an essential component of the civic life. Current events instruction allows social studies teachers the opportunity to examine ethical dilemmas in real time versus a looking back through history approach (Journell, 2013; Pass, 2007). The goal of the social studies is to develop engaged, informed, and active citizens who are capable of identifying and addressing problems. Operating on this position, the need becomes clear to foster both ethical and mindful behavior because it encourages an increased connectedness to the democratic collective (Dewey, 1929; NCSS, 2010; Pass, 2007). The literature shows that a majority of social studies teachers support the use of current events instruction but are restrained by factors they deem out of their control (Haas & Laughlin, 2000; McCoy, 2008). These issues include state testing, curriculum requirements, and time limitations (Haas & Laughlin, 2000; Journell, 2013).

The prevailing belief is that teaching current events helps students better develop the necessary skills to become successful members of a community and the greater civic
collective (Camicia & Dobson, 2010; Haas & Laughlin, 2000; Journell, 2013; King, 2009; Libresco, 2003; McCoy, 2008; Pass, 2007). Teachers might find it easier to employ higher order thinking skills with current events instruction given the often complex nature of the events (Camicia & Dobson, 2010). Camicia and Dobson (2010) found that the use of journaling between preservice social studies teachers and students helped to dramatically increase understanding of the current events and that current events exist in a contested space. Pescatore (2007) has argued that, based upon research conducted in her own classroom, students can gain a sense of critical literacy from the study of current events. Critical literacy may be viewed as an essential skill of all civics classes, especially given the varied and sometimes murky nature of current events (Camicia, 2008; Camicia & Dobson, 2010; Journell, 2013; Pescatore, 2007).

An essential component of civics education is engagement in and an understanding of the nature of citizenship (Journell, 2013). A number of civics assessments have been conducted by the United States government to assess the level of understanding of civic concepts. In 2010 a little more than one third of students possessed basic knowledge of civic concepts (Journell, 2013). The lack of basic civic knowledge may marginalize certain groups in society (Sharp, 2009). Controversial current events require certain civic skills in order to understand and navigate the world in which we live (Hess, 2002; 2005; 2008; King, 2009; Sharp, 2009). Much of the literature suggests that the study of current events is an essential component of social studies education (Journell, 2013; NCSS, 2010; Sharp, 2009).
Current events instruction has been viewed as beneficial to students for a number of different reasons. Its benefits include but are not limited to: civic literacy, civic awareness, civic empowerment, critical thinking, empathy, historical understanding, social acceptance, and how to deal with controversial issues (Camicia, 2008; Camicia & Dobson, 2010; Hess, 2008; Journell, 2013; King, 2009; Pescatore, 2007; Sharp, 2009). It is clear that, given the ever changing nature of the world in which we live, current events instruction allows teachers to foster a rich learning experience (Camicia & Dobson, 2010; Journell, 2013).

**Curricular models.**

There are a number of ways in which current events instruction can be used in the social studies. Most often social studies teachers may incorporate current events into the already existing framework of another social studies class like US History, or American Government (Camicia, 2009; Pescatore, 2007). Student news channels, Channel One and CNN Student News, along with the ever present Weekly Reader have been widely used in social studies classrooms (Libresco, 2003). Deveci (2007) found that it was common across many social studies classrooms to use newspapers as an instructional tool in current events instruction.

To encourage critical thinking and foster a sense of critical literacy, social studies teachers can use current events to engage students in the examination of controversial questions that are contemporary and that students may already have a preexisting awareness of (Swanson, 2005). Pescatore (2007) suggested the use of current events can foster a sense of critical literacy by asking critical questions in the vein of Paulo Freire.
However, in our current world of high stakes testing current events often may take a back seat to test preparation. Pescatore’s (2007) model engaged students in text and then asked them the following questions: “whose viewpoint is expressed, what does the author want us to think, whose viewpoints are missing, silenced, or discounted, how might alternative perspectives be represented and/or found, how would alternative perspectives contribute to your understanding of the text, and what action might you take on the basis of what you have learned” (p.329)? The use of these questions frames the model’s essential components and constitutes a basis for instruction.

Pass (2007) used current events to teach ethics and believes that ethical social studies students should be caring, capable, and connected. She argued that if students approach current events with an ethical frame of mind, they will become better citizens (Pass, 2007).

Journell (2013) describes the use of journaling by students’ on their thoughts about current events. The use of journaling allows students to gain a deeper understanding of current events and to enhance their critical thinking skills through reflective inquiry (Hess, 2005; Journell, 2013). The use of current events in the social studies has long been heralded as the way to increase democratic values by merely having students be better informed (Haas & Laughlin, 2000). However, much of the information on curricular models has been based on self-reports by teachers and students and indicates that many classrooms rely upon open yet superficial discussion (Haas & Laughlin, 2000; Journell, 2013).
Luckhardt (2014) suggests using discussion boards to examine current events that relate to historical content as a means of increasing historical literacy. This curricular model is designed to allow students to respond to one another’s posts without the pressure of class-based discussion (Luckhardt, 2014). In the absence of pressure students will more fully examine current events, connect them with historical events, and develop a deeper civic awareness and historical literacy (Journell, 2013; Luckhardt, 2014). These types of discussions allow students to unpack current events and conduct analysis through historical understanding and determine civic responsibility (Deveci, 2007; Hess, 2008; Sharp, 2009).

There are a number of ways for teachers to incorporate current events in their classrooms, both formally and informally. However, Deveci (2007) notes that for many social studies teachers, deciding which current events to select is based upon what is most relevant to their respective classroom and subject. Selecting current events in this way allows teachers to craft current events to their classes, potentially increasing the likelihood that students will be engaged and internalize the material (Camicia & Dobson, 2009). Additionally, given the many curricular choices are made by teachers in the absence of a formal curriculum, it is in their best interest to be critical of what they choose (Sharp, 2009). The literature is clear that current events are useful and beneficial to fostering engaged, informed, and active citizens who are critical of information and identify problems, determine solutions, and take action (Hess, 2008; Journell, 2013; NCSS, 2010).
Section summary.

There has never been controversy about the value of current events in the social studies and the literature shows that its use in the social studies classroom has been widespread since its beginnings (Deveci, 2007). Much of the literature shows that social studies teachers are in favor of and do use current events (Pass, 2007). However, Lipscomb and Doppen (2013) note that how current events instruction takes place and what this actually looks like is not clear. In addition, some social studies teachers may over-estimate how much they actually cover current events (Lipscomb & Doppen, 2013). However, much of these data have been acquired through self-reporting from teachers and students (Journell, 2013; Sharp, 2009). In addition, current events curricular models remain largely informal in nature, suggesting that the time and space allotted for current events instruction may be limited (Journell, 2013). While there are few stand-alone current events courses, current events instruction is typically embedded in existing social studies courses. NCSS’ C3 framework (2013) provides a clear framework for incorporating current events on a consistent basis. Current events foster civic literacy, civic awareness, critical literacy, historical literacy, critical thinking, empathy, and personal understanding of internal conflicts regarding controversial issues (Journell, 2013; Libresco, 2003; Luckhardt, 2014; Pass, 2007; Pescatore, 2007; Sharp, 2009).

Controversial Issues in the Social Studies

History of controversial issues in the Social Studies.

Throughout the history of social studies education, controversial public issues (CPI) have been a part of the curriculum (Hess, 2002; 2005). Hess (2002) notes that
“since 1916, when the National Education Association's Commission on the Re-organization of Secondary Education [CRSE] recommended the development of a course examining the problems of democracy, social studies reformers have repeatedly called for inclusion of CPI in the social studies curriculum” (p.11). As a discipline, the social studies has taken the responsibility of addressing controversial issues, both directly and indirectly, and developing informed and participatory citizens (Evans, 2004; Hess, 2002; 2005; King; 2009). The social studies has been rife with controversy, especially given the numerous and sometimes contradictory groups represented within the field (Hess, 2002; King, 2009). Going back further, the American History Association’s (1899) Committee of Seven Report suggested that history, as a precursor to the modern social studies, should be used to examine the social life. Within the framework of this report resonate numerous controversial issues such as immigration, race, and gender issues. As the social studies evolved and was formally founded in the early 20th century, controversy persisted (NCSS, 1921). For much of the history of the social studies the connection between controversial issues and effective citizenship has been the importance of being able to navigate and discuss controversial issues as a component of civics education (Newman, 1989).

As part of the dialogue surrounding controversial issues in the social studies, one must not dismiss the importance of recognizing the existence of students as points of origin for controversy outside of the curriculum. While this section of the literature review focuses on the official curriculum, one would be remiss to dismiss the controversial issues students bring to the classroom daily (King, 2009). What students
view as controversial may differ from student to student, but the social studies curriculum
has long been focused on ensuring that students are able to effectively unpack these
issues and begin a dialogue pertaining to the reasons for their being classified as
controversial (Hess; 2002; 2005; Jorgensen, 2013; King, 2009; Washington &
Humphries, 2011). Contemporary controversial issues that students encounter cannot be
exclusively relegated to a social studies classroom where discussions and discourse may
be led by experienced teachers (Hess, 2008; King, 2009). King (2009) points out that the
number of controversial issues that students encounter on a daily basis trumps any
curricular materials that may be encountered in the classroom. In today’s highly
connected world, it is important that students possess the skills necessary for
understanding, discussing, and acting upon these issues (Hahn, 1991; Hess, 2002; 2005;
2008; Jorgensen, 2013; King, 2009; Patterson et al., 2012).

As part of the history of controversial issues in the social studies, individuals such
as Harold Rugg created an entire textbook series devoted to the examination of
controversial issues in society as a means of preparing students for life outside the
classroom and ensuring they were prepared to effectively engage in controversy (Evans,
2004). Moore (2012) points out that it is through the examination of controversy that
citizens are better able to not only understand issues, but also become better citizens
through their increased understanding and appreciation of differing opinions. Moore’s
(2012) notion that students can gain the ability to cooperate with others and learn
tolerance while still learning to be active citizens is perfectly in line with the mission of
Rugg’s textbooks series. Although it has been almost 80 years since Rugg first introduced
his textbook series, the ideas he set forth still resonate with contemporary teachers and students (Bagenstos, 1979; Evans, 2004; Moore, 2012; Rugg, 1941; Thornton, 2008). Looking backward as well as forward, the role that controversial issues have played in the social studies is obvious. As the nature of the discipline is to examine social aspects of the human experience, and contemporary issues are far more readily accessible to students, it is imperative that students are able to navigate controversial public issues as contemporary members of society.

**Teacher beliefs about controversy.**

Controversy in the social studies is something that has been intertwined with the field since its inception (Evans, 2004). While there have been some, such as Harold Rugg, who intentionally sought out controversial topics to be used in the classroom, in general, controversy has arisen out of the use of particular issues that are themselves controversial in nature (Evans, 2004). However, this is not to suggest that social studies is rife with controversy, but rather to point out that it exists intentionally in some cases and unintentionally in others. Using models for research, teachers evaluate their thinking and actions with respect to an issue or topic that has been used for a number of years. Until recently, controversy in the social studies has mostly been centered on curriculum choices rather than on teachers’ dispositions (Hess, 2002; Washington & Humphries, 2011). Hess (2002) notes the importance of face-to-face discourse in the examination of controversy and how this allows students to be able to much more easily understand the nature of controversy while also allowing teachers to facilitate the discourse taking place. The purposeful discussion of controversial issues is significant but can be restricted by
the beliefs of the teacher, especially with respect to the topic and openness of the
classroom discussion taking place (Camicia, 2008). There are two prominent models that
are most relevant with respect to assessing teachers’ beliefs about controversy in the
classroom, Diana Hess’ (2005) and Thomas Kelly’s (1986). Both models assess
teachers’ dispositions but each examines these dispositions from a different perspective
(Hess, 2002; Kelley, 1986). Assessing these dispositions requires teachers to be
reflective and introspective. This can be very difficult when teachers are not clear about
their own beliefs (King, 2009; Misco & Patterson, 2007; Washington & Humphries,
2011).

Although Washington and Humphries (2011) note a lack of research on assessing
teachers’ dispositions towards controversial issues, Misco and Patterson (2007) examined
preservice teachers’ beliefs of controversial issues through an extensive examination of
what influences young preservice teachers. Perceived academic freedom is one of the
most influential factors for preservice teachers as well as for teachers in the early stages
of their careers (Camicia, 2008; Misco & Patterson, 2007). The influence of community
beliefs, coupled with how much freedom and autonomy social studies teachers have in
their classrooms, directly impacts not only what is taught, but also how it is taught
(Camicia, 2008; Thornton, 1991). The literature suggests that when evaluating social
studies teachers’ beliefs about controversial issues, it is important to note that there exists
a divide between what teachers believe versus what actually takes place in the classroom
(Camicia, 2008; Hess, 2005; King, 2009, Misco & Patterson). Social studies teachers
serve in a position that allows for the selection of materials, issues, and curricular models,
in most cases with a good amount of autonomy that may, however, be limited by school
district curricula or pacing guides (Thornton, 1991). The literature has suggested that this
autonomy facilitates the creation of self-editing teachers whose concern for reactions
from the school community, outside school community, or building administration is
reflected in their curricular decisions in the classroom (Camicia, 2008; Misco &
Patterson, 2007; Thornton, 1991). It is important that social studies teachers understand
why they teach certain topics while leaving out others and what groups and interests
influence their decisions. These decisions reflect the power and autonomy they have or
do not have.

Two prominent models exist for addressing controversial issues in the social
studies: one is by Thomas Kelly (1986) and the other is by Diana Hess (2005). Each
model focuses on controversial issues, how social studies teachers view controversy, and
how it is manifested externally in their classroom. Kelly’s (1986) model includes four
essential positions with respect to controversial issues: “exclusive neutrality, exclusive
partiality, neutral impartiality, committed impartiality” (p.114). Each of these offers a
position that a social studies teacher might take regarding controversial issues. Kelly’s
(1986) four part model is primarily focused on the position that the teacher takes in the
classroom through instruction with respect to their beliefs. Hess’ (2005) has four essential
components as well, denial, privilege, avoidance, and balance, and focuses on how
teachers decide what is controversial in the first place and how this plays out in
instruction in the classroom.
Assessing the use of controversial issues in the social studies can be difficult (Misco & Patterson, 2007). Both Kelly (1986) and Hess (2005) present a unique, yet complementary model for assessing controversy in the social studies classroom. Both models seek to adequately navigate how teachers’ personal beliefs manifest themselves in their instructional beliefs of and philosophies towards controversy while also understanding how these beliefs impact instruction. To more effectively analyze controversy in the classroom a merged model will be more effective.

