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Secondary Mathematics Teacher Educators' Interpretations of the Situative Perspective

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In this study, we examined five mathematics teacher educators' (MTEs') interpretation of the situative perspective, who self-identify as holding that perspective. Furthermore, we share how they designed and facilitated their secondary mathematics methods course pertaining to the activities they identified as most important for the course. We discuss the participants' two interpretations of the perspective rooted in the context of teaching and the act of teaching, which seemed to influence their approach to topics of equity but not the types of activities they identified as being most important. Overall, findings from this study indicate there is diversity with respect to how the five MTEs interpret the situative perspective, and that diversity seems to be contextual.

Around the world, and specifically in the United States, there is pronounced variability in mathematics teacher education programs (e.g., Center for Research in Mathematics and Science Education [CRMSE], 2010). This variability may be seen in many programmatic features including the amount of time devoted to preparing prospective teachers (PTs), the number and variety of courses within a program, and the absence of a shared professional curriculum to prepare prospective mathematics teachers (e.g., CRMSE, 2010). For example, there is no shared professional curriculum to prepare PTs of mathematics (Ball, Sleep, Boerst, & Bass, 2009; Zaslavsky, 2007). Another source of variability may be the instructional practices of mathematics teacher educators (MTEs; i.e., university faculty who teach and prepare PTs) as their practices are not widely understood, documented, or disseminated (e.g., Bergsten & Grevholm, 2008;

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Even, 2008; Floden & Philipp, 2003; Hiebert, Morris, & Glass, 2003; McDuffie, Drake, & Herbel-Eisenmann, 2008). In other words, we do not know what content is taught in courses for PTs or how that content is taught and we know little about how specific practices of MTEs influence the learning of PTs. As a result, there is a demanding and critical need to research MTE practices, to develop a shared professional curriculum, and to build a usable knowledge base for MTEs (Floden & Philipp, 2003).

Over the past twenty years, researchers studying mathematics education courses for PTs typically have conducted studies around teacher educator practice that (a) examine how teacher educators improve their own practices (e.g., Berk & Hiebert, 2009; Cady, Hopkins, & Hodges, 2008; Heaton & Mickelson, 2002; Hiebert et al., 2003; Hiebert, Morris, Berk, & Jansen, 2007), (b) study the impact of particular activities or a series of activities on PT learning (e.g., Castro, 2006; Goodell, 2006), (c) focus on designing tasks to support PT learning (e.g., Chval, Lannin, & Bowzer, 2008; Liljedahl, Chernoff, & Zazkis, 2007; Van Zoest & Stockero, 2008), and (d) examine general pedagogical practices (e.g., Dixon, Andreasen, & Stephan, 2009, Steele, 2008). There have also been studies conducted on MTEs' mathematics methods course syllabi (e.g., Harder & Talbot, 1997; Taylor & Ronau, 2006), course topics MTEs value (Otten, Yee, & Taylor, 2015; Watanabe & Yarnevich, 1999), actions and purposes of MTEs (e.g., Appova & Taylor, 2019), MTEs' self-identified theoretical perspectives (e.g., Smith, Taylor, & Shin, 2018), and knowledge MTEs use as they teach PTs (e.g., Chick & Beswick, 2018). In recent years, MTEs have documented efforts to prepare PTs to teach mathematics while considering matters of equity (e.g., Bartell, 2010; de Freitas, 2008; Wager, 2014).

In Fall 2015, the Scholarly Inquiry and Practices (SIP) Conference was organized in order to have a dialogue among MTEs centered around theoretical perspectives, associated learning goals, and corresponding activities for mathematics methods courses. Three broad and commonly used theoretical perspectives (sociopolitical, cognitive, and situative) were selected to frame conference discussions. The sociopolitical

