TEACHERS' POSITIONING IN PROFESSIONAL DEVELOPMENT: THE CASE OF AGE AND GRADE

P. Holt Wilson
The University of North Carolina at Greensboro
phwilson@uncg.edu

Cyndi Edgington
North Carolina State University
cpedging@ncsu.edu

Jared Webb
The University of North Carolina at Greensboro
jnwebb2@uncg.edu

Paola Sztajn
North Carolina State University
psztajn@ncsu.edu

In this mixed methods study, we use positioning theory to analyze teachers' professional discussions about students' mathematical work over the course of 60 hours of professional development focusing on a learning trajectory. After identifying a category of speech actions that suggested student learning is limited by their age or grade level, a quantitative investigation revealed that teachers' discussions grew to include elements of the learning trajectory over time. A subsequent qualitative analysis revealed changes in the structure of these discussions, where teachers came to recognize and use students' prior experiences in instruction, and student learning was more influenced by prior experiences than their age or grade level.

Keywords: Learning Trajectories (or Progressions); Teacher Education-Inservice (Professional Development)

Introduction

Teachers' professional conversations about students often focus on what students cannot do (Franke & Kazemi, 2004) and take evaluative perspectives (Visnovska, Zhao, & Cobb, 2006). Such a focus may lead to limited expectations of students (Rosenthal & Jacob, 1968). In this mixed methods study, we examine teachers' discourse in a professional development setting to consider the ways their learning of a framework for students' mathematical thinking can foster changes in their discourse. We use positioning theory (van Langenhove & Harré, 1999) to frame an analysis of 60 hours of professional development discussions among 22 elementary teachers and examine how certain discourse patterns related to students' ages or grade levels changed during the yearlong professional development. Specifically, our research answers the question: *In what ways does teacher learning of a mathematics learning trajectory relate to changes In their discursive patterns about students as mathematics learners ,and themselves as mathematics teachers, I na professional development setting?*

Background and Theoretical Framework

Professional development (PD) based on students' thinking results in changes in teachers' discourse (Horn, 2007; Kazemi& Franke, 2004). As teachers learn details of students' mathematical strategies, their discussions shift from a focus on students' struggles to more nuanced discussions that attend to students' strategies and levels of sophistication in students' mathematical thinking (Kazemi& Franke, 2004). Teachers' use of more refined language to describe the complexities of student mathematics supports teachers in incorporating student thinking into their model of practice (Horn, 2007). Some researchers have explicitly used student thinking to structure the discourse in a professional development program. For example, Battey and Chan (2010) worked to counteract metanarratives about race and mathematics learning by drawing teachers' attention to student thinking and what students can do—as opposed to what they cannot do. A focus on student thinking led to changes in teachers' discourse about students as they began to base their claims about students

Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.). (2015). *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University.

in evidence of students as mathematical thinkers instead of assumptions formed by other characteristics.

van Langenhove and Harré (1999) proposed positioning theory as an approach to understanding how psychological phenomena are constructed through social interactions in conversations. In contrast to the "roles" people take in interaction which may be static and limiting, positions in conversations are dynamic, negotiated in the moment, and may be accepted or contested. They argue that conversations can be understood through an examination of three mutually constitutive constructs called positioning-triads: the intention of a speech action (speech acts), positions, and storylines. Whereas speech actions are the actual words that one says, speech acts are the meanings intended by the speaker and are taken up in conversation. Speech acts in conversations tend to follow particular patterns called storylines, which refer to narratives that exist within a culture. Storylines provide a socially constructed image which participants in the conversation use to interpret each other's actions and positions. Speech acts relative to a particular storyline lead to positions, or the ways these speech acts may be heard by other participants. Positioning can be interactive, where speech acts along with a particular storyline frame another person as competent/incompetent, powerful/powerless, etc., or reflexive, where a speech act frames one's self in a particular away, such as unknowledgeable, skilled, agentic, etc. Together, speech acts, storylines, and positions describe a structure of conversations and provide a way to understand shared meaning in social interactions.

