



Challenging Idealism: Pre-Service Teachers' Core Beliefs before, during, and after an Extended Field-Based Experience

By John W. White & Richard H. Chant

Introduction

John Dewey (1897, 1938) long ago posited that students learn best by applying theory with practice and by seeing theories put into action. Progressive, constructivist pedagogy is built upon these beliefs. As future pedagogues, preservice teachers are far from immune to the need to experience the theories that they learn about in their teacher education coursework. Like anyone entering a new career or community, teachers become “full participants” (Lave & Wenger, 1991) in their new environments via apprenticeship—a process that Lave and Wenger describe as ‘legitimate peripheral participation’ (Conkling, 2007; Darling-Hammond, 2006; Lave & Wenger, 1991). To become proficient with the methods that they are charged with using, preservice teachers must engage with students in real-world environments (Darling-Hammond, 2006). This, in turn, necessitates that those charged with preparing new teachers must create opportunities in which their students can see theories put into action and, ideally, in which they themselves can practice some of these theories.

In order to more closely match content area teaching theories with research-based effective practices, we chose to build and study a project based around the

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inclusion of reflective practices as part of our students' secondary classroom "field" experiences. We view reflection as a systematic process, one that can enhance learning when used as a mechanism to interpret experiences (Leberman, McDonald, & Doyle, 2007). As Cochran-Smith and Fries (2005) suggested, teachers must learn from their own practice. We also believe that teachers do not practice within a vacuum, but instead function within fluid contexts that are influenced by the interactions of students, teachers, knowledge, and milieu (Schwab, 1969). In our students' cases, this would be represented by the complexities of teaching and learning in a diverse, urban high school. Teachers (preservice, regarding our students) must often consider how these contexts are situated within their own set of beliefs about teaching and learning (Richardson, 1994).

Teacher beliefs have for some time been directly linked to teacher actions (Bandura, 1986; Clark & Peterson, 1986; Pajares, 1992; Tabachnick & Zeichner, 1984; Ware & Kitsantas, 2007). What teachers believe about curriculum, pedagogy, their students, and the greater goals of education itself influences their instructional behaviors and resultant decision-making. Although embedded in the broader teacher-practical-knowledge epistemological framework, teacher beliefs differ from teacher knowledge in that beliefs are grounded in personal understanding (subjective) and knowledge is grounded in factual understandings (objective) (Pajares, 1992). Studies of teachers' practical knowledge often examine how teaching beliefs develop into practical theories of teaching and how these theories influence teachers' decision making.

Sanders and McCutcheon (1986) defined such theories as the conceptual structures and images that provide teachers with the reasons for acting as they do and for choosing the teaching activities and curriculum materials that are most effective for student learning. When describing and identifying teaching beliefs, it is important to consider both personal (outside the classroom) and practical (inside the classroom) experiences as, collectively, these are strong influences on how teachers think and act (Cornett, 1990). As a result, we initially asked our students to (a) describe and define what they believed to be the conceptual structures (which we termed core teaching beliefs) that will guide their teaching and (b) justify the origin of these beliefs and why they were identified. Once completed, each student developed a grounded set of beliefs that represented what he or she believed to be the guiding constructs for teaching.

The process of first identifying and then coming to define in more depth one's teaching beliefs can have a positive impact of the effectiveness of one's teaching. Thornton (1994) argued that all teachers operate under a belief system and, either knowingly or unknowingly, will use these beliefs to guide their instructional decision-making. Knowing (and reflecting upon) one's beliefs lends more to improvement (and empowerment) than simply acting without such knowledge. Teachers can purposely use this knowledge as a construct for their own improvement. This is not a new understanding; Dewey (1938) long ago suggested that experiences influence

teacher beliefs and, once these beliefs are reflected upon critically, provide the basis for professional growth. Understanding and using such pedagogical epistemologies is a key component of teacher development and practice (Pajares, 1992).

There have been numerous studies that illustrate the role of teacher reflection and, equally important, how to apply reflection as key elements of practicing teacher development (Borko & Putnam, 1996; Chant, 2002; Cornett, 1990; Kagan, 1992; Ross, 1992) and, in our situation, preservice teacher development (Calderhead & Robson, 1991; Chant, Heafner, & Bennett, 2004; Levin & He, 2008). In emphasizing the importance of interpreting reflection (Leberman, et al., 2007), we established weekly belief analysis processes that would be used for each classroom observation and culminated with the reexamination of the originally stated beliefs to determine if and how students' core beliefs about teaching were either reified or challenged as a result of experiences. These processes produced the majority of the data used for this study.

