RESEARCH ARTICLE

Examining How Teacher Identities Explain Their Interactions with Students in Small Groups

Byungeun Pak[1]

[1] Assistant Professor, Department of Education, Utah Tech University

Abstract

Examining ways to interact with students in small groups is an important topic for researchers to understand. Existing studies pertaining to the topic have not shed light on knowing why teachers interact with students in small groups the way they do. Given that teacher identity shapes teaching practices, this study explores how teacher identity shapes teachers' interaction with students in small groups. Working with two beginning teachers, I conducted four interviews to collect the data related to reasons behind their interactions with students in small groups in the interview. I analyzed the interview transcripts using a thematic analysis. I found that one teacher's teacher identity was related to her personal experiences as a child and a learner and another teacher's teacher identity was related to her view of teachers' roles as a teacher. I provide discussion and implications of this study.

• email: b.pak@utahtech.edu

I. INTRODUCTION

Research has provided evidence that there are benefits and challenges for students from participating in small group work. Possible benefits for students include academic achievement and developing social skills (Boaler, 2016; Cohen & Lotan, 2014; Davidson, 1990). There may also be challenges for students, such as getting stuck on a problem, having some students dominating discussion, or getting disrupted emotionally when making mistakes (Bishop, 2012; Esmonde & Langer-Osuna, 2013; McCaslin et al., 2016).

How teachers interact with students in small groups is important for researchers to understand because interaction with students seems to maximize the benefits and minimize the challenges. Some researchers have begun to examine teachers' interaction with students in small groups on the part of practicing teachers (e.g., Chiu, 2004; Cohen & Lotan, 2014; Dekker & Elshout-Mohr, 2004; Gillies & Boyle, 2006). These studies contribute to the field of mathematics teacher education in terms of shedding light on how teachers interact with students in small groups to support students in learning mathematics.

Research on teachers' use of small groups has a tendency to emphasize their planning for small group work more than their interactions with students in small groups (Ehrenfeld & Horn, 2020; Webb, 2009, 2013). In this current paper, I argue for a need to examine teachers' interaction with students in small groups in terms of why teachers interact with students in small groups the way they do, which can inform intentions behind teachers' interaction. One way to examine is teacher identity, which I view as having different aspects building on individuals' views of themselves as teachers, as well as their beliefs, knowledge, and/or dispositions (Drake et al., 2001; Spillane, 2000).

In general, research has shown that teacher identity is related to teaching practices (Aguirre et al., 2013; Drake et al., 2001; de Freitas, 2008; Spillane, 2000). In a literature review on teacher identity, Beauchamp and Thomas (2009) note that teacher identity has been used "as a frame or an analytic lens through which to examine aspects of teaching" (p. 176). I recognize that exploring teacher identity in a certain context (e.g., mathematics classrooms) in which teaching takes place may help researchers understand that particular teaching. Considering this well-known relation between teacher identity and teaching practices in a general sense, I argue that beginning teachers' identities as teachers may explain ways of interaction in small groups in mathematics classrooms. As such, the purpose of this study is to understand how beginning teachers' identities are related to interaction in small groups.

In the remainder of this paper, first, I offer a literature review to establish my argument building on prior research in teacher education in general and in mathematics teacher education in particular with respect to teacher identity, teaching practices, and interaction with students in small groups. Second, I describe how I collected and analyzed data, including on-line surveys and interview data, from two beginning teachers. Third, I present two findings to illustrate how beginning teachers' teacher identities are linked to their interaction in small groups in mathematics instruction. Fourth, I provide discussions and implications of this study.

