Developing Preservice and Inservice Teachers’ Pedagogical Content Knowledge in Economics

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High school student achievement in economics has been predominantly characterized by low test scores, while secondary social studies preservice teachers have less formal training in economics than most other social studies disciplines. In this self-study, the instructional affordances and constraints of an experimental economics methods course are analyzed in terms of developing secondary social studies preservice and inservice teachers’ pedagogical content knowledge (PCK) in economics from both the instructor and pre and inservice teachers’ perspectives. Two course assignments appeared to most notably develop PCK in economics, the Analysis of Economic Events and the Active-Learning, Interdisciplinary Economic Lesson. Findings suggest interrelationships exist among common content knowledge, specialized content knowledge, and horizon content knowledge for teaching economics. Implications and instructional suggestions for social studies teacher education and professional development are discussed.

Keywords: social studies education, economic education, preservice and inservice teachers, pedagogical content knowledge, common content knowledge, specialized content knowledge, horizon content knowledge

Introduction

Nearly half of adults and two-thirds of high school students in the United States do not understand basic economic concepts (CEE, 1999; Harris Interactive, 2005). Since 1976, most adult and high school students have earned consistently low scores on the Test for Economic Literacy, the most commonly administered standardized test in economic education (Miller & VanFossen, 2008; Schug & Walstad, 1991; Walstad & Rebeck, 2001). These statistics may be concerning in a democracy heavily dependent on an informed citizenry to make productive economic decisions not only on a personal level but also on a societal level (VanFossen, 2005; Walstad, 1998).

Teachers with low levels of economic understanding consistently have students who learn less economics (Bosshardt & Watts, 1990; Miller & VanFossen, 2008; Watts & Walstad, 2011). Secondary social studies inservice teachers state that economics is the subject for which they need the most professional development, both in content and pedagogy (Eisenhauer & Zaporowski, 1994). This problem stems, in part, from less formal training in economics than in other social studies subject among secondary social studies preservice teachers (Aske, 2003; Bosshardt & Watts, 2005; Dumas, Evans, & Weible, 1997; Lynch, 1994; Schug, Harrison, & Clark, 2012). On average, secondary social studies teacher education programs require one content course in economics for licensure, while the typical social studies methods course deemphasizes the coverage of economic education to one class session (Joshi & Marri, 2006; Salemi, Saunders, & Walstad, 1996; VanFossen, 2000; Walstad, 1992). Compounding the
problem, the literature base on how to prepare secondary social studies preservice and inservice teachers to deliver effective economic instruction is almost silent; therefore, teachers are often unprepared to teach economics at the secondary level.

The irony of these course and literature deficits is that more states than ever before are requiring teachers to teach economics at the secondary level (CEE, 2014; NAEP, 2013). Currently, 22 states require all high school students to take an economics course to graduate, and 45 states require economic standards to be implemented (CEE, 2014). The National Council for the Social Studies (NCSS, 2010) describes social studies education as the “integrated study of the social sciences and humanities to promote civic competence” (p. 3). Recently, the NCSS (2013) published its College, Career, and Civic Life (C3) Framework, advising social studies teachers to utilize an interdisciplinary approach to inquiry-based learning. This study seeks to better understand how an economic methods course might uniquely prepare secondary social studies teachers to deliver economic instruction that improves student achievement in economics and better prepares students for their roles as adult democratic citizens.

**Review of Related Literature**

**Pedagogical Content Knowledge**

Education researchers often focus on better understanding what teachers need to know and be able to do in order to deliver instruction that most effectively promotes student learning (Darling-Hammond & Bransford, 2005). Disagreement within the knowledge base for teaching, however, exists partly because of the highly complex and dynamic nature of teacher knowledge (Mishra & Koehler, 2006; Shulman, 1986, 1987). One subset of teacher knowledge research started in 1986 when Lee Shulman delivered his oft-cited Presidential Address at the American Educational Research Association (AERA) annual meeting. To reform education and professionalize teaching, Shulman insisted teacher knowledge should look differently for each subject, thereby necessitating subject-specific instructional practices. Shulman called this new conceptualization pedagogical content knowledge (PCK) and defined it as the blend of content knowledge and pedagogical knowledge that is unique to a particular subject. More specifically, according to Shulman (1986), PCK includes,

> ...the most regularly taught topics in one’s subject area, the most useful forms of representations of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations—in a word, ways of representing and formulating the subject that make it comprehensible to others. (p. 9)

Since then, education scholars in various subjects have refined and elaborated Shulman’s original conception of PCK (e.g., Ball, Thames, & Phelps, 2008; Magnusson, Krajcik, & Borko, 1999; Mishra & Koehler, 2006). Yet, despite these variations, a basic premise of PCK continues to suggest that teachers who have adequate content knowledge in a discipline are not necessarily equipped to deliver effective instruction in a way that translates into student learning. Somewhat to blame is the frequent disconnect between preservice teachers’ coursework in content courses and education courses commonly taught by different departments whose collaboration efforts are minimal at best (Levine, 2006; Sykes, Bird, & Kennedy, 2010). Consequently, preservice teachers are not given the opportunity to learn the PCK necessary for effective instruction (Feiman-Nemser, 2001).