Finally, we were interested in any changes to our students' original beliefs. We suspected that change, if it were to occur, would be the result of either their structured field experiences, the content of our courses, or some combination thereof. There remains some question as to the effect of teacher education programs on epistemic belief change (Sosu & Gray, 2012). However, like many preservice teacher preparation programs, we offer specified courses and field experiences (scope) within a structured plan (sequence) that we hope prove beneficial to our candidates. Attempting to analyze how experiences influence changes in beliefs can provide insights into our effectiveness and act as a tool for program evaluations. To help situate change in beliefs, we initially employed Levin and He's coding and categorization framework to contextualize the type of belief and from where it emanated: teacher, instruction, classroom, or student. We used these four domains as a mechanism to examine how experiences, be it field or classroom, influenced our students and their beliefs.

Data Collection

All data for this study came from work generated by students during their semester-long methods courses. In an effort to more closely connect methodological theory with practice, we chose to move our respective methods courses to a large, local high school and to integrate into our courses a mandatory field component. These methods courses were taught once per week on-site at a local public high school.

Twenty-eight university students participated in the study. All were taking part in one of two secondary education methods courses (15 in English and 13 in Social Studies). Participation in the study was welcomed and encouraged but not required as a part of the course.¹All of the students were juniors or seniors; the vast majority were in either their final or in their penultimate semester in college. They were split almost evenly between education majors and education minors. The high school

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site with whom we paired is the largest in the district, with almost 3,000 students and 200 faculty and staff. It is demographically diverse, with 48% White students, 31% African American students, 12% Hispanic students, and 8% Asian students. Thirty-four percent of the school's students are eligible for free and reduced lunch and the school is struggling with low standardized test scores.

To match theory with practice, we paired each of our methods students with a cooperating high school teacher in that student's respective content area for a semester-long field placement. Our students were required to visit and participate in one 90-minute (block) class per week for a minimum of nine weeks. To prepare students for their experiences and as a major component of each of our courses, students were required to identify and describe between four and six of their major 'core' teaching beliefs—the theoretical epistemology that guides their thinking and feelings about being an effective secondary teacher. Using a standard "weekly core beliefs chart" (see Figure 1), participants then used their respective beliefs as lenses through which they examined and critiqued their experiences in their classroom placements. Thanks in large part to the cognitive dissonance (Aronson, 1969; Festinger, 1957) that occurred when participants witnessed or experienced classroom phenomena that did not correlate with their original beliefs, they often found it necessary to reexamine these beliefs in light of the realities of the classrooms they were observing. Stated another way, by using their core beliefs as the

Figure 1
Classroom Interactions and Core Beliefs Analysis Chart

Name _____ Observations # _____			
Classroom Interactions and Beliefs Analysis Chart			
Date & Time _____			
Classroom Interactions		Listing of Core Beliefs	Reflections on My Beliefs in Relation to the Interactions I Witnessed
What Happened	Questions I Have		

primary lens through which they evaluated their classroom experiences, participants were sometimes forced to question and even alter their original pedagogical beliefs; they were confronted with the need to shift their paradigms (Kuhn, 1962) regarding what it means to be a good teacher in today's urban classrooms.

Students filled out their standardized chart for each of these observations and turned them in at the end of each week of class. Students' observations and comments from these observations served as prompts for ongoing class discussions about students' experiences (good and bad). The authors also retained a copy of each observation sheet for further future analysis. Finally, the methods students were also required to do a "Final Core Beliefs Analysis" at the end of their methods experiences. This final project asked students to reexamine their original core beliefs and examine the ways in which these beliefs were challenged, reified, or changed through their classroom experiences.

At the end of the semester, the authors collected all early-semester and final core beliefs evaluations sheets/projects for analysis. A research assistant—in conjunction with the two authors—coded and categorized students' initial core beliefs using Spradley's (1983) Componential and Domain Analyses. We then compared initial core beliefs to those at the end of the semester, examining how these beliefs changed, were challenged, etc. Whenever a student's beliefs changed dramatically, we went back to her/his weekly student classroom observation sheets to try to discover what events (single or in a series) might have precipitated such a change.