II. RELATED LITERATURE

Conceptualizing Teacher Identity as Having Different Aspects

In general, teacher identity is defined as how teachers view themselves as teachers in certain contexts. Horn et al. (2008) have investigated teacher identity development building on anthropologists' view of identity, such as Holland et al. (1998). According to these anthropologists, identity is "the way a person understands and views himself, and is often viewed by others, at least in certain situations—a perception of self that can be fairly consistently achieved" (p. 68). By this definition, they mean that the person's view of him/herself would shape and be shaped by others in certain situations. In a study that explored how teacher identity of prospective teachers develops across contexts, such as coursework and field placements, Richmond et al. (2011) view teacher identity as how teachers "tell about themselves" in addition to how they "are told by, to, and about" themselves (p. 1866), drawing on the constructs of actual and designated identity by Sfard and Prusak (2005). These studies highlight that understanding teacher identity is inseparable from contexts. This definition of teacher identity helps researchers "make sense of the relationships individuals develop with the contexts they encounter in teacher education" (Horn et al., 2008, p. 62).

In particular, researchers in mathematics teacher education have conceptualized teacher identity in different ways. Spillane (2000) views teacher identity as "an individual's way of understanding and being in the world of work" (p. 308). Teacher identity does not only include knowledge and beliefs, but also encompasses, "dispositions, interests, sense of efficacy, locus of control and orientations toward work and change" (p. 308). Beyond the notion of teachers' sense of selves as teachers, this conceptualization adds more complexity to teacher identity. Building on the conceptualization of teacher identity by Spillane (2000), Drake et al. (2001) suggest that "teachers construct storied identities" that "serve as the lens through which they understand themselves personally and professionally and through which they view the content and context of their work" (p. 2). Aguirre et al. (2013) also define mathematical teacher identity as "an identity that consists of knowledge and lived experiences, interweaving to inform teaching views, dispositions, and practices to help children learn mathematics" (p. 27). This mathematical teacher identity is also understood as "the stories that people tell about themselves and what they view as important to them: their understanding of their place in the world and their core belief" (p. 27). In common, these researchers view teacher identity as more than self-understandings, including beliefs, knowledge, and/or dispositions, constructed in personal and professional lives.

Building on several views of teacher identity in this subsection, in this study, I view teacher identity as having different aspects, including teachers' individual self-understandings as teachers, beliefs, knowledge, and/or dispositions.

Teacher Identity and Teaching Practices

Across research on teacher identity, how teacher identity can shape teaching

practice has been investigated. In particular, in mathematics teacher education, researchers mentioned above (Aguirre et al., 2013; Drake et al., 2001; de Freitas, 2008; Spillane, 2000) have shown that teacher identity can shape and be shaped by teaching practices. Spillane (2000) investigated how a reform-oriented teacher's identity as a teacher and as a learner about teaching differed in two subject matter contexts, mathematics and literacy, and how these differences in her identity shaped her teaching practices. He found that after analyzing tasks and discourse patterns of her mathematics lessons, the teacher's teaching practices depended largely upon memorization and procedure, which contrasted with her literacy instruction with an emphasis on students' reasoning. On the basis of understanding that subject matter contexts influence teaching practices, Drake et al. (2001) also investigated how elementary teachers' identities played a role in their learning and teaching practices. They analyzed 10 elementary teachers' stories of learning experiences and of teaching practices in mathematics and literacy contexts. They compared the narrative differences in their identities in both subjects. They found that these teachers' stories reflected their identities as mathematics and literacy learners and teachers, which shaped their teaching practices. In the study, unlike literacy stories that were uniform among these 10 teachers, mathematics stories were "dominated by disappointing and discouraging experiences learning mathematics in school" (p. 10). Both studies suggest that teachers may have differences in their identities depending upon subjects. Mathematics teacher identity is "one of many disciplinary identities" that teachers develop (Aguirre et al., 2013, p. 10). These studies also emphasize ways teacher identity in particular relation to the mathematics teaching context can inform and shape teaching practice.

Relationships Between Teacher Identity and Interactions with Students in Small Group Work

The role of the teacher in both setting up small group work and managing effective small group interactions has been regarded as "a rich area for further research" (Blunk, 1989, p. 210). Researchers have still tended to pay attention more to setting up small groups than to managing or intervening in small groups (Webb, 2009, 2013). When researchers have specifically addressed interaction with students in small groups, they have recommended that teachers should intervene in small groups only when it is necessary (Cohen & Lotan, 2014; Ding et al., 2007; Johnson & Johnson, 1990).

