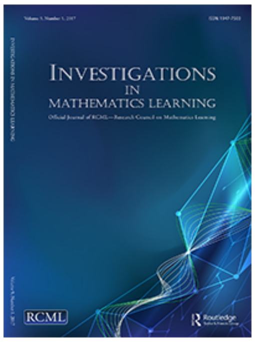

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Peer mentoring professionalism among pre-service mathematics teachers: Safe spaces for community teaching practice

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ABSTRACT
The study described here is a longitudinal qualitative case study conducted on a mathematics pre-service teaching program at a university in Southeast Asia. The university program of study required all pre-service teachers of mathematics to be involved in an alternative form of field experience in which the pre-service teachers would enact mathematics camps for college freshmen and for K–12 students. The pre-service teachers were expected to take on increased responsibility for the success or failures of the mathematics camps as they matriculated through the program. Constant comparative analysis revealed a *peer mentoring professionalism* among the pre-service teachers as they negotiated the challenges of teaching mathematics during these alternative field experiences. Description of the construct of *peer mentoring professionalism* as well as explanation of its derivation from the study are given. Implications and applicability across mathematics teacher education programs are discussed.

KEYWORDS
Field experience; mathematics camps; mathematics education; peer mentoring; pre-service teachers

Introduction

One of the hallmarks of pre-service mathematics teachers' transition into the profession is their aptitude and desire for sharing ideas and working with other professionals to overcome difficulties encountered in the mathematics classroom. As professionals, practicing teachers work as part of a community to overcome the challenges and complexities inherent in the processes of teaching. These communities take many forms as teachers gather into professional learning communities, or local, state, and national teacher organizations that provide services and shared ideas about teaching. Mathematics teacher educators strive to design programs that address the many facets necessary to foster pre-service teachers through the transition from students of education to professional educators. In many cases, pre-service mathematics teachers (PSTs) move according to a prescribed program of study in which they learn from professors, engage in tutoring and/or field experiences with students, and apply their knowledge of pedagogy and content during an internship with an experienced mentor teacher.

During a PST's program of study there is typically cooperation with peers on designing lessons, units, pedagogical strategies, and portfolio development (Davis & Honan, 1998; Freidus, 1998), but there is less opportunity for prolonged collaboration among pre-service teachers in solving the immediate problems presented by issues such as disengaged students, students struggling with hard-to-teach concepts, or the multifarious ways students misbehave. Furthermore, when PSTs do encounter these professional complexities during internship, it is common that their mentor teacher pre-established the norms, socio-mathematical norms, rules, expectations, and/or the classroom learning environment. Is there a safe space in which PSTs might enact teaching to students, as their own community of learners, without the precedent of having a classroom culture pre-established by a mentor teacher? Is there a safe space for PSTs to work together to plan, teach, inspire, and

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reflect together on their own successes or failures with K–12 students? Would such a space better prepare PSTs to join the profession as members of a larger learning community?

When designing programs that give PSTs authentic opportunities to engage in practice, mathematics teacher educators face limitations. Some states restrict the number of total credit hours within a program. Under such restrictions, the amount of time PSTs spend in the field must be balanced with university-required general courses, courses on mathematics content, pedagogical knowledge, knowledge of students, knowledge of differing school contexts, and knowledge of the state education system and mathematics standards. Also, there are often fiscal and geographic barriers for finding and enacting field placements for PSTs. In light of these difficulties, teacher educators seek innovative solutions to overcome these challenges. One area that might hold solutions for PSTs' professional collaboration through valuable field work is the formal incorporation of peer mentoring during a safe space in the field.

Review of related literature

There are various definitions for mentoring (Jacobi, 1991; Le Cornu, 2005). The term *mentoring* is often taken for granted, since it appears somewhat intuitively obvious that everyone knows what mentoring means (Wrightsman, 1981). To help clarify some aspects of the nuanced conceptualizations of *mentoring*, the literature reviewed for this study will be divided into two types: traditional mentoring and peer mentoring learning communities. Studies that more readily align with Jacobi's (1991) five components of mentoring and operate closely to the idea that "Relative to their protégés, mentors show greater experience, influence, and achievement within a particular organization or environment" (p. 513) are discussed as the traditional mentoring conception. On the other hand, studies aligned with peer mentoring learning communities are those that resonate more closely with Hargreaves and Fullan's (2000) notion that in professional learning communities all teachers are enacting modalities of being both mentor and mentee as they give and receive from the community. Lastly, for the purpose of this empirical study on a mathematics education pre-service program, the literature review will focus on educational contexts involving the mentor–mentee relationships of those engaging in professional growth about teaching.

Traditional mentoring

A traditional conception of the mentor–mentee relationship involves an older or perhaps more experienced mentor providing training and enlightenment to a younger or inexperienced mentee. Although for much of the past these relationships were established through family, community, and trade professions, it wasn't until three to four decades ago that formal mentoring programs were developed throughout government entities and businesses for the advantage it yielded in professional growth (Ehrich, Hansford, & Tennent, 2004). In educational contexts it is well known that formal tutors have acted as academic mentors to pupils, and in this most generic sense every teacher is an academic mentor to his or her students. Moving beyond this trivial case of mentoring via teaching, however, affords a wealth of wonder about the benefits and difficulties of mentoring for teachers' professional growth.

Ehrich et al. (2004) conducted a review of 159 studies about formal mentoring programs in education. Their research found commonalities among the studies' reported strengths and weaknesses of formal mentoring programs. For example, the lack of available time for the mentoring process, the extra responsibility for the mentor, and personality mismatches are some of the most notable problems in these studies. On the other hand, articles cited positive outcomes such as collegiality, support, empathy, networking, sharing ideas, subject-knowledge resources, constructive criticism, and help with teaching strategies. According to Ehrich et al. (2004), these positive outcomes were cited in more studies than the weaknesses, and they go on to conclude that: "Despite the shortcomings of mentoring, our findings suggest that mentoring appears to offer far-reaching benefits for mentors and mentees" (p. 531).

Universities have also been implementing and exploring the benefits of mentoring programs for incoming first-year students as a means of improving academic performance and improving retention (Evans & Peel, 1999; Glaser, Hall, & Halperin, 2006; Heirdsfield, Walker, & Walsh, 2005; Rodger & Tremblay, 2003). Researchers have found the benefits of university mentoring programs to be increased social support and social connections resulting in preventing and buffering negative effects of stress (Jacobi, 1991), an improved sense of belonging and better retention (Glaser et al., 2006), and academic success (Jamelske, 2009; Rodger & Tremblay, 2003). In a study of peer mentoring for first-year education students by Heirdsfield, Walker, Walsh, and Wilss (2008), the formal preparation of mentors was determined to be of great importance. Not only did formal mentor training benefit the mentoring process, it had valuable personal benefits for the mentors by raising awareness of their own study skills and personal professional growth.