Data Analysis

Using Goetz and LeCompte's (1984) recommendations for initially organizing data, we identified themes that illustrated the impact of the personal theorizing process on the thinking, and subsequent actions, of the participants. We then used a categorization and semantic structure based upon Levin and He's (2008) study in which they investigated the content and sources of teacher candidates' beliefs. Like Levin and He's work, we used an open coding strategy (Lincoln & Guba, 1985) and constant comparative methodology (Glaser & Strauss, 1967) to analyze the raw data represented in students' initial and final core belief statements. Because both studies—Levin and He (2008) and ours—examined preservice teacher beliefs, we chose to use the semantic and thematic structure represented in the former (p. 58). We classified our data into four domains, each of which was then further divided into subdomains (see Table 1).

The model serves as a tool by which to connect each preservice teacher's beliefs to one of four single domains: teacher, instruction, classroom, and student. Levin and He then further divide these four generalized domains into 14 specific corresponding subdomains or subsets and one general "other" subdomain. For example, the "teacher" category is subdivided into "organizing and planning," "professional development," "roles and responsibilities," "quality of good teacher,"

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“creativity” (p. 58). Such subdivisions give the model much greater specificity and allow for the richness of student-driven qualitative data. Like Levin and He, we created similar subdomain; however, we deviated from and extended Levin and He’s subdomain in order to account for data that we did not feel fit well into their taxonomy. Utilizing Levin and He’s four general domains, we further divided these into a total of 18 subdomains. We deviated most significantly from Levin and He’s model in that we did not categorize each student core belief to a single domain or subdomain; rather, we categorized some initial core beliefs across domains and subdomains. We felt that limiting a belief to only one category ignored the fact

Table I
Initial Belief References by Domains and Subdomains

Total Students, 36; Total Beliefs, 173; Total References, 460				
Domains	Teacher	Instruction	Classroom	Student
Subdomains and Number of References	Organization/ Planning 7	Instructional Strategies 65	Classroom Environment 68	Nature of Student Learning 20
	Professional Development 9	Assessment 3	Classroom Management 6	Student Roles & Responsibilities 15
	Roles/ Responsibilities 33	Differentiated Instruction 24	Relationships 23	
	Quality of Good Teacher 77	Student- Focused Instruction* 25	Respect 14	
	Creativity 0	Goal of Education* 31	Teacher Expectation 5	
		Goal of Subject* 35		
Domain Total	126	183	116	35
* Asterisks represent subdomains that do not exist in Lewis & He's (2008) taxonomy. We chose to add these subdomains in order to more closely describe our students' core beliefs.				

that many beliefs are hard to categorize, that categorizing them in such a way is unduly subjective (it ignores nuances within student beliefs and their description of these beliefs), and because we realized that students' beliefs both affected and were affected by issues and events across multiple domains. In practice, this allows for the fact that students may hold beliefs that traverse specific domains (for example that "showing respect" is both a teacher issue and a student issue) and that students may be ambiguous—if not unintentionally paradoxical—in some of their beliefs. In this sense, we agree with Schommer (1990) who proposed the use of a multidimensional model for categorizing beliefs:

...individual beliefs do not necessarily develop at the same pace. For example, an individual could believe that knowledge is highly complex. At the same time, the person could hold the belief that knowledge is certain or that knowledge is uncertain. The multidimensional conceptualization of epistemological beliefs has been upheld by other researchers. (Schommer-Aikins, Duell, and Barker, 2003, p. 350)

This approach (allowing for multiple categorizations of data) supports Sternberg's (1989) belief that the use of dichotomous domain generality/specificity is a questionable practice. This approach, though fitting in well with naturalistic inquiry (Lincoln and Guba, 1985), ultimately proved to be a very complicated data analysis process, one that adds richness but simultaneously complicates our findings.

Findings

Our 28 study participants' collective responses generated a total of 173 initial core beliefs about effective teaching and learning. These beliefs could, as noted above, fit into multiple domains or subdomains; in our study this resulted in 460 individual references to the 19 subdomains. For example, one student stated her belief that the teacher has the responsibility to "be an organized planner who creates meaningful activities." We felt that this belief fit into two separate domains ("teacher" and "instruction") and subsequently into two separate subdomains ("organization/planning" and "instructional strategies" respectively). Similarly, though we found 354 references that could be categorized in Levin and He's (2008) taxonomy, we felt that 106 belief statements did not fit well within the constructs of Levin and He's 15 "categories" (we use the term subdomains in lieu of categories). Therefore we changed Levin and He's "Other" category to *Student Roles and Responsibilities* and created three new categories—*Student Focused Instruction*; *Goal of Education*; *Goal of Subject*—to include these 106 references. This brought to 18 our number of different subdomains.