Several researchers have attended to different interaction approaches in small groups: for example, evaluation (Chiu, 2004); mediating students' thinking (Gillies & Boyle, 2006); progress of group interaction process (Dekker & Elshout-Mohr, 2004); or treating status-issues (Cohen & Lotan, 2014; Featherstone et al., 2011). More specifically, in the evaluation approach, teachers make comments and questions to agree/disagree with students' ideas in small groups (Chiu, 2004). In the mediating students' thinking approach, teachers offer comments and questions to scaffold students' thinking (Gillies & Boyles, 2006). In the group interaction-related approach, teachers make comments to facilitate the communication process among students in mathematics classrooms (Dekker & Elshout-Mohr, 2004), in ways that "are not concerned with students' reasoning and products, but

with their interaction" (p. 43). For the treating status-issues approach, teachers make comments publicly to assign competence to low-status students (Cohen & Lotan, 2014). Research on these approaches has broadened understanding of teachers' interaction with students in small groups. However, these studies do not support researchers with an interest in teachers' interaction in understanding what may make teachers interact with students in small groups.

As explained in the previous sections, teacher identities are related closely to how they participate in teaching practices (Aguirre et al., 2013; Drake et al., 2001; de Freitas, 2008; Spillane, 2000). Given that, interaction with small groups as teaching practice in mathematics classrooms (Ehrenfeld & Horn, 2020; Pak, 2020b, 2021) could be assumed to have certain strong links to teacher identity. In the field of mathematics teacher education, there have been many studies on teacher identity to understand teaching practices. However, the field does not know enough about this particular relationship between teacher identity and teachers' interaction with students in small groups. As such, I propose a need for investigating the relationships between teacher identity and interaction. In this study, I explore how teachers' identities as teachers shape their interaction with students in small groups in mathematics classrooms.

III. METHODS

In this section, first, I describe a research context and two participants. Second, I illustrate how I collected data to achieve the goal of this study. Third, I detail the data analysis in three phases.

Participants and Context

In my previous research project (Pak, 2020a), I explored how beginning teachers, whose teaching career is between the first and third year, facilitated small groups after intervening in small groups. Two beginning teachers, Leslie and Marva (pseudonyms), were selected as participants in the project. They were in their second or third year in teaching careers in 2018-2019. I recruited them because they reported they had implemented small groups regularly as an instructional structure to teach mathematical concepts and decided to participate in the study. In this study, I used these two beginning teachers as a case regarding how identity shapes teaching practices on the part of novice teachers.

Leslie was in the third year of her teaching career in 2018-2019. She taught at a private Catholic school for K-8 students, which was located in a city area in a mid-western state in the U.S. She taught 20 fourth-grade students in her classroom. Students in her classroom as well as in the school were predominantly White. Marva was in the second year of her teaching career in 2018-2019. She taught at a public charter school for K-12 students, which was located in an urban city area in the same state as Leslie. This area was highly diverse in race/ethnicity, culture, and language, which was reflected in the school

as well. She taught 23 first-grade students in her classroom.

Data Collection

For the study I mentioned earlier (Pak, 2020a), I received approval from the Institutional Review Board (IRB) at a mid-western university to collect the data, including online survey responses, video-recordings, and interview transcripts. In this current study, I used only interview transcripts to examine how teacher identity shapes teachers' interactions with students in small groups. Below, I will explain how I obtained the interview transcripts in the previous study.