These research studies reveal a large set of positive outcomes from formal mentoring programs. We know that undergraduates are likely to find it difficult to find a mentor on their own (Jacobi, 1991). As such, seeking ways to formally establish valuable peer mentors for first-year PSTs in education programs could yield valuable results like those listed above.

Peer mentoring learning communities

A peer mentoring learning community is a different conceptualization of the mentoring process. In a peer mentoring community there is not a traditional mentor–mentee structure; the ideas and practices of teaching are instead developed and validated by the community. All members of the peer group are expected to contribute ideas and establish criteria for validating the success of an educative task or method. In essence, all participants are learners as they engage together in the mentoring process. Such a conceptualization aligns well with approaches in teacher professional development in which teachers work together in professional learning communities (PLCs) (Le Cornu, 2005) to develop collaborative work cultures (Thompson, Gregg, & Niska, 2004).

PLCs are not new to education, and over the years many research studies have been published documenting the effects of this practice. In a meta-analysis of the research literature by Vescio, Ross, and Adams (2008), it was found that teachers' professional practice changed when participating in a PLC. Specifically, teachers involved in PLCs had higher levels of social support for achievement and were better able to teach for depth of knowledge (Louis & Marks, 1998), changed their instructional focus toward the specific needs of their students' learning (Dunne, Nave, & Lewis, 2000; Englert & Tarrant, 1995; Hollins, McIntyre, DeBose, Hollins, & Towner, 2004), gained access to mastery experiences that increase self-efficacy (Weißenrieder, Roesken-Winter, Schueler, Binner, & Blömeke, 2015), and had stronger instructional norms (Strahan, 2003). There is also evidence from research supporting the notion that achievement increases as PLCs positively affect school culture and promote changes in teachers' practice. Perhaps even more important, the degree to which student achievement improves is proportional to the strength of the PLC (Vescio et al., 2008). Several research studies have found that student achievement was significantly higher where PLCs focused on the connections between instruction and student work (Bolam, McMahon, Stoll, Thomas, & Wallace, 2005; Louis & Marks, 1998; Supovitz, 2002). In summary, PLCs have been found to positively affect changes in instruction and are effective for significant teacher development (Tam, 2015). Furthermore, when those PLCs focused strongly on knowledge of student learning, significant improvements in achievement were found (Lomos, Hofman, & Bosker, 2011).

Pre-service teachers and peer mentoring

Although the literature holds several theoretical and empirical studies about traditional mentoring of PSTs (Ehrich et al., 2004) and about professional learning communities (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006), there were no empirical studies connecting university education programs, mathematics or otherwise, with the use of peer mentoring learning communities among PSTs for professional growth. As the benefits of PLCs have been positively perceived by teachers, schools, and districts and as empirical evidence supports those perceptions, PST programs might consider how such PLCs can be enacted as PSTs are learning and growing to be professionals. The study presented here is meant to act as an interlocutor for discussion about possible systemic implementations of such peer mentoring communities involving PSTs. When working with novice PSTs who have limited access to students and limited responsibility for students' achievement, it seems intuitively obtuse to expect the development of valuable peer mentoring or something that resembles a strong PLC. However, the research provided here acts as an existence proof of the possibility of systemic application across a mathematics education program for all PSTs in which *peer mentoring professionalism* is developed.

The teaching profession comes with high-stakes mechanisms that often restrict schools, teachers, or education programs from providing PSTs a safe space to experiment and learn from their own successes and failures with students. What would happen if PSTs were given a safe space to collaborate as young professionals to enact elements of teaching to large groups of students? What if PSTs were given a space in which the responsibility for students' mathematical learning was put squarely on their collective shoulders and in this space they reflected together to adapt and overcome teaching difficulties?

Method

The study described here is a longitudinal case study conducted on a mathematics pre-service teaching program at a university in Southeast Asia. For seven years prior to the start of the study the mathematics education program had been requiring its PSTs to create mathematics camps for large groups of K–12 students. In the second year of the programs requirement, the professors and PSTs began implementing a mentoring component. The program titled this component, Collegiate Math Camp, and during this camp PSTs who were further along in the program would train newer PSTs on conducting math camps. This developed into a routine where younger PSTs were mentored each year by older PSTs on how to implement the camp. The data and analysis reported in this study comes from the eighth, ninth, and tenth years of the program.

The research question guiding this inquiry was "What role do mathematics camps play in the preparation of PSTs?" A qualitative research methodology was chosen to answer this question, for its power to describe programmatic operations, observable outcomes, and avoid obtrusive measurements that might cause participants to react differently during research about program operations. Patton (1987) remarks that although qualitative research is not obtrusion-free, it uses less formal and less obtrusive strategies that reduce "distorting reactions" (p. 34) by those being studied. Furthermore, when conducting qualitative research it is important to consider the contexts and cultures involved that might problematize the validity and reliability of pre-established measures. Due to contextual differences, qualitative descriptions were preferred for contextually grounding information about the program, instead of quantitative measures whose validity and reliability in this context may be suspect (Patton, 1987).

Participants

The participants in this study included four mathematics education professors, two mathematics professors, and 272 first- through fourth-year mathematics PSTs seeking initial teacher certification at a mid-sized university (N = 278). All participants were involved and physically present in the mathematics camp requirement of the program and included in the field note observation data. Over the three years of the study, three collegiate mathematics camps and four K–12 mathematics camps were observed.

Data sources

Three primary data sources were chosen for this case study: field observation notes of mathematics camp events, memos and quotes from informal interviews, and transcriptions from semistructured interviews. These data sources are consistent with the sources used throughout the case studies research literature (Yin, 2009).

