

Repetitive Microteaching: Learning to Teach Elementary Social Studies

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Abstract: *The role of deliberate practice in the development of performance has been studied extensively in many contexts, such as in athletics. The construct of deliberate practice in the development of teacher performance has been receiving heightened examination lately, though the role of practice in the development of elementary social studies teachers remains essentially unexplored. The purpose of this study was to investigate the impact of a repeated practice microteaching model on the teaching behaviors of 64 elementary preservice teachers (PSTs) who taught the same social studies lessons to small groups of 4th-grade students four times in succession. PST reflection journals from all PSTs, observational transcripts of 14 teaching pairs, focus group interviews with the PSTs, and informal cooperating teacher interviews revealed that the PSTs' lessons changed over the four successive teaching episodes. The PSTs became more comfortable and confident after teaching the same social studies lesson multiple times. PSTs also reported that their lessons became better, yet the qualitative data revealed that even though their teaching became more efficient and student work correctness improved, only a few PSTs increased the cognitive demand of their questions and activities. Nonetheless, most PSTs demonstrated increased use of social studies pedagogical content knowledge through their examples and discussions, as well as increased attention to student thinking. Repeated practice field experiences seem to hold potential for elementary PSTs to develop their use of social studies pedagogical content knowledge.*

Keywords: *teacher education, field experiences, practice, elementary*

Introduction

Most middle and secondary social studies teachers have taught the same lesson multiple times on the same day. While most teachers would admit to occasional boredom, nearly all would attest that their lessons changed over those iterations. For example, teachers might rearrange, lengthen, shorten, or even eliminate particular components of their original lessons. Most importantly, teachers would likely suggest that their lessons improved with practice.

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Because middle and high school social studies teachers often teach lessons multiple times, preservice secondary education teachers get opportunities to observe repetitive lessons; and, during field experiences and student teaching, preservice teachers (PSTs) get to teach lessons multiple times themselves. Elementary teachers, however, rarely get to deliver the same lesson multiple times, other than year-to-year. Consequently, elementary PSTs lack opportunities to practice the craft of teaching through repetitive lessons. Since repetition is a vital component toward improvement through deliberate practice, teacher educators should find ways to provide preservice elementary teachers with authentic opportunities for repeated practice. This paper explores a microteaching model designed to give preservice elementary teachers the opportunity to teach the same social studies lessons in succession.

Though teacher educators lack consensus over what is meant by the term *practice*, most commonly, practice relates to an activity done repeatedly in order to get better at it (Lampert, 2010). Practice-oriented teacher education courses typically focus on *pedagogies of investigation*, which focus on studying exemplary teaching by watching and discussing videos and case studies, and on *pedagogies of enactment*, which provide PSTs with opportunities to actually do what teachers do, even if in artificial contexts such as practicing lessons on one's colleagues (Ball & Forzani, 2009; Grossman & McDonald, 2008; Shah, 2011). Ball and Forzani (2009) in advocating for a practice-oriented approach to teacher education proposed that significant attention needs to be paid "not just to the knowledge demands of teaching but to the actual tasks and activities involved in the work" (p. 503).

We based our microteaching model on the notion that in order to best prepare teachers to teach elementary social studies, they need opportunities for authentic practice, which must include teaching social studies content to elementary students. To bridge university coursework with the actual demands of classroom teaching, teacher education programs must provide PSTs with opportunities both to study and to practice specific teaching strategies (Ball & Cohen, 1999; Lampert, 2005; Shah, 2011). What's more, those strategies should be practiced on real students in subject-specific contexts.

The general purpose of this investigation was to examine the impact of a microteaching model we designed to provide elementary PSTs with opportunities for repeated practice of the same lesson on groups of 4th-grade students. We investigated how the elementary PSTs' social studies lessons changed over four successive teaching episodes, as well as the PSTs' perceptions

of those changes. Additionally, we sought to examine the PSTs' teaching of social studies specifically and how their social studies teaching evolved with repeated practice.

Theoretical Framework

Since Normal Schools began, reformers have been calling for teacher education programs to provide future teachers with opportunities to practice on students. Dewey wrote extensively about the need for meaningful apprenticeships for PSTs. Calling for laboratories similar to those scientists use, Berliner (1985) implored, "We must provide our novice teachers with environments in which to experiment with producing cognitive and affective change in children" (p. 6). Even today, the desire to provide PSTs with authentic opportunities for practices is an issue upon which everyone concerned with the next generation of teachers seems to agree (Darling-Hammond, 2006). In a 2011 speech, U.S. Secretary of Education, Arne Duncan, stated, "One big thing I hear consistently from young teachers is that they just spend too much time in college studying educational theory, history, and philosophy and did not receive enough hands-on experience in actual classrooms" (Mack, 2011, p. 5). Duncan went on to say, "Student teaching shouldn't just be the second semester of senior year. It needs to be every year" (p. 19).