Kelly’s (1986) model is limited because it primarily focuses on underlying teacher philosophies when confronting controversial issues. Hess’ (2005) model is most appropriate for assessing how teachers approach controversial issues because the focus is on how and what teachers decide is controversial and how this influences their approach to instruction. However, Hess’ (2005) model is limited by the fact that it fails to present a fifth possibility for how teachers view controversial issues and conduct instruction. A merged model would incorporate Hess’ (2005) framework of denial, privilege, avoidance, and balance, while adding a fifth component, committed impartiality, derived from Kelly’s (1986) model. Relabeling committed impartiality as “balanced privilege,” aligns it better with Hess’s terminology. Balanced privilege suggests that teachers who subscribe to this belief present their positions regarding controversial issues and then equally present both sides of the issue. This new model of denial, privilege, avoidance, balance, and balanced privilege provides a more comprehensive framework for assessing the way controversial issues are approached in a social studies classroom.
As social studies teachers develop their own beliefs about controversy and gain more experience in the classroom, they develop an enhanced sense of autonomy. Understanding social studies teachers’ beliefs and actions of controversial issues is important to fully understanding what is taking place in the classroom, as well as the decisions social studies teachers make to address controversial issues.

**Curricular models.**

This section examines controversy as it pertains to determining what a controversial issue is, how skilled teachers address controversy in the classroom, what these issues might look like and the importance of academic freedom. Much of the literature suggests that the determination of whether or not something is controversial rests with the individual (Hess, 2002; 2005; Kelly, 1986; King, 2009). There are numerous ways for social studies teachers to address controversial issues. Teachers serve as gatekeepers in the social studies and the use of various curricular models impacts instruction and content (Thornton, 1991). In many cases, due to his or her relative autonomy, the teacher is the decision maker with respect to what is taught or not taught, as well as the way it is taught. Numerous curricular models allow for the examination and engagement of controversial issues. Many of these models are influenced by the goal of fostering informed and engaged citizens who are able to not only discuss controversy but also able to respect others’ opinions (Hess, 2005; Moore, 2012).

One of the more successful integrations of controversial issues occurred in Harold Rugg’s textbook series in the 1930’s (Evans, 2004). Rugg used current events and contemporary controversies to foster what he believed were ideal citizens capable of
thinking, assessing, and reacting to controversial issues on their own (Evans, 2004; Rugg, 1931). Given that students will be expected to address controversial issues outside of the classroom, controversy is a way to discuss relevant issues that are invaluable to future members of a democracy (Jorgensen, 2013; King, 2009). NCSS (2010) notes that the goal of the social studies is to promote civic competence and the ability to make informed and reasoned decisions in an interdependent world. This explanation requires students, and therefore teachers, to address issues of controversy. Rugg’s textbook series was quickly withdrawn from the mainstream because it was too controversial for its times (Evans, 2004). Due to controversy’s ability to change over time and from place to place, it is always relative to the time and location of its examination (Camicia, 2008).

Many of the models that exist are used because it is believed that one needs to be able to understand controversy to be an effective citizen (Washington & Humphries, 2011). Hess (2002; 2005) notes that many of the models that exist are at the discretion of the teacher and not fully used but rather structured in a piece meal fashion. Examples of models include the Constitutional Rights Foundation’s (2003) simulation for assessing immigration in America and Brown University’s Choices (2014) program which offers scenarios through which students can examine controversial historical, political, and social issues, as well as Stanford University’s Program on International and Cross-Curricular Education (SPICE) which examines international issues that may be controversial to enhance critical thinking, interconnection, and understanding of events (Stanford University, 2014). In addition, both Advanced Placement and International Baccalaureate curricula claim to examine controversial issues but do so in a fashion that
is decided by the teacher (Hill, 2002). These programs are loosely structured and allow
for a wide variety of customization. Many of the commonly used curricular models are
based on democratic dialogue (Hess, 2002; 2008; King, 2009; Moore, 2012). In addition,
some models require students to role play empathy and understanding by taking on
someone else’s opinions or beliefs (Camicia, 2008; King, 2009). Journell (2011) notes,
that in many curricular models there exists a distinct divide between the teacher and the
student with respect to personal backgrounds such as race, socioeconomic status, and
ethnicity that all impact how the teacher frames controversy in a curricular model and
how the student perceives controversy. This idea leads to the use of Hess’ (2002)
examination of controversy in social studies classrooms, and the notion that issues are
either open, meaning they are up for debate, or closed, meaning they are not open for
discussion. The issue of open or closed curricula is important to understand because
when teachers view an issue as closed the subsequent disconnect impairs any real
evaluation of controversy (Journell, 2011).

Section summary.

Controversy and the social studies have been linked since the early days of the
Controversy surrounding what to teach, how to teach it, and what instructional/curricular
model to use has evoked ever evolving questions in the social studies. How teachers
perceive controversy is very important to the instruction that takes place in the classroom.
The social studies has utilized controversy, both intentionally and unintentionally, in
various forms. In some cases, the controversy arose out of the subjects being taught and
whether they should or should not be addressed in the classroom (Evans, 2004). In other cases instruction in the social studies has been based upon the discussion and evaluation of controversial issues to foster more engaged, informed, and participatory citizens (Moore, 2012; Washington & Humphries, 2011). What is most evident from the literature is that teacher beliefs play an undeniably important role in deciding what constitutes controversy and how to or not to present it in the classroom (Camicia, 2008; Journell, 2011).

Theoretical Underpinnings

There are four primary theories that are relevant to this study: constructivism, discovery learning, theory of instruction, and democratic education. These four theories underscore how learning takes place in the classroom, what that learning looks like, and how knowledge is constructed. Given their position of authority, this study focuses on the teachers’ perspectives in order to determine what they believe and how their beliefs translate into instructional action.

Constructivism.

Constructivism aims at understanding the nature of the ways in which individuals construct knowledge. Constructivism has four main tenets: knowledge is not passive, cognition is an adaptive process, cognition organizes and makes sense of experiences, and knowing’s roots are biological and neurological constructions, as well as their social, cultural, and language interactions (Doolittle and Hicks, 1994). According to Doolittle and Hicks (1994) this means that “knowledge is not passively accumulated, but rather, is the result of active cognizing by the individual” (p. 6). Cognition requires one to adapt to
what is new and this initiates a process that alters individuals’ thinking and behaviors in a particular environment to allow them to adapt to specific environmental requirements. Cognition allows individuals to make sense of their experiences and provides a framework for developing future understandings. Given that cognition is rooted in multiple parts of the human experience and is biological, psychological, and social in its formation, it is present in all phases of individual growth. These four tenets of constructivism are essential for understanding teachers’ learning about and instruction about controversial issues, environmental issues, and notions of civic responsibility. Particularly applicable in this study is what Doolittle and Hicks (1994) define as “radical constructivism” (p. 6), which is based upon the first three tenets that knowledge is constructed and controlled by the individual.

Radical constructivism suggests that students possess a great deal of power in the construction of their cognitive framework when encountering issues that are controversial. It espouses that knowledge construction is not a passive endeavor but one that is intentional (Gibson, 1999). Radical constructivist views of knowledge construction align with critical pedagogy and the work of social justice with regard to the belief that work towards solving issues of social justice and inequity must be taken up through action, not through passive education (Freire, 2000, Gibson, 1999).

Constructivism focuses on the construction of knowledge and is intended to be an active process. Teachers daily impact the construction of knowledge in the classroom through their own biases towards and hesitation with regard to controversial environmental issues such as hydraulic fracturing.
**Discovery learning.**

Discovery learning research highlights that learning is active and based upon prior experiences (Bruner, 1961). Discovery learning suggests that when students discover ideas and issues on their own they will better learn and retain information (Xuan & Perkins, 2013). Discovery learning also fosters the creation of relationships between existing knowledge and newly acquired knowledge, which is important in social studies (Bruner, 1961; Xuan & Perkins, 2013). An example of discovery learning includes problem-based learning which requires students to solve problems through a combination of pre-existing knowledge and new information (Svinicki, 1998).

This research examines social studies teachers’ perspectives on controversial environmental issues. Examining controversial environmental issues requires teachers to reflect on their positions and beliefs within their current framework of knowledge and the acquisition of new knowledge (Bruner, 1961; Patton, 2002). Discovery learning fosters cognitive growth and deeper understanding. When fostering change, it is important to connect the social and the environmental (Bruner, 1961; Svinicki, 1998; Wilson, 2006). This study aims at understanding social studies teachers’ perspectives on controversial environmental issues and the active processes that take place to foster knowledge acquisition. Individuals must first understand their positions regarding the environment and their previous experiences in order to make tangible connections between their understandings of environmental issues. In this study, there will be a number of participants from across diverse regions with different social, economic, and political conditions. Social studies teachers’ views of the environment and whether or not there is
a pedagogical responsibility to environmental issues will be dependent upon previous experiences regarding their responsibility as citizens and to the environment (Bruner, 1961).

**Gagné’s theory of instruction.**

Robert Gagné’s (1985) theory of learning instruction, which focuses on the instructional composition and the nature of instruction being provided to the student by the teacher, serves as a foundation and point of examination. The three components of this theory are: taxonomy of learning outcomes, conditions of learning, and nine events of instruction. Taxonomy of learning is important because individuals move through different learning stages of understanding (Driscoll, 2005; Gagné, 1985). Conditions of learning ensure a balance between previously held beliefs regarding controversial issues and potential new beliefs about how one might use controversial issues in a social studies classroom. The nine events of Gagné’s (1985) instruction ensure that learners progress to mastery understanding of a particular subject (Driscoll, 2005). Gagné’s (1985) events are: “gain attention, inform of learning objectives, recall prior knowledge, present new content, provide learning guidance, practice the new skill, provide specific and immediate feedback, assess learning, and enhance retention and transfer knowledge” (p.246). Given the complex nature of controversy, one must always be mindful of the various components of learning that are in play.

As social studies teachers navigate their developing knowledge of controversial environmental issues, any potential changes will impact what is taught and what is learned (Driscoll, 2005). Fracking as a controversial environmental issue has multiple
stakeholders with vested interests. In addition, social studies teachers must navigate the balance between their position as teachers, advocates, private citizens, and any other positions. Gagné’s (1985) theory of instruction addresses attitudes and skills that play a role in the classroom, the conditions under which students are active or passive learners, and at what stage the instructional process is taking place. This study focuses on the juxtaposition between what teachers believe and what they actually teach in the classroom with regard to controversial environmental issues.

**Dewey’s democratic education.**

John Dewey’s (1963) theory of democratic education suggests that for true, legitimate, and lasting learning to take place, instruction must occur under the conditions of a free and democratic classroom. Thus, if the social studies teachers who participated in this study dictate what their students should believe then, according to Dewey (1963), no real learning takes place. In addition, Dewey’s (1963) theory of democratic learning fits well with critical theory and critical social theory as generating and respecting the beliefs of the individual is imperative. This study aims at understanding what teachers think and actually do in their classrooms. Especially relevant to the social studies is whether or not they teach about controversial issues and whether their instruction aligns with their personal beliefs.

NCSS’ (2010) goals of developing engaged, active, and informed citizens who are capable of defining problems, fostering solutions, and enacting those solutions are framed in the context of democratic citizenship. Given that fracking is the central focus of this research study, it is relevant to examine how teachers choose to select one topic over
another and yet maintain a democratic classroom (Dewey, 1963; Lipscomb & Doppen, 2013). The nature of Dewey’s (1963) theory of democratic education requires inclusion, participation, and the belief that all stakeholders’ ideas are valid. Controversial issues and the nature of citizenship are two aspects of the social studies that must intersect (Dewey, 1963; Kim, 2013).

**Section summary.**

Constructivism, discovery learning, theory of instruction, and democratic education all come into play when examining controversial environmental issues in the social studies. Current events and controversial issues are crucial ingredients of a democratic education (Dewey, 1963; Freire, 2000; Letizia, 2013; Patton, 2002). Constructivism’s focus on the construction of knowledge is important to understanding how teachers construct knowledge and impact their students’ construction of knowledge (Doolittle & Hicks, 1994). Because of the nature of controversy in the classroom and the view that environmental issues are problems citizens must effectively address and solve as members of a diverse democracy, discovery learning theory is relevant to this study as well (Bruner, 1961).

**Chapter Summary**

**What we know.**

Social studies has always been a realm of controversy. Social studies teachers must balance their own beliefs about the issues and decide whether or not and how to introduce a controversial topic in the classroom. Making this decision requires them to reflect upon their own beliefs as well as those of school administrators, parents, students,
and community stakeholders. They may decide that the issue is too controversial to address or perhaps present a biased view. While there is no debate surrounding the importance of civics education as a fundamental goal of the social studies, debate does exist about what actions a good citizen must undertake. Central to this debate has been the question of whether or not to include the environment as a responsibility of good citizenship.

Despite its often controversial nature, environmental citizenship has begun to gain limited traction in the social studies. While some social studies teachers view environmental issues as relevant, others believe that it is not.

Social studies teachers use current events instruction but typically do so within the framework of core social studies classes rather than stand-alone classes. Being aware of current events is important for fostering citizens who are informed, engaged, and active in their community. Although teaching for social justice is important to many social studies teachers, a critical pedagogy focus remains controversial for many. Good citizenship remains an ill-defined concept as there are many questions surrounding what it looks like, how it may take place, and whether or not it includes the environment.

