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Place-Based Mathematics: A Conflated Pedagogy?

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Abstract

Place-based mathematics education (PBME) has the potential to engage students with the mathematics inherent in the local land, culture, and community. However, research has identified daunting barriers to this pedagogy, especially in abstract mathematics courses such as algebra and beyond. In this study, 15 graduates of a doctoral program in rural mathematics education were interviewed about their attempts to integrate PBME in their classrooms. By using qualitative methods to code and categorize interview data, three themes emerged: (a) PBME was easier to teach about than to practice, (b) several factors contributed to participants' level of depth and authenticity in employing PBME, and (c) teaching place-based statistics was fundamentally different than teaching place-based mathematics. The findings suggest that making a distinction between place-based mathematics education and place-based statistics education would benefit research and practice in both areas.

Keywords: place-based, mathematics education, statistics education, rural, doctoral program, pedagogy

Place-Based Mathematics Education: A Conflated Pedagogy?

The debate between local interests and national perspectives has played out on many stages, including that of mathematics education. The Common Core State Standards Initiative (2010) has laid the foundation for a standardized set of goals across the country. How this will affect mathematics education in specific places is yet unresolved. However, the larger controversy has persisted for more than a century (Long, Bush, & Theobald, 2003). One side argues for rigorous mathematical understanding, abstract enough to be extended to a wide range of careers and situations (CCSSI, 2010; National Council of Teachers of Mathematics, 2000). The other side contends that mathematical reasoning should emerge out of fluency with the mathematics of, and *for*, the local context (Bush, 2005). Mathematics teachers who care for place-based efforts, especially those in rural areas, are often caught in a tug-of-war between these two extremes (Kannapel, 2000).

Is there a happy medium that would appease both sides? Place-based mathematics education (PBME) considers the unique history, geography, culture, and community of a place to be valuable resources for enhancing, and being enhanced by, students' learning of mathematics. Among other reasons, teachers practice PBME to increase relevancy for their students and to help sustain the local place (Howley, Showalter, Howley, Howley, Klein, & Johnson, 2011). State and national interests are served by standards-based mathematics education, although the particular standards to be used are another matter of debate. Standards-based mathematics education strives to implement equitable curricula that are uniform across cultures and places (Kannapel, 2000). Judging from the names of the two pedagogies (i.e., *place*-based and *standards*-based), a true compromise would have to serve two bases. Is such a daunting feat even possible? Perhaps not, but rural mathematics teachers around the U.S. are already forced into pursuing such a goal.

But what does PBME actually look like? And what advantages, if any, does it have over what is taught in a conventional mathematics classroom? Painting the picture of the *typical* classroom sharpens the contrasts, and we begin there.

According to the TIMSS videotape analysis of mathematics classrooms across the U.S., typical instruction consists of a teacher introducing material to students, followed by repeated examples. PBME, on the other hand, tends to be more interactive, inquiry-based, and need not be constrained by the physical space of the classroom. An archetype of PBME in the literature is that of Edgewater, an island school in Maine (Howley et al., 2011). The authors describe Edgewater teachers as emphasizing place-based education at every grade-level and in every discipline. Mathematics teachers at the school regularly engage students in the past, present, and future of the island community. For example, one teacher covered patterns of oceanic flow to demonstrate how the island became populated centuries earlier. Another teacher supported students investigating the effects of pollution on clam populations around the island. A third teacher had students create mathematical models of a proposed school building, an activity that resulted in changing the orientation of the school when it was eventually built.

Of course, the above comparison is distorted and unfair. One cannot profitably compare a typical example of one kind of mathematics instruction with a paragon of another. Attempts at PBME are plagued by constraints on time, limited resources, and dissonance resulting from unconventional pedagogy (Howley et al., 2011). Efforts for

PBME are often sustained by a champion, and can fade once the champion leaves. But of deeper concern to PBME are the doubts harbored by students, parents, administration, and community members as to its effectiveness in increasing students' mathematical knowledge. They wonder, does PBME compromise mathematical rigor? Or, rephrased from a teacher's perspective, if PBME is taught in a mathematically rigorous way, how can it still maintain authenticity to place?

The remainder of the discussion reports on a study conducted to address these questions. Fifteen mathematics educators who had completed doctoral-level coursework on PBME were interviewed. The challenges and successes they experienced in attempting to implement PBME are then analyzed for themes.