Observations

Observations were conducted over the duration of three years. Observations occurred at multiple times and locations, including professors' collaborative office space, classrooms, locations on campus, four different K–12 schools, and in a national park in which mathematics camps were being enacted. Observations also occurred in a range of contexts, including spaces where college students were studying course work, preparing camp materials and curriculum, conducting formal meetings about mathematics camp preparations, dinners among mathematics camp student families, and during different aspects of the mathematics camps. Field observation notes consisted of hand-written notes about enacted operations, photos, and video recordings of the mathematics camps taken by the researcher. The collegiate camps were two-and-a-half days in duration and were observed from preparation to cleanup. The preparations for the collegiate camp started in earnest ten days prior. Similarly, observations of the K–12 camps occurred during all phases of the camps, including preparation, enactment, and cleanup. The K–12 camps were prepared the week before and were executed by the PSTs in a single day.

Informal interviews

During observations of PSTs and program operations, informal interviews were conducted where questions flowed from the immediate context (Patton, 1987), and memos from these interviews were written in the researcher field notes. For example, as PSTs were preparing for the mathematics camp, they would be asked open-ended questions about their activities. "What are you working on?" "Who are you working with?" "Why are you doing that?" These informal interviews always originated from the natural context in which the students were performing some action related to the required program. During each mathematics camp the following would occur: observations of various activities, written notes, pictures, and video would be made. Questions about the observations, the intent of the mathematics tasks, or the situational context would be written down. To minimize intrusiveness, these questions would be asked to the PSTs after the conclusion of the activity.

Semistructured interviews

Toward the end of the study, audio-recorded semistructured interviews were conducted and transcribed. Seven interviews took place, first with the programs lead mathematics education professor and then six more with PSTs. As interviews were conducted with each participant, the data were subject to the constant comparative method (Corbin & Strauss, 2008). The sixth and seventh interviews revealed only supporting evidence already obtained from the first five interviews. Having sufficient data saturation, no more interviews were conducted.

The sampling process for the semistructured interviews followed Yin's (2011) recommendation for purposeful sampling. Purposeful sampling involves "the selection of participants or sources of data to be used in a study, based on their anticipated richness and relevance of information in relation to the study's research questions" (Yin, 2011, p. 311). The university faculty who was interviewed began the process of mathematics camp and had been the program's lead developer and advisor for the duration of the math camp requirement. The six PSTs were selected for interviews because they had completed three or more years of the university program; they had started as first-year PSTs who were mentees in the collegiate mathematics camp and progressed to be mathematics camp mentors; they had been observed during all three years of the study. These qualifications gave the seven interviewees both a broad perspective across many mathematics camps as well as knowledge about the specifics of all "roles" PSTs encounter during their service in math camp, best situating them as knowledgeable experts to answer questions about the role mathematics camps played in the preparation of PSTs.

Analysis

Throughout the analysis process, triangulation of the three data sources was employed to ensure the consistency of the findings (Yin, 2009). The text from these primary data sources was analyzed using a constant comparative method whereby coding and analyzing occurred simultaneously (Taylor & Bogdan, 1998). The text from the field observation notes, the informal interviews, and the semistructured interviews was used throughout the coding process. Coding was conducted according to Corbin and Strauss's (2008) process of open coding, axial coding, and selective coding. During open coding, data were analyzed for descriptive phenomena and categories that answered the question, "What role do mathematics camps play in the preparation of PSTs?" A total of n = 445 text-based codes related to this question. Next, axial coding was done as the descriptive phenomena and codes were grouped together into categories by similarities and the text was reread to confirm that these categories accurately represented the observations, informal interviews, and semistructured interviews. As constant comparative analysis was conducted, the 445 codes were initially grouped into 28 categories. Continued analysis revealed relationships among these 28 categories that deepened abstraction into four variables.

Four axial variables emerged from the analysis: spaces of interpersonal professional relationship (188 codes), harmonizing ideas on teaching activities and creating them together (78 codes), collaboration for successful student enjoyment of mathematics problem solving (86 codes), and spaces for connecting applications for mathematics teaching (93 codes). Selective coding was then employed to pull together phenomenal and categorical concepts to find a core category that was theoretically grounded and centrally relevant (LaRossa, 2005). By the end of the second year of the analysis, the four axial variables mentioned above were developed. During the third year, more data were collected and analyzed with the previous data. The third-year data contributed to the evidence of the four axial variables but did not reveal any new categorical concepts, yielding evidence of sufficient data saturation. Lastly, the findings were shared with the lead mathematics educator and three focus groups of PSTs to corroborate the outcomes.

Findings

The findings of this study will be given in two parts. First, the data yielded a thick descriptive context of the purpose of the mathematics camps and the way mathematics camps are incorporated as a requirement of the PST program. These descriptions provide a rich and necessary context for the second section of the findings, the results of the constant comparative analysis, which sought out the deeper and more latent functions of the mathematics camp program requirement.

Mathematics camp contexts

This study examined a Southeast Asian university program that required all of its mathematics PSTs to participate in mathematics camps each year. Each year there were two types of camps,, a collegiate mathematics camp for college students and nine to eleven K–12 mathematics camps each semester. The program required first-year PSTs to participate as campers in the collegiate camp and second- through fourth-year PSTs to work together to design and enact both the collegiate and K–12 mathematics camps. PSTs experienced increasing levels of responsibility and ownership of the mathematics camps as they matriculated through the program. The design of the program involved mentoring, traditional and peer learning community, to successfully design and enact mathematics camps that promoted student enjoyment during mathematical problem solving.

Collegiate mathematics camps

Once a year the mathematics education program holds a collegiate mathematics camp over a three-day, two-night weekend for its college students. Second-, third-, and fourth-year PSTs worked together to make materials, designed mathematics curriculum, and enacted the camp for the first-year PSTs. The collegiate camp had four major purposes.

First purpose of the collegiate camp. The collegiate camp immersed the first-year PSTs into the mathematics camp experience. Giving the first-year PSTs the full experience meant asking them to go through the camp just like a K–12 student would: sitting like a K–12 student, participating in individual and team mathematical problem-solving scenarios, socializing together, creating or adapting mathematics songs and movements together, etc. These activities worked together to allow the first-year PSTs to understand the operations and structure of the mathematics camps while also challenging them to think mathematically.

Second purpose of the collegiate camp. The collegiate mathematics camps provided an opportunity for the second-, third-, and fourth-year students to reflect with their first-year peers about the nature of mathematics and the complexities of teaching. As they engaged their first-year peers in the various mathematical challenges, time was set aside for them to reflect and discuss what it means to be a mathematics teacher and to analyze why they wanted to be a mathematics teacher. Each collegiate camp is the first instance where PSTs who are further along in the program formally mentor their younger peers about aspects of the teaching profession. Evidence from observations and interviews triangulated to show formal mentoring about enacting mathematics problem-solving tasks, teacher expectations for students, the importance of a school's organization, and the responsibility that all teachers have as they grow to be professionals.