**What we do not know.**

There is limited research on how social studies teachers view controversial environmental issues and then actually take action in the classroom. Although social studies teachers report that being informed and engaged about controversial issues is important, there is little evidence of what they actually do in the classroom.
While many social studies teachers feel restricted by the limitations of curriculum standards, high stakes tests, and curriculums guides, do they actually adhere to these limitations? This study aims to assess what actually takes place in the classroom when the doors close. Based on a review of the literature two main research questions emerge:

1. What is the status of teaching about fracking in American Government classes in Ohio?

2. What barriers exist that may prevent teaching about fracking in American Government classes in Ohio?
Chapter 3: Methods

Introduction

Until recently, there has been a lack of research focused on the use of controversial environmental issues in the social studies (Kumler, 2011; Misco and Patterson, 2007). Much of the recent research focuses on the perspectives of students and less on teachers’ perspectives (Camicia, 2008; Costa, 2013; Hess, 2002; 2008; King, 2009). In addition, the research involves case studies of teacher perspectives on controversial issues but exclude environmental issues (Hess, 2002; 2008; King, 2009; Kumler, 2011; Patterson et al., 2013).

To assess the current state of and barriers to fracking related instruction in American Government classrooms in Ohio, this study includes the use of statewide sampling. Statewide sampling compensates for the diverse nature of Ohio’s geography, population, and exposure to fracking activities. The goal of statewide sampling in this study was to obtain a significant sample (n=60) of teachers. Fracking is an issue that is layered with uncertainty in the affected communities and the classroom. The social studies was created to foster the development of critical, informed, and active citizens, who understand how to unpack complicated issues such as fracking. In order to understand the status of fracking it is important to gain a clearer understanding of the perspectives of American Government teachers in Ohio and whether or not they address the issue in the classroom.

The two research questions were:
1. What is the status of teaching about fracking in American Government classes in Ohio?

2. What barriers exist that may prevent teaching about fracking in American Government classes in Ohio?

A statewide cross-sectional survey (see Appendix A) allowed me to obtain data that reflected the views of Ohio high school social studies teachers of American Government who elected to participate in the study.

I used the random number generator in Microsoft Excel to identify a random sampling of participants in all school districts across the state. Random sampling was important to the first level of sampling in order to obtain a diverse participant population. I specifically targeted only those teachers who were high school American Government teachers in Ohio and I used purposeful criterion sampling to select only those members of the initial sample population who fit this demographic (Patton, 2002). After I selected the participants I contacted them with an initial email requesting their participation (see Appendix B).

Due to the lack of existing information about how American Government teachers in Ohio view the practice of fracking, whether or not they address fracking during instruction, and barriers that might prevent them from addressing fracking in the classroom, this is an exploratory study (Johnson & Christensen, 2012). In an exploratory study hypotheses are not made because the nature of the research does not allow for the prediction of population responses or behavior regarding the topic being explored.
This study used a mixed methods design that relied upon a survey to obtain categorical data. According to Johnson and Christensen (2012), a mixed methods design is appropriate for exploratory studies which examine multiple contexts and require both quantitative and qualitative data collection. This study used both quantitative and qualitative survey items to collect data (Terrell, 2011). The study design and analysis were based on what Caracelli and Greene (1993) label a typology development design, a mixed-methods design which employs both qualitative and quantitative data for creating themes and typologies that may be used for further study of both the existing data and future data collected. This study was orientational because I am studying fracking through a controversial lens. I believe that addressing fracking in the classroom is relevant to the social studies and should be incorporated in the curriculum (Patton, 2002). I used reflective journaling. The exploratory design and grounded theory allowed potential themes to emerge from the data (Patton, 2002).

Although I had planned to generalize my findings from my sample to the larger population, I was unable to do so. I was not able to obtain a representative sample because of limitations of time and the size of my population. Based on a data base provided by the Ohio Department of Education (2012), there are 504 high schools in the state and all are required to offer American Government, making the population of Ohio high school government teachers at least equal to the number of high schools in the state. According to Krejcie and Morgan (1970) and Mason (2010), the estimated population of
American Government teachers in Ohio (N = 504) would require a random sample of at least 217 (n=217). The sample I attained was 62. However, my findings provide a first insight into how high school American Government teachers in Ohio view teaching about controversial environmental issues such as fracking that have civic implications.

**Participants and Setting**

The participants for this study included high school teachers of American Government who taught in districts classified as Rural, Suburban, and Urban. (See Table 3.1.) As shown in Table 3.1, the Ohio Department of Education (ODE) categorizes all school districts in the state into one of eight typologies.

<table>
<thead>
<tr>
<th>Typology</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rural - High Student Poverty &amp; Small Student Population</td>
</tr>
<tr>
<td>2</td>
<td>Rural - Average Student Poverty &amp; Very Small Student Population</td>
</tr>
<tr>
<td>3</td>
<td>Small Town - Low Student Poverty &amp; Small Student Population</td>
</tr>
<tr>
<td>4</td>
<td>Small Town - High Student Poverty &amp; Average Student Population Size</td>
</tr>
<tr>
<td>5</td>
<td>Suburban - Low Student Poverty &amp; Average Student Population Size</td>
</tr>
<tr>
<td>6</td>
<td>Suburban - Very Low Student Poverty &amp; Large Student Population</td>
</tr>
<tr>
<td>7</td>
<td>Urban - High Student Poverty &amp; Average Student Population</td>
</tr>
<tr>
<td>8</td>
<td>Urban - Very High Student Poverty &amp; Very Large Student Population</td>
</tr>
</tbody>
</table>

*Source: Ohio Department of Education (2013)*
There were overlaps in population size and level of poverty in ODE’s 2013 typology of school districts. The most recent 2013 typology allows ODE to narrowly classify districts, however, its eight classifications are not needed for this study as my focus was on geographic differences and their exposure to fracking. Due to existing overlaps, for the purpose of this study, I combined these typologies into the following three: Rural (1-4), Suburban (5-6), and Urban (7-8). (See Table 3.2.) The survey targeted 50 social studies teachers from each of the three combined typologies for a total of 150. A response rate above 35% was deemed acceptable (Patton, 2002). Table 3.2 displays the number of teachers in each of the three typologies.

<table>
<thead>
<tr>
<th>Typology</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Respondents</td>
<td>21</td>
<td>20</td>
<td>21</td>
</tr>
</tbody>
</table>

A stratified sample of all three typologies yielded a participant population evenly distributed across all three typologies. The various geographic regions and populations that comprise the state of Ohio are diverse in their socioeconomic, racial, cultural, geographical, and environmental exposure to fracking, which generated a diverse data set comprised of teachers of different ethnicities, genders, and years of teaching experience (Hatzenbuhler & Centner, 2012; Jagger, 2013; Resser, 2013).

Ohio is divided into five distinct geographic regions: Northwest, Northeast, Central, Southwest, and Southeast. Each region contains all three typologies. However, Southeast Ohio contains only one urban and one suburban district. The data sampled
spanned the state of Ohio. The Rural typology respondents included all five geographic regions with the heaviest concentrations in Southeast Ohio. Suburban and Urban typology respondents were clustered in pockets located in Northwest, Northeast, Central, and Southwest Ohio with no representatives from Southeast Ohio.

The state of Ohio mandates the teaching of an American Government course which is typically taught to students in the 11th or 12th grade. The rationale for selecting American Government as the target course for this study was twofold. First, the state aims for the American Government curriculum to highlight the necessary skills for good citizenship. Secondly, it serves as a transition to full-fledged citizenship. In order to meet these goals, the state intends the American Government course to be a student’s culminating citizenship experience allowing for the examination and discussion of controversial issues under the guidance of a citizenship mentor.

Ohio’s New Academic Content Standards state the following theme for American Government “How the American people govern themselves at national, state and local levels of government is the basis for this course. Students can impact issues addressed by local governments through service learning and senior projects” (ODE, 2012, p. 7). In addition, the first two topics covered in the model syllabus from ODE (2012) are: Civic Involvement, and Civic Participation and Skills. Consequently, American Government is an appropriate course for analyzing the status of teaching about a local, regional, and national issue such as fracking.

This study was delimited to teachers of American Government. While I did not physically enter the classroom of the participants, the survey data provide an initial
reflection of the participating social studies teachers’ personal beliefs, professional
beliefs, and professional practices. The data are accurate to the extent that the participants
were honest in their responses and cognizant of their personal beliefs about the nature of
controversy (Hess, 2002; Kelly, 1986; Patton, 2002).

Survey

I used Qualtrics software to collect survey data. Qualtrics allows users to create,
store, collect, and analyze surveys. The survey was a cross-sectional and single stage
sample as it gathered information at one moment in time (Crano & Brewer, 2002; Patton,
2002). I stratified survey participants by typology classification. The survey addressed
questions related to personal beliefs, professional beliefs, and professional practice (see
Appendix A). Hess (2002) and Kelly (1986) have each noted that when assessing
personal beliefs about controversy, teachers may experience a disconnect between their
personal and professional beliefs as related to instructional practices. I addressed this
concern by asking participating teachers to answer a number of evaluative and reflective
open-ended written response questions regarding the purpose of the social studies and
themes related to fracking, current events, controversy, and environmental education
(Misco & Patterson, 2007; Patton, 2002). The survey included multiple Likert scale items
to allow the participants to evaluate their opinions and practices concerning the use of
current events instruction.

The survey addressed each of the following five areas: research literature on
fracking, controversial issues in the classroom, environmental education, civics
education, and current events instruction. The survey consisted of 32 items and included
closed ended questions, Likert scale response, and open ended written response questions. The variety of survey items allowed me to gain a wide range of in-depth, thoughtful, and detailed responses. All data were confidential and anonymous, unless participants indicated that they consented to participate in a potential follow-up interview. I requested teachers’ participation via email and each teacher subsequently granted his or her informed consent in their completion of the survey (see Appendix A and B).

Qualtrics allows users to select the format for downloading data which includes CSV, SPSS, Fixed Field Text, XML, and HTML. The survey data are organized in numeric order. However, Qualtrics allows users to reorganize survey results data. I created three separate but identical Qualtrics surveys and collected data for each typology independent of each other. Each of the three Qualtrics surveys were duplicates of the original IRB approved version. The only difference was the link provided for participants was connected to a survey specific to each typology. Keeping surveys separate was an organizational decision which allowed for easier monitoring of teacher progress and created separate raw data files for each typology. In addition, collecting data this way allowed me to initially independently examine each typology’s data for themes.

**Data Collection**

I contacted participants by acquiring school information and the subsequent teacher contact information from the Ohio Department of Education’s (2013) typology sheet, which lists school contact information and may be downloaded from the ODE website (see http://education.ohio.gov/Topics/Data/Frequently-Requested-Data/Typology-of-Ohio-School-Districts). Due to the timing of my data collection and
the timeliness of responses I randomly sampled until I reached a response rate of 40% which equated to approximately 20 surveys per typology. I conducted four rounds of sampling and each round contained 50 potential participants per typology, totaling 600 potential participants. Each round of sampling averaged 18 days of sampling time. I sent an email to each participant containing an introduction and a link to the survey (see Appendix B), as well as at least one follow-up email reminding him or her of the request to participate in the survey. Data collection began in May of 2014 and ended September 1, 2014.

After randomly selecting districts and then subsequent schools for each typology, I identified the high school American Government teachers in each via the schools’ websites and through telephone calls to potential participants’ schools. Ultimately, I compiled spreadsheets of names and email addresses of teachers of American Government in each typology. Participant contact information was updated after each round of sampling.

Data Analysis

I organized my data thematically using the following themes; current status of fracking, civics education, controversial issues, environmental education, and current events instruction. Organization of data in this way allowed me to structure my comparison in alignment with my literature review. I analyzed the data using descriptive statistics and content analysis to identify themes across the data. I began my data analysis by reading all responses and identifying initial themes including geographic location, demographic characteristics and years of classroom experience. First, I analyzed the data
for all three typologies using descriptive statistics and coded written responses.

Subsequently, I examined individual typologies for themes across the entire sample population.

I conducted my analysis using two programs, Microsoft Excel and Tableau 8.0 and Tableau Reader 8.2. I used Excel to create descriptive statistics from the raw data collected in Qualtrics. Tableau is a visual data analytics software that permits for raw numeric data and descriptive statistics to be analyzed in both numeric and visual form. Data must then be examined using Tableau Reader 8.2 which allows users to cross-tabulate and analyze that data.

I organized and analyzed data thematically by question. Each question was associated with one of the five themes which served as the structure of my data results and analysis section. I generated descriptive statistics for each question and each typology. I analyzed open-ended written response questions using content analysis and I coded teachers’ responses and used word count and the frequency of various terms or phrases to determine what themes emerged. I analyzed data collectively and then examined individual typologies. This allowed me to determine what associations and connections existed between questions and the thematically structured data report.

**Credibility**

For the purposes of this study I used two credibility techniques. Debriefs with my committee chair on a regular basis ensured data collection was credible and useful for the purposes of this study (Crano & Brewer, 2002; Patton, 2002). I also debriefed with a research methodologist at my university. Lastly, I collected participants’ responses over a
three-month period which ensured that my data were not influenced by a specific event such as the response to a fracking related industrial accident. Industrial accidents can influence the public’s consciousness and impact teachers’ views of fracking soon after such an event but then slowly dissipate as memory of the event fades (Patton, 2002).

Validity

Random sampling of participants enhanced the validity of this study. As a current controversial issue such as fracking has increasingly become a matter of public awareness, maturation may have impacted participants’ responses (Crano & Brewer, 2002). The timing of the data collection presented challenges to the validity of my data which took place at the end of the academic school year at a time when teachers’ minds shift to finishing the school year (Crano & Brewer, 2002; Patton, 2002). Also, given that this study used open-ended written response questions and that qualitative research is interpretive, I worked closely with my dissertation committee and chair to ensure that my questions were valid (Fraenkel & Wallen, 2000; Patton, 2002). However, it is the responsibility of the reader to generalize the findings in this study.