Related Literature

There is a dearth of empirical research on PBME (Bush, 2005). Thus, it is helpful to begin by reviewing the relatively larger body of research literature on general place-based education, before narrowing the scope to mathematics. The spirit of place-based education can be traced back as least as far as John Dewey's University of Chicago Laboratory Schools in the late 1800s (Grubb, 1996), but the term itself did not enter the research literature until the early 1980s. Since then, the theory has been subdivided into six main strands. In his definitive piece on place-based education, Smith (2002) provided a typology of five of these strands: cultural investigations, environmental education, problem solving of local issues, economic studies, and public policy involvement. Inspired by deep connections between the goals of place-based learning and critical theorists like Freire, Gruenewald (2003) proposed a sixth strand, critical place-based pedagogy. However, this breadth of theoretical research on place-based education is somewhat deceptive as most of the documented cases have centered on solving local problems (Smith, 2002).

Benefits of PBE and PBME

Researchers and educators have provided rich accounts of the benefits of place-based education. Haas and Nachtigal (1998) discuss how place-based education can increase students' quality of life through fostering relationships within their community and environment. Smith (2007) describes how place-based activities have transformed the teacher-student relationship from a hierarchical structure to one of collaboration. In the same article, he provides examples of how place-based education increases students' awareness of what is worth preserving in their local community and environment while at the same time equipping them with the sense of agency that they can make a difference in realizing this preservation. Takano, Higgins, and McLaughlin (2009) conducted a five-year follow-up on a place-based initiative in Alaska designed to incorporate community values into the curriculum. They found that students involved in the program showed gains in confidence, academic skills, and connection with the community.

Similar benefits have been found, or at least hypothesized, to relate to place-based mathematics education (PBME) as well. Lewicki (2000) arranged 100 days of place-based learning with 25 students in a Wisconsin high school. He found that, in addition to a more positive attitude and increased community accountability, the students improved their standardized math scores by four grade levels in a single year. However, this was an atypical case; other reports of PBME do not necessarily cite increased test scores among the benefits (Smith, 2002; Howley et al., 2011). However, it should be noted that "successful PBME implementation," as viewed by proponents of PBME, is often defined less by standardized test scores, and more with forging classroom-community relationships, motivating students with lessons that are relevant, and engaging students with mathematical ways of perceiving their immediate surroundings.

In perhaps the most comprehensive study of PBME efforts to date, Howley et al. (2011) highlighted specific ways in which this latter definition of success was achieved. They visited sites in seven states (AL, KY, ME, NE, OH, VT, & WA). Experts had nominated each of these sites as exemplars of PBME. According to Howley and her colleagues, teachers reported that PBME activities increased relevancy and motivation in students, as well as opportunities to excel for students who performed poorly in the typical mathematics classroom. At all seven sites, students were engaged in innovative mathematics with links to the community, but PBME was notably absent in classes at or above the algebra level (Howley et al., 2011).

Challenges for PBME

What is it that makes PBME so challenging in these high-level mathematics courses? Bush (2005) posits that one of the most difficult, yet important, challenges for PBME is to engage in activities that maintain *depth* and *authenticity*. Depth refers to the degree to which a place-based activity reflects place. Authenticity is the measure of how accurately a place-based activity reflects a specific place. Studying the fractal patterns used to lay out African villages (Eglash, 1999) might be deep, but the authenticity would be dubious in an American classroom. Conversely, modifying story problems to reflect the names of businesses and landmarks in the community might be authentic, but not deep. Because teachers more readily find examples of age appropriate mathematics (that which is typically taught before eighth grade) in the community, the unsuccessful struggle to find deep and authentic activities is often greatest for teachers of college-bound high school students (Howley et al., 2011). A third quality that becomes even more important in PBME at the secondary school level is that of relevancy, or *meaningfulness*, to students (Smith, 2007). Even if a PBME activity authentically represents the local place in a deep way, the net impact on learning is questionable if the activity does not hold meaning for students.

Although these charges for depth, authenticity, and meaningfulness could, arguably, be extended to place-based pedagogy in any subject, there is an inherent feature of place that is particularly challenging for PBME: variability. In areas such as journalism, the distinctive aspects of a particular place fuel the subject content. The more that a local culture is divergent from the dominant culture, the richer the stories of that culture and that place become. The same is not, however, true in mathematics. Dossey (1992) describes two main views of mathematics; the first view presupposes that mathematics is a cultural practice, whereas the second view conceptualizes mathematics as universal rules akin to Platonic forms. In either case, the variability of a place's context is problematic for PBME. To the extent that mathematics is indeed a cultural enterprise, focus on variability stands in contrast with universal standards-based goals. Any universal components of mathematics, on the other hand, suggest that the difficulties of engaging in PBME are inherent. Thus, PBME at the secondary school level is sandwiched between the proverbial rock and a hard place.