All teacher education programs involve a formal student teaching experience, which incidentally is often referred to as "practice teaching." Yet, the extent to which PSTs get to practice teaching K-12 students varies widely. Too often, programs rely on PSTs merely observing classroom teachers. Certainly, there is value in observing and reflection on teaching, but as Ball, Sleep, Boerst, and Bass (2009) noted, "[T]eacher preparation must help novices learn how to do instruction, not just hear and talk about it" (p. 459). It is widely argued that the improvement of teaching requires clinical practice similar to other fields (Grossman, Hammerness, & McDonald, 2009). Practicing teaching requires not only an awareness of tools and strategies but also experience with their use (Lampert, 2010). A time-honored adage states, "You can't learn to swim if you don't get in the water."

It is no wonder that education leaders have been advocating for increasing practice experiences for PSTs since research on practice in other fields is overwhelmingly positive. In numerous studies on what separates the great performers from the good performers in every context they studied, from music to chess to various sports, Ericsson and his colleagues have found that the amount of time spent on deliberate practice is paramount to success.

“Research across all domains shows that it is only by working at what you can’t do that you turn into the expert you want to become” (Ericsson, Prietula, & Cokely, 2007, p. 3). Expertise is a process, not an acquired state (Bereiter & Scardamalia, 1993).

With the goal of improvement, practice requires considerable effort and high levels of repetition (Dunn & Shriner, 1999; Ericsson, et al., 1993). Performers “should repeatedly perform the same or similar tasks” (Ericsson, et al., 1993, p. 367). Deliberate practice allows performers to make small improvements to their actions through repeated trials of the same exercise, with as few variables altered as possible (Ericsson, et al., 1993). Often, deliberate practice involves a subset of the actual performance the practice is designed to improve. In sports, for example, performers will often practice doing drills involving isolated skills that contribute to their greater game performance. In music, and perhaps in teaching, this would be considered rehearsal.

Purposeful practice of teaching should involve authentic contexts with age-appropriate students, even if only small groups (Berliner, 1985). As Cohen (2011) asserted, teaching is dependent upon learners who share in the commitment to human improvement. Without learners, there is no teaching. Deliberate practice in teaching must include repeated experiences with actual students so that the teacher can make adjustments in order to determine how those adjustments impact performance (Ericsson et al., 1993). Cognitive Load Theory suggests that performance improves when new tasks are scaffolded on top of previously mastered skills (Pass, Renkl, & Sweller, 2003). Since teaching is a layered activity that builds on previous experiences, specific skills should be practiced within the context of entire activity (Ericsson et al., 1999; van Gog et al., 2005).

Teacher educators strive to provide PSTs with opportunities to practice the craft of teaching prior to the seminal activity of teacher education, student teaching. Because teacher educators seldom have access to whole classrooms of K-12 students, they often implement approximations of practice, which consist of opportunities to rehearse and enact components of whole-class teaching in settings of reduced complexity or on their preservice teacher colleagues (Grossman et al., 2005). Microteaching models preserve the authenticity of working with actual students, even if with a smaller group or for a shortened time.

Our microteaching model is based on the importance of repetition in deliberate practice. The model certainly could be used generally; however, we intended to specifically study how elementary PSTs enact their teaching of social studies. Anchored in Shulman’s (1986)

conceptions of how content knowledge and pedagogical skills are not enough to become an effective teacher, we were adamant that our preservice teachers must have opportunities to practice and reflect on their social studies pedagogical content knowledge (PCK).

Initially proposed by Shulman (1986), PCK involves the integration of subject matter, instructional methods, and learner characteristics. PCK in elementary social studies involves a unique blend of pedagogy with content knowledge in each of subordinate components of social studies – history, economics, geography, and civics. Effective teacher preparation programs must put PCK at the fore (Grossman, Wilson, & Shulman, 1989).

The literature base on the study of practice-oriented approaches to education, and their connection to pedagogical content knowledge, is growing; however, the vast majority of the research has focused on mathematics education. Foreign language education has received some attention, and lately researchers have been studying the role of practice and PCK in science education. Noticeably missing from the field has been the examination of practice and PCK in social studies education. What's more, the few studies that address these topics were conducted at the secondary or college levels in history courses. This reveals a common hole in social studies research: studies on elementary social studies and correspondingly on branches of social studies other than history. Our research project serves to help fill that gap.