perspective involves PTs "deconstructing the deficit discourses about historically underserved and/or marginalized students" (Gutiérrez, 2013, p. 11). A cognitive perspective is fundamentally about building models of how people think about mathematical or pedagogical concepts. A goal of individuals who self-identify as holding a cognitive perspective "is to help teachers learn to attend to and respond to student thinking in ways that promote student learning" (Casey, Fox, & Lischka, 2018, p. 299). A situative perspective of learning, with an emphasis on activity systems, draws from situated or situative theories of learning (Greeno, 2006). Greeno explained an activity system as "a collection of people and other systems. . . . The goal is to understand cognition as the interaction among participants and tools in the context of an activity" (p. 83–84). The participants of the SIP conference used the three theoretical perspectives individually or in conjunction with each other as lenses for re-interpreting curriculum and pedagogy for mathematics methods courses, and the perspectives served to enrich their discussions (Kastberg, Tyminski, Lischka, & Sanchez, 2018).

We (the authors) were selected to participate in the conference. We self-identify with the situative perspective, where "learning is conceptualized as an aspect of social activity" and "learning is in relation to interactions and within contexts" (Casey et al., 2018, p. 299). As a result of conversations we had during the conference with other MTEs, we became interested in gaining a deeper insight into how an MTE's perspective influences the design and intended facilitation of their mathematics methods courses.

In our initial study, we sought to "explore theoretical perspectives, goals, and tasks MTEs draw upon when preparing for and instructing their secondary mathematics methods course" (Smith et al., 2018). Our findings from an online survey indicated the situative perspective was the most popular perspective the MTEs self-identified as drawing upon, and the most important goals and tasks were largely based on a situative perspective as well. Our research left us wondering if the participants who self-identified as drawing on a situative perspective drew on it in a similar or different way. We also

noticed in our analysis that only a few of the most important goals and activities could be coded as sociopolitical. In their standards for preparing mathematics teachers, the Association of Mathematics Teacher Educators (2017) put a great deal of emphasis on preparing potential teachers to teach diverse populations of students in equitable ways. In fact, the authors' first assumption on which all of the standards are based states, "we believe that equity must be both addressed in its own right and embedded within every standard" (p. 1). Because so few MTEs who hold the situative perspective stated that they addressed these significant issues of teaching equitably to diverse populations in the previous study, we wondered how they address these issues in their methods course. Thus, a second study evolved, which focused on providing a deeper insight into how an MTE's theoretical perspective (specifically the situative perspective, the most prominent self-reported perspective from the initial study) influenced their design and intended facilitation of a mathematics methods course, including the ways in which they address issues of teaching equitably.

Review of Related Research

Based on Lee and Mewborn's (2009) challenge to MTEs to engage in scholarly inquiry in the design and implementation of mathematics methods courses, Kastberg et al. (2018) advocated "for conscious use of theoretical perspective in the development of curriculum and pedagogy for mathematics methods [courses]" (p. 4). The situative perspective is based, in part, on what has been called the situated or situative perspective of learning (e.g., Lave & Wenger, 1991) in which learning is considered in relation to what Greeno (2006) calls "patterns of interactions" (p. 84). Greeno states, "The goal is to understand cognition as the interaction among participants and tools in the context of the activity" (p. 84). He further articulates that "the situative perspective assumes that all learning, cognition, action, and so forth are situated; the differences have to do with where and how these processes are situated, not whether they are" (Greeno, 2003, p. 315). Furthermore, the term *situative* has roots in various disciplines including anthropology, sociology, and

psychology and refers to broad lines of research and theoretical ideas (Greeno, 2003).

Drawing on the situative perspective, one must consider the individual learner as well as the physical and social systems in which the learner participates. According to Casey and colleagues (2018), MTEs who hold a situative perspective believe the following.