Content knowledge is still important, especially in the context of its interdependent and interactive relationship with pedagogical knowledge in developing PCK. Three distinct domains
of content knowledge for teaching are identified by Ball et al. (2008): common content knowledge, specialized content knowledge, and horizon content knowledge. Common content knowledge includes knowledge and skills needed outside the teaching profession. In the case of economics, for example, ordinary citizens should understand that weighing costs and benefits leads to improved decision making. Conversely, specialized content knowledge includes the knowledge and skills required specifically by teachers to support student learning. In keeping with the economic example, economic teachers should be able to anticipate and remedy common student misconceptions, such as the belief that costs only refer to monetary values (Schug & Baumann, 1991). Horizon content knowledge requires teachers to know how subject-specific topics are related to students’ Kindergarten-12 experiences across grades and subjects. For instance, Economics teachers, for example, need to understand that the concept of opportunity cost learned in elementary grades is a building block for more complex economic concepts learned in secondary grades such as production possibilities frontier and comparative advantage.

Content knowledge has also been divided into declarative and procedural knowledge (Miller & VanFossen, 1994; Wineburg, 1990). Declarative knowledge encompasses the facts, concepts, and principles within a particular discipline. Procedural knowledge, by contrast, includes the knowledge and skills needed to apply declarative knowledge in a way that increases understanding and solves novel problem scenarios. In economics, procedural knowledge is what often separates experts from novices in solving real-world problem scenarios (VanFossen, 1996; VanSickle, 1992). In sum, teachers should understand what counts as knowledge in a particular subject in order to deliver effective instruction (Ball & McDiarmid, 1990).

**Research on Developing PCK in Social Studies**

Research focused on developing PCK in secondary social studies preservice teachers mostly centers on historical thinking instruction, and these preservice teachers often graduate with different competence levels of disciplinary understanding, even upon graduating from the same teacher education program (e.g., Monte-Sano, 2011; Salinas, Bellows, & Liaw, 2011; Waring & Torrez, 2010). Few PCK studies in economic education have been conducted besides one study that used technological pedagogical content knowledge (TPCK), an extension of the PCK construct, to examine inservice teachers’ economic instruction utilizing podcasting technology (Swan & Hofer, 2011). On a more positive note, several articles have been published that begin a dialogue about the teacher knowledge needed by secondary social studies preservice teachers to be well equipped to teach economics as an integral part of the social studies curriculum and about the challenges of an economic methods course (Joshi, 2003; Joshi & Marri, 2006; Weidenaar, 1980). However, little to no research has been conducted that examines how PCK in economics is developed in secondary social studies pre/inservice teachers (Joshi & Marri, 2006). Therefore, the purpose of this study was to gain an in-depth understanding of how teacher educators might better develop secondary social studies pre/inservice teachers’ PCK in economics.

**Research on Economic Reasoning and Interdisciplinary Instruction**

One possible explanation for why high school students typically graduate with subpar levels of economic knowledge and skills is the pervasiveness of teacher-centered instructional practices in economics (Becker & Watts, 2001; Wentworth, 1987). A de-emphasis on economic reasoning instruction often exists despite the widespread agreement among economic educators that a major goal of high school economic instruction should be to teach students to apply economic concepts and principles to real world events. This application of economic content has
the potential to sharpen students’ analytical and decision making skills (Schug & Western, 1990; VanFossen, 2000; Wentworth, 1987), including the ability to think critically about key economic issues such as poverty (Otlin, 2008).

Economic educators recommend that students are afforded frequent learning opportunities to practice economic reasoning skills requiring the application of basic economic concepts and principles, similar to the way in which mathematics students practice basic algebraic formulas (Wentworth, 1987). The Economic Way of Thinking (EWT), for example, also known as “thinking like an economist,” is designed to develop disciplinary-specific reasoning skills by using the following six economic principles upon which most economists agree (CEE, 2000; Wentworth, 1987; Wentworth & Schug, 1993):

1. People choose.
2. All choices involve costs.
3. People respond to incentives in predictable ways.
4. Economic systems influence individual choices and incentives.
5. Voluntary trade creates wealth.
6. The consequences of choices lie in the future.