Methods

Site and Participants

This study took place over two semesters in 2011. Participants included 64 undergraduate PSTs enrolled in an elementary social studies methods course during their final semester prior to student teaching. The PSTs, from an approximately 9,000-student public university in the upper-Midwest of the US, were predominately Caucasian, female (91%), and in their early- to mid-20s. Situated within a block of methods courses taken during their penultimate semester, the social studies methods course involves several field-based experiences in a local rural school district that serves approximately 2,500 K-12 students. The student population is mainly Caucasian (92%) with a wide range of socio-economic levels, including 33% who qualify for free or reduced lunch.

The principal and 4th-grade teachers at the site school agreed to turn over their classrooms for one morning per semester, which consists of approximately 160 minutes. Earlier in the

semester, the 4th-grade teachers provided us with the social studies standards they wanted us to teach. The preservice planned their lessons around those standards accordingly. We structured the 160 minutes so that the PSTs would teach their lessons four different times in succession to one quarter of the class, rather teach the whole class once. Thus, the PSTs delivered, in pairs, 35-minute social studies lessons to groups of six or seven 4th-grade students, four different times.

Data Sources

In order to answer our research questions, we collected data from multiple sources, intending to increase validity through triangulation (Stake, 1995; Yin, 1994). Following the teaching experiences, the PSTs were given an assignment to write a reflection on what they learned from the experience and on how, if at all, their lessons changed over the four iterations. These reflections served as the primary of our four data sources.

We solicited graduate students to sit in on the lessons of 14 teaching pairs, selected at random, in order to document as much as possible. Particularly, we asked them to record everything the PSTs and students said, and if time allowed, to record other observations. We also circulated throughout the classrooms during the lessons making our own observations, sitting in on lessons, and recording the events and our interpretations. A phenomenological approach situated us as participant observers who continuously worked to acknowledge and bracket our assumptions (Moustakas, 1994). One of us was the methods instructor for the course, while the other two authors were graduate assistants. All three of us have been classroom teachers. As such, our personal experiences certainly impacted our interpretation of the PSTs' motivations and actions. In addition, we held frequent conversations with the teachers in whose classrooms the PSTs taught. The classroom teachers remained in their classrooms during the lessons, and though we did not conduct formal interviews, the teachers provided additional perspectives on how the PSTs' lessons changed.

Data Analysis

Since our study was exploratory in nature and inductive in its approach, we first acknowledged our preconceptions and assumptions, and then bracketed those biases (Rich, 2012). We used constant comparison analysis to examine, verify, and draw inferences from the data (Glasser, 1978, Glasser & Straus, 1967; Leech & Onwuegbuzie, 2007). We began by open coding randomly selected PST reflections and observational records collectively over several

sessions to create initial codes. We then divided the rest of the data pieces to code independently, reconvening several times to compare and refine our initial codes. Next, we used focused coding (Charmaz, 2006) to array the first cycle codes into broader conceptual categories under which we placed each subcode.

Throughout our data analysis, we engaged in countless conversations that lead to concurrent and iterative analyses of our data. Because phenomenological methods put personal assumptions and interpretations at the forefront, these conversations, both formal and informal, helped us to challenge our assertions and prompted us to seek rival explanations. The convergence of the multiple data sources, as well as our layered analyses of those data yielded substantial triangulation to increase validity.

Findings

In written reflections completed after teaching their lessons repeatedly, the PSTs were asked to describe how their lessons changed over the four sessions. We compared the data from the PST reflections with our own observations of the lessons, focus group interviews with the PSTs, and conversations with the classroom teachers. Overwhelmingly the PSTs wrote, and we observed, that they became more comfortable and confident after teaching the same lesson multiple times. PSTs also reported that their lessons became better, though our observations revealed that while their teaching became more efficient and student work correctness improved, only a few PSTs increased the cognitive demand of their questions and activities. Nonetheless, most PSTs demonstrated increased use of pedagogical content knowledge through their examples and discussions, as well as increased attention to student thinking.

Efficacy

With few exceptions, the PSTs explicitly noted that they became more comfortable teaching their social studies lessons after having the opportunity to teach the same lessons multiple times. Their increased confidence took different forms. Some PSTs focused on their initial internal insecurities and how practice allowed them to overcome their anxieties. For example, one PST wrote, “The first lesson was kind of a blur. I was so nervous and stared at my lesson plan most of the time. By the third time, I didn’t even need to look at it.” We observed similar phenomena with other PSTs. Eye contact with students increased, and their body language become visibly more relaxed with each iteration.

A number of PSTs expressed a lack of confidence with social studies specifically. When assigned to teach how positive and negative incentives influence behavior in a market economy, one PST wrote in her post-teaching reflection:

I was so nervous the first time I taught because social studies is my weakest area. I was worried that students were going to ask me questions I didn't know the answers to, but it didn't happen. This was somewhat due to the fact that I learned a lot about the topic during my prep but mostly due to the fact that the students didn't ask many questions at all.