- Learning is conceptualized as an aspect of social activity and therefore [individuals] research and work within activity systems.
- Learning is in relation to interactions and within contexts.
- [The] focus is on teaching, which occurs in schools with children and experienced teachers.
- Prospective teachers' learning situated in interactive settings is valued. (p. 299)

Scholars with this perspective argue "that knowing and learning are constructed through participation in the discourse and practices of a community and are shaped by the physical and social contexts in which they occur (Greeno, 2003; Lave & Wenger, 1991)" (Koellner, Schneider, Roberts, Jacobs, & Borko, 2008, p. 60). In an MTE's secondary mathematics methods course, the activity system not only includes the activities they design and use with PTs, but also includes how the MTE facilitates the activities. The activity system also includes PTs' knowledge and experiences as learners of mathematics and other experiences involving teaching, which includes their prior coursework. An additional component of an MTE's activity system includes the discourse that transpires among the MTE and PTs, which contributes to the activity system through new knowledge and understanding of teaching mathematics to students in grade 7–12. Finally, the activity system may also include other systems such as university and state program requirements, and the available partnerships with local schools.

A situative approach has been used by researchers to study online learning (e.g., Evans et al., 2008), PTs' knowledge, beliefs, and practices (e.g., Borko et al., 2000), and to ground

professional development materials (e.g., Seago & Goldsmith, 2006). MTEs also draw on a situative perspective as they prepare and facilitate lessons for the courses they teach. For example, Kazemi (2018) draws on the situative perspective of learning, which informs her work and helps her "understand what learning is happening in [her] classes" (p. 50). She further articulates "that a situative perspective [does not] determine the particular design of [her] course, but rather that a situative perspective leads [her] to think about what the situated character of [her] course is and how that shapes the teaching and learning that occurs" (p. 51). As Greeno and colleagues (1998) state, "all teaching and learning are situated; the question is what their situated character is" (p. 19).

Kastberg et al. (2018) indicated, "perspectives are not absolute, but are situated, interpreted and operationalized in different ways by MTEs" (p. 5). Thus, to better understand how secondary mathematics methods course instructors (i.e., MTEs) who hold the situative perspective design and implement their secondary mathematics methods course, we investigated the following questions: (a) How do MTEs who self-identify as holding a situative perspective interpret that perspective? (b) How does that interpretation influence the design and intended implementation of their secondary mathematics methods course pertaining to their goals, activities, and issues of equity?

Methodology

This study builds off our initial investigation (see Smith et al., 2018) where 35 participants completed a 22-question online survey. Along with demographic information about themselves and the secondary methods courses they teach, we asked participants to describe the perspective they draw upon when developing and teaching their secondary mathematics methods course, identify the top three goals they have for their course, and identify the three most important tasks they use in their course with their PTs. We classified participant responses according to six different perspectives they self-identified as drawing on when designing and facilitating their methods course and then examined the self-reported alignment of 17 respondents

who exclusively drew upon the situative, cognitive, or sociopolitical perspective—the three perspectives that were used to frame the SIP Conference. The survey provided information but left us with questions about the MTEs' interpretations of their perspective and how it influenced their design and intended implementation of their secondary methods course.

For the current study, we chose to focus on the MTEs who self-identified as drawing upon the situative perspective because it was the most popular perspective among the 17 participants (11 of the 17 identified as drawing on the situative perspective). The MTEs were "chosen because it is believed that understanding them will lead to better understanding, and perhaps better theorizing, about a larger collection of cases" (Stake, 2005, p. 446). This type of study design allowed us to make claims about the nature of participants' descriptions of the situative perspective, goals, activities, and experiences as a whole.

Table 1
Participating MTEs' background information

Name	Region in USA	Institution (Basic Carnegie classification)*	Number of secondary mathematics methods courses required for program	How often course meets per week
Dina	South West	Doctoral Univ.: Higher Research Activity	7	4 semester hours
Jake	South East	Doctoral Univ.: Higher Research Activity	4	3 semester hours
Rhys	Mid-Atlantic	Doctoral Univ.: Moderate Research Activity	2	4 semester hours
Stacy	Mid-West	Doctoral Univ.: Moderate Research Activity	2	3 semester hours
Trey	Mid-Atlantic	Master's Colleges & Univ.: Larger Programs	1	5 semester hours

*Basic Carnegie classifications for these institutions were at the time of the study

This study is a multiple case study (Stake, 2005), where the "cases" are five MTEs who teach secondary mathematics methods courses and self-identify as holding a situative perspective. We used the initial survey data to identify potential cases based on whether the methods course was the last course taken by PTs prior to the student teaching semester and whether the MTE had taught the course multiple times. Based on these criteria, we identified seven MTEs to participate in the study and five agreed. The MTEs (2 female; 3 male) were from five different institutions across the United States and have taught the course at least three times (see Table 1). All participants' names were replaced with pseudonyms.

