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## **Teachers' Epistemological Stances and Citizenship Education**

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### **Teachers' Epistemological Stances and Citizenship Education**

This research explored differences among teachers' epistemological and ontological world views and how their world views are related to their personal views on citizenship with respect to curriculum, pedagogy, and consistency over time. Several previous studies have examined changes in epistemological beliefs across time<sup>1</sup> however, none of these studies examined change in both epistemological and ontological world

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<sup>1</sup> Joanne Brownlee, "Teacher Education Students' Epistemological Beliefs," *Research in Education* (2004): 72, 1-17. Rose Marra, "Teacher beliefs: The impact of the design of constructivist learning environments on instructor epistemologies," *Learning Environments Research*, 8 (2005): 135-155. Deborah Trumbull, Grace Scarano, and Rick Bonney, "Relations Among Two Teachers' Practices and Beliefs, Conceptualization of the Nature of Science, and Their Implementation of Student Independent Inquiry Projects," *International Journal of Science Education*, 28(14) (2006): 1717-1750.

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views simultaneously, or whether changing world views are linked to changing beliefs about citizenship and citizenship education. We begin with a discussion of epistemological and ontological world views, and continue with an overview of citizenship education prior to presenting the results of the current study.

### *Defining Epistemology and Ontology World Views*

Epistemology is the study of beliefs about the origin and acquisition of knowledge.<sup>2</sup> We use the term *epistemological world view* to refer to an individual's collective beliefs about the nature and acquisition of knowledge. We use the term synonymously with similar terms used in the literature such as *personal epistemology*<sup>3</sup> and *epistemological stances*<sup>4</sup> that collectively refer to a set of beliefs or a personal theory about knowledge and knowledge justification. We assume that an epistemological world view includes all of one's explicit and implicit beliefs, attitudes, and assumptions about the acquisition, structure, representation, and application of knowledge.<sup>5</sup>

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<sup>2</sup> Babara Hofer, "Exploring the Dimensions of Personal Epistemology in Differing Classroom Contexts: Student Interpretations During the First Year of College," *Contemporary Educational Psychology*, (2004): 29, 129-163.

<sup>3</sup> Kwok-Wai Chan and Robert G. Elliot, "Relational Analysis of Personal Epistemology and Conceptions About Teaching and Learning," *Teaching and Teacher Education*, (2004): 20, 817-831. Barbara Hofer, "Personal Epistemology Research: Implications for Learning and Teaching," *Educational Psychology Review*, (2001): 13, 353-384.

<sup>4</sup> Peter Johnston, Haley Woodside-Jiron, and Jeni Day, "Teaching and Learning Literate Epistemologies," *Journal of Educational Psychology*, (2001): 93(1), 223-233.

<sup>5</sup> Robert Audi, *The Cambridge dictionary of philosophy*. Cambridge, England. Cambridge University Press 1995). James Cunningham and Jill Fitzgerald, "Epistemology and Reading," *Reading Research Quarterly* (1996): 31, 36-60. Barbara Hofer and Paul R. Pintrich, "The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and their Relation to Learning," *Review of Educational Research* (1997): 67, 88-140. Anna-Maija Pirttila-Backman and Anna Kajanne, "The Development of Implicit Epistemologies During Early and Middle Adulthood," *Journal of Adult Development*, 8, (2001): 81-97. Gregory Schraw and Lori Olafson, "Teachers' Epistemological World Views and Educational Practices," *Issues in Education*, 8, (2002): 99-148.

Ontology refers to the nature of reality and being<sup>6</sup> and addresses the question of “what is the form and nature of reality and what can be known about that reality?” (Ponterotto 2005).<sup>7</sup> We use the term *ontological world view* to refer to an individual’s collective beliefs about the nature of reality and being. Previous research found that ratings of epistemology and ontology ratings were correlated in the .50 to .60 range; thus, we assume that these world views each affect an individual’s beliefs about learning and instruction.<sup>8</sup>

Epistemology and ontology refer to abstract concepts that are encountered rarely in everyday life. For this reason, we provide definitions and examples in the Appendix of two ends of the epistemology and ontology continuums, which we refer to as realist versus relativist world views. These examples describe prototypical teachers who represent these endpoints. We also describe what we mean by realist and relativist in more detail in the *Materials* section below.

#### *Previous Epistemology Research*

Research over the last three decades has focused primarily on the structure and development of college students’ epistemological beliefs<sup>9</sup>. Most studies have measured

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<sup>6</sup> Merricks, Trenton. *Truth and Ontology*, (Oxford, England: Oxford University Press, 2007". Donna Mertens. *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative, and Mixed Methods (2nd edition)*, (Thousand Oaks, CA: Sage Publications, 2005). Joseph G. Ponterotto, "Qualitative Research in Counseling Psychology: A Primer On Research Paradigm and Philosophy of Science," *Journal of Counseling Psychology*, 52 (2005): 126-136.

<sup>7</sup> Ponterotto.

<sup>8</sup> Gregory Schraw and Olafson, L., “Assessing Teachers’ Epistemological and Ontological Worldview.”, In *Knowing, knowledge, and beliefs: Epistemological studies across diverse cultures*. Edited by Myint Khine, (New York: Springer, 2008): 25-44. Lori Olafson, Gregory Schraw, G. and Michelle Vander Veldt, “Consistency and development of teachers’ epistemological and ontological world views,” *Learning Environments Research*, in press.

<sup>9</sup> Marcia B. Baxter-Magolda, "Epistemological Reflection: The Evolution of Epistemological Assumptions From Age 18 to 30." In *Personal Epistemology: The Psychology of Beliefs About Knowledge and Knowing*. Edited by Barbara K. Hofer & Paul R. Pintrich. (Mahwah, NJ: 2002): 89-102. Lisa D. Bendixen, "A Process Model of Epistemic Belief Change. In *Personal Epistemology: The Psychology of Beliefs About Knowledge and Knowing*. Edited by Barbara K. Hofer & Paul R. Pintrich. (Mahwah, NJ:

epistemological beliefs using self-report scales that assess multiple, independent dimensions such as the certainty, complexity, or origin of knowledge<sup>10</sup>, although some have used interview techniques to determine a holistic epistemological or ontological stance<sup>11</sup>.

Researchers have begun investigating teachers' epistemological beliefs in the last decade. Many of these researchers have argued that teachers' epistemological beliefs influence teaching practices<sup>12</sup>. For example, teachers with more sophisticated epistemological beliefs and world views were more likely to endorse student-centered instructional practices that emphasize critical reasoning. In contrast, teachers with less sophisticated beliefs were more likely to focus on traditional curriculum, student testing,

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Erlbaum, 2002): 191-208. Deanna Kuhn, Richard Cheney, and Michael Weinstock, "The Developmental of Epistemological Understanding," *Cognitive Developmental* (2000): 15, 309-328. William G, Perry, Jr. *Forms of Intellectual and Ethical Development in the College Years* (New York: Academic Press,1970).