Third purpose of the collegiate camp. The collegiate camp challenged the first-year students with an array of mathematical problem-solving tasks. These tasks varied in form, with some of them engaging students independently and others involving cooperative small-group problem solving. Observations revealed that the problems that were given also had a range of cognitive demand (Stein & Lane, 1996). For example, some lower-cognitive-demand tasks were about finding the solutions to common mathematics exercises or recalling mathematics terminology, definitions, or notations. Higher-cognitive-demand tasks included problem solving as "doing mathematics" to justify why a particular result occurred. For the collegiate camp there was a mix of grade-level content that ranged from elementary school to collegiate-level mathematics. This wide range in content occurred because no PST is left out based on the level of mathematics he or she will teach. Every PST who will teach mathematics, regardless of the age of his or her future students, takes part in the collegiate camp and will take part in the subsequent K–12 camps.

Fourth purpose of the collegiate camp. The last major purpose for collegiate camp was about providing a safe space for the second-, third-, and fourth-year PSTs to practice all the elements of the K–12 camps. Through enacting the collegiate camp during the beginning of the academic year, these PSTs had a space to work out difficulties of conducting their chosen mathematical activities, hopefully to ensure successful mathematics camps for the K–12 students. The second-year PSTs supported and developed ideas for collegiate camp alongside the more experienced third- and fourth-year students. In doing so, all second- through fourth-year PSTs developed a very precise knowledge about what to do for each mathematical task in the K–12 mathematics camps.

K–12 mathematics camps

Following the collegiate camp, the second- through fourth-year PSTs designed and enacted mathematics camps for K–12 schools. The purpose of these K–12 mathematics camps was to create an atmosphere for student enjoyment during mathematical problem solving. According to the lead mathematics education professor, the approximate mean number of students at each camp was 120. The mean number of students in the K–12 camps observed for this study was slightly higher, at 142 students. The PSTs enacted nine to eleven K–12 school mathematics camps per semester, reaching approximately 1,200 different students. All second- and third-year PSTs were involved in the K–12 camps by program requirement. The fourth-year PSTs were involved in a supportive way, and to a greater extent when needed, such as when there were two or more K–12 camps at different locations on the same day. During the planning of the K–12 camps, the PSTs brought ideas and shared them among themselves. Ideas were vetted throughout the community, and some were selected for trial. Throughout the K–12 camp design process, especially the parts involving the selection of mathematics problem-solving tasks, the PSTs were a peer mentoring learning community. Ideas from second- and third-year PSTs were all considered, and some of each were enacted.

Spaces of interpersonal professional relationship

The mathematics camp descriptions offer an overview of the interactions that occurred among PSTs as they negotiated the challenge of designing and enacting mathematics camps for first-year PSTs and K–12 students. The programmatic interactions provided by the mathematics camp requirement opened spaces for interpersonal professional relationships to form in a meaningful way. Through the collegiate camp the first-year PSTs began a journey with their peers that developed professional connections for their interpersonal collaboration and effort. It was not simply about the PSTs being at the same university, taking the same classes, and going to the same sporting events. Rather, the PSTs developed a set of shared professional goals, and those goals were being realized through the enactment of mathematics camps as a shared professional responsibility.

The collegiate camp formally created "families" of PSTs. At the beginning of collegiate camp each PST was placed in a team named after a famous mathematician (e.g., Gauss or Hypatia). PSTs sat with their team, competed against other teams, did mathematics tasks, games, skits, songs, dances, socialized and problem-solved with their team. Furthermore, each year the collegiate camp had the same team names. The first-year PSTs would be introduced to the older students who were on their team from prior years. This established the notion of team families across generations.

From their team interactions during collegiate mathematics camp they developed bonds with other team members and formed "family" groups. These familial-like bonds were exemplified in many ways, including words of endearment that they used for one another. One example of this came from an informal interview during collegiate camp. I asked one of the PSTs, "Who all do you know here?" Smiling, he replied, "Oh, I know everyone and this guy especially," and walking over and grabbing another PST by the arm, "he is my older brother." I inquired about their biological parents. He then explained that his "brother" was not biological, but that he was his older brother from an older generation of mathematics camp. He explained that each team learned their family lineage. Sometime later these same two "brothers" brought a young assistant professor of mathematics over to me. They laughingly said together, "And this is our older older brother." The young professor explained, "Yes, I went through mathematics camps in the same family about 10 years ago."

The strength of these familial relations goes far beyond the familial language used. The actions of the PSTs toward their family and larger team indicated a strong professional closeness. One example of these sentiments came each year during one of the closing activities of collegiate mathematics camp. The upperclassmen formed a circle around the first-year PSTs. The first-year PSTs formed an inner circle. Next, the two circles rotated in opposite directions and all the PSTs said thank you to one another in their customary way. I observed many first-year PSTs crying as they thanked and hugged those they appreciated. Afterwards these PSTs explained that they were crying from a sense of gratefulness. Following the circle ceremony, PSTs of all ages expressed verbally and orally what they enjoyed about the collegiate camp and how they had become close to new friends. They also expressed how special they felt to be working to become a teacher of mathematics. Other sentiments that were shared involved an appreciation of the older students for giving the first-year PSTs an engaging learning environment, social atmosphere, and a meaningful challenge mathematically.

The shared experiences of the collegiate camp and the K–12 camps helped form these bonds but were not the only factors in sustaining them. Once families were established, they were expected to meet together at least once per month, for academic study, fellowship with food, social activity, or developing mathematics camp ideas and materials. The lead professor of mathematics education said:

> The families meet many times throughout the year. Sometimes they study mathematics together. You know, mathematics is very difficult for them, but when they study together they can do it. Sometimes they do not study, they just make some food and enjoy one another's company. They have many friends not in math education too, but they know it's important to work alongside your colleagues. So we expect them to meet as a family at least one time per month. Most of the families meet more because they really enjoy. I think this is an important requirement. (Informal interview, 2nd collegiate camp)

The program had an expectation for the families to meet together. I was curious about how PSTs felt about the requirement and inquired directly about this with 86 PSTs as I encountered them in required mathematics camp settings. All but five PSTs were extremely positive about the requirement, listed no negative impacts, and claimed no personal difficulty in meeting the expectations. The five exceptions all mentioned the same negative aspect of the mathematics camp requirement: exhaustion. A large amount of energy is required to design a camp together, make all the materials, transport materials to the school site, work with more than 100 students, and then clean it all up and transport it back to campus. These five students also listed many positives, the most prominent being the way the requirement allows them to form interpersonal professional relationships. During a formal interview, one of these three students said:

> Setting the math camp can make you tired sometimes. We do it in addition to our course work. Sometimes it's not always easy to be motivated, at first, but once the camp starts you just love working with the students and making memories with your college friends. But the main reason, for me, though it's a lot of work, I would rather do the math camp because it gives us a strong team of both older and younger teachers (PST). I honestly would have been lost in my pure math classes without the older students helping me. (Interview)

The PSTs were observed gathering together with their families every week for a variety of purposes. Many times they met at the mathematics camp building location. I observed PSTs at this location consistently—as many as 56 PSTs at once—sometimes working on mathematics courses, sometimes on mathematics camp, and sometimes socializing.