Research Questions

This study aimed to inform the literature on PBME by addressing the following three research questions:

1. How do mathematics educators with substantial exposure to the theory of place-based mathematics pedagogy transfer this theory into practice?
2. What commonalities exist among mathematical activities that connect students with place in a deep and authentic way?
3. How do mathematics educators engage the tension between variability of local context and the universality of abstract mathematics?

Methodology

Subjects were chosen from the population (N = 48) of former cohort members in a rural mathematics education doctoral program named ACCLAIM (Appalachian Collaborative Center for Learning, Assessment, and Instruction in Mathematics). The population had completed three years of doctoral level coursework in which they had frequent contact with the theory of place-based mathematics education. An attempt was made to contact each of the cohort members by phone, although the contact information was outdated in many cases. Of the 48 members, 32 were successfully contacted. These 32 were asked four brief questions in a five-minute screening phone survey (current status in the doctoral program, current place of employment, the role rural has played in their career, and willingness to participate in two interviews). The following criteria were used to select a purposeful sample from among the 31 willing cohort members. Guest, Bunce, and Johnson (2006) determined that a sample size of 12 was generally sufficient for data saturation in an interview-based qualitative study focused on a homogenous sample. Based on consultation with ACCLAIM leadership, this number was increased to 15.

Since the study was aimed at observing rural phenomena (Coladarci, 2007), priority was given to members who described rural as playing a significant role in their careers. Participants were also chosen so as to provide diversity of geographic location (ten states were represented), biological sex (F=8, M=7), race (numbers suppressed to preserve confidentiality), and cohort (three from the first cohort, five from the second cohort, seven from the third cohort). Participants were also diverse in terms of degree progress and place of employment, although these were not used as selection criteria. At the time of the interviews, all of the participants had passed their qualifying exams and six had been awarded a doctoral degree. In terms of employment, six were teaching at a high school, five were teaching at a two-year post-secondary institution, and six were teaching at a four-year post-secondary institution (some participants were employed by more than one institution).

Instrument

Seidman (1998) recommended that interviews be conducted in three stages, with each round of questions probing more deeply. Given the relevancy of the topic to the participants' daily professional lives, they were eager to be interviewed and were assessed as not requiring three separate stages in order to reach the deepest level of internal reflection mentioned by Seidman. Thus, in this study, the second and third interviews as described by Seidman were combined into the second interview in this study, resulting in a total of two interviews spaced roughly one week apart. The first interview with each participant focused on past and present external experiences, whereas the second interview focused on how the participants made meaning from those experiences. Both interviews were conducted in the spirit of Kvale and Brinkmann (2008), who describe how interviews can create new knowledge for both researcher and participant.

The semistructured framework for the first interview (see Appendix) included questions such as, “How has your locale affected how you teach math?” and “What experiences do you have with place-based education?” Participants’ answers to these questions informed the creation of a tailored set of second interview questions, crafted to elicit the most authentic answers from each given participant. For example, in one of the first-round interviews, a participant mentioned that he had used story problems, but was not sure if that was sufficiently place-based. This moment of deliberation informed a second-round question for that participant of, “How do you decide what is an authentic integration of place and mathematics?” Sample questions from the second-round interviews are included in the Appendix.

Data Collection

Data were collected in the form of semistructured interviews, 27 by phone and 2 in person. With the exception of one participant who was able to complete only one interview due to scheduling constraints, each participant was interviewed twice. The interviews were all conducted within the space of two months and typically lasted about 45 minutes each (i.e., each participant was interviewed for a total of about 90 minutes). The phone interviews, conducted by Skype, were recorded both with computer software and with H2 handheld recorders. Because of the excellent recording quality of the software, the backup H2 recordings were not needed during the transcription phase.

Data Analysis

The interviews were transcribed and, using Atlas.ti software, coded according to a set of a priori and emergent codes. The a priori codes were selected based on research literature in areas such as mathematics education, rural education, and ethnographic research methodology. Emergent codes were formed throughout the interview process in conversation with new data and in situ analysis. This approach follows Strauss and Corbin's (1990) grounded theory approach. In total, 31 codes were formed. However, because some of these did not emerge until well into the coding process, the final list of 31 was used to code all of the interviews a second time.