I conducted four interviews at different times. Early in the study, Leslie and Marva were asked to participate in the first interview as a follow-up after taking an online survey in which they had to respond to four hypothetical scenarios (See Pak (2020a) for detail regarding the online survey). Then I conducted three stimulated recall interviews with each teacher. Before conducting a stimulated recall interview (Dempsey, 2010; Nguyen et al., 2013; Stough, 2001), I video-recorded the entire length of three different mathematics lessons per each teacher. The number of small groups in these lessons was four groups of four to five students in Leslie's lessons and eight groups of two or three students in Marva's lessons. As a result, I obtained video recordings of six different mathematics lessons from Leslie and Marva. Watching each video recording, I identified four or five specific interventions with potentially productive intervention approaches (Chiu, 2004; Dekker & Elshout-Mohr, 2004; Featherstone et al., 2011; Gillies & Boyle, 2006). These approaches included asking students to evaluate other students' work, asking students to explain their mathematical thinking, encouraging students to work together, and mediating students' thinking. During each stimulated recall interview, I had the teacher watch each interaction I had identified prior to the interview. After watching each interaction, I asked the teachers to explain, elaborate on, and reason about what they noticed, what they thought went on in the small group, where they learned the interaction, and how they viewed themselves as teachers when intervening in the small group. The interview data were audio-recorded and fully transcribed for analysis. As a result, I obtained eight interview transcripts to analyze.

Data Analysis

I drew on a thematic analysis (Glesne, 1999) to examine teacher identity on the part of Leslie and Marva in terms of how they made sense of their interaction with students in small groups. I explain the analytic process in three phases. First, reading the whole interview transcripts, I identified excerpts that provided evidence related to teachers' teaching identities. Second, I conducted a closer examination of the excerpts in relation to teacher identity to find similarities and differences among them in terms of teacher identity. Third, I investigated the relationships between teacher identity and interaction with students in small groups.

In this first phase, in search of excerpts that clearly showed instances of teacher identity, I read the whole interview transcripts to identify excerpts with instances of teacher identity. I looked for several cues that might be related to teacher identity. The cues

included 1) I-statements in which teachers said who they were, 2) use of strong adjectives, adverbs, or verbs (e.g., very, highly, wonderful, or hate), 3) characters who had a strong impact on the beginning teacher's teaching, or 4) certain words, such as want, expect, believe, or (dis)like. In particular, I looked for strong adjectives, adverbs, or verbs because people tend to reveal their beliefs or dispositions when they use such strong words. With these cues in mind, I looked for excerpts where teachers explicitly invoked who they were in relation to intervening in small groups. As a result of the search, I obtained 33 excerpts with clear instances of teacher identity. To make sure these 33 excerpts are clear instances of teacher identity, I asked a mathematics educator to examine whether she saw clear instances in the excerpts. She had extensive qualitative research experience, including research on teacher identity. She confirmed that all 33 excerpts provided evidence of teachers' identities as teachers.

In this second phase, using the 33 excerpts, I read back and forth between these excerpts to find similarities and differences within each teacher. The exploration guided me to look for teacher identity in terms of their talk about who they currently were. As such, I looked for teacher identity in terms of whether teacher identities were related to their current teacher identity. The current teacher identity meant their current views of themselves as a teacher ("as a person I've always been more comfortable in small groups"). Using the 33 excerpts, I also examined different aspects of current teacher identity on the part of both teachers. Reading the excerpts within and across individual teachers allowed me to realize both teachers very often emphasized how their past experiences had shaped their teacher identity.

In this third phase, building on the analysis of different aspects of both teachers' current teacher identities, I explored how their teacher identities were related to their interaction with students in small groups. I read again all excerpts and analyzed corresponding interactions in small groups in the excerpts. I looked back and forth between the excerpts related to teacher identities and interaction with students in small groups to identify how both might be related.

IV. FINDINGS

As a result of analyzing 33 excerpts, I present how these teacher identities shaped their interactions with students in small groups in terms of each teacher's current teacher identity. First, for Leslie, her teacher identity was related to her personal experiences as a child and a learner. Second, for Marva, her teacher identity was related to her view of teachers' roles as a teacher. In this section, I demonstrate each finding by providing excerpts and my interpretation.

Leslie's Current Teacher Identity: Personal Experiences

When being asked to provide reasons behind her interactions with students in small groups in the interview, Leslie frequently invoked aspects of her current teacher identity

related to her personal experiences as a child and a learner. I found that these aspects were tied closely to Leslie's interactions with students in small groups. These aspects of her current teacher identity were distributed across her reasoning about interaction excerpts and were invoked more frequently than other aspects of her identity.