Data included responses from a one-hour semi-structured interview based on replies from the online survey from the initial study where the MTEs were asked to identify their three most important goals and activities (see Smith et al., 2018). We asked the MTEs to elaborate about the context of their secondary mathematics methods course PTs take the semester immediately preceding student teaching, because all programs offered such a course. In addition, we asked the MTEs why their self-identified goals and activities were so important to them, and what the situative perspective meant to them. These questions were designed to address how their perspective is operationalized in terms of course design and facilitation. Interviews were audio-recorded, transcribed, and coded using constant comparison method of analysis (Corbin & Strauss, 2008). In order to analyze the data for the MTEs' teacher education programs, interpretations of the situative perspective and their learning goals and activities for secondary mathematics methods courses, two researchers independently coded interview transcripts for examples and explanations using qualitative data analysis software. The researchers created an initial list of codes based on the initial study and the components of the activity system. The researchers met throughout the coding process to verify the coding was consistent and to resolve any differences through discussions. After the coding was complete, the researchers developed tables of similarities and differences focused on the MTEs' teacher education programs, theoretical perspectives,

activities, and learning goals. These tables allowed the researchers to develop themes to address the research questions.

Results

Even though all of our participants shared the situative perspective, they seemed to hold two different interpretations of the perspective. The first interpretation was on the *context of the classroom*, where three of the participants indicated they focused their discussions and activities with their PTs on the setting in which the PTs will teach, the grade 7-12 classroom. The second interpretation was on the *act of teaching*, where two participants facilitated activities to put their PTs in the situation of teaching, but in a safe environment so the PTs could gain confidence, make mistakes, grow, and have confidence to do it in a real classroom. In this section, we elaborate on the similarities and differences among the participants centered within these two interpretations of the situative perspective, their view on issues of equity in the methods classroom, and their design of activities and the corresponding goals for those activities.

Context of teaching—Rhys, Stacy, Trey

When asked for their interpretation of what the situative perspective meant to them, Rhys, Stacy, and Trey focused on the context of teaching—the grade 7-12 mathematics classroom. Specifically, Rhys said, "So one of the things that we need to do is situate their learning about teaching closer to the act of teaching itself." Trey stated, "In my mind, when I'm looking at the situative perspective, whatever we're looking at has to sit within the context of the [grade 7-12] classroom. Because to me, everything we're doing is going to eventually come back to that [grade 7-12] classroom." Stacy also shared the same view by indicating that she always wants her PTs to focus on students and the grade 7-12 classroom. She articulated, "So, I try to make everything tied to when a student in the [grade 7-12] classroom does this, how would you respond?" These three participants' interpretations of the situative perspective focused on the context in which the PTs would be working and, as Rhys said,

"it's that their learning is contextual and the closer I can make their learning to the context that they're going to be using it, the better it is."

Rhys, Stacy, and Trey also were similar to one another when articulating how they addressed issues of equity (implicitly and explicitly) in the methods course. Rhys said he addresses equity in his methods course by focusing on equitable teaching practices and how teachers talk to students. He verbally stresses to his students that "everybody should have an opportunity. And not only an opportunity, everyone should be required to have to think about the math, because that's how you actually learn." Thus, he stated that he requires his students to develop lessons in which all students have access to learning mathematics. He also wants his PTs to develop a positive disposition about their students and explicitly discusses issues of how students feel and react when teachers express a deficit disposition towards their students. However, Rhys said he does not explicitly focus on certain equity issues because very few of his PTs will teach in highly diverse, high needs schools. Stacy takes a similar approach to equity by focusing on whether all students have the opportunity to engage in the mathematics. She asks her PTs to consider whether tasks have multiple entry points and requires her students to watch classroom video cases and consider who was engaged in the lesson and discussion and how the teachers in the videos orchestrated the discussion. In a class discussion following the videos the PTs watch, Stacy stated that she engages her students in conversations centered around issues of equity the PTs noticed in the video lessons. Trey also said he wants to be more explicit about equity and social justice issues and is determined to include more discussions in future iterations of the methods course. He said he made this decision based on the changing demographics in the local school, which have an increased number of English Language Learner students.