<sup>10</sup> Gregory Schraw, Lisa D. Bendixen, and Michael E Dunkle, "Development and Validation of the Epistemic Belief Inventory (EBI). In *Personal Epistemology: The Psychology of Beliefs About Knowledge and Knowing*. Edited by Barbara K. Hofer & Paul R. Pintrich. (Mahwah, NJ: Erlbaum, 2002): 261-275.

<sup>11</sup> Deanna Kuhn. ." *The Skills of Argument*. (New York: Cambridge University Press, 1991). William Perry, Jr. James D. Slotta and Michelene Chi, "Helping Children Understand Challenging Topics in Science Through Ontology Training," *Cognition and Instruction*, 24 (2006): 261-289.

<sup>12</sup> Joanne Brownlee and Donna Berthelsen, "Personal Epistemology and Relational Pedagogy in Early Childhood Teacher Education Programs," *Early Years* (2005): 26, 17-29. Chan and Elliott, 2004. S. Asli Ozgun-Koca, and Ahmet Illhan Sen, "The Beliefs and Perception of Pre-Service Teachers Enrolled in a Subject-Area Dominant Teacher Education Program About "Effective Education," *Teaching and Teacher Education*, 22 (2006): 946-960. Fang-Ying Yang, "Student Views Concerning Evidence and the Expert In Reasoning A Socio-Scientific Issue and Personal Epistemology," *Educational Studies*, (2005): 31, 65-84.

and mastery of basic science concepts. Lidar, Lundquist, and Ostman (2005)<sup>13</sup> found that teachers with more sophisticated personal epistemologies used a greater number of *epistemological moves* in their science classrooms, where moves consisted of cognitive activities designed to promote deeper learning and reflection, including generating, constructing, and re-constructing. They also reported that the relative success of different epistemological moves depended in large part on contextually specific factors such as student knowledge, complexity of activity, and sophistication of students' conceptual understanding.

Teachers' epistemological beliefs may also have an impact on student epistemological development and learning<sup>14</sup>. In their study of two contrasting classrooms, Johnston et al. (2001)<sup>15</sup> found that students held different views of what it meant to be competent in literacy. In the classroom where the teacher's goals included controlling the discussion and ensuring that students had the correct meaning of the text, students viewed literacy as a technical matter. In contrast, in the classroom where the teacher's goal was that students become "thinkers" students viewed literacy as a meaning-making activity. According to Johnston et al.<sup>16</sup>, these differences "illustrate that, in particular classrooms, students' literate epistemologies can be traced from teacher to student through the discursive practices of the classroom".

The development of teachers' epistemological beliefs is another area of study within the field. Brownlee (2004)<sup>17</sup>, for example, found that pre-service teachers who were enrolled in a program based on relational pedagogy experienced more growth in sophisticated epistemological beliefs as compared with pre-service teachers in a tutorial group. Marra (2005)<sup>18</sup> reported similar findings in a study of how constructivist instruction affected the development of graduate student teachers at a university.

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<sup>13</sup> Milina Lidar, Eva Lundquist, and Leif Ostman, "Teaching and Learning in the Science Classroom: The Interplay Between Teachers' Epistemological Moves and Students' Practical Epistemologies," *Science Education* (2005): 90, 148-163.

<sup>14</sup> Johnston, Woodside-Jiron and Day. Loucas Louca, Andrew Elby, David Hammer, and Trisha Kagey, "Epistemological Resources: Applying A New Epistemological Framework to Science Instruction," *Educational Psychologist* (2004): 39(1), 57-68. Marra.

<sup>15</sup> Johnston, Woodside-Jiron and Day.

<sup>16</sup> Johnston, Woodside-Jiron and Day. 230.

<sup>17</sup> Joanne Brownlee, "Changes In Primary School Teachers' Beliefs About Knowing: A Longitudinal Study," *Asia-Pacific Journal of Teacher Education* (2003): 31(1), 87-98.

<sup>18</sup> Marra.

Teachers reported a variety of changes after the course, but especially changes in epistemological and pedagogical beliefs. Teachers adopted constructivist beliefs that emphasized the role of student interactions.

Unlike epistemological beliefs, few studies have investigated teachers' ontological beliefs, nor have any studies examined the joint contribution of epistemological and ontological beliefs. We believe it is important to examine teachers' ontological beliefs to determine if they have explicit awareness of their beliefs and if these beliefs are related to epistemological beliefs and classroom practice. Consistent with this view, recent review articles<sup>19</sup> addressed the importance of personal ontology. Packer and Goicoechea (2000)<sup>20</sup> called for the reintroduction of ontology as topic in research on learning and development. The ontological processes of schooling they described illustrates how children are actively engaged in the ongoing reproduction of the classroom community of practice and how schools operate as sites for the production of persons. Packer and Goicoechea (2000, 235)<sup>21</sup> noted that "the shift from family member to student is already an ontological transformation" as it fundamentally changes the "being" of the child.

### *Citizenship Education*

Historically, the primary motive for establishing public schools was for the implementation of civic learning, its aims being to equip its students with the knowledge, skills, and dispositions required for effective civic engagement. Civic learning includes a variety of teaching and discovery methods that enable citizens to participate in and sustain democracy. Most schools today still have mission statements that list civic education as a top priority, but with the push for higher test scores, civic education in the United States is often "left behind."<sup>22</sup> The National Alliance for Civic Education

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<sup>19</sup> Martin Packer and Jessie Goicoechea, "Sociocultural and Constructivist Theories of Learning: Ontology, Not Just Epistemology," *Educational Psychologist*, 34(4) (2000): 227-241. Ponterotto. Joe L. Kincheloe, "Critical Ontology: Visions of Selfhood and Curriculum," *Journal of Curriculum Theorizing* (2003): 19(1), 47-64.

<sup>20</sup> Packer and Goicoechea

<sup>21</sup> Ibid.

<sup>22</sup> Walter Parker, *Social Studies in the Elementary School*. (New Jersey: Merrill Prentice Hall, 2005, 2008).

(2008)<sup>23</sup> believes it is time that people come together to support future generations understanding of democracy and actively engage in building this democracy in America.

It is not surprising that schools are identified as the logical place for students to learn about civic participation and responsibility. If school is where children acquire their civic knowledge, skills, and dispositions, then it is crucial for teacher educators to help teachers become knowledgeable, civic-minded citizens. Civics education prepares students to understand the roles and responsibilities of democratic citizens<sup>24</sup>. Unfortunately, many teachers initially reject the idea of a civics-centered curriculum because it does not support their district's curriculum goals. Since the implementation of the No Child Left Behind, teachers often report that their curriculum has been sharply narrowed to focus on mathematics and language arts. Real world experiences and meaningful curriculum projects are obsolete because their format does not support the test preparation regimen mandated by their school districts. As a result, any request to deviate from the script is often met with resistance from the administration. This is why the importance of civics curriculum must be considered in social studies education.