Natural History

This study is the outcome of my personal experiences as a classroom teacher and doctoral student as well as having been raised in a farming community. Because of these experiences, I value and believe in the importance of the environment and our responsibility to sustain it for future generations. However, as a classroom teacher, who has taught in predominantly urban settings in which students frequently lack exposure to
the natural world, I began to reflect on how to integrate environmental education into the social studies.

I have deeply benefitted from growing up in an area where the natural world is readily accessible and celebrated. However, many students I have encountered are alienated from the natural environment. In addition, fracking arose as a prominent controversial issue when I began my doctoral studies. I realized the devastating effects of these practices on the social, economic, and environmental landscape. These experiences and interests have led me to question how to integrate environmental education in the social studies classroom and teach about fracking as a controversial issue in regions where fracking occurs as well as where it does not. Consequently, I decided to randomly sample teachers of American Government in Ohio to assess whether or not they act upon their beliefs about fracking, and if so, how and why.
Chapter 4: Findings

Introduction

This chapter presents findings on the status of and barriers to teaching about hydraulic fracturing, commonly referred to as fracking, in Ohio high school American Government classrooms. The findings will be presented aligned with the five major themes that emerged from the review of the literature:

- Current Status of Fracking
- Civics Education
- Controversial Issues
- Environmental Education
- Current Events Instruction

Two research questions guided this study:

1. What is the status of teaching about fracking in American Government classes in Ohio?
2. What barriers exist that prevent teaching about fracking in American Government classes in Ohio?

Each of the following five sections will present the entire sample’s data, followed by a sequential presentation of typology data defined as rural, suburban, and urban.

Population Demographics

The participants in this study were Ohio high school teachers of American Government, separated into three categories based on the Ohio Department of Education typology classification of the school districts in which they taught: rural (T1-T4),
suburban (T5-T6), and urban (T7-T8). The total number of participating teachers was 62. Twenty-one were classified as rural, 20 as suburban, and 21 as urban based upon the ODE’s typological classification. The participants were evenly distributed across the state. However, the data indicate that regardless of whether they taught in rural, suburban, or urban settings, non-Hispanic Whites and males dominated the participant population. (See Tables 4.1. and 4.2.)

Table 4.1. 
*Gender Distribution by Typology*

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong></td>
<td><strong>%</strong></td>
<td><strong>n</strong></td>
<td><strong>%</strong></td>
<td><strong>n</strong></td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>76%</td>
<td>13</td>
<td>65%</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
<td>14%</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td>No Response</td>
<td>2</td>
<td>10%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Of the 19 rural teachers who responded, approximately three fourths were male (n=16; 76%) and one seventh were female (n=3; 14%), while two chose not to respond (n=2; 10%). (See Table 4.1.) Among suburban teachers nearly two thirds were male (n=13; 65%) while slightly more than one third were female (n=7; 35%). The urban group was the most gender diverse, approximately half male (n=11; 52%) and half female (n=10; 48%).
The majority of teachers in this study were non-Hispanic Whites (n=52; 84%) with the remainder comprising non-Hispanic Black, Asian-Pacific Islander, Multi-racial and Other (n=12; 16%). (See Table 4.2.) Two teachers did not respond. The data indicate that the urban teachers in this study were the least ethnically diverse with nine tenths being non-Hispanic White. The findings suggest that regardless of geographic location, this study’s population of American Government teachers in Ohio was highly homogeneous.

The teachers in this study were asked to indicate their total years of teaching experience by the end of the 2013-2014 school year, in the profession as well as in their current districts. (See Table 4.3.) The data indicate a distinction between the years of experience for rural teachers when compared to suburban and urban teachers and that there were more teachers with longer-term experience in the rural typology than in either of the other two categories.
Table 4.3. 
Teaching Experience

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural Total</th>
<th>Rural District</th>
<th>Suburban Total</th>
<th>Suburban District</th>
<th>Urban Total</th>
<th>Urban District</th>
<th>Total</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n %</td>
<td>%</td>
<td>n %</td>
<td>%</td>
<td>n %</td>
<td>%</td>
<td>n %</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>0 0%</td>
<td>1 5%</td>
<td>1 5%</td>
<td>0 0%</td>
<td>0 0%</td>
<td>1 2%</td>
<td>2 3%</td>
<td></td>
</tr>
<tr>
<td>2-5</td>
<td>1 5%</td>
<td>1 5%</td>
<td>0 0%</td>
<td>1 5%</td>
<td>1 5%</td>
<td>2 3%</td>
<td>2 3%</td>
<td></td>
</tr>
<tr>
<td>6-10</td>
<td>2 10%</td>
<td>4 20%</td>
<td>6 29%</td>
<td>4 29%</td>
<td>12 19%</td>
<td>12 19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-15</td>
<td>3 14%</td>
<td>2 10%</td>
<td>3 14%</td>
<td>3 14%</td>
<td>8 13%</td>
<td>12 19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-20</td>
<td>1 5%</td>
<td>7 35%</td>
<td>6 30%</td>
<td>3 14%</td>
<td>11 18%</td>
<td>8 13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-25</td>
<td>2 10%</td>
<td>3 15%</td>
<td>1 5%</td>
<td>2 10%</td>
<td>6 10%</td>
<td>8 13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26+</td>
<td>11 52%</td>
<td>3 15%</td>
<td>7 33%</td>
<td>7 33%</td>
<td>21 34%</td>
<td>17 27%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>1 5%</td>
<td>0 0%</td>
<td>0 0%</td>
<td>0 0%</td>
<td>1 2%</td>
<td>1 2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>21 100%</td>
<td>21 100%</td>
<td>20 100%</td>
<td>20 100%</td>
<td>21 100%</td>
<td>21 100%</td>
<td>62 100%</td>
<td>62 100%</td>
</tr>
</tbody>
</table>

Approximately two fifths of the teachers had more than 20 years total teaching experience (n=27; 44%) as well as more than 20 years teaching experience in their current districts (n=25, 40%). Approximately one third of the teachers in this study had 11-20 years of experience, both in total (n=19; 31%) and in their current districts (n=20; 32%). Approximately one fifth (n=12; 19%) had 6-10 years of experience in both categories (n=12; 19%).

The data illustrate that the majority of the rural teachers in this study (n=13, 62%) had more than 20 years of total teaching experience, about double that of the suburban (n=6, 30%) and urban teachers (n=8, 38%). Nearly three fifths of the rural teachers (n=12; 57%) had more than 20 years teaching experience in their current districts, compared to the suburban (n=4; 20%) and urban teachers (n=9; 43%). However, the suburban teachers had more than double the number of teachers with 11-20 years of experience in total (n=9; 45%) when compared to rural teachers (n=4; 19%) and slightly
less than double compared to urban teachers (n=6; 28%). This was also the case for the number of years in their current districts. (See Table 4.3.) There were three times as many urban teachers with 6-10 years of experience (n=6; 29%) in comparison to rural teachers (n=2; 10%) and double the number of suburban teachers (n=4; 20%). Only three teachers out of 62 participants in this study had five or fewer years of teaching experience. The data suggest that rural teachers in this study had more experience and that few teachers were new to the field.

Ohio’s five regions contain all three typologies while Southeast Ohio only contains one urban district and one suburban district. This study included participants from all five geographic regions. However, suburban and urban teachers were not represented in Southeast Ohio. (See Figure 4.1.)

Figure 4.1. Geographic Distribution of Participants
The distribution of the teachers in this study is presented in Figure 4.1 where blue represents rural, orange represents suburban and green represents urban. There are pockets of densely populated urban areas with surrounding suburban communities in Northwest, Northeast, Central, and Southwest Ohio around the respective metropolitan areas of Toledo, Cleveland/Akron, Columbus, and Cincinnati/Dayton. Outside these metropolitan areas across Northwest and Southeast Ohio are large predominantly rural sections of the state. In this study rural teachers predominated in Northwest and Southeast Ohio whereas suburban and urban teachers taught mostly in Northeast, Central, and Southwest Ohio.

**Current Status of Fracking**

**Teachers’ perspectives on fracking.**

This section presents the teachers’ personal and professional perspectives about teaching about fracking in their classrooms and about fracking in their communities. The findings address the following: concerns about fracking, knowledge about fracking, fracking in teachers’ communities, professional development, fracking in the social studies, the controversial nature of fracking, teaching about fracking, barriers to teaching about fracking, and comfort level with teaching about fracking.

**Concerns about fracking.**

The participating teachers in this study were presented with the following definition of fracking: “Hydraulic fracturing (fracking) is a technique used by energy companies in which they drill vertically and then horizontally into shale formations in order to crack the shale formation with high pressure fluids to release natural gas and oil”
(Gjelten, 2012). They were then asked to rate their level of concern about fracking on a Likert scale from 1 (Not Concerned) to 5 (Highly Concerned). (See Table 4.4.)

Table 4.4.

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th></th>
<th>Suburban</th>
<th></th>
<th>Urban</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Not Concerned</td>
<td>6</td>
<td>29%</td>
<td>5</td>
<td>25%</td>
<td>2</td>
<td>10%</td>
<td>13</td>
<td>21%</td>
</tr>
<tr>
<td>Somewhat Concerned</td>
<td>6</td>
<td>29%</td>
<td>3</td>
<td>15%</td>
<td>2</td>
<td>10%</td>
<td>11</td>
<td>18%</td>
</tr>
<tr>
<td>Moderately Concerned</td>
<td>8</td>
<td>38%</td>
<td>8</td>
<td>40%</td>
<td>6</td>
<td>29%</td>
<td>22</td>
<td>35%</td>
</tr>
<tr>
<td>Highly Concerned</td>
<td>1</td>
<td>5%</td>
<td>4</td>
<td>20%</td>
<td>4</td>
<td>19%</td>
<td>9</td>
<td>15%</td>
</tr>
<tr>
<td>Very Highly Concerned</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>7</td>
<td>33%</td>
<td>7</td>
<td>11%</td>
</tr>
<tr>
<td>Totals</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Approximately one fourth of the teachers in this study (n=16; 26%) were highly to very highly concerned about fracking whereas nearly two fifths (n=24; 39%) were not concerned or somewhat concerned. Slightly more than one third (n=22; 35%) indicated they were moderately concerned about fracking. (See Table 4.4.) Thus, the data suggest that three out of five teachers in this study were, at least moderately if not more concerned about fracking (n=38; 61%).

Even though fracking operations are more prevalent in rural school districts, the data suggest that the level of concern among suburban (M=2.55; SD=1.1) and urban (M=3.57; SD=1.33) teachers in this study was higher than among the rural teachers (M=2.19; SD=0.93). Only one rural teacher indicated he was highly concerned while no rural teachers indicated they were very highly concerned. The data indicate that approximately three fifths of rural teachers (n=12; 58%) were either not concerned or only somewhat concerned whereas two fifths of suburban (n=8; 40%) and one fifth of
urban teachers (n=4; 20%) indicated they were either not concerned or only somewhat concerned. Urban teachers were the most concerned in comparison to the entire sample (M=3.57, SD=1.33), and were the only group with teachers who indicated a very high level of concern, even though at the time of this study very few fracking operations were taking place in any urban area in Ohio (see Figure 4.4).

**Knowledge about fracking.**

The teachers in this study were asked to rate their level of knowledge about fracking on a Likert scale ranging from 1 (None) to 5 (Very High). The responses indicated that most teachers believed they had some to sufficient knowledge about fracking. (See Table 4.5.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Some</td>
<td>9</td>
<td>6</td>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>Sufficient</td>
<td>10</td>
<td>7</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>High</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Very High</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>20</td>
<td>21</td>
<td>62</td>
</tr>
</tbody>
</table>

About one out of three teachers in this study (n=23; 37%) believed they had an adequate knowledge base about fracking whereas approximately two out of five (n=24; 39%) indicated they only had some knowledge. One fifth of teachers (n=12; 19%) indicated they had a high to very high level of knowledge about fracking. Only three teachers (5%) indicated they had no knowledge about fracking. (See Table 4.5.)
summary, more than half of the teachers in this study (n=35; 56%) believed their knowledge about fracking was either sufficient or more than sufficient.

Rural (M=2.67, SD=.66) teachers’ data illustrate they had less knowledge of fracking compared to the entire participant population (M=2.77; SD=0.95) while suburban teachers (M=2.9; SD=1.21) were slightly more knowledgeable. Approximately three fifths of the rural (n=12; 57%) and suburban (n=12; 60%) teachers and approximately half of urban teachers (n=11; 53%) believed they had a sufficient or higher level of knowledge about fracking. Only three teachers, two suburban and one urban, indicated they had no knowledge whereas all rural teachers had at least some knowledge about fracking. In addition, approximately two fifths of the rural teachers (n=9; 43%) and urban teachers (n=9; 43%) and nearly one third of the suburban teachers (n=6; 30%) had only some knowledge of fracking. (See Table 4.5.)

**Fracking in teachers’ communities.**

Responses by the teachers in this study indicate that fracking operations were occurring in all three geographical regions while there were no active fracking operations occurring in urban or suburban areas. (See Table 4.6.) A majority of the teachers indicated that there were no fracking activities in their communities even though such activities did occur in all three geographical regions. (See Table 4.6.)
Table 4.6.  
**Teacher-Reported Fracking Operations**

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th></th>
<th>Suburban</th>
<th></th>
<th>Urban</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>52%</td>
<td>3</td>
<td>15%</td>
<td>4</td>
<td>19%</td>
<td>18</td>
<td>29%</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>43%</td>
<td>13</td>
<td>65%</td>
<td>15</td>
<td>71%</td>
<td>37</td>
<td>60%</td>
</tr>
<tr>
<td>I Do Not Know</td>
<td>1</td>
<td>5%</td>
<td>4</td>
<td>20%</td>
<td>1</td>
<td>5%</td>
<td>6</td>
<td>10%</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Three fifths of the teachers in this study (n=37; 60%) indicated that there was no fracking in their communities and nearly one third (n=18; 29%) responded that there was. Only six teachers out of 62 (10%) responded they did not know whereas one teacher chose not to respond.