One common activity among Rhys, Stacy, and Trey was that they facilitated activities where PTs were able to practice the art of teaching in the secondary mathematics methods course classroom with their peers. Rhys's PTs taught a problem solving lesson to their peers where the focus was on the launch and explore phases of the lesson. He specifically noted that the

discussion portions of the lessons his PTs facilitated were not pre-planned. Instead, Rhys engaged his class by assessing the student work collected during the explore phase, and they collectively planned the discussion based on the work. His purpose for doing that was to allow the PTs "to assess and experience assessment as something other than just grading…and to say what are the different ways [your peers] are making sense of this?" Here, Rhys stated that he strived to emphasize that assessment should be interconnected to lesson planning.

Trey's PTs participated in yet another experience where they practiced the art of teaching. The PTs presented lessons where they taught their peers about a manipulative and technology that no one in the class had previously encountered. Trey structured the lesson presentation activities so they had a professional development feel to it—the PTs were the expert and then they talked to their peers about the topic at hand. Trey articulated that this activity allowed his PTs "to do the work of teaching."

Stacy, in contrast to Rhys and Trey, engaged her students in rehearsals, where the PTs planned and taught a lesson to their peers, received feedback on the lesson plan and in-class facilitation of the lesson, and then taught the exact same lesson to secondary students. Stacy believed this allowed the PTs to revise the lesson prior to teaching it to eight students at the local high school. She noted, "practice-based approach is really important. The more I can have preservice teachers working with students and/or in classrooms which are going to be like the practice they're going to be put in as a classroom teacher, the better." Despite the similarity between the three participants of planning activities where their PTs were teaching their peers in the mathematics methods course, the MTEs' goals and facilitation of the peer teaching activities differed.

A second similarity that arose from the activities Rhys, Stacy, and Trey shared was their use of reflection, either by having the PTs' reflect on their own (in the case of Stacy) or someone else's (in the cases of Rhys and Trey) teaching. Stacy elaborated on an activity where she had her PTs videotape themselves teaching a lesson in order to analyze their own practice from the video and reflect on their own "teacher moves"

in order to prompt them to identify instances where they probed for student thinking in the lesson. In contrast, Rhys created videos of himself teaching in order to have conversations about teacher moves and the situations that arose in the video in order for the PTs to learn from representations of practice that would be typical interactions in their future classroom. Trey, on the other hand, used vignettes and narrative cases to have conversations about teaching. He specifically focused on the Standards for Mathematical Practice (National Governors Associate Center for Best Practices & Council of Chief State School Officers, 2010) and then had his PTs observe a lesson taught by their respective cooperating teachers and provide evidence for observed Standards for Mathematical Practice(s). Despite the fact that the activities the three participants described were different, each of the activities had a similar overarching purpose: for the MTE to provide their PTs with the opportunity to reflect on teaching in some way.

Act of teaching—Dina, Jake

The second interpretation of the situative perspective, shared by Dina and Jake, focused on the act of teaching rather than the context of the grade 7–12 classroom. Dina believed PTs should be put in teaching situations, but they should be in a safe environment with their peers. She said, "I think it's this idea that, I mean, they're being put in the situation of teaching, but doing it in a safe environment. So they can gain confidence, they can make mistakes, they can grow, and then have the confidence to be able to go out and do it in an actual classroom setting." Dina further stated, "So it's putting them in a situation where they are having to do the work of teaching," but are not yet teaching secondary students in a "real" classroom.