### *Civics Curriculum*

Since civic competence is the goal of social studies<sup>25</sup> and citizenship is usually mentioned in most school mission statements, then what does democracy look like when

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<sup>23</sup> National Alliance for Civic Education. *Expectations of Excellence: Curriculum Standards For Social Studies*. 2008. <http://www.cived.net/tioce.html> (accessed June 8, 2009).

<sup>24</sup> Terrence Mason and Diane Silva. "Beyond and Methods Course: Civics As the Program Core In Elementary Teacher Education. In *Principles and Practices of Democracy in the Education of Social Studies Teachers: Civic Learning In Teacher Education: Volume I*. Edited by John Patrick, & Robert S. Leming (Eds.). Bloomington, IN: ERIC Clearing house for Social Studies (2001): 65-86. John Patrick and Thomas Vontz, "Components of Education for Democratic Citizenship in the Preparation of Social Studies Teachers. In *Principles and Practices of Democracy in the Education of Social Studies Teachers: Civic Learning in Teacher Education: Volume I*. Edited by John Patrick, & Robert S. Leming (Eds.). Bloomington, IN: ERIC Clearing house for Social Studies (2001): 39-64.

<sup>25</sup> National Council for the Social Studies. *Expectations of Excellence: Curriculum Standards for Social Studies*. 1994. <http://www.socialstudies.org/standards> (accessed January 18, 2009).

translated into a common curriculum? It is essential that teacher educators find curricula to help students understand that civic education is not a list of mechanical skills for a test, but knowledge for "creating a public."<sup>26</sup> Patrick (2002)<sup>27</sup> developed a framework that defines components of common education for citizenship in a democracy: 1) civic knowledge, 2) civic dispositions, and 3) civic skills. These three components guided the development of civics-infused social studies methods course and this research study.

### *Civic knowledge, dispositions and skills*

If active civic involvement is necessary to promote civic competence, it is crucial that citizens are knowledgeable about democracy. With any discussion about knowledge, it is inevitable that the issue of what knowledge should be deemed important will arise. This will depend on the nature of the project and the meaningful connections the students will find as they examine the issue. Natural connections related to the knowledge of the concepts, principles, practices, contexts, and history of democracy and institutions of representative democratic government<sup>28</sup> emerge through the curricular experience.

The second aspect of civic education critical to quality civic curriculum is the development of attitudes and values regarding the roles and responsibilities of citizenship. These civic dispositions are the elements of civic education concerned with the habits and inclinations that summarize an individual's behaviors and values in relation to democracy. These virtues include responsibility, civility, honesty, courage, fairness, and lawfulness<sup>29</sup>. Wynne (1986, 4)<sup>30</sup> emphasizes the importance of civic dispositions by stating that "the transmission of moral values has been the dominant educational concern of most cultures throughout history". This transmission of civic dispositions continues through the current filtering of character education through public

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<sup>26</sup> Neil Postman. *The End of Education: Redefining the Value of School* (New York: Alfred A. Knopf, 1995, 18).

<sup>27</sup> John Patrick, "Defining, Delivering and Defending a Common Education for Citizenship in a Democracy. In *Principles and Practices of Democracy in the Education of Social Studies Teachers: Civic Learning in Teacher Education: Volume 2* Edited by John Patrick, George Hamot, & Robert S. Leming, (2002): 5-21.

<sup>28</sup> Patrick and Vontz.

<sup>29</sup> Parker.

<sup>30</sup> Edward Wynne, "The Great Tradition In Education: Transmitting Moral Values," *Educational Leadership* (1986): 43(4), 4-9.

school domains<sup>31</sup>. Qualities such as promoting the common good, recognizing and supporting equality for all people and responsible civic participation are all traits necessary to sustain a representative democracy. Civic skills, or the skills necessary to “empower citizens to influence public policy decisions and to hold accountable their representatives in government,” are a crucial piece to civics curriculum<sup>32</sup>. This encourages students to actively engage in thoughtful deliberations that encourage the consideration of multiple perspectives before decisions are made.

### *Types of Citizenship*

Civic participation can be examined through different levels of involvement. Westheimer and Kahne (2004)<sup>33</sup> identify three categories of citizenship: personally responsible, participatory, and justice-oriented. Personally responsible citizenship requires individuals to act responsibly in the community. Such action involves the individual: working, paying taxes, obeying laws, recycling, and volunteering. Participatory citizenship centers on organizing community outreach for those in need. These citizens are active members of community organizations and work to accomplish collective tasks. Finally, justice-oriented citizenship focuses on critically assessing the social, political, and economic circumstances surrounding the surface conditions. These types of citizens seek to identify areas of injustice in the world. They have knowledge of democratic social movements, which informs how these citizens effect systemic change.

### **The Present Study**

This goal of this research was to examine the relationship between teachers’ epistemological and ontological beliefs and citizenship education in a methods course that emphasized civics education. Four research questions were of interest:

1. Is there a change between pre- and post-test scores for epistemology, ontology civic education perspectives, and civic development scores?
2. Is quadrant placement correlated with other variables such as the three civic education perspectives and civic development questionnaire described below?
3. What do written essays reveal about participants’ epistemological and ontological beliefs?

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<sup>31</sup> Thomas Lickona. *Educating for Character*. (New York: Bantam Books, 1991).

<sup>32</sup> Patrick and Vontz 2001, 42.

<sup>33</sup> Joel Westheimer and Joseph Kahne, "What Kind of Citizen? The Politics of Educating For Democracy," *American Educational Research Journal* (2004): 41(2), 237-269.

4. What aspects of the social studies methods course, with an emphasis in civic education, had an impact on participants' beliefs and learning experiences?

## **Method**

### *Research Design*

The current study utilized a mixed-model design with both quantitative and qualitative methods throughout all stages of the research process<sup>34</sup>. These data were collected sequentially, which is a common approach in mixed methods research<sup>35</sup>.

### *Setting and Participants*

The study occurred in a graduate class at a large university in southern California. Participants were graduate students enrolled in a course taught by one of the authors called Graduate Studies in Elementary Education: Social Studies. The class met once a week for 2 ½ hours for a total of 15 weeks in the spring 2009 semester.

The goal of the course is to help the participants reflect on and self-assess areas of need, growth, and strength in teaching elementary social studies. Within the course, teachers learn teaching techniques that support social studies aims and content and examine a standards-based approach to teaching social studies. A major portion of the class is devoted to looking at goals and objectives, instructional materials, teaching strategies, curriculum development, and assessment/evaluation techniques. The objectives of the course included: 1) create a democratic classroom that will support students' development of knowledge, skills, and dispositions for good citizenship, 2) effectively design and teach lessons for the elementary grades using a variety of instructional methods, resources, and assessment strategies that provide access to the core curriculum for all learners, and 3) engage in the profession of education by (a) collaborating with others via technology and in person and (b) by analyzing and reflecting on social science education practices, materials, and teaching practice.