During interviews, the PSTs spoke directly about how families work together across generations. One example of this involves a story about what happens after a PST graduates. She said:

> So, in our math camp, we also have the families work on activities together. So that means seeing the first generation and last is like a circle, right? And then when I, for example, I'm already graduate, and I become a teacher, so I would like to invite my younger generations to do mathematics camp with me at my school. That means I can connect with them every time because some time we had done math camp together. That is good for us. (Interview)

It is important to note that in all of these examples there is an absence of a professor or university staff guiding or overseeing these collaborations. Due to the formal structures of and experiences in conducting mathematics camps, the PSTs have the connections to one another and in many cases contact members of their family directly for help. These experiences weave the students together in their professional identity, starting with collegiate camp and continuing on during the rest of their education together and then even into their professional collaborations after graduation. As I went out and observed the K–12 camps, the PSTs took time to introduce me to their mathematics camp family members who were now teachers at that particular school. There was a sense of community identity around being a teacher of mathematics.

The PSTs exhibited pride in their mathematics PST community. During one families meeting they told this story:

> We take our math camp family very serious but also our larger university math teacher [PST] community too. One time some of us were out at the market and we saw some strange person wearing our math jacket but we know that he did not go through math camp with us. We called some of our family and they drove out to meet

> us. We went up to the person and said to him, "Hey, why you wearing that jacket, you cannot wear that jacket" [PSTs all laughing] and he responded, "Oh, I'm so sorry, I was cold, and my friend let me borrow it." (Informal interview at a family dinner)

After collegiate mathematics camp, the first-year students are given a high-quality mathematics camp jacket with the year they will graduate on it, signifying their generation. These jackets are similar to high school letter jackets in the United States. The importance of this story and similar tales recorded from the PSTs was that they held an identity belief that one has to earn the right to wear one of these jackets by being a part of the mathematics PST community. These ways of being demonstrated the centrality of interpersonal professional relationships that were developed through mathematics camps and gave justification of it as a core variable that connected what mathematics camp was all about to what its function was in the program. The centrality of interpersonal professional relationships can be seen through the other three variables as well, starting with how the PSTs made decisions and collaborated to enact teaching ideas.

Harmonizing ideas on teaching activities and creating them together

PSTs in this program collaborated, often on multigenerational teams, to decide on the mathematics tasks and activities that would be involved in each camp. They worked as individual families and mixed familial groups to come to a decision. When a new idea was offered, it would be decided on by the group based on the idea's connection to the K–12 school's needs and the grade level of the students.

Sometimes these decisions were made by small groups of specialized teams working on particular aspects of the mathematics camps. For example, there is a math camp book designed for each mathematics camp that has space for K–12 students to solve problems or make calculations and contains information on all activities and mathematics tasks. One group of PSTs was observed working to make a booklet of all the activities for a particular camp. They worked on this book together, four of them huddled around two computers, one of them typing the official document and another using the other computer to look up resources and graphics to include. The group discussed information to include about mathematicians, the order of activities, the words of the mathematics songs, and the pre/post survey given to the K–12 students. Upon conclusion, the PSTs printed the booklet and finished their work together by folding and binding it.

At other times, decisions about the camps structure were made by the more experienced third-year PSTs. However, these PSTs had to give an account to the whole group and answer questions from their peers, younger and older, and also their professors. One example of this kind of process came from observations on collegiate mathematics camp meetings. All of the second-year through fourth-year PSTs and mathematics education professors met the day before collegiate camp. Those responsible for making decisions for the whole camp and for critical activities explained to everyone the flow of the day. Each set of PSTs explained their decisions about the process for their part of the camp. Other PSTs asked clarifying questions and the mathematics education professors asked planning questions such as, "Did you think about how to get the campers safely across the street to the stations area?" These large group meetings acted as a peer accountability check.

These kinds of peer group decisions also occurred throughout the enactment of the mathematics camps. At one of the K–12 camps a problem developed prior to the start of camp. The school had a school-wide science activity early in the morning, and it had run long by about an hour. The PSTs were forced to wait idly until the students were available. The PSTs huddled underneath a shade tree as I went to inquire about the issue. One of them explained:

> Now we are discussing the problem because the science activity go too long. We start late. But I think we decide to shorten each station by 5 minutes. This will save us an hour, more than. And we will shorten the Ravana activity and do less problems during brain challenge. We are making the new schedule now by hand for everyone. (Informal interview at a K–12 math camp)

Understanding that the shortened time affected everyone, the PSTs gathered together to discuss the problem as a peer group. Ideas were offered on how to modify the existing plan, and they came up with an alternative. After the camp, the PSTs reflected on this modification and the difficulties it brought. The shortened time for mathematical tasks meant that the students were rushed to think about the mathematics and did not have enough time to make the task meaningful. This greatly disappointed the PSTs. They discussed being proactive with school administrators in future camps to make sure that there were no possible conflicts. Again, the PSTs worked through the difficulty by themselves as a peer group—their professor was present but did not intervene—allowing the PSTs opportunity to work out a harmony of solving these kinds of teaching issues together.