Of the 460 total references, most (183) were identified under the major domain of "Instruction," followed by 126 under the domain "Teacher," 116 under the domain "Classroom," and the fewest (35) under the domain "Student." These data mirror Levin and He's 2008 findings; our students' initial core beliefs match—almost to the exact percent—those described in Levin and He (Table 2).

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These data suggest that our preservice teachers were much more focused on the teacher-centered and instructional contexts of teaching and learning rather than on classroom contexts and the nature of students and student learning. This is understandable given the very limited experiences these students had in secondary classrooms at this early point in their teacher education experiences. Though all of our students had some experience in the field, their experiences were generally limited to 50 hours in a generalized “Field I” course; they had not yet taken the more intensive “Field II” course or started their student teaching experience. We hypothesize that our students tended to focus more on those areas of teacher education and teaching about which they had the most recent knowledge and experience. We also concur with Levin and He that “...it may be that we are reinforcing prior beliefs during the teacher education program” (p. 67) and that these beliefs are reflected in students’ initial core belief statements. It is highly likely that our students were to some degree assuming the epistemologies they have encountered and likely have internalized via exposure from their coursework and from their peers.

Though we are pleased to see that our students took from their coursework valuable lessons and beliefs, this finding suggests that we—and possibly other teacher education programs like ours—should redirect some of our energies to our “foundational” courses (e.g., Introduction to Education and Multicultural Education) and to our educational psychology course because these courses focus less upon the role of the individual teacher and more on the myriad contexts in which students learn and the ways in which students learn. Similarly, in the current era of ever-increasing numbers of “alternative” means to teacher licensure (some of which require very limited exposure to actual secondary classrooms), we believe that these findings have major implications for the necessity of matching theory with practice. Our findings, as outlined below, highlight how preservice teachers’ views grow and shift with actual experience in secondary classrooms.

Before exploring how our students’ core beliefs changed, it is important to provide a caveat. We do not chronicle those areas in which students’ respective beliefs did not change substantially in conjunction with their field experiences (though we

Table 2
Comparison of Domain Outcomes across Studies

	Levin & He (2008)		Chant, White, Monahan (initial core beliefs)	
Teaching	139	29%	126	27%
Instruction	166	35%	183	40%
Classroom	138	29%	116	25%
Student	38	8%	35	8%
Total	472		460	

do examine the areas in which students' experienced a significant strengthening of their original beliefs). It should come as no surprise that most of our students' core beliefs did not change substantially; rather, students' experiences served to reify most of their original core beliefs. Because their core beliefs served as a conceptual lens through which to examine the events that they witnessed in their respective experiences, our students were more prone to recognizing as important those events that significantly strengthened or challenged their original beliefs. As Thomas Kuhn (1962) demonstrated, without the disequilibrium associated with a challenge to one's epistemology—one's core beliefs—one is unlikely to question or alter those beliefs. This is not to say that the field experience was unimportant in these cases. Rather, many students confirmed through their classroom experiences that their original beliefs were important and that they should try to teach to those beliefs: "I have seen my belief present throughout my field experience... It is extremely important that as teachers we recognize and take into consideration that each and every student does have the potential to be successful" (social studies preservice teacher).

Changing Beliefs

Near the end of the semester, our students were required to reexamine each of their previously stated beliefs, looking specifically at the inclusiveness of or deficits in their beliefs as a whole. They were not limited to their original taxonomies when doing so; rather, we encouraged our students to consider how they might alter, add to, or even delete some of their original beliefs in light of their experiences. Thus our students could—provided they included a written rationale—add one or more beliefs to their original beliefs (Table 1), reword their original beliefs to add greater context and/or to provide caveats for those beliefs, or eliminate one or more of their core beliefs altogether. For the sake of simplicity, we chose to categorize such changes in one of three categories: "strengthened beliefs," "new beliefs," and "weakened beliefs." Table 3 represents how students' beliefs changed over the course of the semester.