For their four repeat lessons, most PST pairs were assigned to teach lessons on economics, which nearly all identified as their weak areas within social studies. For example, one PST remarked, "Most of my social studies classes have been history, so I was freaked when I learned that we had to teach about global trade." Another PST, who was assigned to teach how price affects decisions about purchasing goods and services, wrote:

Even though I spent more time researching the econ topics for this lesson than I have for any other lesson I've taught at (this university) thus far, I was still so nervous that I didn't know anything. Actually, I learned so much that I had to work to simplify the concepts for the students.

Despite the PSTs' initial anxiety over teaching social studies, their self-efficacy increased with opportunities to teach the same lesson in succession. With practice, the PSTs became more comfortable with the social studies content and consequently more confident with their teaching. PST reflections and focus group debriefing interviews yielded numerous comments like, "I can't believe how much better I got with each lesson," and, "I feel sorry for our first group. My lesson got so much better by the end, I am kind of embarrassed by our first lesson."

A central challenge of this study lies in trying to determine the extent to which their lessons actually improved (increased student learning) versus the PSTs' merely becoming more comfortable and confident (increased PST self-efficacy). Certainly, increased confidence is an important component of teacher development, and having opportunities for repeated practice helped with this. PSTs noted becoming more comfortable with teaching in general and with the social studies content specifically. More importantly, the PSTs made discernible changes to the way they delivered their lessons as a result of their increasing confidence.

Time-Management

The most common changes to lesson plan delivery PST involved adjustments to the order and duration of procedures in their lessons – time management. Few PSTs noted that they deviated from their lesson plans during the first time they taught their lessons. However, nearly all the PSTs reported that they made adjustments in subsequent teaching episodes. PST It was clear that because most PSTs lacked teaching experience in general, and with teaching 4th-grade social studies specifically, the opportunity to teach their lessons repeatedly gave the PSTs answers to their inquires, which allowed them to adjust. Because the PSTs were given a defined length of time (35 minutes) to teach each of their lessons, they were anxious about how much content and activities to include. Not sure about whether she had planned too much for the time allotted or too little, this PST reflected on her concerns about timing:

During our first lesson, we were not quite sure about the timing of everything. We had a lot of questions we were asking ourselves like: How long will the PowerPoint take? Will the simulation go fast or slow? Will the students have a lot of questions or will they grasp the concept quickly? We did end up running out of time during the first lesson, and therefore, students did not get their worksheet completed. The second time we did the lesson we decided to speed up the PowerPoint in the introduction to make time for the worksheet at the end.

Commonly, PSTs over-planned, which lead to them having to make difficult decisions over what to drop from their originally planned lessons. We observed several PST teaching pairs exasperated when the classroom teachers announced after 35 minutes that it was time to switch groups, even though they weren't close to the end of their lessons. Having been taught in their methods courses that it is better to be overplanned rather than underplanned, most PSTs were forced to decide which materials and activities to cut. This PST wrote about how she decided which elements to eliminate from her lesson on public goods and taxes:

We definitely were not paying attention to the time during the first lesson. When Mrs. A told us it was time to switch groups, the students were still reading the article, so we didn't have time to do the structured conversation activity, and thus we weren't able to assess them. The second time through was better because we read the article to them, but we still didn't have as much time as we wanted. So, for the 3rd and 4th times, we cut out the game at the beginning which gave us more time to focus on the article and then the

structured conversations. It might not have been as fun for them, but they definitely learned more that way.

When faced with the decision over what to cut, there were no distinct patterns. Some pairs eliminated “fun” activities to preserve the efficiency of transmission-style teaching, while others did the reverse. For example, one PST, who repeatedly taught a lesson on how competition among buyers results in higher prices and competition among sellers results in lower prices, explained that he kept the hands-on part of his lesson: “We realized we had way too much planned, so we had to cut something. We didn’t want to cut the trading activity because that was the best part of our lesson, so we eliminated the PowerPoint.” Conversely, another PST noted that she eliminated the more interactive part of her lesson on trade: “We planned to have them make a picture representation of triangular trade, but this didn’t give us enough time to read the article about China, so we dropped the picture part of the lesson.”

Pedagogical Content Knowledge

At this point it is important to recognize that the ways the PSTs demonstrated increased knowledge and skills included both general pedagogical knowledge (GPK) and pedagogical content knowledge (PCK) (Shulman, 1986, 1987). When the PSTs made decisions about which parts of their lessons to eliminate, they were making decisions that required more than GPK. To be sure, the PSTs demonstrated and noted many ways in which they used GPK to change their teaching throughout the four lessons. For example one PST wrote about how she and her teaching partner took over a task that was not related to the lesson objective in the effort to provide students with more focused reading time. She that recognized one of their lesson activities was taking time from student work time:

In the first session, I felt unorganized. The students didn’t have a surface to write on or pencils to write with. We had them fold and cut their flipbooks, which took up too much time. After the first lesson, we decided we would fold and cut the flipbooks while the children were creating their three laws.