Researchers in mathematics education have used positioning theory in a variety of ways, including studies of student interactions (e.g., Langer-Osuna, 2011) and classroom interactions (Herbel-Eisenmann and Wagner, 2010). Suh, Musselman, Herbel-Eisenmann, and Steel (2013) used positioning and storylines to study nine teachers' talk in PD and revealed how teachers' speech acts positioned students and themselves in relation to teaching and learning. They identified two particular storylines present in the PD discussions related to "low students." First, teachers' discussions followed an "institutional tracking" storyline, where students in less advanced mathematics tracks were unlikely to move to take advanced courses. Second, discussions followed an "individual maturation" storyline, where students' lack of maturity prevented them from being successful in mathematics. In both storylines, students were positioned with characteristics that were beyond the teachers' control, thus limiting teachers' self-positioning as agents of change. They report that when teachers were introduced to a new storyline, they positioned students differently and themselves with more agency.

Suh et al.'s (2013) work both demonstrates the utility of positioning theory to examine teacher discourse in PD as well as the possibility of changing discursive patterns about students through the introduction of new storylines. Our research aimed to understand the degree to which teacher learning about a learning trajectory (LT) affected the discursive patterns in PD. Specifically, we focused on speech actions, speech acts, storylines, and positions in teachers' discussions about students' mathematical work to understand the ways their learning of a LT affected their conceptualizations of students as learners and themselves as teachers.

Methods

Our study used an exploratory sequential mixed methods design to investigate the changes in teachers' discursive patterns about students as mathematics learners (Teddlie & Tashakkori, 2009). We followed a two-phase approach. First, we investigated whether teachers' learning of the LT affected their discussions of students' mathematical thinking through a quantitative analysis of their speech actions. Next, we investigated qualitatively teachers' discussions by examining changes in the speech acts, positioning, and storylines over time to understand the ways teachers' discourse patterns incorporated the LT.

Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.). (2015). *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University.

Context

Our study is a part of the Learning Trajectory Based Instruction (LTBI) project, a multiyear PD and research project that investigated teacher learning of students' mathematics LTs and an instructional model where LTs provide guidance for teachers' instructional decisions (Sztajn et al., 2012).LTs are mappings based on empirical research and represent the ways student thinking within a specific mathematical domain evolves over time (Daro, Corcoran, & Mosher, 2011). They outline the partial understandings, common alternative conceptions, and expected tendencies of how learning proceeds in relation to particular forms of instruction (Confrey 2009).

In the first implementation of the PD, we shared Confrey's (2012) equipartitioning LT with teachers and sought to understand how their learning of the LT affected the ways they conceptualized students as mathematics learners and themselves as mathematics teachers. The equipartitioning LT describes how students' informal understandings of fair sharing might evolve to an understanding of partitive division, including students' strategies and common errors related to fairly sharing collections, wholes, and multiple wholes to produce equal-sized groups or parts. The 60-hour PD was designed for a 12-month period, beginning with a 30-hour summer institute during which participants engaged in professional learning tasks (PLTs) that included video analysis of students' working through mathematical tasks, videos of classroom instruction, and analysis of students' written work. Throughout the year, teachers and researchers met monthly after school to discuss the implementation of instructional tasks with their students and refine their understanding of the LT. The PD ended with a two-day follow-up summer meeting.

The research team partnered with one elementary school in a mid-sized suburban school district in the Southeastern United States. The school had approximately 600 students, 35% Caucasian, 29% Hispanic, 25% African American, 7% Asian, and 4% other; 54% of the children qualified for free or reduced lunch. Twenty-two K-5 teachers completed the project at years end.

Data Collection and Analysis

Data sources included video and audio recordings of teachers' discussions while engaging in 21 selected PLTs that focused teachers on students' mathematical thinking. During the summer, teachers engaged with various practice-based artifacts to learn about students' thinking of equipartitioning. During the school year meetings, teachers discussed various classroom-based activities aimed at eliciting and understanding their own students' thinking. Recordings for these 21 PLTs, totaling 41 video and 55 audio files, were transcribed.