"I was the more shy, quiet one" (Survey follow-up interview). In the follow-up interview to the online survey, Leslie invoked a personal aspect of her current teacher identity when she talked about her plan to intervene in the small group in a hypothetical scenario. The scenario depicted a situation where a small group of students had difficulty working together to identify line-symmetric figures and draw lines of symmetry. In her written response in the online survey, she noted she understood the situation that, "Robin [one of the students in a small group in a scenario in the online survey] is feeling self-conscious that her way was critiqued." She went on to note that she would intervene in the small group by helping them get back to working well with each other.

> I would go to the group and ask them to review their discussion with me. I would specifically ask Robin what he/she thought about each of them and finally ask both partners what they thought about Robin's. I would praise the criticism and remind them that sometimes the best way that we learn is through making mistakes.

In explaining why she would intervene in the small group in this way, she wrote, "from my personal experiences, kids are afraid to be wrong because they don't want to be made fun of or seen as less smart than others. I would reiterate that being wrong isn't a bad thing." This quote suggests that there is a tight link between her personal experiences and her interaction.

When asked to talk more about her personal experiences in the follow-up interview, Leslie elaborated on her personal experience as a child in her family. She had seven siblings, some of whom were older than Leslie. She was shy and quiet while her siblings were always very outspoken. When she made mistakes, her older siblings teased her for her mistakes.

> I'm one of eight kids and my older brothers and sisters were always very loud, very outspoken, very confident. And I was the more shy, quiet one. And so, being one of eight kids, I mean, if you say something that's wrong someone is about to harp on you and tease you a little bit, which was, I mean, that's just my family, that's just what we do. But I think it-- I internalized it into the classroom. So even though I wasn't really made fun of if I got a question wrong, I was hesitant to answer a question if I didn't think it was 100% right. Because I was a little fearful that someone was going to make fun of me in the classroom. And I see that with a lot of my kids.

What Leslie highlighted in this excerpt was that having experiences as an introverted child

with extroverted siblings made her understand how a child may feel when the child makes mistakes and others critique the mistakes. These experiences also shaped her sense of empathy toward those kids who make mistakes. In a response to another hypothetical scenario, Leslie said, "having that experience I kind of relate to the kids that kind of go under the radar and so I want to pull them out of what I wished someone would've pulled out of me a long time ago." She "internalized" this personal experience as a child into "the classroom." In her plan to intervene in the small group above, this internalization seemed to explain her plan to intervene in the small group by "ask[ing] Robin what he/she thought about each of them and finally ask[ing] both partners what they thought about Robin's." She invoked her teacher identity related to her experience as a child and furthermore used this personal aspect to reason about her interaction with students in this specific small group.

"I was one of eight kids" (Third stimulated recall interview). Leslie invoked a personal aspect of her current teacher identity when explaining her interaction in the third stimulated recall interview. In this lesson relating to the interview, the students in small groups had worked on addition, money, and decimals in the context of teaching scarcity and opportunity cost. The students engaged in a group activity based on a hypothetical scenario regarding students' background knowledge about Black Friday shopping.

Looking at the students' worksheet, the teacher attended to slow progress they were making on the group work. "I saw they only had one answer written down." She knew that some "higher side" students in the small group tended to take over the small group work and "lower side" students joined passively. "Seeking to understand" whether the students "were thinking of total as the whole sum altogether," the teacher approached the small group and told the students her expectation to find exact costs that they should obtain by adding three totals, pointing out what students were missing in solving the group task.

Being asked to talk more about the interaction, the teacher invoked her current teacher identity that has been shaped by experiences as a child in her family. As mentioned above, she had seven siblings, some of whom were older. In this excerpt, the teacher explained her older siblings as a source of learning for her within her family:

> I think that every student has strengths and weaknesses. And I think they vary across the board. So, I have some students that are really good at drawing, and some students that are really good at reading comprehension. So, when we do a reading comprehension activity that's all about drawing, I try to pair those two students up together so they can kind of build off each other, and help each other's strengths and weaknesses and help them grow. And I think that-- I mean I was one of eight kids, so I-- my brothers and sisters were constantly-- I knew I could go to my one sister and she was really good at quizzing me, versus I know I could go to my other sister and she was really good with helping me with writing. So, I knew that I had all these resources that I could go to. So, I really want to build that community in my classroom too, where I'm not the only resource you have to go to. If I'm working with a student, there are 17 other kids here that you can

go to help you. Now, they're not supposed to give you the answer, but they're supposed to help you kind of understand it too.