The major assignment for the class was an action research assignment. This action research, described to the participants as research "conducted by people who want to do

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<sup>34</sup> Burke Johnson and Anthony Onwuegbuzie, "Mixed Methods Research: A Research Paradigm Whose Time Has Come," *Educational Researcher* (2004): 33(7), 14-26.

<sup>35</sup> John Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (Thousand Oaks, CA: Sage, 2003).

something to improve their own situation” (Sagor 1992, 5)<sup>36</sup>, provided steps for the participants to involve their students in an social action curriculum project while documenting connections between their academic learning and their civic knowledge, dispositions, and skills related to their involvement with the project. Participants were also required to collect data and reflect at various stages of the project.

To introduce the assignment, participants watched a clip from the movie *Pay it Forward*<sup>37</sup>. In the featured movie clip, the classroom teacher introduced social studies to a group of 7<sup>th</sup> grade students on the first day of class by asking them to identify their roles and responsibilities as citizens of the world. To encourage the kids to become active citizens, the teacher introduced a social studies assignment for the whole year that challenged the students to think of a way to change the world and put it into action. After watching the clip, the study participants were asked to reflect on the assignment presented in the movie and discuss how it connected to their personal definition of social studies. This led to a discussion about the dimensions of citizenship education and connections to social studies. Next, the participants were asked to define the characteristics of a good citizen. After examining the categories of citizenship defined by Westheimer and Kahne<sup>38</sup>, they were challenged to engage their students in activities that require active civic involvement on a participatory or justice-oriented level. After sharing examples of different projects completed by children in the past, they were provided with a handout to guide the facilitation of an active citizenship project in their classrooms.

In addition to this semester-long project, activities were conducted in class each week related to topics including, but not limited to, deliberation, patriotism, historical inquiry, community involvement, and global interdependence. One such class assignment required participants to conduct a book review on *Pledging allegiance: The politics of patriotism in America's schools* edited by Joel Westheimer. The participants were instructed to read the book, take notes, participate in an on-line book club discussion, and prepare a book review. The purpose of the assignment was for participants to articulate their own ideological position in regards to patriotism, as well as consider the ideas presented by their classmates. After having participants identify their own stances, the next questions revolved around how they could address the complexities associated with patriotism in their own classrooms. Do they simply go through the motions by reciting the Pledge of Allegiance every morning with their students, display a flag at the front of the room, and celebrate patriotic holidays with superficial activities? Or do they strive to create democratic communities in their classrooms where students are encouraged to explore controversial issues, raise questions, engage in dissent, and examine multiple

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<sup>36</sup> Richard Sagor, *How to Conduct Collaborative Action Research*. (Alexandria: VA: Association of Supervision and Curriculum Development, 1992).

<sup>37</sup> Mimi Leder, (Director), et al. *Pay It Forward*[DVD], 2000.

<sup>38</sup> Westheimer and Kahne.

perspectives before making a decision, all the while respecting one another's ideas and viewpoints on important issues? According to a recent study, such classroom practices are among those that predict higher levels of civic participation by high school students<sup>39</sup>.

Another example of a class activity was involvement in a mock congressional hearing. In class, the participants evaluated and discussed instructional strategies that could be used in conjunction with the Constitution and the rights of American citizens. After participants became familiar with the structure of our government and the implications of the Constitution, they participated in a mock congressional hearing to apply these ideas to current issues and events.

This graduate course on social studies focused on citizenship and citizenship education through a format that assumed that learners construct shared understanding in collaborative contexts in which teachers serve as facilitators<sup>40</sup>. Within this learning environment, reflection played a central role as participants investigated their views about citizenship and citizenship education, their views of learners and how learning occurs (ontological aspects of teaching), their beliefs about how citizenship knowledge is acquired (epistemological aspects of teaching), and their actual teaching practices.

The 19 participants held degrees in a content area and were working toward a graduate degree in education. Sixteen participants completed the instruments at the

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<sup>39</sup> Joseph Kahne and Susan Sporte, "Developing Citizens: A Longitudinal Study of School, Family, and Community Influences on Students' Commitment to Civic Participation. Paper Presented At the R. Freeman Butts Institute on Civic Learning and Teacher Education, (2007).

<sup>40</sup> Michael Cole, *Cultural Psychology: A Once and Future Discipline*. (Harvard, MA: Harvard University Press, 1996). David Wei L Hung, "Activity, Apprenticeship, and Epistemological Appropriation: Implications From the Writing of Michael Polanyi," *Educational Psychologist* (1999): 34, 193-205. Mary McCaslin and Daniel T. Hickey, "Educational Psychology, Social Constructivism, and Educational Practice: A Case of Emergent Identity," *Educational Psychology* (2001): 133-141. Barbara Rogoff, *Apprenticeship in Thinking: Cognitive Development in Social Context* (New York: Oxford University Press, 1990).

beginning and end of the semester, of which 15 were female and one was male. Participants ranged in age from 22 to 40, with an average age of 27.45 years. The majority were Caucasian (75%); three were Hispanic and one was bi-racial. Participants had between 0 and 12 years of teaching experience with an average of 2.85, and taught a variety of grade levels, from primary to high school.

### *Data Sources*

Four data sources were utilized. The participants completed three pre and post test surveys designed to elicit information about their world views and beliefs about citizenship. Additionally, participants were interviewed by two of the authors at the end of the semester.