During the PD, patterns in teachers' discussions about students' mathematical work began to emerge, often attributing students' lack of success to their grade level or age. Statements such as, "we don't do that in third grade" or "he is low," revealed some of the narratives about students as learners that were accepted and used in the group. We conceptualized these statements as categories of speech actions related to storylines that were used to position students as mathematics learners and themselves as mathematics teachers. Upon completion of the PD, we developed a codebook to identify these speech actions based on the field notes collected during implementation (Wilson, Edgington, Sztajn, & Decuir-Gunby, 2014). Four codes defined the categories and described teachers' speech actions as suggesting student learning is dependent upon their: Ability/Achievement; Age/Grade; Effort; and Luck. In this paper, we focus exclusively on speech actions related to Age/Grade.

Phase one. For the quantitative analysis, we specified the unit of analysis as a speech action. Four independent coders first identified speech actions related to Age/Grade (85% inter-rater reliability). To understand if learning the LT resulted in changes in their speech actions, the research team revisited the coded units for evidence from the LT. Evidence was taken to be both explicit use of LT terminology (e.g., direct reference to the LT structure, specific student strategies described

Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.). (2015). *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University.

within the levels) as well as implicit where teachers used less formal language to describe ideas from the LT. In both cases, these units were assigned an additional code of LT, resulting in three variables: Age/Grade with LT, Age/Grade without LT, and total Age/Grade. Next, we organized the total speech actions within each of the 21 PLTs chronologically (see Table 1). We hypothesized that as the PD progressed, teachers' speech actions would increasingly include references to the LT and thus subjected each variable with its associated time to Spearman rank-ordered correlation tests of significance.

Phase two. To understand the ways and the extent to which teacher learning of the LT resulted in changes in speech acts, positioning, and storylines in the PD, we identified episodes in teachers discussions, that is segments of discussion around one idea that begins when a speech action is made and taken up by other participants in the discussion (Harré & van Langenhove's, 1999). We then used a constant comparative method (Strauss & Corbin, 1998) to discern themes across all episodes, meeting regularly to discuss emerging patterns, deviations from those patterns, and reconcile them with the data. We considered the resulting themes as storylines teachers used to conceptualize students as mathematics learners and themselves as mathematics teachers. Next, we applied the positioning-triad as an analytic tool to the episodes to understand the ways, and extent to which, teacher learning of the LT resulted in changes in the storyline and positions across the PD. For each PLT, two members of the research team summarized the speech acts, teachers' positioning of themselves and students, and variations in the storyline for all episodes occurring during the PLT. The entire research team then looked across the summaries to mark shifts in teachers' discussions as the PD proceeded and understand the ways the LT affected teachers' discursive patterns.

Findings

Results from the two phases of analysis indicate that teacher learning of a LT affected the discursive patterns about students as mathematics learners in a PD setting. First, we show how the speech actions related to Age/Grade changed quantitatively over time. We then qualitatively examine how the speech acts, storylines, and positions changed.

Phase one analyses indicated that teachers' speech actions related to Age/Grade remained present throughout the PD ($n = 143$; $\rho = -0.052$; $p = 0.411$). Further, speech actions related to Age/Grade that also used the LT significantly increased over time ($n = 40$; $\rho = 0.352$; $p = 0.059$). For the subset coded no LT, no significant decrease was found ($n = 103$; $\rho = -0.079$; $p = 0.367$). These findings confirm our hypothesis that, as the PD unfolded, teachers learned about the LT and came to use LT-language in Age/Grade discussions of students as mathematics learners. These analyses show that teachers' speech actions changed, yet they do not characterize the changes in positions or storylines used to conceptualize students as mathematics learners.

Phase two analyses focused on the episodes related to Age/Grade in order to examine positioning and storylines. As seen in Table 1, a total of 46 episodes related to Age/Grade occurred in the focus PLTs. Table 2 summarizes the speech acts, storylines, and positions across these episodes. Whereas the initial storyline of the discussions indicated that age and grade level are key influences of student learning, the storyline changed such that students' prior experiences influenced learning. Though teachers' speech actions still referred to age and grade, these actions were intended more as descriptions of the student. Teachers began the PD by positioning themselves as one who had experiences with students and expertise to make sense of students' mathematics but had no instructional recourse if a student did not meet their age or grade level expectations, because students' capacities to learn were limited. Over time, teachers began to note that students had experiences, beyond their age or grade level, that they may bring to instruction, and began to indicate that they could include these experiences in their instructional decisions. Eventually, teachers positioned students as having resources that support their mathematics learning and could tailor their

Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.). (2015). *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University.

instruction to make use of these resources. In what follows, we provide two episodes to illustrate these shifts.