Similarly, Jake viewed the situative perspective as a practice-based approach to designing a secondary mathematics methods course. He explained, "So my thinking around this is similar to my thinking around developing mathematical understanding, which is between engaging students in a different context in mathematics tasks, and they can generalize their understanding." Jake attempts to engage his PTs in the work of

teaching with the end goal of applying what they learn about teaching grade 7-12 students in the secondary school classroom. In other words, Jake did not necessarily focus his activities in the context of the classroom. Instead, he hoped that his PTs would transfer these ideas into their future teaching.

Dina and Jake also have a similar view on how they incorporate issues of equity in their methods courses; they both articulated that they do not explicitly address equity issues in their methods course. Rather, Dina and Jake said they address these issues implicitly and without reference to the term equity. Jake said that he tries to engage his students in equitable teaching practices by having them focus on teaching for conceptual understanding. He said he asks his PTs to consider whether an activity would provide all students the opportunity to engage in high-level, rigorous mathematics. Jake noted, "They're trying to teach for conceptual understanding, which I believe is through kind of equitable tasks." Yet, he said in his interview that he does not explicitly refer to this kind of teaching as equitable teaching. Similarly, Dina also said she does not explicitly address issues of equity, but implicitly refers to these issues if they arise during the PTs practice teaching episodes. She provided an example common in her course in which she asks her PTs to consider which classmates they selected to respond to questions and solve problems in front of the class. She said her PTs generally select the student who has their hand raised, but she wants her PTs to realize that other students can contribute.

With respect to similarities around the activities that Dina and Jake engage their PTs in, they both have their students practice teaching in the methods classroom and then teach the same lesson to secondary students. Jake shared that he has his PTs plan and teach a lesson (in Jake's case around a high-level task) to their peers, receive feedback on the lesson plan and in-class facilitation of the lesson, and then teach the exact same lesson to secondary students. Dina engages her students in a similar assignment where she has her students practice teaching with peers, analyze themselves on video, and then teach "real" kids the same lesson. Jake's reason for incorporating the peer teaching activity in his course was to give his PTs a chance to practice planning for the task they would facilitate. Dina's

purpose was different from Jake's in that she wanted her PTs to practice developing a lesson plan and elicit student thinking in a safe environment.

Dina and Jake also have their PTs analyze teaching, however Dina has her students analyze and reflect on their own teaching while Jake has his PTs analyze others' teaching behavior. For example, Dina has her PTs videotape themselves teaching a lesson in order to analyze their own practice from the video and reflect on their own "teacher moves" in order to prompt them to identify instances where they probed for student thinking in the lesson. Dina noted,

> I have found that when students watch themselves teach, they learn a lot more than listening to me tell them what they did wrong. And so, when they go and watch their video, and have to actually identify different instances of them doing some practice, they find out really quickly how often they did it, or how often they didn't do it…and so it's kind of a tool to be able to have them recognize a lot of things.

Jake articulated that his PTs reflect on teaching after watching classroom videos and reading vignettes and narrative cases through his facilitation of discussions about what the PTs notice.

Discussion

The purpose of this study was to investigate MTEs who draw on a situative perspective and how their theoretical perspective influenced their design and facilitation of a secondary mathematics methods course. Based on our interview results, we found participants held two different interpretations of the situative perspective when planning and designing their secondary mathematics methods course that PTs take the semester before student teaching—context of teaching and act of teaching. Compared to Rhys, Stacy, and Trey, the other two participants, Dina and Jake, seemed to focus more on the action of teaching rather than the context of teaching. That is, they seemed to believe they needed to provide their PTs with multiple opportunities to practice teaching to their peers prior to teaching

lessons to secondary students in a "real" classroom environment. Dina and Jake focused on providing the opportunity for PTs to develop and practice the knowledge and skills related to the actions of the teacher. Rhys, Stacy, and Trey also engaged their PTs in opportunities to learn how to teach in the secondary mathematics methods classroom. However, their focus seemed to be on how this would unfold in an actual secondary mathematics classroom rather than merely giving them experience to learn via practice teaching.