### **Materials**

#### *The four quadrant scale*

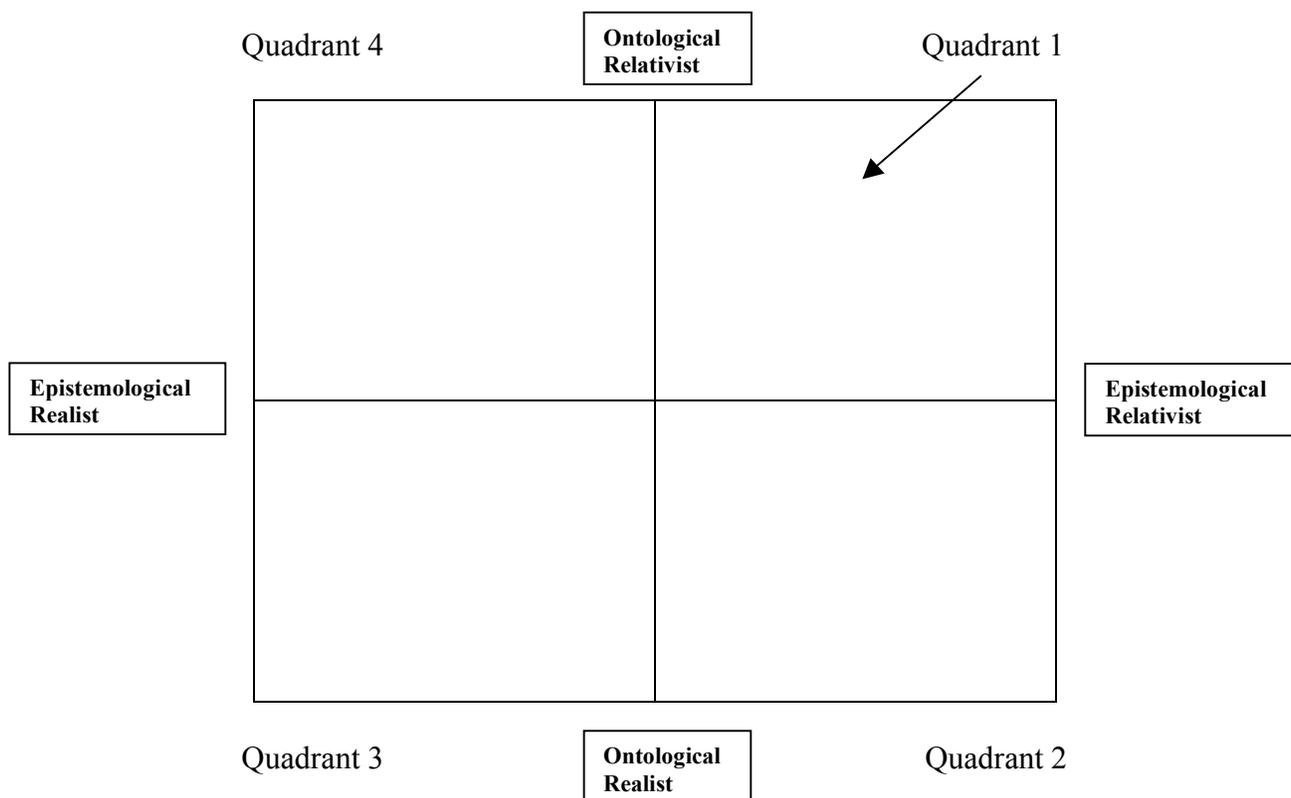
Participants completed the Four Quadrant Scale (Schraw & Olafson 2008)<sup>41</sup>. This instrument was developed to assess the strength of epistemological and ontological beliefs. This instrument partitions epistemological and ontological world views into two axes at right angles to each other that range from realist to relativist on each axis (see Figure 1). This yields four quadrants, including realist-realist (quadrant 3), realist-relativist (quadrant 4), relativist-realist (quadrant 2), or relativist-relativist (quadrant 1). Individuals first read a brief summary of each quadrant and then selected a point in the four-quadrant array that best corresponded to their personal epistemological and ontological world views about teaching (see Appendix). This enabled participants to record the degree to which they endorsed realist versus relativist epistemological and ontological beliefs. We refer to this as the *four-quadrant scale* because there are four distinct quadrants into which a person can be classified based on self-report of external judgment by a researcher. The results are used in two ways. The first is quantitative, which examines the coordinate along each of the epistemological and ontological scales. The second is a qualitative interpretation based on the quadrant placement of the score (1-4) as well as relative position within the quadrant. Previous research has reported significant correlations between the coordinate measures and scores on the Epistemological Belief Inventory (EBI)<sup>42</sup>.

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<sup>41</sup> Schraw and Olafson (2008).

<sup>42</sup> Olafson, Schraw and Vander Veldt

Figure 1: The Four-Quadrant Scale



Along the epistemological continuum, teachers' world views can be located between the two endpoints of *epistemological realist* and *epistemological relativist*. An epistemological realist would believe that there is an objective body of knowledge. From a teacher's perspective, this position would hold that curriculum is fixed and permanent and focuses on fact-based subject matter. An epistemological relativist, on the other hand, would describe curriculum as changing and student-centered. Problem-based or inquiry curricula are examples at the relativist end of the continuum from the perspective of a one-size-fits-all curriculum.

Along the ontological continuum, an ontological realist assumes one underlying reality that is the same for everyone. Instructionally, this means that all children should receive the same type of instruction at the same time regardless of their individual circumstances, achievement, or context. An ontological relativist, on the other hand, assumes that different people have different realities, and that these realities are constructed in social settings. From an instructional perspective, teachers are seen as collaborators, co-participants, and facilitators of learning who work to meet the individual needs of students.

Participants read the information in the Appendix prior to making their ratings, which defines epistemology and ontology, and provides an example of realist versus relativist perspectives on both dimensions. The four quadrant scale yields a strong realist quadrant (realist-realist; quadrant 3), a strong relativist quadrant (relativist-relativist; quadrant 1), and two mixed quadrants (realist-relativist; quadrant 4), and (relativist-realist; quadrant 2).

### *Conceptions of citizenship*

Participants also completed a ten-item instrument that was designed to elicit conceptions of citizenship<sup>43</sup>. The citizenship survey assessed beliefs about personally responsible citizenship (i.e. *I think people should assist those in their lives who are most in need or help*); participatory citizenship (i.e., *I think it is important to get involved in improving my community*); and justice-oriented citizenship (i.e. *I think it's important to challenge inequalities in society*). Participants read each statement and indicated the extent to which they agreed with each of them using a five-point scale, ranging from strongly agree to strongly disagree.

*Civics survey.* Participants completed a 57-item questionnaire adapted from the Civic Development Inventory<sup>44</sup>, developed by the Center for Civic Education at Calabasas, California to assess various civic dispositions, skills, and propensity to participate in future political life, which reported acceptable reliabilities and predictive validity evidence. The final survey used in this study incorporated the aforementioned civics inventory statements and organized them into the following categories related to Patrick and Vontz's<sup>45</sup> *Components of Education for Citizenship in a Democracy*: civic knowledge (*People expressing their opinions on political issues influence what happens in government*), civic dispositions (*I would like to know more about how political parties work*), civic skills (*I am skilled in explaining problems in my community or country*) and civic classroom climate (*I feel it is important to teach about democracy*). Participants

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<sup>43</sup> Westheimer and Khane.

<sup>44</sup> Patrick and Vontz.

<sup>45</sup> Vontz. 41

read each statement and indicated the extent to which they agreed with each of them using a five-point scale, ranging from strongly agree to strongly disagree.

*Interviews*

Nineteen students also consented to an interview. These interviews were conducted at the end of the semester and were designed to allow participants to further discuss their epistemological beliefs and their beliefs about citizenship and citizenship education. The interview protocol consisted of two broad, open-ended questions: 1) Did your ideas about “what is a good citizen” change over the semester?, and 2) What does civics education look like in your classroom? All interviews were audio-taped and transcribed.