Table 1. Number of Age / Grade speech acts and episodes by Time and PLT.

Time	PLT	Speech Actions			Episodes	Time	PLT	Speech Actions			Episodes
		LT	No LT	Tot.				LT	No LT	Tot.	
Summer Institute	1	0	31	31	5	Dec.	12	0	0	0	0
	2	0	1	1	1	Jan.	13	3	1	4	2
	3	0	13	13	7	Feb.	14	5	7	12	5
	4	0	0	0	0	Mar.	15	2	2	4	2
	5	1	3	4	2	Apr.	16	3	2	5	1
	6	0	0	0	0		17	0	2	2	1
	7	1	1	2	1	May	18	0	1	1	1
	8	2	11	13	5		19	0	0	0	0
Sept.	9	3	2	5	1	June	20	2	5	7	1
Oct.	10	9	7	16	6		21	6	4	10	3
Nov.	11	3	11	14	2	Total		40	104	144	46

Table 2. Number of Age/Grade episodes & related speech acts, storylines, and positions.

PLT	N	Speech Act Examples	Storyline	Teacher Positioning	Student Positioning
1-3	13	"I would have expected that from the third grader"	Learning is limited by a student's age or their grade level	Teachers have expertise in understanding students and have expectations based on age / grade level	Students' age or grade level are expected to be successful at certain mathematics
5-12	17	"That radial cut has not appeared yet…kids have the idea from [their] experience that it's supposed to look like a triangle"	Learning is influenced by age or grade level and prior experiences	Teachers have expertise and expectations but recognize the role of prior experiences	Students have prior experiences beyond their age or grade level that influence learning
13-21	16	"We think that because kids are older, they've had experiences, but that's not necessarily true"	Learning is influenced prior experiences	Teachers can use students' prior experiences to support learning	Students' prior experiences are resources that support their learning

As an example of initial positioning during the summer institute (PLTs 1–3), the following example occurred during the first task (PLT 1). Teachers viewed two clinical interviews of two students completing a series of equipartitiong tasks where they were sharing 24 coins among four and three people (Wilson, Edgington, & Confrey, 2010). The following episode was part of a group discussion about what they described as surprising about the students' work:

Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.). (2015). *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University.

G1: Well, the kindergartner did what I thought starting back over with a pile in order to move from four to three. I thought that. But she surprised me with what she did after that.
A1: Well, the most surprising thing was that she seemed to know quickly that it was eight. And I was trying to decide if that was just a guess or if it was an intuitive understanding because she did seem to even recognize that if you took the six coins that the fourth person had, you could distribute those three ways and have eight. She almost seemed to know that intuitively –[D5 agreeing] – which I would never have expected.
D5: No. Me neither.
A1: I would have expected that from the third grader and yet I felt dismayed that formalized classroom mathematics education had stifled her, so that she [G1, D5 agreeing] didn't see it at all that way and immediately suggested that you couldn't do it because three was an odd number.
G1: Right - and there would be some leftover.
A1: You know? Certainly the five year old wasn't encumbered by that. [D5 agreeing] She probably -- she might know odd from even, but that wasn't part of the discussion.
G1: Yeah, that –
A1: was a real stumbling block for the third grader, I thought.

As teachers explained students' mathematical approaches in this discussion, they used the grade levels or age of the students to support their expectations and understanding of what the student did. Speech acts, such as "The kindergartener did what I thought…but surprised me when", "which I never would have expected…I would have expected that from the third grader", and "the five year old wasn't encumbered," positioned themselves as competent in inferring students' mathematical understanding based on their expectations of students at a particular grade level or age. Simultaneously, students were positioned according to these expectations in comparison to students of other age or grade levels, resulting in teachers' surprise. Taken together, the teachers' speech acts and positions follow a storyline that students' mathematical understandings are defined by their age or grade level.