Strengthened Beliefs

At the end of their field experiences, many of our students claimed to have experienced a significant strengthening of their original beliefs. Thus in this categorization the numbers grew across all of the domains and within 14 of the original 18 subdomains. Not surprisingly, students claimed to have strengthened beliefs in those areas in which they had initially felt strongly. For example, under the Teacher domain, students showed the greatest strengthening of their beliefs in the area of Quality of Instruction; under the Instruction domain they showed the greatest strengthening in Instructional Strategies; and under the Curriculum domain, they showed the greatest strengthening in Environment and in Relation-

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Table 3
Overall Changes to Students' Core Beliefs at the Conclusion of Secondary Field Experience

	Teacher	Instruction	Classroom	Student	
Subcategory	Organization/ Planning	Instructional Strategies	Environment	Nature of Student Learning	
New Beliefs	6	5	1	12	
Weakened Beliefs	0	2	0	1	
Strengthened Beliefs	1	25	9	11	
Subcategory	Professional Development	Assessment	Managerial	Student Roles and Responsibilities	
New Beliefs	2	3	7	1	
Weakened Beliefs	1	0	2	0	
Strengthened Beliefs	1	0	3	0	
Subcategory	Roles/ Responsibilities	Differentiation of Instruction	Relationships		
New Beliefs	6	2	8		
Weakened Beliefs	1	2	0		
Strengthened Beliefs	11	4	10		
Subcategory	Qualities of a Good Teacher	Student Focused Instruction	Respect		
New Beliefs	11	2	10		
Weakened Beliefs	0	1	0		
Strengthened Beliefs	22	5	5		
Subcategory	Creativity	Goal of Education	Teacher Expectations		
New Beliefs	3	0	1		
Weakened Beliefs	0	0	0		
Strengthened Beliefs	0	0	4		
Subcategory		Goal of Subject			
New Beliefs		1			
Weakened Beliefs		1			
Strengthened Beliefs		3			
Totals					Totals
New Beliefs	28	11	22	15	79
Weakened Beliefs	2	6	2	1	11
Strengthened Beliefs	35	37	31	11	114

ships respectively. These subdomains dwarfed all of the other domains in terms of students' strengthened beliefs.

Students provided a wealth of data that highlighted the respective rationales or experiences that affected how their original beliefs had been strengthened. When talking about relationships for example, one student—representing numerous others across our methods classes—noted how important it is for a teacher to serve as a role model for his or her students: “I believe that it is essential for the teacher to strive to be a role model for all of their students.” This student's belief about being a role model grew stronger once she experienced the diversity of her teacher's classroom: “there needs to be someone or something they [high school students] can look up to. Many times children come from homes where there is no [educational] role model, this job usually gets picked up by the teacher.” She realized through her experience that teachers must strive to be role models “*for all* of their students.”

A language arts student's experience in her field placement provided support for her original core belief in the importance of quality instruction. Though she was reasonably well versed in contemporary and constructivist ELA pedagogy through her coursework, she saw through her field experience that teachers are limited in what and how they can teach. She therefore looked for ways to engage students even in this limited curricular context: “I saw that Springboard [the district's ELA curriculum] easily loses student attention if you approach it negatively. Students don't act like it's so bad if you use it casually and in inventive ways.” Closely mirroring this student's beliefs were many others:

I found that students are not automatically engaged in the material; they need me [the teacher] to keep it relevant; and

I believe that my class assignments and material should be as close to real world scenarios as possible to keep my students interested in the content long enough to foster an appreciation for Language arts and lifelong learning.

Interestingly—and again supporting our contention above—even negative examples proved to strengthen students' initial core beliefs. For example, one student claimed in her initial core belief (Instruction/Instructional Strategies) that “stimulating lessons will help students be more successful in their social studies courses.” This student held all the more tightly to this belief when she saw that “My teacher's lessons were pretty dull and boring and had little stimulation...there was a lot of bookwork going on and what liked like busy work. The students were not very engaged.” Seeing students bored in their social studies classes served to reinforce her belief that to learn students must be engaged and that doing so is a teacher's primary responsibility: “I want my classroom to be motivated and willing to participate and I feel that the only way to achieve this is to get the students interested in what you are trying to teach them.”

These findings support our contention that students' initial core beliefs—as the

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lens through which they examined their classroom experiences—both influenced and tainted how and what they saw in their field experiences as well as the conclusions that they drew from those experiences. In other words, students entered their classroom experiences ready to look for and thus to see examples—positive or negative—of those beliefs that they had originally claimed as being significant to quality teaching. Similarly, students were most likely most desirous of providing support for their original beliefs than they were for providing evidence that made them question those beliefs. Though we encouraged our students to alter their beliefs in any ways that they saw fit, we hypothesize that our students may have felt fear that they would be judged for changing their beliefs or a fear of revealing that their original beliefs had been naïve. Thus there was a preponderance of changes in the strengthened category.