Based on the teachers’ responses, the data suggest that fracking occurred twice as much in the rural as in the suburban or urban communities. (See Table 4.6.) Slightly more than half of the rural teachers (n=11; 52%) responded that fracking was happening in their communities while approximately two fifths (n=9; 43%) indicated it was not and one did not know (5%). Fewer than one fifth of suburban teachers (n=3; 15%) responded that fracking was occurring and nearly one third (n=13; 65%) indicated it was not. One fifth of urban teachers (n=4; 19%) indicated fracking was occurring in their communities whereas nearly three fourths (n=15; 71%) indicated that it was not. One urban teacher did not know and one chose not to respond.

**Professional development.**

The findings suggest that little fracking-related professional development had been offered in the school districts in which the teachers in this study taught. (See Table
4.7.) The professional development that did occur was informal and consisted of spontaneous conversations rather than expert-led sessions.

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
<td>10%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>67%</td>
<td>18</td>
<td>90%</td>
</tr>
<tr>
<td>I Do Not Know</td>
<td>2</td>
<td>10%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>13%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

When asked whether or not energy company-sponsored professional development had been offered in their school district four out of five teachers in this study (n=50; 81%) indicated it had not. Only two out of the 62 teachers in this study indicated that it had and seven did not know. (See Table 4.7.) Only two rural teachers out of the total participant population responded that they had participated in professional development; however, their written responses indicate that this consisted of informal conversations with former students or parents who worked in the fracking industry.

**Fracking in the Social Studies.**

This section presents teachers’ perspectives about the appropriateness of teaching about fracking in the social studies. Teachers were asked whether they believed fracking is an appropriate topic in the social studies classroom and could choose a *yes* or *no* answer. Most participants indicated that fracking was an appropriate topic to address in the social studies classroom. (See Table 4.8.)
Table 4.8.
Fracking in the Social Studies

<table>
<thead>
<tr>
<th>Answer</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>76%</td>
<td>17</td>
<td>85%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>19%</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Four out of five of American Government teachers in this study (n=51; 82%) indicated they believed it is appropriate to teach about fracking whereas slightly fewer than one out of five (n=10; 16%) did not. One teacher chose not to respond. (See Table 4.8.) The data strongly suggest that the participants in this study believed that fracking was an appropriate social studies topic.

**Controversial nature of fracking.**

This section presents teachers’ perspectives about fracking as a controversial issue. Teachers were asked to indicate whether or not they believed fracking was a controversial issue. (See Table 4.9.)

Table 4.9.
Teacher Perspectives about Fracking as a Controversial Issue

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>71%</td>
<td>14</td>
<td>70%</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>14%</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>I Do Not Know</td>
<td>2</td>
<td>10%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

The data indicate that most of the teachers in this study believed fracking was indeed controversial. (See Table 4.9.) Three out of four teachers (n=47; 76%) indicated
they believed fracking was a controversial issue, while eight (13%) did not and six (10%) did not know. One teacher did not respond. The rural and suburban teachers’ data mirrored those of the entire sample. However, urban teachers, who were least exposed to fracking activities, had the most teachers who indicated they believed fracking was controversial. All but three of the 21 urban participants indicated fracking was controversial.

**Teaching about fracking.**

Teachers were asked whether or not they taught about fracking in their classrooms. The data indicate that more teachers did not teach about fracking than did but only with a small margin of difference. (See Table 4.10.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>52%</td>
<td>9</td>
<td>45%</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>43%</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Slightly more than half of all participants in this study (n=33; 53%) indicated they did not teach about fracking in the classroom whereas slightly fewer than half (n=28; 45%) responded that they did. Rural teachers who indicated the highest level of exposure to fracking appeared to teach more about fracking than the suburban and urban teachers. Although the urban teachers indicated the lowest level of exposure to fracking and yet the highest level of concern, they taught the least about fracking. (See Table 4.10.)
Approximately half of rural teachers (n=11; 52%) and nearly half of suburban teachers (n=9; 45%), indicated they taught about fracking whereas just one out of three urban teachers (n=8; 38%) taught about fracking. One rural teacher chose not to respond.

The participants were given the opportunity to explain their responses. Themes that emerged from their responses were that they taught about fracking only if there was student interest or it was relevant to their community. Those who chose not to address fracking indicated they faced time constraints as a result of the need to teach their existing curriculum, the perception that fracking belonged in the science and not in the social studies curriculum. The data suggest that while the teachers in this study believed it to be appropriate to teach about fracking, its controversial nature imposed various limitations which led most to not teach about the subject.

**Barriers to teaching about fracking.**

Participants were asked whether there were any barriers to teaching about fracking. The barriers they listed included curriculum requirements, opposition from stakeholders, teacher beliefs about the issue, and time constraints. (See Table 4.11.)

<table>
<thead>
<tr>
<th>Table 4.11.</th>
<th>Barriers to Teaching about Fracking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response</strong></td>
<td><strong>Rural</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>1 5%</td>
</tr>
<tr>
<td>No</td>
<td>18 86%</td>
</tr>
<tr>
<td>No Response</td>
<td>2 10%</td>
</tr>
<tr>
<td>Total</td>
<td>21 100%</td>
</tr>
</tbody>
</table>
Three out of four participants in this study (n=45; 73%) believed no barriers existed whereas one out of four (n=15; 24%) did. Significantly more urban teachers (n=10; 48%) cited the existence of barriers than did rural (n=1; 5%) or suburban teachers (n=4; 20%). Those participants who indicated that barriers did exist gave written responses. Themes that emerged were a lack of time, a lack of knowledge, the absence of ready-made classroom resources, current curriculum standards demanding priority, and the belief that fracking was an issue best examined in science courses.

**Comfort level with teaching about fracking.**

Participants were asked to rate their level of comfort with teaching about fracking on a Likert scale ranging from 1 (Not) to 5 (Totally Comfortable). The data indicate that most teachers in this study had some level of comfort with teaching about fracking and that a majority felt somewhat to moderately comfortable doing so. (See Table 4.12.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Not Comfortable</td>
<td>3</td>
<td>14%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Somewhat</td>
<td>6</td>
<td>29%</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Comfortable</td>
<td>8</td>
<td>38%</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>Moderately</td>
<td>3</td>
<td>14%</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>Highly</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>Totally Comfortable</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>
One out of four of the teachers in this study (n=16; 26%) felt highly to totally comfortable with teaching about fracking whereas nearly three out of five felt only somewhat to moderately comfortable (n=37; 59%). Eight out of 62 teachers (13%) indicated they were not at all comfortable with teaching about fracking. Data on rural teachers illustrate a lower level of comfort (M=2.55, SD=.94) in comparison to suburban (M=2.9; SD=1.29) and urban teachers (M=2.71; SD=1.23). Yet, rural teachers taught about fracking the most.

Section summary.

The data revealed surprising insights about the status of fracking. The rural teachers in this study reported the highest prevalence of fracking in their communities yet indicated the lowest level of concern, whereas urban teachers, who indicated the lowest occurrence of fracking had the highest level of concern. The teachers in this study indicated they had at least some knowledge of fracking. Professional development was minimal and informal. Only two teachers, both of whom taught in a rural community, reported having received professional development and they had gotten their information from conversations with students or their parents. Four out of five teachers indicated fracking was an appropriate topic to be taught in the social studies classroom. Three out of four believed it to be controversial. Slightly fewer than half actually taught about fracking. When asked whether they taught about fracking, those teachers in this study who chose respond indicated that coverage in their classrooms consisted of a very low-level overview. Additionally, although most of the teachers in this study indicated that there were no barriers, barriers they did list included a lack of time, a lack of knowledge
about fracking, district curriculum restrictions, the Common Core State Standards, and a lack of useful lesson materials. Most of the teachers in this study felt somewhat to moderately comfortable teaching about fracking.

The responses by teachers indicated that they believed fracking was important but controversial and about half chose not to teach about the topic. Overall, the data suggest that more than half of the participants (n=35; 56%) knew about fracking but felt they did not know enough about the topic to teach about it. Surprisingly, despite their limited direct exposure to fracking, the urban teachers had the highest level of concern. The data indicate that four out of five teachers in this study believed fracking to be controversial. They believed it to be an appropriate topic in the social studies classroom and that there were few barriers to doing so. The biggest factor that prevented these teachers from teaching about fracking was lack of knowledge of the subject in combination with an inability to acquire ready-made lessons that would be appropriate for their social studies classrooms.

**Civics Education**

Fracking is a social, environmental, and political issue which is relevant to civics education. In order to fully understand the status of fracking it is important to understand teachers’ perspectives on civics education, what they believe it to be and what they think should be taught.

Social studies was originally conceived to provide a curriculum through which civics education could be delivered. While this concept has evolved, the original goal of civics education remains a vital component of the field. This section presents findings
based on teachers’ perspectives on the purpose of the social studies, the purpose of civics education, citizenship, and civic action. The data indicate that the teachers in this study had distinct personal beliefs regarding these themes and their professional practices in the classroom.

**Purpose of the Social Studies.**

When asked about the purpose of the social studies, responses varied across each of the three categories. The following themes emerged: teaching citizenship, teaching history, and teaching the social sciences. The participants believed the primary purpose of the social studies is to prepare students for citizenship. (See table 4.13.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Citizenship</td>
<td>12</td>
<td>57%</td>
<td>12</td>
<td>60%</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
<td>14%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
<td>14%</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>14%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Slightly more than half the teachers in this study (n=33; 53%) indicated that the primary purpose of social studies is to prepare tomorrow’s citizens. One out of five teachers believed its purpose to be teaching history (n=12; 19%) and one out of six (n=10; 16%) believed its primary purpose to be teaching the social sciences. Seven teachers (11%) chose not to respond. Three fifths of rural (n=12; 57%) and suburban teachers (n=12; 60%) indicated that teaching citizenship was the purpose of the social
studies whereas slightly more than two fifths (n=9; 43%) of the urban teachers did so. However, more urban teachers indicated that teaching history was the purpose of the social studies when compared to rural and suburban teachers.

**Purpose of civics education.**

Civics education serves as the foundation for the social studies and aims to teach students how to be active and participatory in their local communities. Understanding what teachers believe the purpose of civics education to be is important as this impacts what and how skills and content are being taught.

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Knowledge of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>4</td>
<td>21%</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>Civically Active</td>
<td>1</td>
<td>5%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Citizenship</td>
<td>11</td>
<td>58%</td>
<td>15</td>
<td>79%</td>
</tr>
<tr>
<td>Individualism</td>
<td>2</td>
<td>11%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Tests</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>No Response</td>
<td>2</td>
<td>0%</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Teachers were asked what they believed to be the purpose of civics education. Five themes emerged from their responses: knowledge of government, being civically active, citizenship education, teaching individualism, and tests. Three out of four teachers (n=43; 74%) indicated the primary purpose of civics education is to prepare students for citizenship. In their responses, the words *citizen* or *citizens* appeared 46 times across all responses. Knowledge of government, being civically active, teaching individualism, and
preparing students to take state tests comprised the remaining one fourth of teacher responses (n=14; 24%). (See Table 4.14.) Only five teachers (9%) in this study cited being civically active as the purpose of civics education.

**Citizenship.**

Study participants were asked what they believed to be the most vital characteristics of good citizenship and were provided the following three choices: “personally responsible, participatory, justice-oriented” (Westheimer & Kahne, 2004, p. 239). According to Westheimer and Kahne (2004) personally responsible citizens act responsibly in their communities; participatory citizens are active in civic affairs at the local, state, and national levels; and justice-oriented citizens actively seek out and expose injustice and attempt to rectify the underlying causes of the issue. (See Table 4.15.)

Table 4.15.  
*Characteristic Most Vital to Good Citizenship*

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural n</th>
<th>Rural %</th>
<th>Suburban n</th>
<th>Suburban %</th>
<th>Urban n</th>
<th>Urban %</th>
<th>Total n</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being Personally Responsible</td>
<td>9   43%</td>
<td>10 50%</td>
<td>9 43%</td>
<td>28 45%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being Participatory</td>
<td>6 29%</td>
<td>5 25%</td>
<td>9 43%</td>
<td>20 32%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being Justice-Oriented</td>
<td>5 24%</td>
<td>5 25%</td>
<td>3 14%</td>
<td>13 21%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>1  5%</td>
<td>0 0%</td>
<td>0 0%</td>
<td>1 2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21 100%</td>
<td>20 100%</td>
<td>21 100%</td>
<td>62 100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data indicate that regardless of their geographical location, the teachers in this study consistently believed that good citizenship centers upon individuals being personally responsible in their communities while only a few indicated justice-oriented
action. (See Table 4.15.) Slightly fewer than half of all teachers in this study (n=28; 45%) believed being personally responsible to be the most vital component of good citizenship. One third of participants (n=20; 32%) believed that being participatory was the most vital and one fifth (n=13; 21%) expressed being justice-oriented. Only three urban teachers (14%) compared to one fourth of both rural (n=5; 24%) and suburban teachers (n=5; 25%) responded that being justice-oriented was most vital.

**Civic action.**

Teachers were asked if they required their students to engage in civic action and to describe why or why not. More urban than rural or suburban teachers indicated they engaged their students in civic action. (See Table 4.16.) In their written responses, teachers described civic action as participation in community service projects, engagement with local governments, and voter registration.

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
</tr>
<tr>
<td>Yes</td>
<td>13 62%</td>
<td>11 55%</td>
<td>17 81%</td>
<td>41 66%</td>
</tr>
<tr>
<td>No</td>
<td>7 33%</td>
<td>9 45%</td>
<td>4 19%</td>
<td>20 32%</td>
</tr>
<tr>
<td>No Response</td>
<td>1 5%</td>
<td>0 0%</td>
<td>0 0%</td>
<td>1 2%</td>
</tr>
<tr>
<td>Total</td>
<td>21 100%</td>
<td>20 100%</td>
<td>21 100%</td>
<td>62 100%</td>
</tr>
</tbody>
</table>

Two thirds of the teachers in this study (n=41; 66%) required their students to engage in civic activities while one third did not (n=20; 32%). These actions centered on either community service projects or voting-related activities. Those who did not require such activities cited numerous barriers such as not having enough time, it not being an
expectation or requirement, it not being allowed by the school administration, or believing they did not have the authority to require students to complete tasks of this nature outside of the regular classroom. Although three of these teachers indicated they wanted to require civic action, they felt prevented from doing so by barriers due to their geographical location, lack of time, and disapproval by the school administration.