She emphasized in this excerpt that everyone has "strengths" and "weaknesses." This acknowledgment was tied to her experience as "one of eight kids." Her older siblings were able to help her with things she was not good at or could not do alone, such as quizzing and writing. Her experience as "one of eight kids" shaped her reasoning about her interaction.

What the teacher did in her interaction was make sure that the students learned from each other to find the exact costs of the totals. She intervened in the small group this way because she wanted her students to see and use each other as a learning source. This idea of other students as a learning source "that you can go to help you" explains her interaction with students in the particular small group. In another interaction episode, the teacher also emphasized this idea. She "wanted the students to also be the teachers" instead of leading the students "right to the answer." Her emphasis on students being teachers of each other was built on her personal experience as one of eight kids.

Marva's Current Teacher Identity: Role-Related

When being asked to provide reasons behind her interactions with students in small groups in the interview, Marva invoked aspects of her current teacher identity related to her view of teachers' roles as a teacher. These role-related aspects were linked frequently to Marva's intervention in small groups.

"For me it fits into me as a teacher" (First stimulated recall interview). The goal of this lesson regarding the first stimulated recall interview was "follow procedures of addition and to recognize that addition is two parts making a whole." In this lesson, the students in small groups had worked on simple addition problems with a missing part in the addends, such as $5 + [\ ] = 9$.

Marva recognized the "typical" body posture and action of Jordan, a male student in a small group. While other group members were working together in the small group, this student was "back in his chair" so "he couldn't see the paper, and he was too far away to be able to hear and listen to them."

In Marva's interaction, "without putting it [the off-task behavior] on him," she encouraged the group members to work together ("are you guys working together?"). The teacher also wanted the group to include Jordan in the group work ("Who are you supposed to be working with right now? You three are supposed to be working together, not just [inaudible] and Rosa, you can't leave Jordan out.") By doing this, the teacher wanted Jordan to realize that he had to get back to work with his group members.

Being asked to talk more about her interaction, the teacher detailed a view of her role as a teacher. In connection to her view, she seemed to have a certain expectation towards students working together with each other.

I think it fits me as a teacher because I try to give them that opportunity to work in groups and it's usually a privilege to work in groups because they like working

with each other and nobody likes sitting there working quietly. So, for them, it's being able to be responsible for that because a lot of people say, "Oh, they're only in first grade." But I'm like, "Yeah, now's the time to teach them that responsibility and to listen and follow directions." Because if you wait it's going to be that much harder to get them to do it. If you set the expectation, they can do it. It's just setting that expectation and sticking to it. And so for me-- with that in mind because of how I am as a teacher because of that, So I see he wasn't really working, he was off task then the expectation is you're engaged in it. And it's not responsible to just be sitting there because now you're not learning. And they know that the reason they're in school is to learn and that's one of the things I always go back to is, "We're here to learn. You have to be trying, if you're not trying, you're not learning."

When Marva said, "it fits me as a teacher," the "it" in this excerpt meant for the teacher to give the students a chance to work with others in small groups, which was her view of her role as a teacher. This excerpt shows her view in a strong connection to an expectation and belief that she held in relation to students' cooperation. This particular view of her role as a teacher seemed to shape the way she intervened in the small group. In her interaction, when she saw Jordan "off-task," she tried to help him and his group peers recognize that they had to work together with others "to learn" from each other. What Marva did in her interaction was to provide the students with an opportunity to work with others. By this interaction, she seemed to put her view of teachers' role in intervening in small groups into practice. Marva used this role-related aspect of her current teacher identity to explain the way she intervened in the small group, particularly in relation to Jordan's typical off-task behavior.