Diminished and Weakened Beliefs

Though fewer in number than strengthened beliefs, we did find a significant number of weakened or diminished beliefs. In total, we found negative changes in all four major domains and within eight of the 18 subdomains.

The “Teacher” domain was the one in which our students most often expressed negative changes in their beliefs, a finding that correlates with our earlier observation that our students tended to be most focused on teaching and the role of the teacher. For example, a language arts student questioned her initial belief in the importance of professional development through continued formal education and the reading of educational research; she came to see practical experience in classrooms as being most important to professional development:

My time and effort in the classroom will benefit my students. I still believe it's important to continue my education, but I've learned more from my classroom experiences over the past four years [than from theory and coursework].

Many of the ‘negative’ changes we observed resulted from what students perceived as the chasm between ‘best practices’ in theory and the harsh realities of teaching in diverse classrooms. One student began to question not the ideal of differentiating instruction to students’ individual needs, but the possibility of being able to do so in large and diverse classrooms: “From these experiences I concluded that it is, in fact, quite difficult to teach to each learning style individually.” In a similar example, another student came to the conclusion that cultural relevance and connecting curriculum to ‘real world’ examples was of far less importance than she had originally thought: “Not every lesson needs a real world connection.”

The realities of the classroom also significantly challenged what are arguably our students’ most esoteric—and possibly idealistic—core beliefs. A number of students questioned the notion that demonstrating care for one’s students will result in positive outcomes (“If you are too caring and understanding, students will most likely take advantage of your kindness”), that one can reach all of one’s

students through teacher effort and passion (“I no longer will assume that all of my students, no matter how relevant or exciting I make the lessons, are going to connect, cooperate, and even like the subject matter at hand”), and even some learning theories, including Maslow’s hierarchy of needs (“It’s not something a teacher should be most worried about”). Possibly most telling is the fact that one of our students began to question his initial belief that “classrooms should be a place of acceptance and tolerance, but not a place to promote a set of beliefs.” He initially felt that he should be unbiased and resist promoting his beliefs with his students. Yet after his time in a high school social studies classroom where he noticed that “some students may not be as mature as others” in their beliefs about “racism, sexism, and homosexuality,” he came to the conclusion that:

I still agree with this belief, but not as strongly as I used to...While I still believe that classrooms should be a place of acceptance and tolerance, I now realize that completely eliminating the promotion of a set of beliefs from the classroom may not be possible.

Throughout the examples related to diminished or weakened beliefs, a common strand was evident in that the changes to these beliefs were a result of a disconnect between students’ expectations (beliefs) and what they observed within their field (classroom) observations. The observations illustrated events that chiseled at strongly-held notions until the belief, as originally stated, no longer held true as the guiding framework of the student. In some instances, these beliefs morphed into new beliefs, branching into a new understanding that can be used to interpret practice. In others, beliefs were amended or abbreviated to be less inclusive or extensive, but still focused on the content of what was stated in the original beliefs.

New Beliefs

Our students’ field experiences not only served to strengthen many of their original beliefs, they forced students to begin conceptualizing issues that they had not previously considered. Our students saw in their field experiences many issues that they had not anticipated prior to these experiences. They had not been prepared for the myriad complexities, nuances, and contexts that affect quality teaching, learning, and diverse classrooms. This is, we believe, best represented in the fact that students felt a need to create new core beliefs both during and at the end of their field experiences because these beliefs were important but did not fit into their original taxonomies. In categorizing this data, we found net growth in 17 of the original 18 subdomains (the only sub-domain that remained unchanged was Goal of Education (Instruction)). We saw the greatest net change in the subdomains of Nature of Student Learning (Student), Quality of a Good Teacher (Teacher) and Respect (Classroom).

Our students seemed to have learned the most from having close contact with a diverse group of high school students, many of whom came from backgrounds

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and cultures that were—before now—largely alien to our students. Thus we saw significant changes and growth in the Student domain. Whereas our students had a tendency in their initial core beliefs to make stereotypes about the nature of high school students based upon their own high school experiences (i.e., mostly white, middle class schools), they found through their field experiences that reaching a more diverse group of students brought with it unique challenges. They noted, for example, that many of the students they encountered were insecure, afraid to admit areas of weakness or a lack of understanding, and difficult to reach. One of our students was surprised to learn that many of the students in her field experience were reluctant to admit to not understanding a concept:

...students will not always raise their hands and let you know that they do not understand...I found that many students will say that they understand and then two minutes later are asking you to help them. It is great that students ask for help, but it shows that they did not understand it the first time.