Another aspect of harmonizing involved the creation of teaching activities and making the materials necessary for the mathematics camp. The large amount of time spent creating materials for mathematics camp is an important indication of the level of connectedness of the interpersonal relationships among PSTs. An observation revealed that after a class day had concluded, PSTs decided to work together to make materials for the mathematics camp. Several groups were working on a variety of materials. One group was making origami strawberries to hold chain links. Two PSTs were showing four others how to carefully fold and tuck to make the origami strawberries. The PSTs worked together for about an hour and a half. Afterwards, some went on to eat together at a local restaurant and others went to study together. Mathematics camp, as a shared professional responsibility, created necessity for PSTs to work together. This in turn created time for other profession-based conversations about mathematics courses, teaching, and K–12 students, deepening their interpersonal relationships. Creating the materials might seem like a chore, but as part of the mathematics camp process the PSTs continued to harmonize through valuable social and professional interactions.

Collaboration for successful student enjoyment of mathematics problem solving

The professional aspect of these interpersonal relationships became more pronounced through the enactment of the mathematics camps themselves. The PSTs took on a modality of teacher professionalism as they took responsibility for whether the mathematics camps successfully engaged students in the enjoyment of mathematical learning and problem solving.

As the PSTs enacted the camps, they were acutely aware of the finite nature of their time together. The traditional conception of mentoring could be visibly observed as the older PSTs took strides to encourage the younger PSTs to take the helm. This was observed among pairs of mentors and mentees and among groups of PSTs. The program required that as PSTs moved from their second to third year they must take over the leadership responsibility of the camps while simultaneously helping develop the next generation of PSTs to enact the camps by themselves. For example, at the beginning of collegiate camp the MCs are two year-three PSTs. Then, halfway through, the MCs change over to two year-two PSTs. All of the campers see a transition in who is orchestrating the collegiate camp, and the year-two PSTs transition from mentee to responsible leaders at that time.

As PSTs began implementing the K–12 mathematics camps, clear aspects of a peer mentoring community were also observed. PSTs set up mathematics tasks, making large circles on the ground, tying string together for a problem-solving activity, or setting up projectors, speakers, and drums. They were all working together and often asked questions of one another. Observations revealed questions being asked across all experience levels of PSTs, not just younger PSTs to older. PSTs greeted their professor but very rarely asked her a question about what to do. These times of collaboration tended to flow quite naturally, as everyone either has something to do or simply joined others in helping them do what they needed to do. No one was standing around doing nothing. The PSTs sought to help their peers be successful in their part of the mathematics camp. The interpersonal relationships among the PSTs allowed them to shift roles as needed to take care of problems or to help one of their PST peers who was having difficulty.

PSTs collaborate to decide which roles of math camp each of them will do to ensure its success. The three major roles are Executive Leaders, who oversee overall camp organization and monitor how the camp is going; Team Leaders, who work directly with a specific group of students to build report and manage their needs, cognitively and physically, throughout the day; and Mathematical Task leaders, who prepare and pedagogically engage students in a specific mathematics task. Following each camp, the PSTs would meet together to reflect on improvements. The different specificity of roles provides for a robust discussion among the PST community, and it is here that their professional interpersonal relationships allow for open and honest discussions about the difficulties, large or small, that were seen and encountered. Much like a school in which many professional educators take on different roles and view the learning from different perspectives, the PSTs grouped together to reflect on teaching and student learning during each mathematics camp. The PSTs shared, discussed, and suggested future solutions based on their various roles and perspectives.

The topics of discussion I observed during these group reflections included issues such as “Were the mathematic problems too difficult?” “Were the students tired?” “How could the students be engaged more?” “Did the planned rotation work well?” “Are all the leaders doing what they need to do?” “How did the new mathematics activities go?” “What other adjustments do we need to make?” “What did the students come to know as a result of the mathematics task?” The PSTs evaluated the mathematics camp and shared their answers to these questions based on their own roles and perspectives. All ideas were considered and discussed, regardless of the role of the PST or his or her year in the program. During this time the group of PSTs worked together as a peer mentoring learning community to improve the mathematics camp.

Spaces for connecting applications for mathematics teaching

The collegiate and K–12 camps open a space for PSTs to make connections to teaching and student learning. During collegiate camp the first-year PSTs are introduced to many mathematics problem-solving tasks that they have never seen before, because each new generation designs new tasks. This experience is then extended to the K–12 camps as the PSTs adapt activities to the contexts of students at a particular grade level. Furthermore, PSTs get valuable and repeated opportunities to engage K–12 students in both newly designed and well-known mathematical tasks.

One such well-known task they call the “The four 4’s.” Observations revealed PSTs giving this task on five different occasions. In each case they asked students to solve a mathematics problem using operations and four 4’s to creatively obtain results containing the set of integers from 1 to 20. For example, “1” could be obtained by using operations with four 4’s in the form of $\left({}^{4}\!/_{4}\right)^{(4-4)}$. PSTs always challenged the students to find as many forms of each number as possible. In the case of the number “1”, middle-grades students went on to adapt their first answer to find many others, including $(0)^{(0)}$, $(4-4)^{(4-4)}$, and $(4x4)^{(4-4)}$. The PSTs leading the mathematical task noted the students’ ideas and inquired further to the whole group. “Can they do this $(4-4)^{(4-4)}$? What does this mean $(0)^{(0)}$?” The pursuit of good mathematical questions often became a time of learning for all, especially the PSTs. As the students and the PSTs pondered and discussed this question, it became apparent that not everyone agreed that the answer was “1.” Some students respectfully argued for “0” as the answer. In the end the students decided to strike it from the list of ways to make a “1,” since it could not be determined. The PSTs themselves were divided in their thoughts on the answer, most thinking that it should be 1 and the rest that it cannot be determined. During their reflection time the PSTs agreed that they needed to do more research about the indeterminate form $(0)^{(0)}$ and also ask their mathematics professors. From this same activity, other mathematical questions and discussions emerged during the mathematics camps, such as “What counts as an operation?” “Is factorial an allowable operation?” “What about the cubed root?” “Can we define a new operation of our own making?” Through the enactment of mathematics camps, the PSTs were always in a process of developing and deepening their knowledge of the mathematics needed for teaching K–12 students.