However, as portrayed in the journal excerpts above, PSTs frequently used their knowledge of how to “help specific students learn specific content” (Harris & Bain, 2011, p. 9). This PCK is “both built with and builds upon content knowledge, general pedagogical knowledge, and knowledge of learners (Gudmundsdottir & Shulman, 1987, p. 60). When the PSTs in this study made changes to their lessons they were not merely using pedagogical knowledge to increase

lesson flow and efficiency. The PSTs kept their lesson objectives at the forefront and made purposeful efforts to connect the social studies content to student learning.

Attention to student learning was prominent in this study, but much more so in later iterations of their lessons. As PSTs' comfort levels with the social studies content increased, many PSTs modified their lessons in attempt to increase student learning. For example, one PST rearranged her lesson sequence because students were rushing through the writing portion of her lesson to get to the illustration portion. Reflecting on her lesson about factors of production and resource conservation, she noted how rearranging activities allowed her to formatively assessed individual student thinking:

During the first lesson I passed out the paper for the final activity and instructed students to draw a picture and write one sentence about how to conserve our resources and why. For the second group, I instructed the students to write their sentences first, then draw the picture. I quickly realized the sentences were simply being scribbled down, without much thought, so the students could get to the drawing. For the rest of the groups, I gave the students time to think of a sentence and get it approved by me before handing out the paper. This worked really well and the sentences reflected what the students actually learned.

Numerous reflection journals revealed that PSTs were able to identify and overcome obstacles to student learning. The PSTs commonly made procedural changes to their lesson activities when the students in their early groups struggled with the task at hand. Describing how she used a pre-reading strategy to prime students' thinking about how positive and negative incentives influence behavior in a market economy, one PST wrote:

We realized that the students were having a hard time coming up with an answer so instead of asking the question after they had read the article, we changed it so that we would ask the question before they read so they could be thinking about it while they were reading. This seemed to make a big difference with students being able to answer the question.

PSTs

Largely, however, the PSTs mentioned their lesson objectives when describing changes to their lessons. We posit that there were three reasons for this. First, writing objectives and corresponding assessments is a primary component of the social studies methods course in which

the PSTs were enrolled. Second, for the deliberate practice field experience, each pair of PSTs in each 4th-grade classroom was assigned a specific objective (from the Michigan Grade Level Content Expectations). The PSTs were advised to teach the objectives in whatever manner they chose, as long as they taught to the objective. Finally, the PSTs might have centered their lesson adjustments on their objectives due to the rising attention given to standardized testing and mandated curricula. We think it is safe to claim that most PSTs in this study knew that their 4th grade students would be taking the Michigan Educational Assessment Program (MEAP) test in 6th grade.

The PSTs' emphasis on meeting their originally intended objectives, despite altering their originally intended procedures, revealed their attention to student learning. Predominantly, the PSTs adjusted their teaching not to make their lives easier, but rather to help their students learn more. Despite the prevalence of attention to students' thinking and learning, the PSTs were quite dichotomous regarding what they prioritized when altering their teaching actions. In general, they tended to emphasize either students' correctness or students' deeper thinking. Approximately 75% of the PSTs adjusted their actions to guide students toward their previously determined outcomes, often using a three-part Initiation, Response, Follow-up cycle, or Triadic Dialogue to direct student toward their expected answers (Gourlay, 2005; Lemke, 1990). A minority of the PSTs altered their actions to elicit deeper thinking from the students, scaffolding instruction to elicit greater cognitive demand.

Teacher-Centeredness

Many of the PST reflections focused on a self-perceived improvement in the quality of their examples, explanations, and analogies. Demonstrating emerging use of pedagogical content knowledge, the PSTs often stated their goals of improving student understanding of the content through use of interventions that connect to students' background knowledge, often in the form of contemporary references, or by referring to newly learned content. For example, one PST explained that it took multiple lesson implementations to find appropriate examples grounded in students' prior knowledge in this referencing a popular animated movie: "We didn't come up with the *Cars* reference right away. Once we did, this made a big difference as to how our students understood some of the bigger issues." Yet, despite this PST pairs' profound connection between the local economy and that of the fictional Radiator Springs, they did not allow the students to make the connection themselves. Instead, they used a transmission approach to give

students one more example to support their intended objective, which they then asked the students to explain in their own words on the assessment.