Four out of five urban teachers (n=17; 81%) required their students to engage in civic action such as community service projects, engaging their local governments, and voting-related activities such as registering to vote or working local polls. In comparison, three out of five rural teachers (n=13; 62%) required civic action but focused primarily on voting-related activities. Suburban teachers (n=11; 55%) required the least amount of civic action. Of these urban and suburban teachers who required their students to engage in civic action, one out of three urban (n=6; 35%) and approximately half of suburban teachers (n=5; 45%) responded that their districts required civic action whereas rural teachers indicated that civic action was not mandatory.

**Section summary.**

A majority of the teachers in this study believed the primary purpose of the social studies is to educate tomorrow’s citizens how to be good citizens. When asked what is most vital to good citizenship, almost half the teachers cited that being personally responsible was most vital, while nearly one out of three said it was being participatory. In contrast, only one out of five teachers believed social justice is most important. Few teachers required their students to engage in civic action, instead they required civic engagement.
Controversial Issues

When teachers examine controversial issues which may lead to disagreement and tension in the classroom their expectations of civic education and citizenship may change. Therefore, it is important to understand how teachers view and teach about controversial issues such as fracking.

Controversial issues have been part of the social studies curriculum since its inception. Studying controversial issues provides students with specific tools that are beneficial for studying complex issues inside and outside the classroom. This section presents the findings on teacher perspectives on controversial issues, teaching about controversial issues, barriers to teaching about controversial issues, and approaches to teaching about controversial issues.

Teacher perspectives on controversy.

An open-ended written response question was used to assess what makes an issue controversial. The teachers’ responses were varied, nuanced, and diverse across and within each category. (See Table 4.17.)
Table 4.17.
*What Makes an Issue Controversial*

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th></th>
<th>Suburban</th>
<th></th>
<th>Urban</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Public Disagreement</td>
<td>10</td>
<td>48%</td>
<td>14</td>
<td>70%</td>
<td>14</td>
<td>67%</td>
<td>38</td>
<td>61%</td>
</tr>
<tr>
<td>Emotional Political Correctness</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Lack of Knowledge</td>
<td>4</td>
<td>18%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>Current Event</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Discomfort Societal or Personal Impact</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Media</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>10%</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Human Interests</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>10%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Strong Opinions</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>14%</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>14%</td>
<td>1</td>
<td>5%</td>
<td>2</td>
<td>10%</td>
<td>6</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Approximately three out of five teachers in this study (n=38; 61%) indicated that the existence of public disagreement made an issue controversial. (See Table 4.17.) The remaining teachers’ responses to what makes an issue controversial were divided among nine factors (n=14; 67%). (See Table 4.17.) The data indicate that urban (n=14; 67%) and suburban (n=14; 70%) teachers in this study were more likely to view an issue as controversial when subject to public disagreement, compared to rural teachers (n=10; 48%). Furthermore, four rural teachers (19%) also cited lack of knowledge as a reason to make an issue controversial.
Teaching about controversial issues.

The reason teachers believe an issue is controversial is significant. Equally important is whether or not they actually address the issue in the classroom. Teachers were asked whether they taught about controversial issues in the classroom, and if so, about which and how often. They were asked to respond on a Likert scale ranging from 1 (Never) to 5 (Daily). Overall, nearly all teachers indicated they addressed controversial issues. (See Tables 4.18.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural n</th>
<th>Rural %</th>
<th>Suburban n</th>
<th>Suburban %</th>
<th>Urban n</th>
<th>Urban %</th>
<th>Total n</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>20</td>
<td>95%</td>
<td>18</td>
<td>90%</td>
<td>21</td>
<td>100%</td>
<td>59</td>
<td>95%</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>5%</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

All but two of 62 teachers in this study indicated they address controversial issues in their classroom. A majority of them indicated they address controversial issues either weekly or daily. (See Table 4.19.) Ten out of 62 teachers indicated they taught controversial issues occasionally and two out of 62 teachers indicated they never taught about controversial issues. There were no significant differences in the frequency of teaching about controversial issues between the typology groups. (See Table 4.19.)
When asked to indicate which controversial issues they address, the most common responses were gay rights, abortion, gun control, and immigration.

Controversial issues that can be categorized as environmental included global warming, sustainable energy, the environment, clean water, fracking and drilling. Only three rural (14%), four suburban (20%), and seven urban teachers’ (33%) responses included any reference to environmental issues.

Urban teachers were more likely to address environmental issues than were rural and suburban teachers but were least likely to address fracking. The responses suggest that teachers’ responses centered on controversial topics that have been and are being viewed as controversial by the general public.

**Barriers to teaching about controversial issues.**

While teachers generally act as gate keepers barriers outside their control impact their instructional and curricular choices. Teachers were asked in an open response to describe what, if any, barriers prevented them from teaching about controversial issues (see Appendix A). Barriers they listed were: students, community, administration, curriculum/standards, religion, and being politically correct. (See Table 4.20.)
Table 4.20.
**Barriers to Teaching about Controversial Issues**

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural n</th>
<th>Rural %</th>
<th>Suburban n</th>
<th>Suburban %</th>
<th>Urban n</th>
<th>Urban %</th>
<th>Total n</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Barriers</td>
<td>5</td>
<td>24%</td>
<td>6</td>
<td>38%</td>
<td>8</td>
<td>38%</td>
<td>19</td>
<td>31%</td>
</tr>
<tr>
<td>Students</td>
<td>5</td>
<td>24%</td>
<td>3</td>
<td>19%</td>
<td>4</td>
<td>19%</td>
<td>12</td>
<td>19%</td>
</tr>
<tr>
<td>Community</td>
<td>3</td>
<td>14%</td>
<td>3</td>
<td>10%</td>
<td>2</td>
<td>10%</td>
<td>8</td>
<td>13%</td>
</tr>
<tr>
<td>Administration</td>
<td>2</td>
<td>10%</td>
<td>3</td>
<td>10%</td>
<td>2</td>
<td>10%</td>
<td>7</td>
<td>11%</td>
</tr>
<tr>
<td>Curriculum Standards</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>14%</td>
<td>3</td>
<td>14%</td>
<td>5</td>
<td>8%</td>
</tr>
<tr>
<td>Religion</td>
<td>2</td>
<td>10%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Politically Correct</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>No Response</td>
<td>4</td>
<td>19%</td>
<td>1</td>
<td>5%</td>
<td>1</td>
<td>5%</td>
<td>6</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Three out of ten teachers in this study (n=19; 31) indicated that no barriers existed but six out of ten said they did. The most frequently cited barrier was students.

Approximately one out of five teachers in this study (n=12; 19%) cited students as a barrier. Specifically, teachers cited students’ lack of knowledge, inability to handle controversial topics, or a lack of skills to be able to effectively navigate sensitive issues.

One fourth of the teachers (n=15; 24%) indicated that their communities or administrations posed barriers to their teaching about controversial issues. The remaining barriers were: curriculum, religion, and the need to be politically correct (n=16; 16%).

Six teachers (10%) chose not to respond. Overall, the data suggest that a majority of the teachers encountered some type of barrier when teaching about controversial issues.

**Approaches to controversial issues.**

In order to understand how the teachers in this study might address controversial issues, they were asked to indicate on a Likert scale ranging from 1 (Denial) to 5 (Balanced Privilege), the approach that best describes their approach. (See Table 4.21.)
Table 4.21.
Approaches to Addressing Controversial Issues in the Classroom

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural n</th>
<th>Rural %</th>
<th>Suburban n</th>
<th>Suburban %</th>
<th>Urban n</th>
<th>Urban %</th>
<th>Total n</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denial</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Privilege</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>2</td>
<td>10%</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Avoidance</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Balance</td>
<td>13</td>
<td>62%</td>
<td>13</td>
<td>65%</td>
<td>17</td>
<td>81%</td>
<td>43</td>
<td>69%</td>
</tr>
<tr>
<td>Balanced Privilege</td>
<td>8</td>
<td>38%</td>
<td>6</td>
<td>30%</td>
<td>2</td>
<td>10%</td>
<td>16</td>
<td>26%</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Most of the teachers in this study indicated that when addressing a controversial issue they preferred the balance approach and elected to not share their opinion with their students (M=4.16, SD=.63). Seven out of ten teachers in this study, (n=43; 69%) indicated that they chose balance when addressing controversial issues and elected not to share their opinion but try to present all sides. However, one fourth of teachers (n=16; 26%) indicated that they take a balanced privilege approach and share their opinions while still presenting all sides equally. Three remaining teachers indicated they take the privilege approach and do not mind favoring one opinion over another. However, more rural (n=8; 38%) and suburban (n=6; 30%) teachers indicated that when they feel an issue is controversial they choose to share their opinion with students while presenting all sides equally than did urban teachers (n=2; 10%).

Section summary.

When addressing controversial issues it is imperative to understand how teachers define controversy, as this impacts when and how often they teach about controversial subjects. Because it provides insight into how teachers view controversial issues, understanding the point at which an issue becomes controversial is relevant to this study.
Three out of five teachers in this study indicated that an issue becomes controversial when there is such consensus among the public. The data also indicate that three out of five teachers in this study claim they address controversial issues on a daily or weekly basis. Additionally, although most addressed controversial issues, very few teachers specifically address a controversial environmental issue.

The most frequently cited barrier to teaching about controversial issues was their students’ lack of knowledge and discussion skills. When addressing controversial issues in the classroom, most teachers responded that they chose to not reveal their own opinions while presenting all sides equally. Overall, on average controversial issues are being addressed weekly.

**Environmental Education**

Traditionally, environmental education has not been seen as within the domain of the social studies. However, this study’s focus on fracking as an environmental issue highlights the intersection of these two disciplines. Using Likert scale questions, open-ended questions, and yes or no questions, the teachers in this study were asked a series of questions aimed at better understanding their perspectives on environmental issues, the relevance of these perspectives in the social studies, and whether or not they addressed environmental issues in their classroom.

**Environmental events study in the Social Studies.**

The teachers in this study were asked open-ended questions to share their perspective on the value of teaching about environmental events. Four themes emerged: teaching citizenship skills, addressing environmental concerns, better understanding the
impact on local communities, and whether these issues align with the curriculum. (See Table 4.22.)

Table 4.22.
Value of Teaching about Environmental Events in the Social Studies

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Citizenship Skills</td>
<td>9</td>
<td>43%</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Environmental Concerns</td>
<td>3</td>
<td>14%</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>Impact on Community</td>
<td>3</td>
<td>14%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Curricular</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Not Valuable</td>
<td>3</td>
<td>14%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>14%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td>100%</td>
<td><strong>20</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

Slightly fewer than half of the teachers in this study (n=28; 45%) indicated that teaching about environmental events is useful for teaching citizenship skills. They indicated that teaching about environmental events allows them to illustrate to students how to be better, more involved and global citizens. In addition, they responded that analyzing these events showcases examples of critically thinking citizens and consumers of information. Approximately one out of five teachers in this study (n=10; 16%) believed that addressing environmental concerns or understanding the impact of events on local communities is useful. Five out of 62 teachers in this study (8%) indicated teaching about environmental events had no value.

**Level of environmental concern.**

Using a Likert scale from 1 (Not Concerned) to 5 (Very Highly concerned) the teachers in this study were asked to rate their level of concern about environmental
issues. (See Table 4.23.) The data indicate that the level of concern differed dramatically between the three categories.

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Not Concerned</td>
<td>1</td>
<td>5%</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>Somewhat Concerned</td>
<td>5</td>
<td>24%</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>Moderately Concerned</td>
<td>13</td>
<td>62%</td>
<td>9</td>
<td>45%</td>
</tr>
<tr>
<td>Highly Concerned</td>
<td>2</td>
<td>10%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Very Highly Concerned</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

The data indicate that urban teachers (M=3.43; SD=1.03) had a high level of concern about environmental issues compared to the rural (M=2.76; SD=0.7) and suburban teachers (M=2.7; SD=1.13). This finding reflects a similar trend that exists regarding teachers’ concern about fracking. (See Table 4.4.) In both cases, the urban teachers indicated being more concerned than the rural and suburban teachers about environmental issues.

**Teaching about environmental issues.**

Teachers were asked to indicate whether or not they taught about environmental issues in their classrooms and were asked to explain why they did or did not. (See Table 4.24.) Most written responses were submitted by those who indicated they did teach about environmental issues and these responses clarify their reasons for teaching about...
environmental issues. Notably, the urban teachers taught about environmental issues more than did the rural or suburban teachers.

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th></th>
<th>Suburban</th>
<th></th>
<th>Urban</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>71%</td>
<td>12</td>
<td>60%</td>
<td>18</td>
<td>86%</td>
<td>45</td>
<td>73%</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>24%</td>
<td>8</td>
<td>40%</td>
<td>3</td>
<td>14%</td>
<td>16</td>
<td>26%</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Three out of four of the teachers in this study (n=45; 73%) indicated they taught about environmental issues in their classroom. One out of four (n=16; 26%) did not, and one teacher chose not to answer the question. Their written responses indicated that citizenship, local impact, environmental concerns, and an issue’s status as a current event made environmental issues an instructional priority. Interestingly, only one urban teacher and one rural teacher responded that he/she addressed fracking as an environmental issue. Each noted that the issue was not addressed in a formal lesson.

The data indicate that in this study more urban than rural or suburban teachers taught about environmental issues. (See Table 4.24.) All but three out of 21 urban teachers (n=18; 86%) indicated they taught about environmental issues whereas three out of four rural teachers (n=15; 71%) and three out of five suburban teachers (n=12; 60%) indicated they teach about environmental issues. Themes that emerged as reasons for teaching about environmental issues were the roles of citizens and government when dealing with these issues, the environmental impact on local communities, and
environmental concerns. The suburban teachers were the only ones to refer to the economic aspects of environmental issues whereas the urban teachers were the only ones to respond they teach about environmental issues in order to raise student environmental awareness.