These six economic principles construct a unique lens designed to make sense of complex economic events and issues that sometimes seem at odds with what common sense would ordinarily suggest. Using the EWT to better understand current events has the potential to generate more informed and productive decision making cognizant of the long-term consequences imposed on the lives of individuals and society at large. The ability to critically analyze economic issues and policies from multiple perspectives then articulate an argument grounded in economic concepts and principles should also be an important outcome of economic reasoning instruction (Davies, 2006).

Another possible contributing factor to historically low student achievement in economics is the incomplete and often inaccurate integration of economic concepts into other social studies subjects (Buckles & Watts, 1998). Due in part to social studies preservice teachers’ limited coursework in economics, Joseph Eisenhauer and Mark Zaporowski (1994) found that, on average, interdisciplinary social studies inservice teachers indicated they had difficulty teaching 42% of the economic content outlined in their course syllabi. Three-fourths of these same teachers specified the need for professional development programs in economics. In contrast to the findings that the integration approach to economic instruction is often unreliable and ineffective (Becker, Greene, & Rosen, 1990; Miller & VanFossen, 2008), some evidence exists that integrated economic instruction is better than none at all. For example, Mark Schug and Scott Niederjohn (2008) reported significant gains in economic achievement in U.S. history classes when teachers incorporated explicit economic instruction with non-economic content rather than merely mentioning economics as somewhat of an afterthought or side note. Also promising, after reviewing domain-specific literature related to economic education, Watts (2005) concluded economics can be integrated effectively in other social studies subjects if enough accurate, context-specific economic examples are included during instruction. Taken together, these inferences suggest there is potential for successful integration of economics in other social studies subjects if the instruction is delivered under the right circumstances and by skilled teachers (Schug, Harrison, & Clark, 2012). The research question guiding this study was What are the instructional affordances and constraints of an economic methods course in terms
of developing secondary social studies pre/inservice teachers’ pedagogical content knowledge (PCK) in economics from both the instructor and pre/inservice teachers’ perspectives?

**Method**

The data collected in this self-study come from an economic methods course called “Economics for Educators,” which I created as an experimental course and taught during the Fall 2012 semester at a southeastern university. Of the 11 pre and inservice teachers enrolled in the course, seven were undergraduate students and four were graduate students. Five students were female, six were male, and all were between the ages of 20 and early 40s. Three students self-identified as African-American, one student as Asian-American, one student as Hispanic, and the remaining six students as White. All were enrolled in the university’s secondary social studies teacher education program; however, one student had already completed her student teaching practicum and had practiced as a high school social studies teacher for three years. Five of the 11 students had completed one or two courses in economic content at the undergraduate level. Two students chose not to participate in the study, and another student never scheduled an appointment to be interviewed. As the instructor of the course, I had 10 years of previous experience in delivering teacher education and professional development programs as well as three-credit, graduate-level courses in economic education to Kindergarten-12 social studies pre/inservice teachers.

Because the course was approved as a content course in economics, approximately 80% of class time was devoted to teaching economic content and 20% was focused on teaching PCK in economics. The state’s standards in economics and the Council for Economic Education’s (CEE, 2011a) *Voluntary National Content Standards in Economics* guided the breadth and depth of microeconomic, macroeconomic, and international economic content coverage to maximize students’ marketability and mobility as future teachers. The primary text used for the economic content portion of the course was *Essentials of Economics, 8th edition* (Schiller, 2011), and the main teaching resources were *Virtual Economics 4.0* CD-ROM (CEE, 2011b) and the *Economics and Personal Finance Resources for K-12* website (CEE, 2013).

Self-studies of instructional practices (Dinkelman, 2003; Faikhamta & Clarke, 2013; Feldman, 2003; Hamilton & Pinnegar, 2014; Peercy, 2014; Ragoonaden, 2015) are offering evidence-based solutions for education reform (Zeichner, 2007). To collect accurate data, all student work in my study was either posted on Blackboard Learn™ and then saved electronically on my computer or submitted in hard copy form, photocopied, then stored in a filing cabinet. A pre and post-survey was used to measure changes in economic attitudes and was administered at the beginning and end of the course. Midway through the course, I asked the participants to evaluate the course by answering the following two open-ended questions: What’s working? What are your suggestions for change? In addition to the university’s end-of-course evaluation, I also administered my own more detailed course evaluation on the last day of class to collect participants’ perspectives regarding each of the graded assignments, among other course components. Additionally, I recorded reflective and analytical insights in the form of researcher memos during and after class sessions (Maxwell, 2013).