Though she was initially frustrated by this phenomenon, this same student learned through the experience of working closely with these high school students that “students are a lot smarter than what they show themselves to be.”

Another student poignantly noted how her views of what it meant to be a good teacher had changed to include attitude as a requisite for professionalism (Qualities of a Good Teacher/Teaching). She said, “I realized that something was missing: it is fine to dress nice (sic) and talk well, but if you don’t feel like a professional, you’re just dressing up a bad attitude. I now believe that professionalism that comes from within; it is an attitude that you radiate to all who surround you. It informs them that you mean business and that you take your job seriously.” When discussing the need for teachers to respect their students, another student learned from her experience in the classroom that respect is both relational and that it is predicated upon each party having self-respect: “In my observations I found that respect was not only an issue with the teacher. The students did not respect themselves or each other. This lack of respect led to unnecessary behavioral problems.”

Again highlighting cultural differences between today’s students and those of the past, one of our students realized the need to bring a different approach to teaching than the one she had experienced. More specifically, she noted that in the current era of ubiquitous wireless technology and instant gratification, capturing and keeping a student’s attention is harder than it used to be: “I have learned that there is more of a challenge to teach today’s modern high school students especially due to the high level of advanced technology our students enjoy today.” She realized that she had an obligation to know new technology, to incorporate it into her lessons, and to “guide them [students] along the way.”

Finally, though none of our students’ initial core beliefs fit into Levin and He’s “creativity” category (2008), three of our students, after reevaluating their initial beliefs, found they had developed new beliefs that fit well with this sub-domain.

Two students, noting how often high school students are disengaged from their lessons—and the associated problems that come with such disengagement—cited a need to find creative ways to engage them: “If I want to succeed then I have to persevere, be creative, and most importantly, be sincere.”² Another student, noting the ways that scripted curriculum limits a teacher’s ability to be creative, felt that it was all the more important for teachers to deviate from such curriculum, to use humor, and to bring in examples that were more relevant to students: “My experience with that curriculum [Read180] is that teachers are not given the chance to teach; they merely play the part of a friendly proctor. It was a relief to see creativity fitted into the schedule.” This same student, while noting the need for creativity, also learned the need to be cautious with being creative in a heterogeneous classroom: “I witnessed a class lost in the humor and they didn’t understand when [the teacher] attempted to teach them satire.”

Conclusions

Two major themes emerged from this study. First, we found that our students’ initial beliefs changed very little considering the spectrum of possible changes and the myriad contexts and experiences they witnessed in their classroom placements. Second, in those instances in which there were significant shifts in students’ beliefs, these shifts followed two distinct patterns: a) they shifted toward the epistemologies and beliefs that guided their professors’ instruction or b) they shifted away from the best practices described in educational research and toward the pragmatic but *status quo* oriented educational practices that they had previously decried.

As the tables and examples above show, we saw no changes in some categories through the course of the semester while we saw only moderate changes in others. The limited change in our students’ respective beliefs might be concerning in that individuals who view teaching knowledge as changing may demonstrate greater awareness and openness to new teaching methods and techniques (Buehl & Fives, 2009). Although this is not surprising in that western society is characterized by the rigid paradigms through which sees and conceptualizes the world (Kuhn, 1963). Western society only begins to question and then alter paradigms when the latter no longer serve their intended purposes (e.g., when they fail to account for phenomena a society sees or experiences). Nonetheless, we cannot help but conclude from our data that most of our students held fast to their original beliefs despite what they witnessed in the field or experienced in our methods classes.

If anything, most of our students reacted to what they saw in their field placements by becoming increasingly entrenched in their core beliefs; rather than altering their beliefs, many of our students instead sought out evidence—good or bad—to justify them. Similarly, they judged what they saw through the lenses of their respective beliefs. Considering the personal nature of students’ teaching beliefs, the fact that they had developed these beliefs through numerous years of teacher

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education coursework, and that we had asked our students to use their individual belief statements as a lens for analysis of their field experiences (rather than as permeable objects), this resistance to change is not surprising.