**Controversial environmental issues in the Social Studies.**

Using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), the teachers were asked to rate their level of agreement with whether the social studies curriculum should include controversial environmental issues. More than two out of three teachers in this study (n=43; 69%) indicated that controversial environmental issues are appropriate in the social studies. Notably, however, 15 teachers in this study indicated they were neutral about the inclusion of controversial environmental issues in the social studies (24%). (See Table 4.25.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1 5%</td>
<td>1 5%</td>
<td>0 0%</td>
<td>2 3%</td>
</tr>
<tr>
<td>Disagree</td>
<td>1 5%</td>
<td>1 5%</td>
<td>0 0%</td>
<td>2 3%</td>
</tr>
<tr>
<td>Neutral</td>
<td>6 29%</td>
<td>6 30%</td>
<td>3 14%</td>
<td>15 24%</td>
</tr>
<tr>
<td>Agree</td>
<td>11 52%</td>
<td>8 40%</td>
<td>9 43%</td>
<td>28 45%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>2 10%</td>
<td>4 20%</td>
<td>9 43%</td>
<td>15 24%</td>
</tr>
<tr>
<td>No Response</td>
<td>0 0%</td>
<td>0 0%</td>
<td>0 0%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Total</td>
<td>21 100%</td>
<td>20 100%</td>
<td>21 100%</td>
<td>62 100%</td>
</tr>
</tbody>
</table>
Overall, the urban teachers ($M=4.29; \text{SD}=0.72$) agreed more with the inclusion of controversial environmental issues in the social studies than did the rural ($M=3.57; \text{SD}=0.93$) and suburban teachers ($M=3.65; \text{SD}=0.72$).

**Section summary.**

The findings illustrate that most teachers in this study recognize the value of teaching about environmental issues. They viewed environmental issues as a valuable means for teaching citizenship and were at least moderately concerned about environmental issues. Moreover, three out of four teachers indicated they actually taught about environmental issues while agreeing that controversial environmental issues belong in the social studies.

**Current Events**

Current events instruction in the social studies has been used as an instructional and curricular tool since the inception of the discipline; however, the ways in which social studies teachers teach about current events have differed. In addition, social studies teachers may differ one from another in the way they view the value of current events instruction.

This section presents teachers’ perspectives on how often they address current events and the inclusion of current events in the social studies. Using a Likert scale, open-ended responses, and *yes* and *no* questions, teachers were asked a series of questions to gain a deeper understanding of their perspectives on the use of current events in the classroom.
How often teachers teach about current events.

Using a Likert scale ranging from 1 (Never) to 5 (Daily) the teachers in this study were asked how often they teach about current events. All teachers, except one, (n=60; 97%) indicated they teach about current events at least daily or weekly. (See Table 4.26.)

Table 4.26.
Teaching about Current Issues

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th></th>
<th>Suburban</th>
<th></th>
<th>Urban</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Occasionally</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Monthly</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Weekly</td>
<td>7</td>
<td>33%</td>
<td>11</td>
<td>55%</td>
<td>13</td>
<td>62%</td>
<td>31</td>
<td>50%</td>
</tr>
<tr>
<td>Daily</td>
<td>14</td>
<td>67%</td>
<td>7</td>
<td>35%</td>
<td>8</td>
<td>38%</td>
<td>29</td>
<td>47%</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Half dealt with current events weekly (n=31; 50%); while half (n=29; 47%) did so daily. The rural teachers (M=4.67; SD=0.48) taught about current events more frequently than did the suburban (M=4.15; SD=0.93) and urban teachers (M=4.38; 0.5). The data suggest that among all three categories, most rural teachers (n=14; 67%) taught about current events on a daily basis, whereas the suburban (n=11; 55%) and urban teachers (n=13, 62%) did so on a weekly basis.

Current events instruction.

Teachers were asked whether or not current events instruction should be a major component of the social studies, whether they taught about current environmental events/issues, and how they chose to address current events in the social studies. (See Tables 4.27, 4.28, and 4.29.)
Table 4.27.  
*Current Events in the Social Studies*

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>21</td>
<td>100%</td>
<td>18</td>
<td>90%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Nearly every teacher in this study indicated he or she believed that current events should be a major component of the social studies. However, the level of support for current events declined to three out of four teachers in this study (n=47; 76%) when asked if they taught about current environmental events/issues. (See Tables 4.27 and 4.29.)

Table 4.28.  
*Teaching about Current Environmental Events*

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th>Suburban</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>86%</td>
<td>12</td>
<td>60%</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>10%</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Teachers in this study were also asked an open-ended question to describe how they address current events. Five themes emerged: using media, discussions, curriculum, notebooks/portfolios, and student presentations. (See Table 4.29.)
Table 4.29. 
*Teachers' Methods for Addressing Current Events*

<table>
<thead>
<tr>
<th>Response</th>
<th>Rural</th>
<th></th>
<th>Suburban</th>
<th></th>
<th>Urban</th>
<th></th>
<th>Totals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Media</td>
<td>5</td>
<td>24%</td>
<td>7</td>
<td>35%</td>
<td>11</td>
<td>52%</td>
<td>23</td>
<td>37%</td>
</tr>
<tr>
<td>Discussion</td>
<td>9</td>
<td>43%</td>
<td>5</td>
<td>25%</td>
<td>4</td>
<td>19%</td>
<td>18</td>
<td>29%</td>
</tr>
<tr>
<td>Curriculum</td>
<td>4</td>
<td>19%</td>
<td>4</td>
<td>20%</td>
<td>4</td>
<td>19%</td>
<td>12</td>
<td>19%</td>
</tr>
<tr>
<td>Notebooks/Portfolios</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>10%</td>
<td>2</td>
<td>10%</td>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>Student Presentations</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Does Not Use</td>
<td>3</td>
<td>14%</td>
<td>1</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100%</td>
<td>20</td>
<td>100%</td>
<td>21</td>
<td>100%</td>
<td>62</td>
<td>100%</td>
</tr>
</tbody>
</table>

Only one out of 62 teachers in this study indicated that current events instruction should not be a major component of the social studies and one did not respond.

Approximately one third of the teachers (n=23; 37%) addressed current events through the use of television, print, and digital media. Slightly more than one fourth (n=18; 29%) indicated they use classroom discussion and nearly one fifth (n=12; 19%) does so through the operational curriculum. Four teachers indicated they use current events notebooks/portfolios, one uses student presentations, and four indicated they do not use current events at all. Nine rural teachers in this study (43%) indicated they use discussion compared to five suburban (25%) and four urban teachers (19%). However, half of the urban teachers (n=11; 52%) indicated they use media to address current events, compared to one third of the suburban teachers (n= 7; 35%) and one fourth of rural teachers (n=5; 24%).

Three out of four teachers in this study (n=47; 76%) indicated they teach about current environmental events in their classrooms. One out of four (n=14; 23%) said they do not and one teacher declined to answer this question. Various ways in which they teach about current environmental events are: studying local and national media reports,
relating local events to the current environmental issues, including it in their operational
curriculum, studying government policies and responses, studying current environmental
events as they relate to preparing for end-of-course exams, teaching students the science
behind the current event, studying the economic impact of current events, and notebook
journaling. The data suggest significant support for teaching about current events.

All but two of the 21 rural teachers in this study (86%) and four out of five urban
teachers (n=17; 81%) indicated they taught about current environmental events compared
to just three out of five suburban teachers (n=12; 60%). They taught about current
environmental events primarily in the context of their operational curriculum and local
events. Suburban teachers indicated they primarily teach about current environmental
events by studying government policy, media, local issues, and the use of student
notebooks. Most urban teachers teach about current events through the use of media or
the existing curriculum. Using media and classroom discussion are the most-used
methods to address current events.

**Section summary.**

Most teachers indicated they teach about current events on a weekly or daily
basis. The predominant way in which they do so is by using the media and classroom
discussion. In addition, nearly every teacher held that current events instruction should be
a major component of the social studies. However, this support decreased to three out of
four when the current event being studied was perceived as environmental. The findings
suggest that current events instruction is common and has widespread support, yet the
type of current event matters greatly.
Chapter Summary

Most of the participants included in this study were White non-Hispanic males who expressed a low level of concern about fracking. Rural teachers indicated the lowest levels of concern; urban teachers had the highest reported concern about fracking. In addition, most teachers expressed feeling at least moderately comfortable teaching about fracking.

Most teachers reported few barriers to their teaching about fracking although many indicated they did not teach about the topic. Most defined civics education as teaching students how to be personally responsible or participatory while few indicated that it is important to be justice-oriented. Although most teachers in this study required their students to engage in civic action, they tended to limit this to voting-related activities. Although the teachers in this study did teach about controversial issues, few addressed environmental issues. In addition, when asked to decide what made an issue controversial, most indicated that it was the presence of public disagreement. The most frequently cited barrier to teaching about controversial issues was students’ lack of knowledge and discussion skills. These teachers appeared to have consensus that environmental issues are integral to the social studies.

Finally, the teachers in this study indicated that current events are integral to the social studies and that they teach about current environmental events. However, a majority limited their teaching to discussions of these issues. The data also indicate that these teachers had a limited knowledge of fracking and that, even though few barriers existed to teaching about the topic, a majority did not teach about fracking. These
findings suggest there is a disconnect between teachers’ personal beliefs and their professional practices regarding fracking.
Chapter 5: Conclusions

The summary, recommendations, and suggestions for further study in this chapter are based on the major research questions:

1. What is the status of teaching about fracking in American Government classes in Ohio?

2. What barriers exist that may prevent teaching about fracking in American Government classes in Ohio?

Summary

The Ohio American Government teachers in this study held different personal and professional beliefs about fracking, citizenship, and controversial issues. The perspectives of these teachers were influenced by several factors including demographics, years of teaching experience and typology. In general, the teachers in this study were mostly non-Hispanic White males; had many years of teaching experience; and were geographically distributed across the state of Ohio, with urban and suburban clusters in the Northwest, Northeast, Central and Southwest.

In general, these teachers were concerned about fracking. The rural teachers were the least concerned and least knowledgeable about fracking, whereas the urban teachers were the most concerned and most knowledgeable. These results suggest an interesting dichotomy of survey responses about occurrences of fracking. More than half of rural respondents indicated hydraulic fracturing was indeed happening in their communities, which is nearly three times more often than in the urban communities. While there were no significant demographic or years of teaching experience differences between the three
categories, it is possible to link motivators of fracking concern and knowledge to
teachers’ views on citizenship.

These teachers considered the purpose of the social studies and of civics
education to be teaching citizenship. Generally, they agreed that personal responsibility
was most vital ingredient of good citizenship. Those teachers who focused on civic action
in their classrooms required their students to participate in activities aligned with being
personally responsible and participatory, such as voting, engaging local government, and
community service-based projects. This view of good citizenship and the action required
of citizens is significant when addressing issues like fracking.

Fracking requires a social-justice-oriented citizenship approach rather than a
personally responsible one. Surprisingly, only urban teachers indicated social action was
equally important as personal responsibility. This definition of good citizenship was the
reason why the urban teachers in this study were more motivated to be knowledgeable
and concerned about fracking despite its absence in their communities. Ultimately, the
findings indicate that teachers in this study taught about civic engagement but not civic
action.

Four out of five teachers in this study believed that fracking was an appropriate
topic for the social studies and also believed that fracking was a controversial issue.
However, slightly fewer than half actually taught about the subject. These responses were
supported by teachers’ moderate comfort level with teaching about fracking and lack of
knowledge and even though they believed it to be appropriate, a majority did not address
the issue in the classroom. Surprisingly, rural teachers were the least comfortable with
teaching about fracking, yet taught about it the most. The general lack of teaching about fracking is attributed to a number of factors, such as the teachers’ definition of what is most vital to citizenship, the controversial nature of the topic, a lack of knowledge about fracking, or lack of exposure to fracking operations.

Nearly all teachers in this study indicated that they taught about controversial issues. However, that number dropped to about three out of four when addressing environmental issues and dropped even more, to fewer than half when asked specifically whether they taught about fracking. However, when asked to indicate the types of controversial issues they addressed, the most frequently cited issues were abortion, gay rights, and gun control, with limited mention of environmental issues and only one urban teacher specifically referencing fracking. Although fracking is not only a science but also a social issue, the teachers in this study did not view fracking as a social issue. Teachers in this study viewed fracking differently from other controversial issues.

Traditionally, environmental issues have not been within the locus of the social studies. However, the teachers in this study indicated that teaching about environmental issues and analyzing them is useful for teaching citizenship skills. A majority of teachers in this study agreed that controversial environmental issues are appropriate subject matter for the social studies. The urban teachers were the strongest supporters of this perspective. Additionally, these teachers supported the use of current events and current environmental events in the social studies classroom. Teachers were only moderately concerned about environmental issues, yet three out of four taught about them. Those who did not teach about these issues referred to barriers such as time constraints, state
standards, or opined that issues such as fracking belonged in the sciences. Therefore, when defined as a controversial environmental issue, these barriers prevented them from teaching about fracking.

More specifically, three out of four teachers indicated there were no barriers preventing them from teaching about fracking. However, urban teachers cited the existence of barriers more often than did rural or suburban teachers, which was the reason why they taught the least about fracking. In fact, while only one rural teacher referred to barriers to teaching about fracking nearly half of the urban teachers did. Although one in four teachers cited barriers to teaching about fracking, one in three cited barriers to teaching about controversial issues in general. The barrier most cited was teacher beliefs that their students did not have the knowledge and skills to effectively discuss controversial issues.

When addressing controversial issues in their classrooms, most of the teachers in this study suggested they took a balanced approach and presented all sides of the controversy but chose not to share their personal opinions with their students. The outcome of withholding an opinion may have been intended to not influence students’ beliefs. However, merely presenting an issue signals its importance. Therefore, if the teachers’ intent had been to not influence students’ beliefs it would have been more effective had they chosen to address their own beliefs while still presenting multiple perspectives on the issue.