Meaningful self-studies require the researcher to intentionally collect data from participants and other actors linked to the study to challenge his or her own assumptions with the interpretations of others, thus increasing the validity of the findings by triangulating the data collected (Denzin & Lincoln, 2011; Ellis & Bochner, 2000). Therefore, I received feedback from a professor in the same department who observed two class sessions, after which debriefing
meetings were held. To further challenge my assumptions and interpretations, semi-structured interviews were scheduled about one month after the course ended with eight of the students to gain a more in-depth, nuanced understanding of how the students experienced the course and assignments. Interviews were audiotaped and transcribed (see Appendix A for the interview protocol). Upon further critical reflection after the course ended, I revised the course syllabus and assignments to improve the course for the following year.

Analysis was guided by initial coding of the data to form descriptive and interpretive codes which were eventually collapsed into categories then themes (Miles & Huberman, 1994). These themes facilitated sense making of the data and developed propositions that, while inherently personal and situation-specific in any self-study, have the potential to prompt readers to generate their own “naturalistic generalizations” (Stake, 1995, p. 85) as they reflect on their own teacher education and professional development practices and to consider delivering a similar course to better prepare teachers for effective economic instruction. Data triangulation among my instructor/researcher memos, student work, student pre and post-survey, student pre and post-test, three course evaluations, and student interviews was sought to gain a deeper, more refined understanding of how PCK in economics was and was not developed in the course (Denzin & Lincoln, 2011).

Findings

Economic content was taught predominantly by modeling active-learning economic lessons from *Virtual Economics* that were often appropriate for replication with high school students; one way in which I attempted to develop teachers’ PCK in economics. Because many social studies teacher educators do not have enough content knowledge in economics to teach an economic methods course that also counts as a content course in economics, I chose to focus here on two assignments instead, both of which are relatively easy to implement. These two assignments emerged as major themes from the data whereby PCK in economics appeared to most notably develop in the teachers: the Analysis of Economic Events and the Active-Learning, Interdisciplinary Economic Lesson.

Analysis of Economic Events Assignment

The Analysis of Economic Events assignment was designed to reinforce economic concepts and principles as well as develop economic reasoning skills, that is, increase both declarative and procedural content knowledge. The assignment also simultaneously taught participants a specific instructional strategy unique to economics called the EWT, thereby attempting to further develop their PCK in economics. Each analysis was scaffolded by 12 questions that required participants to think critically about an economic news event on a variety of levels such as stating a compromise between multiple perspectives and discussing how the economic news personally impacted the lives of their future high school students. The emphasis of the assignment was, however, on using the EWT to help make better sense of the economic news articles (see Appendix B for the analysis form).

Despite what I thought was a thorough introduction to the EWT, most participants struggled to provide depth of analysis on the first two assignments. By the end of the course, however, the average grade for the class across all three assignments was an 87%. The pre and post-survey item with the second highest percentage change at almost 42% was Item #11, which stated, “I use basic economic concepts to analyze economic events in the news.” Further triangulating the data, questions on my end-of-course evaluation asked participants to agree or disagree with five statements derived from the course objectives listed in the syllabus. All
circled “agree” for the second statement that read, “I am able to analyze economic events using the ‘Economic Way of Thinking’ from multiple perspectives in order to make more informed, productive decisions as a consumer, worker, and voting citizen.”

Despite the amount of practice it took for participants to demonstrate competence in applying the EWT, they agreed that this systematic form of economic reasoning added real-world relevance to economic instruction and was essential for making sense of daily economic news that, at first glance, seemed overly complicated. Supporting evidence was found in the interviews. One interviewee stated

I think that the six principles are really helpful in breaking down the economics in the news. Specifically…you have to take a moment to step back and to think: What is this? What is the cost? What are people choosing? What are the benefits? In going through the six steps, you see how it plays out. It allows you to see how economics is interwoven into our everyday life.

Another interviewee said

I like the analysis of the events a lot because I thought that was really a great thing to do with your students, as well…. always that sort of current event requirement. I’d never really seen it used very effectively,…[only] writing a paragraph about it, but I think the [Analysis of Economic Events assignment] could be a way to do that effectively and really get them to understand something.

A third interviewee stated

[The EWT] helps you with things you don’t really understand. It gives you a way to analyze them step by step and come to a better understanding at the end.