We conjecture that the differences between the MTEs' interpretations of their perspective may be related to the number of secondary mathematics methods courses taught in the MTEs' degree programs (see Table 1). Thus, Dina and Jake's interpretation may have been influenced by the fact that they have a great deal of time and opportunity to discuss ideas related to the actual secondary mathematics classroom and can focus on the specific teacher actions in the final secondary mathematics methods course prior to student teaching. Rhys, Stacy, and Trey did not share this luxury and chose to focus on preparing their PTs for the context in which they would be working, the grade 7–12 classroom.

Greeno (2006) stated, "In a situative study, the main focus of analysis is on performance and learning by an activity system: A collection of people and other systems" (p. 83). With both of the interpretations described above, the main focus is on teaching; however, the activity system for where the focus occurs, is the difference (i.e., in the grade 7-12 classroom or the PTs' university classroom). It is important to note that situative perspectives are not prescriptive. Greeno and colleagues (1998) stated,

> As a scientific perspective, situativity does not say what educational practice should be adopted. However, it does say that the activities of different learning practices are important, not only for differences in their effectiveness or efficiency, but also because participation in those practices is fundamental in what students learn. (p. 14)

They went on to state that "all teaching and learning are situated; the question is what their situated character is" (p. 19). Thus, holding a situative perspective does not determine the design of a course, but rather the situative perspective drives what the MTEs think the situated character of their course is and how that shapes the teaching and learning experiences the MTEs' facilitate in their course. For our participants, it seems Rhys, Stacy, and Trey view the situated character of their course as preparing PTs to engage students in learning mathematics in meaningful ways, while Jake and Dina see the situated character of their course as preparing PTs to teach mathematics in meaningful ways.

Related to addressing issues of equity in the classroom, Rhys and Trey's decision on whether to address particular equity issues seemed to be primarily based on the kinds of classrooms in which the PTs would be working. Both Jake and Dina indicated their PTs have completed a course focused on equity in their program prior to their enrollment in the methods course. Thus, Jake and Dina may not feel the need to focus explicitly on these issues in their course because their students have already addressed equity related topics in their other coursework. Perhaps they feel they can focus more on the acts of teaching such as how to select a variety of students to respond to questions and designing engaging, rigorous tasks.

A common goal and associated activity among the five MTEs were to engage their PTs in teaching a lesson to their peers. Yet, their interpretation of the situative perspective did not seem to influence the design of the activity. For instance, Stacy, Dina, and Jake all had their PTs engage in rehearsals in which the students taught a lesson to their peers, received feedback and then taught the same lesson in a secondary classroom even though Stacy expressed a context of learning interpretation of the situative perspective. Because the PTs share the same perspective, it is unsurprising they would engage their students in similar activities. Similar to how the situative perspective is not prescriptive, neither are the two interpretations of the situative perspective.

During the interviews, we asked our participants to describe whether they drew upon other perspectives while designing and

implementing their methods course. Dina, Stacy, and Trey said they drew upon the cognitive perspective, Rhys drew upon the social constructivist perspective, and Jake said he did not consider another perspective. Dina even said she should draw upon other perspectives more often. First, we note that the MTEs said they do not draw upon the sociopolitical perspective which may provide some rationale for the way these MTEs approach issues of equity in their methods course. Although the ways they approach issues of equity seem to be related to their interpretation of the situative perspective, their limited amount of explicit attention to the topic could also be due to their lack of awareness of quality resources and activities and the sociopolitical perspective as a whole.

We also note that the lack of alignment between the participants' interpretations of the situative perspective and their goals and activities may be due to the MTEs considering other perspectives along with the situative perspective. Dina, Stacy, and Trey's use of the cognitive perspective may have influenced the type of activity and how it was implemented such that they wanted their PTs to focus more of their attention on student thinking in relation to the teachers' actions and behaviors while Jake, drawing solely on the situative perspective, may have only considered the activity system of his methods course. The interpretations of the situative perspective were not prescriptive in regards to activities because the MTEs also draw upon other perspectives.