In summary, typology dictated whether or not teachers taught about fracking, were concerned about it, and whether they believed fracking to be controversial. The
rural teachers were less concerned, less knowledgeable, cited the fewest barriers, and taught about fracking the most. The urban teachers were more concerned, more knowledgeable, listed more barriers, and taught about fracking the least. Based on this study’s findings, neither concern about fracking, its controversial nature, level of comfort, nor knowledge about fracking dictated whether the topic was addressed in the classroom. Instead, typology and barriers such as students, administrators, community, lack of time, state standards, and a belief that fracking was best suited for the science classroom, dictated whether or not teachers addressed fracking.

In summary, the findings in this study suggest that even though high school American Government teachers in Ohio are confronted with barriers imposed by students, administrators and the community, they do teach about fracking. However, barriers such as teachers’ limited perception of good citizenship which excluded civic action and environmentally responsible behavior, environmental issues, and approaches to present current events influenced whether or not they taught about fracking.

**Recommendations**

Based upon the findings, the recommendations resulting from this research study are as follows:

- Because the foundation of the social studies is civics education, it is imperative that the notion of citizenship shift from personally responsible and participatory behavior to social justice-oriented behavior. In order to achieve this, preservice and inservice teachers need to be offered opportunities to foster social justice-oriented behavior and citizenship. It is unreasonable to expect social studies
teachers to engage their students in civic behaviors with which they themselves have no experience.

- Social studies needs to expand the notion of citizenship to include environmental awareness and environmentally responsible behavior. This must coincide with expanding the definition of citizenship to include environmental issues as relevant to the social studies. Social studies teachers and students must understand and agree that environmental issues are social issues.

- Teacher preparation programs need to include focused and direct opportunities for preservice teachers to learn and teach about controversial and environmental issues. Specifically these experiences must include how to teach students to navigate controversial and environmental issues and how to adequately deal with potential barriers they may encounter. In addition, school districts should provide professional development opportunities that allow teachers to examine controversial and environmental issues and learn best practices for how to teach these issues.

- It is essential that teachers are cognizant of their personal perspectives on specific controversial issues before they engage their students in discussion. In order to achieve this objective Hess’ (2005) model for assessing teachers’ approaches to controversy, denial, privilege, avoidance, and balance should be expanded to include balanced privilege. Teachers must be able to share their personal perspective while still presenting multiple divergent perspectives to their students.
It is undeniable that teachers rely upon national and state academic standards as a basis for their instruction. While many go beyond these standards, the inclusion of content and activities would go a long way towards increasing awareness and action involving environmental issues such as fracking. Furthermore, the National Curriculum Standards for Social Studies, the Ohio Learning Standards, NCSS’ C3 curriculum, and the Common Core, should all be expanded to move beyond sustainability and sustainability practices to include environmental awareness, understanding, and action. Sustainable practices are important but are limited in scope.

Environmental issues such as fracking are social issues equal to others such as immigration, abortion, and gay rights. It is important that teachers understand the dynamic nature of these issues. Prior research has already indicated that issues such as fracking have been traditionally viewed as best suited for the sciences. However, to overcome this issue teacher preparation programs and high schools need to foster professional development and curricular opportunities that focus on the social nature of environmental issues such as fracking. This will allow preservice and inservice teachers to better understand such issues.

Community members can directly or indirectly influence teacher behavior in the classroom as a result of teacher beliefs about how their instruction might be received. In order to mitigate this impact, it is important that schools become more inclusive by engaging more community stakeholders in order to promote
environmental education, raise awareness, and create increased opportunities for social action.

**Suggestions for Further Study**

As discussed in the review of the literature, there are numerous studies about the use of controversial issues in the social studies. However, there are no studies about fracking in the social studies. Furthermore, while there are studies that discuss the integration of environmental issues in the social studies, few address controversial environmental issues. Little research has been done to focus on teachers’ perspectives and the use of controversial environmental issues in the social studies. While this study focused on the status of and barriers to teaching about fracking in Ohio high school American Government classrooms, suggestions for further study include the following:

- Studies should examine Ohio high school social studies teachers’ perspectives on fracking across all required social studies courses at the high school level. Expanding beyond American Government to include History, Geography and Economics would further the understanding of how social studies teachers view and address controversial environmental issues such as fracking. In addition, this would clarify any barriers to teaching about controversial environmental issues such as fracking.

- Studies that include a larger sample population representative of the overall population of Ohio social studies teachers.

- Comparative studies are needed on the status of fracking and controversial environmental issues in both social studies and science courses. These studies
should analyze and understand how these issues are addressed in the classroom. Furthermore, these studies would offer insight into best practices from each discipline and might foster interdisciplinary and/or integrated instructional models.

- Studies on the status of teaching about controversial environmental issues need to include expanded sets of protocols for collecting data. These studies should utilize surveys, interviews, and participant observation. Additionally, these data collection tools will enhance the understanding of what teachers actually do in the classroom.

- Studies on multiple controversial environmental issues in the social studies will offer deeper insights into how teachers approach a broad collection of controversial environmental issues. Studying multiple issues will allow for the triangulation of the findings. A study of this nature might find that teachers may be aware of and engage in the examination of other environmental issues, yet exclude fracking.

- Studies are needed on lessons that purposefully use controversial environmental issues in the social studies in order to better understand how teachers actually develop and implement such lessons. Providing a template that guides teachers on how to incorporate controversial environmental issues in their lessons would offer insight into how to better structure teacher education and professional development.
• Studies and evaluations of the formal and operational social studies curriculum, will help teachers and school districts determine what and how environmental issues are addressed.

• Case studies of teachers who actively teach about controversial environmental issues in the social studies will provide a deeper understanding of what they do and how they do it. This will enhance our understanding of how to incorporate best practices.

• Studies and evaluations of students’ perspectives are vital to understanding how controversial environmental issues are addressed in the classroom. Research on their perspectives will reveal much about outcomes in the classroom.
List of References


Counts, G.S. (1932). *Dare the school build a new social order?* New York, John Day.


Slack, B. (2013). Environmental fracturing vs. fracking: while 'fracking' is the subject of much contention in political and social arenas, environmental fracturing continues to make quiet headway. Pollution Engineering, (9). 18.


Appendix A: Qualtrics Survey

Status of the Teaching of Hydraulic Fracturing in Ohio American Government Classrooms

Directions
Thank you very much for your participation in completing this survey. It will provide me with valuable information about your beliefs and practices regarding the teaching of Hydraulic Fracturing. The survey should take no more than 20 minutes to complete.

As you complete the survey, please follow the instructions. You can use the menu drop down feature to indicate your choice or, when applicable, type in your response in a textbox.

When you are finished, simply click the Submit button.

THANK YOU FOR YOUR TIME!!

The Status of Teaching about Fracking Survey

1. What is the purpose of social studies?

2. What is the purpose of civics education?

3. Which of the following items is most vital to good citizenship?
   a. Being Personally Responsible
      i. Example: I am a good citizen. In my personal life, for example, I recycle because I care about the environment.
   b. Being Participatory
      i. Example: I am an active citizen, for example I go out in the community and help organize a campaign to promote recycling.
   c. Being Justice Oriented
      i. Example: I care about social justice, for example I question why my city doesn’t recycle and why some citizens don’t. I actively try to get my government and citizens to support recycling.
4. Do you require your students to engage in civic activities, such as voting drives, volunteering in the community, or engaging local government officials in community issues? If yes, please list and explain. If no, why not
   a. Yes
   b. No

5. How often do you teach about current events?
   a. Never
   b. Occasionally
   c. Monthly
   d. Weekly
   e. Daily

6. How do you address current events in your classroom? Please describe.

7. Do you believe current events instruction should be a major component of the social studies?
   a. Yes
   b. No

8. Do you teach about current environmental events/issues in your classroom? If so, how? If not, why not?
   a. Yes
   b. No

9. In your opinion, what, if any, is the value of teaching about current environmental events?

10. In your opinion, what makes an issue controversial?

11. How often do you teach about controversial issues in your classroom?
    a. Never
    b. Occasionally
    c. Monthly
    d. Weekly
    e. Daily

12. Do you address controversial issues in your classroom? If so, what are some of those issues?

13. What, if any, barriers exist that might prevent you from teaching about controversial issues?
14. How would you characterize your approach to teaching about controversial issues? Please select the statement that best describes your approach.
   a. Even though some people might think something is controversial, I might not.
   b. Even though an issue might be controversial, I don’t mind favoring one position over another.
   c. When an issue is controversial but I believe more strongly in favor of one position, I prefer to avoid the controversial issue in my classroom.
   d. When an issue is controversial, I make sure not to share my opinion and present all sides equally.
   e. If I feel an issue is controversial, I tell my students my opinion to let them know where I stand and then try to present all sides of the issue equally.

15. How would you rate your level of concern of environmental issues?
   a. Not Concerned
   b. Somewhat Concerned
   c. Moderately Concerned
   d. Highly Concerned
   e. Very Highly Concerned

16. Do you teach about environmental issues in your classroom? Why/why not?
   a. Yes
   b. No

17. Please rate your level of agreement with the following statement: The social studies curriculum should include controversial environmental issues.
   a. Strongly Disagree
   b. Disagree
   c. Neutral
   d. Agree
   e. Strongly Agree

18. Hydraulic fracturing (fracking) is a technique used by energy companies in which they drill vertically and then horizontally into shale formations in order to crack the shale formation with high pressure fluids to release natural gas and oil. Please rate your level of concern about this issue.
   a. Not Concerned
   b. Somewhat Concerned
   c. Moderately Concerned
   d. Highly Concerned
   e. Very Highly Concerned
19. How would you rate your level of knowledge of the process of hydraulic fracturing?
   a. None
   b. Some
   c. Sufficient
   d. High
   e. Very Highly

20. Is hydraulic fracturing taking place in your community?
   a. Yes
   b. No
   c. I don’t know

21. Have any energy industry companies offered professional development or educational sessions related to fracking in your school community? If yes, did you participate, why/why not?
   a. Yes
   b. No
   c. I don’t know

22. Do you believe hydraulic fracturing to be an appropriate topic in the social studies curriculum?
   a. Yes
   b. No

23. Do you believe hydraulic fracturing is controversial? Why/why not?
   a. Yes
   b. No
   c. I don’t know

24. Do you teach about hydraulic fracturing in your classroom? Why/why not?
   a. Yes
   b. No

25. Are there any barriers that might prevent you from teaching about fracking? If yes, what barriers? Please explain.
   a. Yes
   b. No

26. Considering your own level of knowledge, how comfortable do or would you feel teaching about hydraulic fracturing?
   a. Not comfortable
   b. Somewhat comfortable
   c. Moderately comfortable
d. Highly comfortable
e. Totally comfortable

**Background Information**

27. In what school district do you currently teach?

28. How many years of teaching experience will you have at the end of this school year?
   a. 1
   b. 2-5
   c. 6-10
   d. 11-15
   e. 15-20
   f. 20-25
   g. 25+

29. How many years of teaching experience in your current district will you have at the end of this school year?
   a. 1
   b. 2-5
   c. 6-10
   d. 11-15
   e. 15-20
   f. 20-25
   g. 25+

30. What is your gender?
   a. Male
   b. Female

31. Which of the following best represents your ethnic background??
   a. White, non-Hispanic
   b. Hispanic
   c. Black, non-Hispanic
   d. American Indian or Alaska Native
   e. Asian or Pacific Islander
   f. Multi-racial
   g. Other

32. Would you be willing to participate in a personal follow-up interview? If so, please provide your contact information below.
   a. Name
   b. Telephone Number
   c. Email address
d. School
Dear colleagues,

My name is Matthew Hollstein and I am a full-time high school social studies teacher in Columbus, Ohio where I teach American History, Globalization, and American Government. I am currently completing a dissertation at Ohio University in social studies education. 

As a social teacher, I recognize how busy you are during this time of year. However, I am requesting your assistance in my dissertation research. I am seeking American Government teachers to participate in a brief online survey. Your participation is completely voluntary and should take not more than 20 minutes to complete.

I am conducting research on the current status of teaching in Ohio about hydraulic fracturing in American Government classrooms and barriers that might exist to prevent the teaching about this topic. All information obtained from this survey will be confidential and your information will not be shared with any outside parties. You will be able to discontinue this survey at any time.

To complete the survey please visit (Survey link will be inserted here).

Participation in the survey will constitute your informed consent to participate in this study. If you have any questions, please feel free to contact me. I very much appreciate your time and willingness to participate in this study.

Matt Hollstein
Appendix C: Informed Consent

Status of the Teaching of Hydraulic Fracturing in Ohio American Government Classrooms

Informed Consent

I have been asked to participate in an online survey to assess the status of teaching about fracking in American Government classes, and to determine what barriers exist that may prevent the teaching of environmental issues such as fracking. I understand that my participation is voluntary, and that if I choose to participate, I can withdraw at any time, and that there are no anticipated risks to my participation. I understand that completion of the survey should take no longer than 20 minutes. My decision to participate or not participate in the research will have no impact on my employment in any way and that that all the information I provide will be held in the strictest confidentiality, that no names will be included, and that no one outside of me and my academic advisor will handle the data. It may be possible for you to be identified via your demographic data if a third party were to have access to your responses; however, no persons outside of me or my academic advisor will have access to your information. The data will be stored on a secure, password-protected external hard drive with the researcher.

I understand that I may discontinue the use of this survey at any time during the process. I have been informed that my completion of this survey constitutes my informed consent to participate. I understand that I must be at least 18 years of age to participate in this study.

I have been informed that if I have any questions about this study, I can contact Mr. Matthew Hollstein (614) 657 3942 or mh124997@ohio.edu; Dr. Frans H. Doppen at (740) 593-0254 or doppen@ohio.edu. If I have any questions about my rights as a research subject, I can contact Jo Ellen Sherow at (740) 593-0664 or compliance@ohio.edu