In addition to better understanding the world in which they live, the participants also claimed this process of economic reasoning prepares secondary students for democratic citizenship “…because they are involved in a society that operates on voting and voting only works with a populace…that is informed.” The basic tenants of the EWT appeared to give the participants the means by which to formulate and cogently articulate their economic opinions as well as to better understand political debates, thus hopefully cast a more informed vote. During the interviews, one preservice teacher stated,

Being able to break down economic news that you see by using those six principles allows you to better understand what [politicians are] trying to say and if it really makes sense in your perspective. It allows you to interpret better [and]…better voice your opinions about it.

Most of the participants acknowledged the broad applicability of the EWT and the potential for interdisciplinary instruction by making claims in the interviews such as, “I’d want to include [the EWT] in a bunch of different classes” and “You can use [the EWT] for everything…and [it] helps you understand why people make the choices that they make.” The participants’ newfound connection between the EWT and other subjects provided a glimpse into the early stages of developing horizon content knowledge, as the following quote illustrates:

“The [EWT] principles are simple but comprehensive and easily applicable…and can be used to explain and understand events and decisions involving history, geography, sociology, even psychology.” Finally, teaching high school students to use economic reasoning skills, instead of just memorizing economic concepts, was an important educational goal shared by a participant:

I think our main goal is to teach kids how to think, and [the EWT] helps them in a systematic way to think about things and take their own personal views out of it to an
extent and look at things more logically, which is something I want all people to be able to do.

**Active-Learning, Interdisciplinary Economic Lesson Assignment**

Midway through the course, the participants were given the opportunity to demonstrate their own PCK in economics with an emphasis on developing horizon content knowledge. This assignment was designed to give them practice in writing and demonstrating an active-learning via an interdisciplinary economic lesson. By applying what they learned about economic content and pedagogy, groups of approximately three participants wrote 45-minute lesson plans that taught economic concepts in a way that incorporated another social studies subject as well as demonstrated an active-learning instructional strategy. Participants then demonstrated the lessons in class and completed a personal essay reflecting on the lesson writing and delivery processes. To aid the reflection exercise, demonstrations were videotaped and later privately viewed and evaluated by the participants according to the established demonstration performance criteria. Whole-class discussions were held after each demonstration during which other participants and I shared both positive and constructive feedback. The lesson-writing portion of the assignment was scaffolded by allowing the participants to tweak published lessons on Virtual Economics as long as at least 50% of their lesson was original (see Appendix C for lesson descriptions).

Findings were mixed in regard to PCK in economics, as observed in lesson demonstrations. All groups exhibited the ability to integrate economics and active-learning strategies, which was especially impressive for the three groups—Groups 1, 3, and 4—whose lesson plans were completely original. One group used a cotton production simulation to generate excitement and a sense of competition between the two groups of “cotton producers,” while infusing realistic variables that commonly influence production. Examples of economic content that related to the lives of most high school students also were used. After the participants simulated the economic growth of a city during the Industrial Revolution, for example, they discussed the economic reasons for constructing local roads surrounding the university and nearby city. In the economic and sociology lesson, participants converted the average price of slaves during the Transatlantic Slave Trade into today’s dollars and compared it with the price of a modern-day car.

The most obvious way in which the participants were weak in demonstrating PCK in economics was in the actual process of infusing economic content into other social studies subjects. Explicit connections between economic concepts and the other social studies concepts were rarely made, and those connections made often seemed unplanned. In the geography lesson, for example, the discussion of supply and demand concepts was in isolation, despite a follow-up with a geography role-play activity having clear implications for understanding supply and demand. Similarly, the economic concepts featured in the Industrial Revolution simulation were supposed to be discovered inductively at the end of the simulation, but the participants never specifically mentioned the economic concepts during the simulation debriefing. All five lessons, however, contained potentially effective economic content integration. I judged that the participants just needed to take time to be more thoughtful in making the economic concept connections overt in both their written lesson plans and lesson demonstrations. The inservice social studies teacher who had already taught economics reached the same conclusion in her personal reflection essay when she wrote,
The thing I want to do to improve my lesson writing is to think more about what interdisciplinary concepts I can include in my lessons. That is, I am going to actively seek out the opportunities for including interdisciplinary concepts in my lessons instead of only including them when they jump out at me.

The degree to which the participants were successful in demonstrating their interdisciplinary knowledge—that is, horizon content knowledge—sometimes depended on their level of common content knowledge in other social studies subjects. One preservice teacher commented in his personal reflection essay that integrating economics and geography was “…harder than I thought it would be, granted geography is not one of my specialties, something I should work on.” This same preservice teacher shared similar concerns in the interview when he said that “some subjects will be easier than others” in terms of integrating economic content. Further corroborating this finding were three pre/inservice teachers who had extensive coursework in the social studies subject in which they integrated economics. In their personal reflection essays, these pre/inservice teachers talked about the ease with which they integrated economics. The preservice teacher who completed sociology coursework at the Master’s degree level stated,

The [part] that I think we did a great job on was the integration between sociology and economics. We used hardcore theory in both disciplines to explain the slave trade. The lesson really focused on using economics to explain the motivation behind the slave trade. By chunking the lesson into factors of production then supply and demand basics, we developed the economic concepts within the lecture on the slave trade. In fact, it was this integration of sociology and economics that others gave us high scores on.