Another facet of teaching that was apparent was the opportunity to notice and attend to students who were off-task or disengaged. Observation notes revealed that PSTs practiced directing or redirecting students back toward the task or activity when they were off-task. Through the mathematics camps, PSTs had many opportunities to think about why students might go off-task and how to bring them back into the learning environment. During the interviews with PSTs, all the participants spoke about how they felt that the camp helped prepare them to be a better teacher. When speaking about how he learned to enact many mathematics tasks through the camp, one PST reflected:

> I think all the activities we can apply in the classroom because we have to think about the learning of math to start our math camp. So even when we do activities that are not mathematical they provide safety for learning and enjoyment. After that, we have achieved responsibility and harmony and many things. So all things we can apply to teaching. (Interview)

The PSTs often spoke about achieving responsibility and harmony. From their point of view, teaching involves getting the students directly involved in the learning by any professional means. The PSTs see mathematics camp as an integration of relationships that involves each PST contributing to solving the problems they encounter. The interpersonal professional relationships that are born out of the mathematics camp interactions contributes to PST learning about teaching. On this matter, one of them stated:,

> When we do the camp together we have good team work. Because we have at least a pair to solve the problem. For example, we have to design the activity for the kids or for the school. When we do the activity together this means everybody in the staff have to more understand together. Doing that sets a good relationship. (Interview)

Through the mathematics camps, PSTs are thrust into a situation in which the purpose is larger than any one person. They understand the need to work with others, learn from others, and teach others. They seek to build interpersonal professional relationships and, in the process, become a *community of peer mentoring professionals*.

Peer mentoring professionalism

Analyzing evidence to answer the research question, "What role do mathematics camps play in the preparation of PSTs?" yielded the theme of *peer mentoring professionalism*. The peer mentoring culture that occurred among the PSTs in this program could not be classified according to current conceptions of peer mentoring, traditional– or learning community–based, because both were present and there was a constant ebb and flow between the two. Furthermore, the authenticity and significance of the professional requirement and expectations levied upon the PSTs were essential to the PSTs developing peer mentoring professionalism as a group. Hence, evidence converged to show that the PSTs were professionally enacting their peer mentoring activity for the expressed goal of improving their professional teaching endeavor: mathematics camp. The mathematics camp requirement positioned PSTs to build interpersonal relationships with those who have the same professional goals. Those relationships enriched the success of the mathematics camps as PSTs harmonized their selections of teaching activities, created them together, and collaborated with the focused goal of creating a mathematical learning experience in which K–12 students find enjoyment during mathematical problem solving. Lastly, the mathematics camp requirement allowed for PSTs' professional learning as they connected mathematics camp experiences to applications for mathematics teaching.

The PSTs peer mentored one another for the professional purpose of creating a mathematics camp that would engage students in problem solving and improve their attitudes toward mathematics. The program established structure for traditional peer mentoring about mathematics camp as well as the requirement to enact mathematics camps in the field, which opened spaces for PSTs to engage as a peer mentoring community. As such, the PSTs naturally flowed from times of traditional mentoring to a peer mentoring community and vice versa. The mentoring structure remained fluid and depended on the *need of the professional practice* of enacting mathematics teaching through the mathematics camps. At the heart of *peer mentoring professionalism* among these PSTs was the collective pursuit of the professional task to create an enjoyable learning environment of mathematics problem solving. The authenticity and significance of that professional task allowed PSTs to focus less on who was the mentor and who was the mentee and more on what was needed to accomplish and improve the professional task.

In deciding the ideas for each mathematics camp, the PSTs' modality appeared as a peer mentoring learning community, considering together the viability of an idea, enacting that idea, and creating the resources needed for its effectiveness in the mathematics camp. Similarly, as the PSTs gathered to reflect on the mathematics camps, they operated as a peer mentoring learning community, explaining what they observed and sharing their ideas to make it better, giving advice to one another without a focus on who held what position. On the other hand, when PSTs were learning about the overall mathematics camp structure, the program had clearly developed an expectation that those further along in the program would act as the expert mentors. This expert mentor set of PSTs had the responsibility to ensure high quality when enacting a mathematics camp but also the responsibility to include the next generation of PSTs.

The professors in the program helped oversee the structure and requirements of enacting the mathematics camps and also gave advice from time to time. However, they were intentionally silent for most of the decisions being made. When the program first incorporated the mathematics camp requirement, the professors were more involved, but after a few years it began to sustain itself as the PSTs took responsibility for mathematics camp. It's important to note that not everything always goes perfectly in any camp. There were always difficulties to reflect on. The professors allowed the students to try ideas and see how they worked. There was a safe space free of judgment for failure that goes along with an expectation of professional reflection and group adjustment to account for the difficulty in the future.

These PSTs have a perception that they are better prepared to be teachers because their program expects them to design and create the mathematics camps. They continually shared how it made "them" better and how they were improving "themselves" through this endeavor.

> So I have also my friend from another college. They don't have a camp. They just study and then go home to a boring house, chat with friends on Facebook, play games, do homework, and then go to school and they don't have the meeting with other persons (families of PST).... But this math camp can improve ourselves [PST] to meet another person and create a relationship more. It's good for becoming a teacher because if you only study in the class when you are a graduate, you will become a teacher, you don't know how to apply to the students, how to teach students. He, my friend from another college, knows only the experience in the college class and then only gives that same experience to the students. But the math camp, it's better, I think. (Interview)

There is evidence here to support that an important degree of teaching efficacy and authenticity comes about for these PSTs as a result of having the responsibility to foster learning and engagement of a large group of students. The professors gave their PSTs several large groups of K–12 students and provided safe spaces, such as mathematics camps, to investigate the ideas of teaching and learning mathematics. From this safe space the PSTs sought to meet the challenge, learned important things from their experiences, and passed on these ideas and experiences to other mathematics PSTs. From these experiences, peer mentoring professionalism developed among these PSTs and has been sustained over a long period.

Discussion

Through the mathematics camp program requirement, the PSTs developed a culture of *peer mentoring professionalism*, ebbing and flowing from a traditional mentoring model and a peer mentoring learning community. As first-year PSTs entered the university program, they were given first-hand mathematics camp experiences and mentored into a knowledge of the overall mathematics camp processes by the older PSTs. The collegiate mathematics camp training allowed multiple spaces for all PSTs to form bonds and provided a set of shared academic and collegiate experiences. From these initial experiences the older mentors continued to provide a family-like atmosphere for the younger students. The older students would plan group meals in which they would eat together, give advice on how to pass a class, and offer assistance with mathematical and pedagogical ideas. This finding is consistent with McInnis, James, and Hartley's (2000) recommendation that more experienced students act as mentors to younger students during the first-year transition to university life because they provide effective support. Such mentoring may yield higher retention rates.

After the initial year, the second- through fourth-year PSTs worked together to improve and develop new elements for mathematics camp. During these types of collaborations the PSTs naturally enacted a peer mentoring learning community. The PSTs would redesign the elements of the camp, discuss the reorganization of the camp experience, and create new mathematics tasks together. Each revision would then be presented and evaluated by peers before being enacted with K–12 students. Lastly, after each camp, the PSTs would evaluate the degree of success for each revision. The mathematics camps provided a space for the mentoring model to ebb and flow as needed.