After all of the interviews had been coded according to the final set of 31 codes, the researcher read all of the quotes within each code. Juxtaposing quotes within a given code allows the researcher to identify commonalities and patterns within the code much more easily than can be seen from the initial sea of data (Guba, 1978). During this phase, it was observed that the data separated into two distinct portions: (a) place-based mathematics education and (b) world view, intellectual projects, and practice. This paper deals with the first portion of data.

Six main categories were constructed around participants' references to place-based pedagogy (discussions, taking action, activities, examples, community connections, and program transformation). Multiple reports of the same instance were then recoded as a single instance. Aside from the cases of taking action, all of the instances involved mathematics in some form. By reading through the quotes contained in these six categories, as well as the remainder of coded quotes related to participants' processing of place-based mathematics, three salient themes emerged. These themes are reported in the results section and then analyzed in the discussion section. After the themes were synthesized, they were sent to all of the participants to ensure validity through a member check; two participants responded to this email, both stating that the results were a fair portrayal of their experiences.

Results

Three major themes surfaced in analyzing the instances of place-based mathematics education: (a) PBME was easier to teach about than to practice, (b) several factors contributed to participants' level of depth and authenticity in PBME, and (c) teaching place-based statistics differed fundamentally from teaching place-based mathematics.

Teaching PBME vs. Teaching About PBME

Consistent with the findings of Howley et al. (2011), the majority of participants in this study found it difficult to practice PBME in mathematics courses at the algebra level and above. Participants reported a gap between the theory they had learned about and their inability to achieve it in practice (to their satisfaction). Ten of the 15 participants reported tensions from feeling that they *should* be doing more PBME. Of the other five, three felt they were doing enough and two did not consider PBME among their goals. The ten participants who reported this tension fell into two groups: the first group felt that the grade level or content in the courses they were teaching was not conducive to PBME, and the second group was simply unsure about how to implement PBME in a meaningful way.

Participants in the latter group felt that PBME would be well suited for their students, but were unsure about how to implement it. This feeling persisted, even when the participants made attempts to incorporate place. One instructor of a college class in mathematics for elementary teachers had changed the content of story problems to reflect the local area. The following excerpt from an interview with her captures the uncertainties typical of the participants:

> *So I guess the thing for me is, is this word problem thing opening up the conversation enough or should more be done? . . . I guess that's the struggle. What could you reasonably do and is it enough to have an impact? I guess that's mainly it - is it just showing it in class, should there be some further work that they should do?*

Other participants attributed their lack of engaging in PBME to inappropriate course content, and presumed that they *would* practice more PBME in a different course (for one participant, this meant teaching in the K–12 setting; for the others, it meant teaching a methods course). When asked about the largest obstacles to practicing PBME, one participant responded:

> *Probably time vs. coverage would be a lot of it. Most of the folks that I do teach are—I don't have many education folks in my content courses—most are going into the physical sciences - engineering, math, physics students.*

Was this perception that PBME is more natural for education classes supported among the teachers of methods courses? Of the 15 participants, five had taught a university-level methods course for preservice teachers of mathematics. All five of these participants had discussed PBME with their students, either in terms of being aware of the cultural issues of a place or in terms of how teachers could position place as an affordance when teaching mathematics. Yet, these participants also reported experiencing the same types of difficulties with PBME in their content courses as the ten who were not teaching methods courses.

There were exceptions to this perceived difficulty. One of the three participants who had no problem practicing PBME explained how she connected the mathematics with the place in her high school classroom:

> *[PBME deals with] things the kids are more familiar with so it actually hits home. We talk about all those word problems you probably remember from Algebra class where you talked about the speed of the boat in still water; well, it's something they actually use here.*

Comparing this quote with the earlier quote, in which a participant questioned whether word problems were "enough," raises the issue of depth.

Factors Contributing to Depth, Authenticity, and Meaningfulness of PBME

Participants rarely mentioned mathematical rigor when describing their engagement in PBME. On the surface, this finding is surprising because of the research base emphasizing the difficulty in simultaneously maintaining high-level mathematical content and an authentic connection with the community (Gutstein, 2003; Howley et al., 2011). This apparent contradiction can be explained with evidence that participants prioritized the integrity of the content in their mathematics classes above goals involving place. Participants did, however, struggle with depth and authenticity, explicitly and implicitly.