Another preservice teacher with a background in political science said, “The integration…was one of the easiest parts since government and economics are so intrinsically linked. This made it exceptionally easy to incorporate them into the assignments and presentation.”

Just getting started was a problem for some groups who had never even considered economic integration possibilities, as one preservice teacher commented in her personal reflection essay: “Picking a subject that was not economics in order to teach economics was a hard concept for me. At first I did not see how this was possible.” Related to history, another preservice teacher claimed after the assignment was completed,

I was really surprised to see how many economic situations were easily describable throughout various points in history that I had never given any thought to. Clearly economics plays a huge role in several aspects in social studies, but without it ever being pointed out to me as a student, I never even considered it.

Finally, it is likely that practice with economic integration is important, as the inservice teacher who had already taught other social studies subjects commented in her personal reflection essay:

I think I could use more instruction and practice with including economic concepts into lessons for other classes. As someone who has taught the other [social studies] subjects, I struggled with integrating economics without losing any of the content I needed to teach...

This assignment was most often cited as the best part of the course, in both course evaluations and interviews. By the end of the course, participants admitted to not previously realizing how important and broadly applicable economics is to understanding other social studies subjects, much less just “how many integration opportunities there were” based on their newfound realization that “…economics applies to all of life and so many different concepts.”
The assignment seemed to develop some degree of horizon content knowledge in the participants, as the following interview response suggests: “[In] every single discipline, you can turn to economics and explain some of the motivating factors for why this was done and why this wasn’t done.” Another related response was:

To understand American and world history, including why wars broke out or why something else happened, you have to understand the econ behind it. What’s the saying? War’s always over religion or money, so...I think not only does [the economics-history integrated lesson] give students an insight into economics, but it lets them further understand the history concepts you're trying to teach them, too.

In her personal reflection essay, one preservice teacher wrote about her experiences in finding an interconnected instructional relationship between economics and history: “I felt that it really brought together what could’ve been considered two separate lessons on economics and history into an easily understandable activity that really encompassed the presented concepts for both disciplines.”

This assignment not only seemed to sharpen PCK in writing and demonstrating active-learning instructional strategies uniquely geared toward economics, but based on some course evaluations and interviews, the assignment also synergistically increased the participants’ common content knowledge in economics. The inservice teacher, for example, who had completed two separate semesters of economics—microeconomics and macroeconomics—in her undergraduate program and had taught economics at the high school level, came to the following realization:

[It was] weird for me… because I had taught [economics] before but really didn’t understand what I had been teaching, and some things I wasn’t teaching right and really didn’t get. I definitely feel like I understand not only the content more, but ways to teach it better and make it make more sense.

A similar sentiment was concisely expressed when another preservice teacher wrote, “The easiest way to learn something is to teach it.”

The participants’ perceptions of their abilities to present active-learning, interdisciplinary economic lessons at the end of the course appeared to be mostly positive, as evidenced on my end-of-course evaluation. When asked to agree or disagree with the statement, “I am able to present an active-learning, interdisciplinary economic lesson in preparation for integrating similar lessons into the social studies curricula as a teacher,” nine participants agreed, one left it blank, and one disagreed. The preservice teacher who disagreed decided not to go into the teaching profession.

**Discussion**

This self-study set out to better understand the affordances and constraints of an economic methods course in developing secondary social studies pre and inservice teachers’ PCK in economics. One inherent component of PCK is common content knowledge, which appears to have increased as a result of my and the participants’ economic lesson demonstrations and EWT assignments. Gaining specialized and horizon content knowledge of how to teach economics simultaneously helped the participants gain common content knowledge in economics, as evidenced in assignments, course evaluations, and interviews.

By combining both economic content and pedagogy, the Active-Learning, Interdisciplinary Economic Lesson assignment appeared to be one of the most influential contributors to developing these participants’ PCK in economics. Evidence existed via
observations, peer feedback, and self-evaluations that the participants were successful in executing active-learning strategies and including economic examples, both important elements in delivering effective interdisciplinary economic instruction (Schug & Niederjohn, 2008; Watts, 2005). The participants needed to be more thoughtful in making the interdisciplinary content connections more explicit during instruction.