Frequently, PSTs provided students with foundational knowledge early in the lesson, then asked the students to recall the newly learned information later in the lesson. In groups we observed, the anticipatory set often included a video, photographs or maps to which students could later refer in order to answer recall or comprehension questions. PST reflections support the intentionality of such practices. For example, one preservice teacher described how she *showed* and *explained* concepts on the three branches of US government to students, rather than allowed students to construct their own understanding :

As other groups came in, I tried to make the overview more relatable to the students. I gave scenarios that referred back to the anticipatory set, school, or other powers. For instance, two powers federal governments hold are “appointing federal judges and other government officials” and “approving the appointments of federal judges.” When one of these came up, I showed the other one to the students too. I then compared them and helped students realize how they both couldn’t be done by the same branch. I also tried to explain how the judicial branch was made up of the judges, so it wouldn’t be fair for that branch to hold either one of these powers.

Often, it seemed as if the PSTs simply wanted students to be able to recall answers discussed earlier in their lessons.

In some ways, the PSTs demonstrated adherence to the NCSS Curriculum Guidelines for Social Studies Teaching and Learning, a central focus of the methods course in which they were enrolled. PSTs made purposeful efforts to make the material meaningful, integrative, and active; yet, they seldom challenged the students to think critically. A number of PSTs referenced how their discussions improved after teaching a time or two. For example, one PST reflected: “Once we figured out how 4th graders think and answer, we were able to scaffold our questions better.” Later in the reflection, the same PST described how she and her partner were able to lead the students to the correct answers about their lesson on the history of migration:

We asked, “Why did they have to move? Maybe for a better job? Better schools?” These examples helped our students to connect immigration and migration to current times and their own lives. Our evidence that they “got it” came from the quiz at the end where almost all of the students were able to answer the questions about push and pull factors,

how jobs relate to immigration/migrations, and tell one new thing they learned from the lesson.

Likewise, in our observations we frequently observed PSTs' reliance on initiation-response-follow-up and scaffolding to guide students toward correct answers. What's more, it was common to observe PSTs asking rhetorical questions such as, "Immigrants wouldn't come here just for fun, would they?" and, "Mining is good job because it doesn't require a lot of training and it pays a lot, right?"

In addition to suggesting that their examples, explanations, and discussions improved, the PSTs purported that the students' written work improved. PSTs explained that by later lesson implementations, they learned to take more time to explain the task and expectations, thereby allowing students to focus on the content in more depth. By improving the pedagogical aspects of their lessons, PSTs created more time for social studies learning. One PST felt that "students had an easier time getting started in the later session" when her group "took more time to introduce the activity, [the expectations], and how to set up the timeline." As a result, their "students were able to get the physical timeline set up faster, and then put more details into their responses about each event." This same group recognized their goal for "detailed responses" and credited the fact that "the timelines got better with each lesson" with getting "the basics accomplished, so [the students] had more time for the details." Consistently, we saw PSTs focused on directing students toward predetermined outcomes, which they were better able to do when they had several opportunities to teach their lessons. For example, although this PST noted improved student output through increased time on task, we observed the pair of PSTs accomplishing their goal by increasing the amount of time on initiation-response-follow-up: "We had the students fill out Exit Tickets explaining taxes and government spending. When comparing what the first group of students wrote and what the last two groups of students wrote, it is a night and day difference."

Powerful and Purposeful Social Studies

As noted earlier, although most PSTs altered their lessons toward greater emphasis on correctness rather than on students' deep thinking, approximately 25% of the PSTs demonstrated more "powerful and purposeful" teaching of social studies (<http://www.socialstudies.org/positions/powerfulandpurposeful>), which we explore below. First, however, it is worth noting that many PSTs appeared to honestly assess when their changes did

not comply with powerful and purposeful social studies teaching. These PSTs often took the time to explain why they deviated from best practices. One group explained their decision to “slow down on the higher-order-thinking questions” to accommodate a “wide variety of academic levels” and alleviate time pressures. Other PSTs lamented that they “had to use teacher-centered teaching to get through the material.” In the debriefing focus-group discussions, PSTs commonly apologized for not teaching the “way they were supposed to.” It isn’t clear if the PSTs actually wanted to teach in a more student-centered manner or if they were responding how they thought their professor wanted them to act. We do not know if the preponderance of transmission-style teaching was due to a lack of willingness or lack of ability.

Nevertheless, a number of PSTs were able to alter their lessons in ways that were more consistent with NCSS principles. Several pairs recognized that even though they thought their lesson plans were student-centered, their lessons ended up being transmission-style. For example, one PST captured the challenges she and her partner faced and how their teaching evolved. She recognized that by prioritizing coverage of material, they relied on telling students information as opposed to allowing students to engage with the material themselves:

The lesson we planned to teach was very hands-on and activity-based, but we just didn’t have enough time to get through it. So, for the second and third time we made sure to cover all the material, but it turns out that we pretty much just lectured them and asked a few questions. By the fourth time, we were starting to be able to put more of the responsibility on them.