When asked how she implemented PBME, one teacher paused and then tentatively listed out a few examples, before confessing that she was "just fishing" and didn't really know how to connect with place in an authentic way. She said, "There's a consciousness that's been raised by being in the ACCLAIM program, but the other part is the implementation. How do you do it?" Another participant questioned the criterion of depth. When asked about PBME, she immediately pointed out a discrepancy in definitions when it came to PBME. She described herself as engaged in PBME as she defined it, but felt that the ACCLAIM staff would deem her version of PBME as not going deep enough. Her approach to PBME was finding examples in the community that were relevant to the mathematics material being studied, and then incorporating these examples into her lessons.

One participant problematized the situation further. He questioned whether depth and authenticity even mattered in PBME if the activities were not meaningful to students:

> *I really thought and struggled through the program because so much of rural mathematics education or place-based that I saw didn't seem like meaningful mathematics to me; . . . a lot of it can be statistical, but I definitely have a clear line in my mind between what's mathematics education and statistics education . . . I'm not sold on finding volumes of bales of hay that that's meaningful to kids regardless.*

While casting doubt on the potential for meaningfulness of PBME, this participant did express hope in teaching statistics in a meaningful way. Several of the other participants echoed this claim that statistics was the one area where they found it easy to incorporate place. In fact, of the 16 "PBME" activities described by participants, 12 dealt primarily with statistics. Moreover, the depth of connection with place was inherent in these activities by definition (as opposed to the 13 *examples*, which were more of a quick mention of, or tie-in with, the place).

What, then, led to authentic activities? There was insufficient data to discern with objective accuracy the authenticity of many of the activities. However, data from several of the interviews confirmed Bush's (2005) assertion that a teacher must have strong familiarity with a place in order to design authentic place-based activities. One participant met regularly with the chamber of commerce, local legislators, and a small business startup center to determine what was being done and potential for the future of the community. She then used this information to design projects with her statistics class in an effort to revitalize the town economy.

The recurrence of statistics throughout the interviews as a meaningful, deep, and possibly authentic way to engage in place-based pedagogy led to the third theme. This final theme examines differences between linking place with mathematical topics and with statistical topics.

Teaching Place-based Mathematics vs. Teaching Place-based Statistics

Several of the participants differentiated mathematics from statistics, underscoring the importance of nonmathematical components in statistics education. For example, to study economic disparities in the region, one participant had collected data with his students. After fitting several mathematical models to the data, the students were unsure about how to choose the best one. The participant informed his students, “It depends on the story you want to tell.” Standards-based mathematics brought the students only so far; the interpretation depended on the context of the data and the values of the students.

Participants appeared to leverage this dependence on context to immerse their students in the community. In one instance, a post-secondary instructor arranged for her class to meet with the committee of a local festival to discuss what data would prove helpful for local businesses. The class then designed a study based on surveys and interviews in order to gather the desired data. Because all of these activities were vital to achieving statistical literacy, this participant felt she achieved her instructional goals through, not in spite of, the place-based engagement. The same was not true of her mathematics classes, for which she had struggled to “work in” place-based activities. Another post-secondary instructor gave a similar account, stating that statistics seemed to “lend itself well to place-based education.” A third participant described a statistical study on local drug use that had intrigued his high school students. He went on to assert that statistical studies, whether or not they were based in the local place, generally tended to be relevant to his students. This same participant claimed that, despite a long and open-minded search, he had not come across a single example of a PBME activity that would be mathematically rigorous yet meaningful to students.

Although place contributed to the content in statistics classes, many of the participants viewed place-based activities as contradicting the course goals in mathematics classes. One participant reported that his colleagues in the mathematics department refused to teach place-based activities in their mathematics classes, for fear of being marked down in evaluations (for not keeping pace with curricular goals). On the other hand, participants viewed using place-based *examples* in mathematics classes as desirable for conveying a concept and increasing motivation for students. Of the 13 *examples* of place-based pedagogy, 12 occurred in mathematics classes (as opposed to statistics classes). Thus, PBME was valued for its relevancy, but on a small scale. When one of the three main proponents of PBME was asked if it would be realistic to implement PBME at the high school level on a large scale, he replied with a chuckle, “It kind of depends on what the word ‘realistic’ means . . . I guess I would say no, unless there’s a major change in education overall.” This comment raises two questions: (a) How can place-based efforts in mathematics classes resist a dominant culture that is intolerant of local efforts? and (b) How would the current education system need to change to facilitate PBME efforts? The first question will be addressed directly in the discussion; the second one is beyond the scope of this study, but is recommended for future research.