The lesson demonstrations also allowed other participants to experience economic instruction as high school students might, affording them opportunities to recognize and discuss potential student misconceptions and instructional remedies. Consequently, I submit that these experiential learning components of the course are important in developing PCK in economics. During and after these lesson demonstrations, whole-class discussions of examples of economic content related to current events and the everyday lives of high school students provided further opportunities to develop PCK in economics. In some ways, these lesson demonstrations were similar to written cases studies of instructional practices some teacher education scholars claim are important to analyze in order to develop PCK (e.g., Hammerness, Darling-Hammond, & Shulman, 2002; Loughran, Mulhall, & Berry, 2008; Shulman, 1987).

Even though the participants demonstrated an ability to provide interdisciplinary economic instruction, they all struggled to get started. This initial hurdle has implications for other teachers who may experience the same frustrations, especially if they were not given opportunities to practice integration strategies in their teacher education programs: a reason, perhaps, why interdisciplinary economic instruction is often documented as ineffective (Miller & VanFossen, 2008). Therefore, I posit that interdisciplinary economic instruction and practice should be staples in social studies methods courses, especially because the NCSS defines social studies as an integrated study of multiple social sciences and the new C3 Framework insists on interdisciplinary learning across all social studies subjects. Such interdisciplinary economic instruction is particularly important in the 28 states that currently do not require an economic course for high school graduation (CEE, 2014).

Just as making interdisciplinary connections between economics and other social studies subjects was initially difficult, the EWT was not intuitive to the pre/inservice teachers in ways similar to how Wineburg (1999) describes historical thinking as unnatural; yet all the more reason to include such assignments in social studies methods courses and professional development programs. A 21st century education requires critical thinking and reasoning skills to engage in real-world, authentic tasks (Newmann & Wehlage, 1993; Preus, 2012) if informed and prosperous citizenship is to remain a primary goal of U.S. public schools. The EWT is a critical component in teaching high school students these skills in economics. From an instructional standpoint, the EWT is a tool through which to also answer NCSS’s call for more social studies authentic instruction, which includes teaching students to make informed decisions (NCSS, 2010) and productively engage in discussions about controversial issues (Hess, 2002; Kelly, 1986). The EWT is a form of procedural knowledge unique to the study of economics, thus the Analysis of Economic Events assignment has the potential to impact the development of teachers’ PCK in economics, with the added benefit of reinforcing content and shaping teacher orientations to include correct disciplinary understanding.

Finally, two limitations of this study need to be addressed. The first limitation is the small sample size of nine teachers. While often necessary for qualitative studies in education because of complex and nuanced teaching environments, such a small sample size generates findings that are highly contextualized and thus reduces the degree to which the findings are
transferable (Denzin & Lincoln, 2011). The second limitation is my researcher bias (Maxwell, 2013) that existed because I was both the instructor and the researcher, although inherent in self-study research. Consequently, the participants may have felt obligated to provide positive feedback, especially during the interviews, even though proper anonymity safeguards were in place and the interviews occurred after the course ended and final course grades were submitted.

**Conclusion**

I hope that this study continues the conversations started by Joshi and Marri (2006) and others about the need for secondary social studies teacher education and professional development programs to better prepare pre and inservice teachers to deliver economic instruction that reverses the historically low student achievement scores in economics. For secondary students to be prepared for democratic citizenship, they must learn economics from teachers who have PCK in economics. The course affordances and constraints discussed in this study will hopefully serve as a springboard for teacher educators to implement similar economic instructional practices and assignments in the future. Succinctly making the case for economic education, the inservice teacher in this study concluded,

I think most people turn to the news to be informed about what’s going on in the world and things like that, so if you can’t read a newspaper article and understand the economics of what’s going on, how can you have a really deep understanding of what’s going on in the world?

**References**


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Web-based References


Appendix A

Interview Protocol

1. How do you define economics?
2. Do you believe that understanding economics is important for high school students? Adults? Why or why not?
3. Do you think public schools should require students to learn more economics? Why or why not?
4. Do the six principles of the “economic way of thinking” help you make better sense of the world in general? Economic events featured in the news in particular? Why or why not?
5. Do you feel like you have enough economic content knowledge after taking this course to teach economics at the high school level? Explain.
6. Do you feel like you have enough economic instructional resources after taking this course to teach economics at the high school level? Explain.
7. Do you feel like you will be able to effectively utilize active-learning instructional strategies after taking this course to interest high school students in economics? Explain.
8. Do you feel like you will be able to effectively integrate economic concepts into other social studies subjects? Why or why not?
9. How will you go about making economics interesting to your high school students?
10. Do you believe that it is important for teachers to not unduly influence students’ political beliefs about the free market vs. government control debate?
11. What concerns do you have about teaching high school economics, if any?
12. Did you enjoy the course format in terms of mixing content and pedagogy? Explain.
13. Do you think the assignments were effective in learning economics? Explain.
14. What things did you enjoy most about the course?
15. What are your suggestions for improving the course?
Appendix B

Analysis Form

Analysis of Economic Events

Applying the Economic Way of Thinking

After finding a news article from a reliable news source, please fill in the identifying information below and answer the questions that follow in order to practice the economic way of thinking to make more informed and productive decisions for yourself and society at large.