When students' beliefs did change, they changed in two distinct ways and in two distinct directions. Students whose beliefs shifted over time tended to move in a direction that corresponded with the general tone and focus of their methods courses. In short, they tended to change in the direction of the belief structures that we as instructors both consciously and unconsciously advocated via reading selections, activities in the classroom, classroom discussions, and our own views as former teachers and now professors of education. Our beliefs, though varied, nonetheless share a social justice perspective. Both of us emphasize the need for building strong and positive relationships with our students as prerequisites to engaging them in our lessons. Similarly we highlight in our courses the myriad roles and responsibilities of teachers (beyond the often simplistic view that preservice teachers bring to the profession). We each focus on the need for teacher creativity and, with it, differentiating instruction to engage and keep our students attention and to foster effective learning environments. We saw this reflected in our students' beliefs and in changes in those beliefs. We would be remiss were we not to acknowledge that our own beliefs both permeated and affected the beliefs of our students and their expression of how their beliefs changed. Though we by no means wish to take credit for being the catalyst for all of the changes demonstrated above, we have noticed in the raw data and in students' comments on their beliefs chart that our influence was influential in this regard. At the same time, we also acknowledge that, just as we influenced students in this positive manner, we no doubt played a part in influencing them to some degree in the opposite direction.

The classroom field component was also influential on diminishing references related to students' beliefs, though to a lesser degree than we had originally anticipated. Our students' interactions with their 'cooperating' teachers had both positive and negative effects on their beliefs—effects that are represented above. Interestingly, our students' interactions with the high school students, though again showing both positive and negative effects, tended toward diminishing (negative) core beliefs. Generally, our students saw diversity in the classroom (ethnic, racial, SES, and ability) as challenges or problems rather than as opportunities. They witnessed many examples of problems with classroom behavior and interpreted this as problems with students—namely lack of respect for teachers, schools, and adult authority figures.

There can be little doubt that connecting methodological theory with practice is or at least should be a crucial component of secondary methods courses. Pre-service teacher feedback reflects this; like many teacher educators, we repeatedly hear complaints of dissonance between what students learn in their teacher education coursework—and which many, if not most, come to hold as essential to their teaching epistemologies—and what they are told to do or what they are

allowed to do in their actual internship and in their own classrooms. As this study demonstrates, methods courses—when they adequately integrate a requisite field component—have the potential to address and even eliminate some of these issues; in such courses, teacher educators and students can discuss and negotiate the nuances of “best practices” and actual classroom practices. Students’ diverse and unique field experiences can serve as catalysts for discussion and debate; thus, students’ concerns can be addressed ‘in the moment.’ Both good and bad practices are topics of discussion and analysis, thereby reinforcing each in the consciousness of the student (and, we hypothesize, making pre-service teachers more likely to stay true to the best practices we teach in the academy and less likely to adopt the less than effective practices sometimes perpetuated in schools). For this to happen, however, students and instructors must have a framework through which they can examine and discuss their beliefs and how these beliefs coincide with or contrast to the issues that arise in their methods courses and field experiences.

Limitations

We recognize a number of limitations to our study (and readily admit to others of which we are not necessarily aware). First, the number of students participating in the study was relatively small (28 students with 470 references that were then distilled into 173 basic core beliefs) and homogeneous in terms of background experiences and cultures (almost all of our students were from the southeast and most were white middle class). It is therefore unwise to generalize these findings to other preservice teachers in undergraduate teacher education programs. Second, students participating in the study did not represent 100% of the students in our classes or the entirety of our secondary methods students at our university (the math methods professor chose not to integrate field experiences into her course). Similarly, we relied solely upon self-reported data. Our data may therefore be prone to “selection” bias; students who chose not to participate may have altered the results above significantly (though from anecdotal data and our own experience with our students in our methods courses we doubt that this is the case). Though self-reporting is prone to issues of reliability (Yang-Hansen, Rosen, and Gustafsson, 2006), it can also lead to valuable data (Koziol & Burns, 1986; Lavalley, Hatch, Michalos, & McKinley, 2007). An additional, but necessary, limitation results from the fact that we avoided placing our students together in classrooms and attempted instead to place them across a variety of teachers, grades, and content levels. Our students’ respective classroom contexts differed greatly; this, in turn, likely correlates with some of the fluctuations in pre- and post-semester core belief statements. For these and other reasons, we caution readers from generalizing from our findings.

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Notes

¹ Students in our courses were required to do the activities we describe in this study but could opt out of having their work represented in the study.

² This example highlights how students' beliefs may fit into multiple domains and subdomains.

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