      "It's just me being flexible" (Second stimulated recall interview). Marva also invoked a role-related aspect of her current teacher identity to explain how she interacted with a small group in the second stimulated recall interview. The goal of this lesson was "figure out how to use the measuring tools and the ideas behind accurately measuring." In this lesson, the students in small groups had to measure the length of their desk, a marker, their book, and then a fish figure that was in the book using connecting blocks, paper clips, rulers and tape measures.

      While monitoring small groups, she heard a student saying "stop" to another student in a small group. She stepped in with an intent to "cut the attitude" and to understand what was going on in the small group.

      In her interaction, she asked the students to explain how they measured the book with paper clips because the students did not have the same measurements ("Let's see. How did you measure it? Show me"). She found that a student said "stop" because the student "didn't like the way she [another student] was measuring with the book open." The student measured the book and got eight, while another student got seven because of leaving "too many gaps" between paper clips. The teacher tried to facilitate them to help them figure out what was wrong on their own ("What do you think that [leaving gaps] means for a

measurement?”).

Being asked to talk more about her interaction, her role as a teacher trying to “be flexible” was invoked several times in relation to this particular interaction episode. Marva invoked the role-related aspect of her current teacher identity depending on students’ needs she perceived at the moment. The excerpts below show her view of teachers’ role with respect to flexibility.

> A lot of it is-- it's just me being flexible and so hopefully just trying to be flexible. It's just me finding, and knowing the students, and what's happening and just trying and going with the flow and trying to figure out what's happening.
> Because if I was just, it's got to be this way, it would never get done correctly. Just because if I went with what was planned and stuck to it, either half the kids would never get it, or things would fall apart and kids would probably get hurt, because they'd start fighting or something out of nowhere. So just being able to adjust and know what the needs are at the moment and just finding ways to meet those needs.

According to these excerpts, in general, when Marva perceived a need to intervene in a small group, she first tried to find out what was going on in the small group. She also tried to “go with the flow” in the group. This role related to flexibility emphasizes what the teacher should do. The teacher is responsible for “knowing what the needs are at the moment and just finding ways to meet those needs.” This flexibility exists in “all the subjects, even just and now even in the classroom just being in a school.”

There might be several events happening simultaneously in a small group that might need Marva’s attention and interaction in a flexible way. “Being flexible” as one of the role-related aspects of her current teacher identity influenced ways for Marva to intervene in the small group. In her interaction in this interview, she needed to respond to the students’ argument. She also had to help them revise their strategies to measure the book without telling them what was wrong. Even though she had an intention to “cut the attitude” in the beginning, her actual interaction was more about leading the students to thinking about their measuring strategies. This actual interaction related to learning mathematics seems to be an example of her “just being able to adjust and know what the needs are at the moment.” She might feel a need to help the students learn mathematics at the moment by “going with the flow.” This way Marva called on the aspect related to flexibility to reason about her interaction in the specific small group.

V. DISCUSSIONS AND IMPLICATIONS

In summary, I constructed multiple aspects of the current teacher identity that Leslie and Marva invoked to explain their interaction with students in small groups in mathematics instruction. I illustrated aspects of current teacher identity used more

frequently by both teachers to make sense of their interaction. Leslie frequently drew on personal aspects of her current teacher identity as a learner and a child ("I was the more shy, quiet one" and "I was one of eight kids"). Marva very often invoked teachers' role-related aspects of her current teacher identity ("For me it fits me as a teacher" and "I'm more of just a monitor.") On the whole, their reasoning about their interaction with students in small groups were tied closely to these distinct aspects of both teachers' current teacher identity. In general, this paper suggests that making sense of interaction with students in a particular small group sometimes involves teacher identity.

The findings of this study suggest that both teachers invoked their current teacher identity to explain, make sense of, and reason about their interactions. In this paper, teacher identity was used in two ways. First, it was an analytic lens for me as a researcher to understand teachers' interaction. Second, teacher identity served as a resource for teachers to use to make interaction-related decisions.