The use of other perspectives of learning may also influence their own interpretation of the situative perspective. Rhys, Stacy, and Trey all said they draw upon a second interpretation to design and implement their methods course, which either focused their attention on how teachers could attend to student thinking as a means to promote student learning (cognitive) or the importance of discussions as a mechanism for student learning (socio-cultural). In essence, their second perspective of learning seemed to focus their attention on students, which may have influenced their interpretation of the situative perspective to one that is more classroom based. We see that Dina also draws upon the cognitive perspective, yet holds a "teacher action" interpretation of the situative perspective. Within any activity

system, there are many internal and external factors that can influence the given activity system. But, each factor does not have the same sway within a system or even between systems; the amount of sway depends on the given activity system. Thus, for Rhys, Stacy, and Trey, the type of program and their use of cognitive perspective may lend themselves to the classroom interpretation of the situative perspective; while the program in the activity system for Dina has a stronger influence on her perspective than the use of the cognitive perspective.

Concluding Remarks

Results from our study indicate the five MTEs who hold a situative perspective interpreted it in two ways—focusing on the context of teaching or the act of the teacher. Their perspective interpretation seemed to influence their attention to equity-related issues in the classroom in that the MTEs who held a perspective that focused on the act of the teacher said they did not explicitly address equity issues in their methods course, whereas the three MTEs who held a context of teaching focus articulated they implicitly and explicitly addressed equitable teaching practices in their courses. Yet, their interpretation did not seem to influence the types of activities they self-identified as being most important. For example, Dina and Stacy both facilitated an activity where PTs would analyze their own teaching, yet they did not share the same interpretation of the situative perspective. Furthermore, all five participants had similar course goals (i.e., provide opportunities for PTs to practice the art of teaching and reflect on teaching), but how they facilitated the learning experiences varied. Thus, our results align with Kastberg et al.'s notion that "perspectives are not absolute, but are situated, interpreted and operationalized in different ways by MTEs" (2018, p. 5) and indicate that there is diversity with respect to how the five MTEs in this study are conceiving the situative perspective and that diversity seems to be contextual.

In addition to context, drawing on other perspectives seemed to influence the MTEs' interpretations of the situative perspective and the design and facilitation of their methods

course. In 2017, the Association of Mathematics Teacher Educators (AMTE) released Standards for Preparing Teachers of Mathematics (AMTE, 2017) that were written to "guide the improvement of individual teacher preparation programs and promote national dialogue and action related to the preparation of teachers of mathematics" (p. xi). The AMTE standards were not written from a particular theoretical perspective. Instead, the authoring committee was comprised of individuals who adopt various theoretical perspectives because the committee recognized the need for multiple perspectives in order to improve mathematics teacher education programs. By drawing on the AMTE standards to design and facilitate their methods course, MTEs may begin considering multiple perspectives which will lead to a more comprehensive teacher education experience. As MTEs design and facilitate their methods course, we encourage them to examine the perspective they are coming from, how they interpret it, how that interpretation manifests itself in the development and facilitation of methods courses in the context they are working, and consider alternate theoretical perspectives in light of the AMTE standards.

The participants in our study all hold a situative perspective, in which each MTE works in a different activity system—their university context which includes their secondary mathematics program as a whole, state guidelines for teacher preparation, and various state and national standards for teaching mathematics and preparing teachers to teach mathematics. Yet, each MTE is also responsible for designing and facilitating an activity system (i.e., the methods course) for their PTs to learn how to teach mathematics. While we found that these activity systems seem to influence each other and the MTEs' views of the situative perspective, we can only speculate about the nuances of these relationships. Results from this study raise additional questions to investigate about the nature of these relationships and how they influence each other in the secondary mathematics methods course as well as in other mathematics methods courses (e.g. elementary, middle grades). Additional questions include, (a) Do MTEs who self-identify as having a cognitive or sociopolitical perspective have different interpretations of their perspective and how do the activity systems in which these

MTEs work influence their methods courses? (b) In what ways does the interpretation of MTE's theoretical perspective become more evident in their facilitation of the class? (c) How are MTEs' interpretation of their perspective influencing how they are implementing the AMTE standards?

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