**Results**

A number of quantitative and qualitative analyses were conducted. Research questions 1 and 2 listed above were addressed with quantitative analyses; research questions 3 and 4 were addressed in the qualitative analyses.

*Quantitative Results*

Research question 1 addressed whether there was change between the pre- and post-test means for epistemological and ontological beliefs, three citizenship composite subscores (personal responsibility, participatory, justice oriented), and five composite subscores from the civics survey (knowledge, dispositions, skills 1, skills2, classroom climate) (see Table 1). Factor analyses were not conducted due to the low sample size: however, reliabilities were computed for each scale and were above .70 in most cases (see Table 1). Dependent *t*-tests comparing post-pretest differences were conducted for each variable in Table 1. There was a significant increase in the justice oriented citizenship perspective,  $t(15) = 2.31, p < .05$ , and civics knowledge scores from pre- to posttest,  $t(15) = 2.14, p < .05$ . We attribute the significant increase in justice oriented citizenship scores to a focus on social justice throughout the semester. Table 1 reveals that justice scores were low compared to personal responsibility and participatory views. Discussion of these views appeared to increase awareness and commitment to them. We attribute the significant increase in civics knowledge scores to instructional content studied throughout the semester.

Table 1  
Means and standard deviations for pre- and post-test variables

Variable	Pretest Mean, Standard Deviation, and Reliability			Pretest Mean, Standard Deviation, and Reliability		
	Mean	S. D.	Reliability	Mean	S. D.	Reliability
Epistemology	63.56	33.28	NA	56.78	26.34	NA

Ontology	59.75	20.23	NA	57.44	18.87	NA
Quadrant	1.68	1.40	NA	1.81	1.47	NA
Personal responsibility	12.18	1.905	.47	12.12	2.06	.63
Participatory	14.00	3.22	.62	14.87	3.00	.72
Justice oriented	10.18	3.250	.72	12.56	2.06	.79
Civics knowledge	37.54	7.95	.81	40.81	6.22	.83
Civics dispositions	65.31	5.84	.75	65.21	8.91	.79
Civics skills 1	38.37	6.17	.73	30.54	6.97	.81
Civics skills 2	22.56	7.43	.71	22.71	5.68	.67
Civics classroom climate	48.62	8.56	.72	50.62	6.83	.77

We conducted follow up repeated measures analysis of the citizenship subscales to examine whether the three perspectives of citizenship changed as a function of the semester long course. A 2 (time: pre vs. posttest) X 3 (perspective type: personal responsibility, participatory, justice oriented) analysis of variance revealed a significant time X perspective interaction,  $F(2, 30) = 5.49, p < .01$ , that was due to the fact that scores on the personal responsibility and participatory perspectives did not differ significantly between pre and posttest, whereas scores on the justice oriented perspective increased significantly. This result suggest that the course activities increased participants' justice oriented worldviews, which were significantly lower than other views at the beginning of the semester.

Research question 2 addressed whether quadrant placement (i.e., the intersection of epistemological and ontological beliefs) was related to other variables. As described above, those in quadrant 1 had strong relativist epistemological and ontological beliefs, whereas those in quadrant 3 has strong realist epistemological and ontological beliefs. Table 2 shows correlations among the posttest variables that support three findings. One is that quadrant placement was correlated with personal responsibility citizenship. Those in quadrants 3 and 4 were more committed to this perspective than those in quadrants 1 and 2. A second finding was that relativist quadrants (e.g. quadrant 1) were correlated with higher scores on the skills 2 subscale. A third finding was that citizenship subscales are highly intercorrelated, as are civics subscales. In addition, we correlated the

epistemology and ontology coordinate scores at pretest ( $r = .56$ ) and posttest ( $r = .57$ ), which were significant at  $p < .01$ . This indicated that relativist epistemological beliefs were associated with relativist ontological beliefs at both occasions. Similarly, quadrant placement at pretest and posttest was correlated  $r = .59$ , which was significant at  $p < .01$ .

Table 2  
Correlations Among Posttest Variables

	Quad.	P.R.	Part.	Just.	Know.	Dispt.	Skil1	Skil2	Clim.
Quadrant	1.00								
PRO	.43	1.00							
PO	.15	.48	1.00						
JO	.25	.86	.59	1.00					
Knowledge	.02	.41	.43	.43	1.00				
Dispositions	.19	.19	.45	.25	.29	1.00			
Skill 1	-.12	.23	.00	.11	.74	-.09	1.00		
Skill 2	-.45	.39	.27	.42	.68	-.02	.72	1.00	
Classroom Climate	-.25	-.06	.22	-.06	.43	-.03	.67	.62	1.00

Note: values of  $r > .42$  significant at  $p < .05$ ; values of  $r > .55$  significant at  $p < .01$ . PRO= personal responsibility orientation; PO = participatory orientation; JO = justice orientation.

### *Qualitative Results*

Research questions 3 and 4 addressed whether a social studies methods course affected classroom practice and whether epistemological and ontological beliefs relate to a broader set of instructional activities in the classroom. Transcribed interviews and participants' essays from the Four Quadrant Instrument were imported as primary documents into Atlas.ti. Atlas.ti is a software program that facilitates many of the activities involved in qualitative data analysis and interpretation, but does not automate these processes (Muhr 2004)<sup>46</sup>. Rather, it supports coding according to a scheme of categories (Alexa and Zuell 2000)<sup>47</sup>. It offers an exploratory, yet systematic approach to qualitative analysis.

<sup>46</sup> Thomas Muhr, *Atlas.ti v5.0 User's Guide and Reference, 2nd edition*. (Berlin, Germany: Scientific Software Development, 2004: 417).

<sup>47</sup> Melina Alexa and Cornelia Zuell, "Text analysis software: Commonalities, differences and limitations: The results of a review," *Quality and Quantity* (2000): 34, 299-321.

## *Essays*

During open coding, an initial list of codes was developed as we began the analysis of the structured essays. This initial list was refined as we analyzed each subsequent essay.

The majority of the participants (70%) demonstrated consistent epistemological and ontological beliefs the semester. Eight participants, for example, indicated that they were ontological and epistemological relativists (quadrant one) at both data collection points. Individuals in this quadrant were characterized primarily by their overwhelming support of student-centered practices that included constructivist approaches, projects/presentations, group work, student-directed learning, inquiry, and critical thinking that were consistent with a relativist view of teaching. In addition, there was an awareness of the importance of individual differences, and the belief that curriculum is not static. Carol, for example, wrote at the beginning of the semester:

I'd say that I am an ontological and epistemological relativist. I believe that curriculum is not fixed and permanent. The content of the curriculum should be responsive to the needs of the community/students. Teachers should plan and instruct materials/lessons to meet the needs of all students.