In a broad sense, research on teacher identity has suggested the close relationships between teacher identity and teaching practice in many contexts (e.g., Drake et al., 2001; Spillane, 2000). In these studies, it seemed that teacher identity was used as an analytic tool for these researchers to examine the relationships. For example, Drake and colleagues (2001) analyzed 10 elementary teachers' stories of learning experiences and of teaching practices in mathematics and literacy contexts to understand the relationships between teacher identity and teaching practices. In this research, teacher identity was a crucial tool that Drake and colleagues used to investigate the relationships. I do not claim that teachers in these studies did not use their identity as a teacher to explain their teaching practices. Rather, these researchers shed light on teacher identity to examine teaching practices.

The idea of teacher identity as a resource for teachers is similar to the way mathematical teacher identity is discussed by Aguirre et al. (2013). Even though these researchers did not label teacher identity as a resource, they illustrated multiple aspects of teacher identity that are built on teachers' experiences as learners or persons. These aspects of teacher identity could be seen as resources that teachers took with them and used to make sense of their teaching practices. To be similar, beginning teachers in this study drew on different aspects of teachers' current teacher identity to explain their interaction with students in small groups. For example, Marva called on the role-related aspect of her current teacher identity to explain her specific interaction with students in a small group. In this way, her teacher identity was a resource for her to make sense of her interaction. As such, these aspects of current teacher identity could be resources for beginning teachers in intervening in small groups.

This study offers some implications for researchers as well as teacher educators. First, this study suggests an implication for research on teacher identity in terms of teachers' interaction with students in small groups. The implication is to examine designated teacher identity (Sfard & Prusak, 2005) to understand its relationship to current teacher identity and how the relationships shape their interaction with students in small groups. For example, Marva invoked her current teacher identity related to "being flexible" to explain her interaction in which she asked the students to explain how they measured the book with paper clips. It seemed that she was not satisfied with this interaction and this dissatisfaction reminded her of who she wanted to be "as a teacher." She would "rather be just almost

eavesdropping and watching them interact," which would be her designated teacher identity. As shown in this example, I suggest examining the relationships between current/designated teacher identity and further how they shaped her interaction.

Second, this study suggests supporting prospective teachers to learn diverse ways to interact with students in small groups. Teacher educators could also make different combinations between the pedagogies of practices and findings in this study. For example, teacher educators could have prospective teachers who are on their practicum record their own interaction with students in a small group. They could give a course assignment to analyze their own interaction in terms of different aspects of their current teacher identities they invoke. In particular, given both teachers' current teacher identity was related to personal experiences and teachers' role, teacher educators may focus on personal and role-related aspects of teachers' current teacher identities in relation to interaction in small groups.

VI. LIMITATIONS OF THE STUDY

In this section, I describe two limitations- 1) the small number of participating teachers and 2) the short period of time. First, the small number of beginning teachers in this study might limit the understanding of how identity shapes interactions with students in small groups. I analyzed the data from two beginning teachers. It is not clear whether this study would have similar findings if I analyzed the data from several beginning teachers with different grade levels. The findings might be different from the current findings. Even though this difference in findings might be the case, I argue that this study can still contribute to the field in terms of unearthing some relationships between identity and teaching practices. Regardless of the small number of participating teachers, this study still allows the field to deepen its understanding of this ordinary teaching activity on the part of beginning teachers. Second, a single semester investigation of beginning teachers' interaction with students in small groups might limit the understanding of interactions. Even though I said that data collection occurred in a single semester, the actual period for me to collect from the beginning teachers was about two months apart from the first interview to the last interview. Furthermore, I did not collect data at the beginning and end of the year. Thus, it is not clear whether and how their interaction would be different from year to year. The findings might be different when I took a developmental perspective on intervention in small groups. I could understand how their identity as a teacher could develop along with change in ways to intervene in small groups coming from more chances to participate in professional development. As such, taking a view of the learning trajectory to understand intervention in small groups would allow me to find much richer data sources. However, even though this study was conducted in about two months, I was able to provide a solid understanding of the relationships between identity and interactions with students in small groups. For my future research, I would examine intervention in small groups in combination with those constructs from developmental perspectives.

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