From an empirical research perspective, it appears that there is little information about mathematics camps. The study here provides a unique look at what is possible through systemic incorporation of mathematics camps into pre-service teacher programs. However, at the current time, research could not be found on mathematics education programs in the United States that systemically incorporate mathematics camps in a way that is similar to the program described in this study. However, this is not to say that mathematics camps are not being employed. On the contrary, there are many reports of summer camp programs that give results about students improved attitudes toward mathematics or growth in integrated topics (Cooper & Nesmith, 2013; Tichenor & Plavchan, 2010; Wiest, 2008; Williams, Ma, Prejean, Ford, & Lai, 2007).

Mathematics camps vary in type, focus, and design. Though it is beyond the scope of this study to report and classify all these differences, it is important to note that the mathematics camps discussed in this study hold significant structural differences from the kinds of camps mentioned elsewhere (Cooper & Nesmith, 2013; Tichenor & Plavchan, 2010; Wiest, 2008; Williams et al., 2007). In fact, no two camps in the literature were identical, even if they claimed to aspire to the same goal. These differences create a language conundrum about what is meant by "mathematics camp" across the literature. It also creates difficulties for research-based comparisons. However, one study by Cooper and Nesmith (2013) did lend itself to comparison. In their study, PSTs prepared lessons and taught them to students in a summer "math camp" as an alternative field experience for a mathematics methods course. The findings of their study align with those of this study in the following ways: (1) Mathematics camp provided many opportunities for PSTs to design, teach, and reflect on lessons they taught to students. (2) These PSTs had a more developed sense of self as a mathematics teacher and they were able to focus specifically on the needs and abilities of specific students during their field experience, partly because there was no classroom teacher in the mathematics camp setting and the responsibility lay solely on the PST. These kinds of field experiences provide rich contexts that form the groundwork of PSTs' career development (Cooper & Nesmith, 2013).

That being said, mathematics camps are certainly not a panacea for all the difficulties PST programs encounter in providing valuable field experiences for PSTs. They do appear, however, to be a rich possibility for field experiences that expect PSTs to work together as professionals to enact learning experiences to a large group of students. There may be many different ways to achieve *peer mentoring professionalism* among PSTs that more readily apply to the needs and limitations of specific mathematics PST programs. What seems important from the evidence provided from this study is that PSTs be given a safe space in which to enact elements of the profession of mathematics teaching, systemically across the program, and that they share the responsibility for the professional activities' success or failure. Within this safe space there needs to be a focus on an authentic and significant professionally-based task with some clarity about purpose and usefulness of both traditional mentoring and peer mentoring learning communities. Perhaps mathematics camps might be one part of a larger constellation of teaching spaces through which mathematics teacher education programs systemically engage all PSTs to develop a culture of peer mentoring professionalism.

In mathematics education we promote the importance of having teachers provide tasks that develop students' reasoning and problem solving for themselves. Furthermore, we seek to help students push for individual and collective perseverance, and the construction and critique of viable mathematical arguments and other mathematical proficiencies (Common Core State Standards Initiative, 2010; National Council of Teacher of Mathematics, 2009, 2014; National Research Council, 2001, 2012). To help students achieve these proficiencies, we aspire to create spaces for students to take risks, make mistakes, engage in productive struggle, share ideas in the classroom community, and make sense of mathematical successes and failures (National Council of Teacher of Mathematics, 2007, 2014). Analogously, it seems to be a worthwhile endeavor to design spaces for our mathematics PSTs to take risks, make mistakes, and share and reflect on their mathematics teaching successes and failures. To do this, however, would require PSTs to engage K–12 students with real responsibility, and to do so in a context that lessens the stakes for all involved. Mathematics camps, like the ones described in this study, offer a suitable and sustainable space for PSTs to practice teaching, individually and as a community.

Further research is needed to look more closely at PST perceptions of the various elements of mathematics camp and the mentoring requirement. Employing surveys and quantitative measures could illuminate outcomes related to the benefits and drawbacks of these kinds of program requirements as well as the extent of impact on PST mathematical knowledge for teaching. Research on the following would deepen our knowledge about mathematics camps as a program requirement: how PSTs use their learning from mathematics camp when they go on to be classroom teachers; to describe and measure what categories of mathematics knowledge for teaching are occurring through these professional interactions; whether mathematics camp influences PSTs' mathematics teaching efficacy (Matney, Panarach, & Jackson, 2016); the degree to which PSTs involved in field experiences of this kind of program meet the assumptions and characteristics of a professional learning community (Vescio et al., 2008); and the possibilities for PSTs to engage in authentic research lesson studies (Lewis, Perry, Hurd, & O'Connell, 2006) with these mathematics camp field experiences.

The isolation that early-career teachers feel (Rogers & Babinski, 2002) is perhaps connected to the individualist nature of pre-service and in-service teacher preparation, with its focus on individualistic scoring on assessments, course grades, and program GPAs. Though PSTs often feel nurtured in the nest of PST programs (DeWert, Babinski, & Jones, 2003), they do not come into the profession feeling empowered to overcome the barriers or create the support systems they need to solve the problems encountered as teachers (Gold, 1996). Mathematics teacher educators should consider what elements in our programs systemically counter the isolated nature of these assessments and would allow PSTs to gain authentic experiences of peer mentoring professionalism within a community dedicated to the same professional goals. Having rich experiences such as the ones found in this research would likely help PSTs continue to seek this kind of professional community after graduation and may help counteract the isolation that teachers feel and the attrition rate of early-career mathematics teachers (Borman & Dowling, 2008; Ingersoll, 2001).

Conclusion

In this study there is evidence of a connection between PSTs' *peer mentoring professionalism* and the systemic inclusion of a professional goal tied to a safe space to practice that goal in field experiences (mathematics camps). This connection may warrant further conversation and research among mathematics teacher educators and others in the education community about the ways we think of valuable "field experiences" for our pre-service teacher candidates and the degree to which those experiences prepare them to collaborate professionally when they transition to full-time teaching. The research described here can provide mathematics teacher educators an initial step toward conceptualizing and researching formal program structures that help develop *peer mentoring professionalism* among PSTs and the possible value of well-designed PST programs that connect peer mentoring with authentic yet non-high-stakes field experiences.

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