Discussion

The interview data suggest that teaching about PBME was easier for participants than actually implementing PBME. This is not surprising, considering that the teachers of methods courses were generally working with pre-service elementary and middle school teachers, grade levels at which the mathematics is more readily intertwined with place. The struggles voiced by teachers of upper-level mathematics content in teaching PBME is consistent with prior findings that PBME is difficult to implement in higher-level mathematics classes (Howley et al., 2011). In the present study, however, the interviewees all had the benefit of substantial doctoral-level coursework related to PBME. If such a group, with a collective average of roughly 20 years of educational practice and three years of theoretical background at the doctoral level, struggled to implement PBME in upper-level mathematics courses, serious consideration must be given to the feasibility of upper-level PBME. Or, from a different perspective, does the content of upper-level mathematics courses serve the needs of local communities?

There were exceptions to this content mismatch; teachers found it easy to incorporate statistical reasoning with place-based issues. This is logical, because place is a context and, as Cobb and Moore (1997) point out, “In mathematics, context obscures structure . . . In data analysis, context provides meaning” (p. 803). The same real-life variability that devalues contrived applications in mathematics functions as core content in statistics. Because of statistics’ center on variability, desirable qualities such as depth, authenticity, and meaningfulness arise naturally from the content, rather than being attached as appendages to a set of abstract concepts. Simply put, the approach needed to study and implement PBME appears to be different from that needed for place-based statistics education (PBSE). These differences stem from the fact that statistics is not merely a branch of mathematics, and is in fact fundamentally different from mathematics (Franklin, Kader, Mewborn, Moreno, Peck, Perry, & Scheaffer, 2007; Groth, 2007a; Cobb & Moore, 1997; Groth, 2007b). A central claim is that, although statistics includes many mathematical components such as probability, it also emphasizes the importance of nonmathematical components (Groth, 2007b). Namely, the data collection design, data exploration, and interpretation of results depend on contexts beyond the mathematics (Franklin et al., 2007).

Although PBSE has not been distinguished in the research literature, there are examples of high school classes connecting school and place through statistics education. For example, high school seniors in a small South Dakotan town used statistical surveys to analyze community cash flow (Long et al., 2003). Their subsequent reports led to an estimated infusion of $6 million into the local economy. However, such occurrences have been isolated, posing substantial challenges to the sustainability of PBSE. Is PBSE routinizable in ways that PBME is not? How could PBSE be used in the strong enrollment increases in statistics classes reported by Boslaugh and Watters (2008)? Many high school mathematics teachers have little or no formal training in statistics and are unprepared to teach statistics (Groth, 2007b). Can PBSE serve as a solution for high school mathematics teachers who are now being asked to teach statistics, but don’t know how to handle the nonmathematical aspects of statistical reasoning? Can PBSE serve as an effective tool for linking the school with the community? Differentiating PBSE from PBME has potential to create a new and productive area of research (PBSE) and to remove confounding variables in an extant area of research (PBME).

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Appendix: Semi-structured Interview Protocols

Interview 1: History with Rural Mathematics Education (Selected Questions)

1. Tell me about your experiences with rural mathematics education before joining ACCLAIM.
2. As an ACCLAIM student, how were you exposed to rural education issues?
3. How has your locale affected how you teach mathematics or mathematics education classes?
4. What experiences do you have with place-based education?
5. What external challenges have you faced in relating mathematics with rural education?
6. How would you describe your current intellectual project?

Interview 2: Making Meaning of the Experiences (Sampling of Typical Questions)

1. What is your definition of rural? (What are the common factors between these seemingly different areas?)
2. How do you understand the role that rural plays in mathematics education?
3. How has this view of rural math education changed from when you first entered ACCLAIM?
4. What internal struggles have you faced in attempting to relate mathematics with rural education?
5. When you use context in a class, how do you choose which culture to appeal to?
6. Would you consider yourself a stronger supporter of rural mathematics ed in general, or of the specific department in which you work?
7. How would you respond to someone who sees that your PhD is in rural mathematics education and says, “Hey, math is math; it’s the same anywhere. There shouldn’t be any difference in teaching math in New York City or at Rural Place High School…”?

8. What life values are most important for you to convey to your math students?