At the end of the semester, she again indicated that she viewed herself in quadrant one and wrote:

I'd say I am an ontological and epistemological relativist. I think teachers should be flexible and responsive to the students' needs. We teach effectively when knowing what the students need to learn and that sometimes would make us change our lesson plans in order to teach students.

Six of the participants (30%) changed their quadrant placement between pre and post. The majority of participants who indicated a change became more relativist epistemologically. At the beginning of the semester Nancy wrote, "I do feel epistemologically that there is a mandatory curriculum that must provide the foundation for knowledge in Social Studies," and at the end of the semester she said, "I believe that the curriculum should be current and valuable and that there is more than one scripted way of understanding and gaining knowledge of a topic." Two participants moved to a more realist position epistemologically. Chrissy, for example, wrote that she considered herself an epistemological relativist at the beginning of the semester and at the end of the semester she wrote, "Teachers are the vessels of information that students draw/learn from."

Overall, two thirds (68%) of the participants stayed or became more relativist over the course of the semester, while one-third stayed or became more realist.

### *Interviews*

We were interested in determining participant's personal views of citizenship and citizenship education, in addition to exploring whether or not their beliefs changed over the semester.

### *Conceptions of citizenship*

About half of the participants (47%) expressed views consistent with the personally responsible kind of citizen. The *personally responsible citizen* is someone who acts responsibly in the community: the core assumption of this view of citizenship holds that "To solve social problems and improve society, citizens must have good character; they must be honest, responsible, and law-abiding members of the community."<sup>48</sup> This view was expressed by Jean when she noted, "I think being a good citizen is, you know, abiding by the laws and kind of doing what you're supposed to." Participatory citizens "actively participate and take leadership positions within established systems and community structures" (Westheimer and Kahne 2004, 240). Four participants indicated a participatory view of citizenship. None of the participants expressed views primarily consistent with the justice-oriented view of citizenship, with its emphasis on question, debate, and changing unjust systems and structures<sup>49</sup>. Nevertheless, participants' views increased significantly on the justice dimension throughout the semester. This is due in part to significantly lower scores for the justice orientation at the pretest compared to other views, and to discussion throughout the semester that increased the perceived importance of the justice perspective.

### *Changing conceptions of citizenship*

In response to the question "Did your ideas about what is a good citizen change over the semester?" most participants (63%) indicated that their beliefs had not changed. Laura, for example, said, "I think I was pretty firm in what I thought what a good citizen was and it hasn't really changed." Several participants noted that although their ideas about citizenship had not changed, their beliefs were reinforced and clarified: "I think my ideas were always there but it just made me think of more ideas, that I maybe didn't think about before" (Grace). Over a third (38%) of the participants, however, discussed how their beliefs changed. Chrissy said that her beliefs "definitely" changed, not only within herself but also "in looking at my students and knowing that they can be good citizens as well, no matter what the age is."

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<sup>48</sup> Westheimer and Kahne, 240

<sup>49</sup> Ibid.

With respect to change, we were interested in exploring the impact of various learning activities within this graduate level social studies methods course. Even for those students who had not experienced a change, there were course experiences that seemed to have a significant impact on their thinking.

In particular, the action research project *Pay it Forward* was mentioned by all participants as being an important component of the course. Several participants noted that although they were resistant to the project initially it had a tremendous impact on them. Sarah said,

I think the biggest eye opener for me was the Pay it Forward project. For me I was really not wanting to do it at the beginning and really against it and I didn't see how my kids could do it and then I saw how they progressed and they could take that on themselves.

Participants were surprised at the engagement of their students. After a guest read the picture book version of *Three Cups of Tea* during Read Across America week, Nancy's second graders decided to become involved in the Pennies for Peace program and raised \$645. Nancy explained how the project benefitted her students as well:

They saw they could make a difference in other people's lives and they saw that they have a lot to be thankful for. They have so many things that those kids in Afghanistan and Pakistan don't have. And my 8 year-olds were coming into class saying "we heard Pakistan on the news yesterday" or, "my dad was reading about Afghanistan in the newspaper." Just the fact that they were picking up on that was just amazing to me.

Another class activity that had an influence on participants' beliefs about citizenship and citizenship education were the structured small and large group discussions. Discussion topics included deliberation, patriotism, historical inquiry, community involvement, and global interdependence. Mona described the value of these discussions:

You know, we talked so much about patriotism and what it means to be a good citizen and hearing everyone's different, you know, perspectives on how they view things. So it wasn't necessarily the textbook but I think more of class discussion and hearing people's points of view.

The discussion topic that generated the most comments from participants during the interview was the book review on *Pledging allegiance: The politics of patriotism in America's schools* edited by Joel Westheimer. Kim said, "you know the thing that really made my ideas differ was the book that we read, the *Pledging allegiance* book." The common theme related to the discussions about *Pledging allegiance* was related to how "eye-opening" it was to read about different perspectives on patriotism:

There were several essays that helped me see what it meant to be patriotic and a citizen because so many people in the book said, You know I have no reason to be patriotic, to love this country, because of the prejudices that I've had against me but you know even though I criticize my country and I voice my opinions, I still do love it.

### *Civics education*

And, finally, we were interested in how participants viewed civics education after experiencing a semester long course that focused on the development and articulation of their positions with respect to citizenship and patriotism. We wondered if the participants would describe any connections they had made between their own learning in the university setting and their teaching practices. All of the participants agreed that civics education was an important part of the social studies curriculum, and that it was their "duty" to teach civics education: "It just made me realize that even though I'm strapped for my time it is my responsibility and it's really important to try and teach those things to my kids" (Mona).

Participants also spoke at length about the changes they experienced in the classroom as a result of their participation in the course. Jane described how she made this theory to practice connection: "This class helped me to explore all the different ways that we can encourage students to be good citizens in their school community, where they live, and all the way up to their nation and how they can give back." Another participant described how her approach to civics education in the classroom had changed:

The big change is with my students and with my approach with them and talking more about it instead of like, "Okay let's stand and say the flag salute," or "Oops, we forgot to say the flag salute today," it's more of like, "Well why are we doing this? What's the purpose of doing this?" Just because I want them to know so that they have that choice. (Gail)

### **Discussion**

The goal of this research was to examine the relationship between teachers' epistemological and ontological beliefs and citizenship education in a methods course that emphasized civic education. We posed four research questions that focused on whether beliefs, knowledge, and dispositions changed over the 15-week semester. Question 1 addressed change between pre- and posttest scores for epistemology, ontology civic education perspectives, and civic development scores. Quantitative results showed that civic knowledge and justice oriented citizenship scores increased. Increased knowledge was attributed to course content, while the change in justice orientation was attributed to extended discussion of justice-related issues throughout the semester that raised initially low scores. Question 2 examined whether quadrant placement was correlated with other scores. Table 2 revealed a significant correlation between quadrant

and a preference personal responsibility citizenship. Specifically, individual in quadrant 3 and 4 (i.e., epistemological realists) reported a stronger commitment to personal responsibility. Question 3 considered what written essays reveal about participants' beliefs. Most participants reported consistent epistemological beliefs. Of the 30% who reported change, most of these reported becoming more relativistic due to increased awareness of their personal beliefs and course activities. Question 4 addressed which aspects of the social studies methods course had an impact on participants' beliefs and learning experiences. Results from the interviews found that the action research project, group discussions, and a greater explicit awareness of the link between theory and practice each played an important role in increasing participant awareness of their beliefs and classroom practices.