Another PST described the shift from direct explanations to using questions to lead students in inquiry-based discussions. Reflecting on her lesson about government, she noted how they changed their lessons to allow students to contribute more to the dialogue:

The first time we went through the lesson, we realized that we were talking at the students too much and not letting them come to conclusions. After this, we tried to ask the students questions that got them to tell us what the powers of the branches were rather than trying to just tell them. We also started asking about what branch they would like to work in and why after the first lesson because we thought it would help the students.

The groups that evolved to become more student-centered did so in two main ways: better direct questioning and better discussion facilitation. Initially, nearly all the groups had

lesson plans that were, on paper, student-centered. As mentioned above, however, most PSTs were preoccupied with lesson efficiency and time-management centered on covering the material. Conversely, as the lessons progressed some PSTs gave more priority to students' deep thinking and connections between abstract concepts and students' lives. For example, one PST explained the shift in learning priorities that took place over the course of the four lessons:

We had in mind the big questions we wanted them to answer, but when they weren't able to answer them during the first lesson, we panicked and made the questions easier. Slowly, we brought back the big ideas we wanted the students to take away: "Why do we still talk about Harriet Tubman today? In what ways did she influence our present lives? Who is our Harriet Tubman?" We learned that they could answer these questions, but we had to be patient with them and give them little prompts without doing too much of the work for them like we did during the first couple of lessons.

Another PST reflected on how prompts from the PSTs facilitated a discussion that allowed students to compare elements of their local economy to a larger, less familiar context:

During our later lessons, we prompted them to think of bigger things such as (the university), (the hospital), mining, etc. We went through the economic circle in which we produce something (cars, coal, lumber, etc) that we sell for money. The company gets the money, pays its employees, and the employees spend the money in the community, which creates demands for products, and it starts over. We then prompted what would happen if all our economic resources went away. The students decided what would happen if (our town) lost its major economic activity, and how this would affect the people. Students were able to compare and contrast (our town) to Detroit. All of this related to the automotive industry, the ups and downs, including the recent bail out. Students did a good job of analyzing how the economic activity affects the people. Students' ideas just bounced off each other, and they had great discussions. I felt like we just got to sit back, moderate, and put in ideas. The students really collaborated together to get a good understanding of our materials.

We observed a few groups who changed the ways they asked students questions throughout the four lessons to include more divergent questions rather than recall or comprehension-based questions. We also witnessed how some groups' discussions improved as PSTs allowed student-generated questions about the examples and material to direct the flow of

the conversations. One PST highlighted the flexibility she and her teaching partner demonstrated in later lesson implementations. Reflecting on their lessons about role of the President, the PST described how they altered their delivery over the four iterations to accommodate student interests::

We found that as the lessons went on the students wanted to discuss why certain people got elected and how important it was to make sure we are voting for the right reasons. We also got into the debate on why the President can't just appoint people without getting it approved. The students were very interested in the topic of what things to look for when electing a President...The ideas they came up with were great and helped to instill how the process worked.

Despite the evidence that some PSTs changed their lessons toward more powerful and purposeful social studies, we were not able to ascertain why those PSTs did while most did not. Clearly, on the whole, the PSTs altered their behaviors as result of teaching the same lesson four times. PSTs self-reported that they became more confident and competent. They also noted that they became more efficient and made better use of time by consciously cutting less-important elements of their lessons. Most PSTs were attuned to student thinking and work, though most PSTs altered their actions to help students arrive and their pre-determined convergent outcomes. In other words, most PSTs got better at helping students to answer and produce work that was consistent with the PSTs wanted. A few PSTs, however, evolved their teaching to include more divergent tasks and deeper student thinking.

Discussion

Learning to become an effective teacher requires practice. Teacher educators, faced with limited access to K-12 classrooms, must find ways to provide PSTs with high-quality preparation opportunities to set future teachers on a path toward effective and reflective practice. Though microteaching has been a popular method for giving preservice teachers opportunities for practice, no published studies explored the use of authentic repeated practice. Furthermore, only a few studies have investigated the preparation of elementary social studies, and particularly how PSTs develop their social studies PCK. Though only exploratory, our repeated practice microteaching model appears to foster development of preservice elementary teachers' PCK. Through repeated

microteaching, our model controls many conditions of the practice activity by changing only the group of students, not the lesson objectives.