Article Name

News Source

Date

1. How would you summarize the news article in approximately 5 sentences?

2. How does the news article pertain to microeconomics, macroeconomics, and/or international economics?

3. Which economic concepts are featured?

4. What interdisciplinary (i.e., other social studies subjects) and/or multidisciplinary (i.e., other academic subjects such as science and math) concepts are featured?

5. **List and explain ALL 6 principles of the economic way of thinking in a way that helps explain the news article. **Give this part of the analysis special attention.**

6. What additional information would be helpful?

7. What do you predict will happen in the short-term? Long-term?

8. What is your personal position on the issue and recommended course of action in the future?

9. What comprise might need to take place between the multiple perspectives?

10. What policy reform recommendations do you have?

11. How is this economic event relevant to your personal life? To the lives of your future high school students?

12. What economic lesson would be helpful in teaching high school students about the economic content featured in this article? Use Virtual Economics 4.0 or www.econedlink.org. List the name of the lesson and the name of the publication.
### Active-Learning, Interdisciplinary Economic Lesson Descriptions

<table>
<thead>
<tr>
<th>Groups</th>
<th>Interdisciplinary Subjects (Concepts)</th>
<th>Primary Economic Concepts</th>
<th>Active-Learning Strategy</th>
<th>Lesson Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sociology (Social Inequalities and Social Institutions)</td>
<td>Factors of Production; Supply and Demand; Trade</td>
<td>Game</td>
<td>The preservice teachers used a highly graphic PowerPoint to discuss the Transatlantic Slave Trade from an economic and sociological perspective. The PowerPoint was then used to play a game called “Who Wants To Be a Merchant?” modeled after the television game show “Who Wants To Be a Millionaire?”. Fifteen game questions reviewed basic concepts in economics, sociology, and history, as they pertained to the root causes, events, and outcomes of the Transatlantic Slave Trade.</td>
</tr>
<tr>
<td>2</td>
<td>Geography (Renewable and Nonrenewable Resources)</td>
<td>Natural Resources; Supply and Demand</td>
<td>Role-play</td>
<td>The lesson began with a presentation of U.S. natural resource imports and trading partners (e.g., diamonds come from Belgium) followed by a review of supply and demand. Next, students were assigned a country/resource then asked to trade with five other countries/resources, after which all trades were transferred to a world map with arrows showing which countries supplied and demanded which natural resources.</td>
</tr>
<tr>
<td>3</td>
<td>Government (Role of Government in a Market Economy)</td>
<td>Market and Government Failure; Business Regulation</td>
<td>Political Cartoon</td>
<td>The preservice teachers first analyzed several political cartoons with the class about market and government economic failures. The students were then divided into two groups and given a political cartoon expressing opposing economic perspectives about business regulations and asked to analyze the cartoon using a six step process. Both groups shared their interpretations of the cartoon with the class. The lesson concluded with students attempting to draw their own political cartoons about the economic concepts featured in the lesson.</td>
</tr>
<tr>
<td>4</td>
<td>U.S. History (Industrial Revolution)</td>
<td>Specialization; Costs Simulation</td>
<td>Simulation</td>
<td>After a brief discussion of what life looked like for an average American before the Industrial Revolution, pairs of students were instructed to...</td>
</tr>
</tbody>
</table>
and Benefits illustrate how specialization contributed to the development of cities during the Industrial Revolution. Then, the inservice teacher read a script of how colonial farms were slowly displaced while the students used markers to draw farms, schools, stores, factories, houses, and roads as directed by the script reading.

| 5 | U. S. History (Cotton Industry) | Factors of Production; Costs and Benefits Simulation | The lesson began with a brief overview of the U.S. cotton industry in the 19th century followed by a simulation in which two groups of students were given different types of capital (e.g., scissors) to produce as much cotton (i.e., one inch squares of paper) within three different 2-minute rounds. Various unexpected events (e.g., natural disaster) were announced in each round, representing the variables that affected cotton production. Total production was calculated after each round and compared between the groups. |

**Author Bio**

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