These findings further our knowledge of epistemological and ontological beliefs in three ways. The first is that epistemological and ontological coordinate scores from the four quadrant scale were correlated positively at both pretest (.56) and posttest (.57). This revealed that individuals tended to adopt either a realist or a relativist perspective on both dimensions. This finding replicated previous research<sup>50</sup> and suggested that epistemological and ontological beliefs are linked, perhaps due to some common dimension such as commitment to relativism. A second contribution was the finding that beliefs tended to be consistent over time, as measured by the correlation between quadrant placement at pretest and posttest (.59), and data from the interviews. This supported the idea that beliefs among graduate students are stable, consistent, and change slowly (Wilcox-Herzog 2002; Wilson 2000)<sup>51</sup>. A third contribution was that changes in beliefs tended toward an increase in relativism<sup>52</sup>. Based on interviews, these changes were facilitated through reflection on beliefs, classroom discussions, and the action research project that that promoted greater awareness of personal beliefs and relationship between beliefs and classroom practices.

Our findings further knowledge of how graduate coursework affects beliefs and knowledge about citizenship education. Individual interviews revealed that most participants found the course extremely helpful with respect to increasing knowledge, clarifying personal beliefs, and understanding new perspectives about citizenship. Three types of events were highlighted as particularly important. One was a comparison of different theoretical perspectives of citizenship, including the personally responsible,

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<sup>50</sup> Schraw and Olafson, 2008.

<sup>51</sup> Amanda Wilcox-Herzog "Is There A Link Between Teachers' Beliefs and Behaviors?" *Early Education and Development* (2002): 13, 79-106. Barbara Wilson, "The Epistemological Beliefs of Technical College Instructors," *Journal of Adult Development* (2000): 7, 179-186.

<sup>52</sup> Olafson, Schraw and Vander Veldt.

participatory, and justice-oriented citizenship approaches. A second was the action research project, which helped many participants bridge the gap between theory and practice, and also better understanding the motivating impact of participation with their students. A third was classroom discussion, which prompted reflection and resolution of new information and unresolved issues regarding personal beliefs. This finding is consistent with previous research on reflection in teacher education (Brownlee and Berthelsen 2006; Lidar et al. 2005; Schon 1983; van Manen 1992)<sup>53</sup>.

### *Educational Implications*

Our findings suggest three benefits of the 15-week class. One is that civics knowledge increased significantly as a result of instruction. This suggests that individuals who take the course are better prepared to teach and promote civics education because the civics curriculum has a strong impact on teachers (Patrick and Vontz 2001).

A second benefit was that the course promoted reflection and reflection on action that helped participants increase awareness of their beliefs (Brownlee 2003), even though personal epistemologies did not change for most participants during the semester. In contrast, participants reported an increase in relativist beliefs and attitudes about the classroom. There also was a significant increase in commitment to the justice-oriented citizenship perspective as well.

A third benefit was that the course and course activities such as *Pay It Forward* had a strong impact on participants' ability to bridge the gap between theory and practice. Many individuals in the interviews discussed the difficulty of translating complex beliefs into tangible classroom practices. However, using relevant classroom-based activities appeared well suited to help participants bridge this gap. This finding is consistent with previous research<sup>54</sup> who reported that meaningful activities promote reflection and translating theory into instructional practice.

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<sup>53</sup> Brownlee and Berthelsen. Lidar, Lundquist and Ostman. Donald A. Schon, *The Reflective Practitioner*. (New York: Basic Books, 1983).

<sup>54</sup> Olafson, Schraw and Vander Veldt.

## Appendix

### Instructions, Definitions and Examples Shown to Research Participants

#### Instructions

We want you to rate and explain your epistemological and ontological world views. Please read the following description of terms used in this study. Then indicate with an “X” where you would place yourself in the four quadrants shown on the Rating Sheet. To make your X, find the point where your ratings intersect on the epistemology dimension and the ontology dimensions.

Please note that the descriptions provided below represent endpoints on each of the scales. Your own beliefs may lie anywhere between these two endpoints. You may use any part of the four quadrant area.

After you make your rating, please describe in as much detail as possible on the Explanation Sheet your reasoning for your self-rating.

#### Epistemology

Epistemology is the study of what can be counted as knowledge, where knowledge is located, and how knowledge increases. The personal epistemology of teachers is characterized by a set of beliefs about learning and the acquisition of knowledge that drives classroom instruction.

##### *Epistemological Realist*

An epistemological realist would believe that there is an objective body of knowledge that must be acquired. From a teacher’s perspective, this position would hold that curriculum is fixed and permanent and focuses on fact-based subject matter. An epistemological realist might believe the following:

There are certain things that students simply need to know.

I am teaching information that requires memorization and mastery.

There are specific basic skills that need to be mastered.

##### *Epistemological Relativist*

An epistemological relativist would describe curriculum as changing and student-centered. Problem-based or inquiry curricula are examples at the other end of the continuum from a perspective of a one size fits all curriculum. One of the central features of curriculum from this position is the notion that curriculum is not fixed and permanent. An epistemological relativist might agree with the following statements:

The things we teach need to change along with the world.  
The content of the curriculum should be responsive to the needs of the community.  
It is useful for students to engage in tasks in which there is no indisputably correct answer.  
Students design their own problems to solve.

## Ontology

Ontology is the study of beliefs about the nature of reality. The personal ontology of teachers is characterized by a set of beliefs regarding whether students share a common reality and what a classroom reality should look like.

### *Ontological Realist*

A teacher who is an ontological realist assumes one underlying reality that is the same for everyone. Instructionally, this means that all children should receive the same type of instruction at the same time regardless of their individual circumstances and context. An ontological realist would agree with the following:

Student assignments should always be done individually.  
It's more practical to give the whole class the same assignment.  
The teacher must decide on what activities are to be done.

### *Ontological Relativist*

An ontological relativist assumes that different people have different realities. From an instructional perspective, teachers are seen as collaborators, co-participants, and facilitators of learning who work to meet the individual needs of students. Instructional practices are less teacher-directed, such as:

Students need to be involved in actively learning through discussions, projects, and presentations.  
Students work together in small groups to complete an assignment as a team.

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