Since Shulman introduced PCK more than 25 years ago, numerous educational researchers have attempted to redefine and reconceptualize PCK. Hashweh (2005) synthesized research on PCK into seven assertions, one of which is that “teacher pedagogical constructions develop through experience” (p. 278). Consistent with what we found in this study, Hasweh suggested that teacher learning is a constructive process that requires authentic episodes working with students, reflection, and adjustment. Most importantly, PSTs’ PCK constructions are better developed during teaching experiences than during traditional coursework. As Hasweh declared, practice is vital:

A teacher might invent an analogy during interactive teaching when she realizes she needs one more representation to explain a certain concept. Or she might, reflecting on the last period, realize she needs a new analogy, and invents a new one. (p. 279)

Hasweh’s assertion is remarkably consistent with the findings of our study, where nearly all the PSTs changed how they taught, with most adopting new explanations, examples, or analogies to help students learn.

It is important to note Hasweh’s example of a teacher reflecting on the previous class period and then altering her lesson for the next period. Certainly, this is a common occurrence for secondary teachers, but a rarity for elementary teachers. If teachers need opportunities to teach, reflect, adjust, and re-teach in order to develop their PCK, they are unlikely to gain those opportunities in a traditional field experience or student teaching practicum where they will be teaching several different subjects each day. As such, the deliberate practice model we describe in this paper may hold great potential to aid teachers’ PCK development.

Limitations and Implications

Teacher educators must keep in mind that the goal of teaching is student learning, not teacher behavior (Dunn & Shriner, 1999). Though the PSTs’ behaviors in this study changed, we do not know the extent to which their students’ learning increased. In our study, it was apparent that the PSTs were attuned to their students’ behaviors and made adjustments accordingly. It is not apparent, however, that PSTs made these adjustments because they taught their same lessons

four times in succession – because of our microteaching model. We do not know, for example, if PSTs would make similar changes if they taught four different lessons over four weeks instead.

In addition, teaching small groups is not the same as teaching a whole class. It is not clear how learning parts of teaching constitute learning the whole of teaching. Likewise, this study cannot allow us to make any claims about the long-term effects of our model on PSTs' future teaching. Yet, because there is no evidence that expert performance correlates with innate ability in other domains, it is reasonable to conclude that teaching expertise can be developed (Ericsson, 2006, 2008, 2009; Ericsson, & Charness, 1994; Ericsson, Krampe, & Tesch-Römer, 1993; Ericsson, Prietula, & Cokely, 2007; Plant, Ericsson, Hill, & Asberg, 2005). Furthermore, there is no evidence that contradicts our supposition that in learning to teach, delivering short lessons multiple times to small groups of students is a legitimate practice activity to improve PSTs' capacity to teach the whole class.

There are several important reasons why repetitive microteaching holds great promise in this particular era of teacher education, particularly in the United States. First, the US has seen a rapidly heightened teacher accountability movement. Starting with the No Child Left Behind Act (2001) and more recently with the Race to the Top Initiative (2009), much greater emphasis has been placed on student test scores. What's more, teacher evaluations are now tied to their students' performance on standardized tests. As a result, classroom teachers are likely to be less willing to turn over their classrooms for PSTs to practice on their students, adding to the longstanding barriers toward establishing practice-based teacher education programs, which also include complexity and cost (Zeichner, 2012). With reduced opportunities for authentic field experiences, repetitive microteaching might serve as an efficient and effective way for pre-service teachers to gain meaningful experience. Repetitive microteaching is relatively simple and low-cost.

Second, there has been a recent rise in scripted instruction, assumedly in response to mandated curriculum and testing pressure. Scripted teaching situates teachers more like technicians than professionals who must apply deep knowledge and judgment (Zeichner, 2012). Because most teacher educators advocate for the professionalizing of teaching, judgment-based field experiences, like repetitive microteaching, allow pre-service teachers to develop broad skills in authentic and unique contexts. As Hiebert and Morris (2012b) suggested, we need to engage in the work of "improving teaching versus training teachers" (p. 383). That work,

however, should emphasize practice opportunities in real classrooms rather than laboratory programs (Hiebert & Morris, 2012a).

Third, and most importantly, a growing body of research suggests that practice-based teacher education is the optimum model for improving classroom instruction (Zeichner, 2012).

Hiebert and Morris (2012b) asserted:

Learning to teach something well is best achieved by directly studying and improving instruction of this content and in the process of repeated cycles of implementing and refining instructional methods and materials, to abstract the recurring routines and core practices that become keys to effective practices. (p. 384)

Repetitive microteaching fosters high-leverage practices at “a grain size that is usable new teachers and their teacher educators” (Zeichner, 2012, p. 378). With scarce opportunities for authentic practice in classrooms prior to student teaching, elementary teacher education programs could benefit from further exploration of repeated practice microteaching models.

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