As the PD progressed through the fall (PLTs 5-12), PLTs were based on students' written work and videos of whole classroom instruction. Although teachers' speech acts still referred to students' ages or grade levels, they began to include terminology and ideas from the LT to describe student thinking in more detail. For example, in an episode where teachers were examining a set of student work, one teacher commented, "Developmentally, that radial cut has not appeared yet…kids have the idea from [their] experience that it's supposed to look like a triangle. But when they're dividing, we only had one that actually tried to use those radial cuts." The teacher attributed students' lack of success on the task to their age (development), but also recognized that students' experiences influence their thinking. In such episodes, teachers continued to position themselves as competent in understanding students' thinking but began to expand their explanations beyond age or grade level to include other students' experiences. In turn, students were positioned as having experiences that may support them in learning. These nine episodes followed a storyline that shifted from learning being limited by age and grade to include opportunities to learn and prior experiences also influencing student learning.

By January (PLT 13),a stable positioning-triad emerged in the episodes related to Age/Grade and persisted for the duration of the PD. At this point, speech acts incorporated ideas from the LT and referred to age and grade level not as a limiting factor for learning, but as a descriptor. These 16 episodes followed a storyline where students' prior experiences affected learning, teachers positioned themselves as able to use those experiences as resources for instruction, and students were positioned

Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.). (2015). *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University.

as bringing resources to instruction. To illustrate, the following example episode from the summer follow-up in June occurred as teachers revisited the two clinical interviews from the example above.

A4: If we believe learning is along this trajectory and it's this path way and they need to have these things earlier on before they can get to these things, then it does seem that age is less relevant. Yes, they have more experiences so hopefully they're getting there.

D4: Yeah, isn't it both? Because they don't necessarily have to have- it's not really linear. I mean, they can jump certain things, you know, levels.

[one speech act omitted from the episode]

D3: I liked what D4 was saying about like with age, we often link that to experiences, that because they're older, they've had more experiences. And so I think a lot of what we do is that we do learn from our experiences and we often make the assumption that because kids are older, they have consistently had experiences and they've learned through that. But I don't think that's necessarily true when you look at home backgrounds that kids come from or look at being in a different classroom or a different school, different things like that. That's going to come into play. So each child comes to the table with a different set of experiences. And so that's where like sometimes the high kids do surprise us because they don't know something. Because maybe we've made that assumption before and not provided them with those experiences, or those experiences have always been done for them at home.

Teachers' speech acts incorporated ideas from the LT (e.g. "trajectory," "levels") and referred to age and grade level, not as a limiting factor for learning, but as a descriptor. The storyline suggests that student learning is influenced by prior experiences and opportunities and is not limited to their age and the expected school experiences for students at particular grade level. Teachers positioned themselves with agency – they could provide learning opportunities for students that draw upon, or even provide, such experiences as resources to foster learning. Students were positioned as having these resources that could be used when learning mathematics.

Discussion

Learning the LT changed teachers' discursive patterns about students as mathematics learners and themselves as teachers. Similar to Suh et al.'s (2013) individual maturation storyline, we found a storyline with elementary grades' teachers that a student's age or grade level limits their learning. Yet in our study, teachers grew to acknowledge and use prior experiences as a resource for supporting learning rather than viewing students' learning as bounded by their age or grade level. Thus, we conclude that learning a framework for students' thinking may led to changes in the ways teachers position students from a more strengths-based perspective. Further, such learning may support teachers' agency.

References

Battey, D. & Chan, A. (2010). Building community and relationships that support critical conversations on race: The case of cognitively guided instruction. In M.Q. (Ed.), *Mathematics Teaching and Learning in K-12: Equity and Professional Development*, p. 137-149.

Confrey, J. (2012). Better measurement of higher-cognitive processes through learning trajectories and diagnostic assessments in mathematics: The challenge in adolescence. In V. Reyna, M. Dougherty, S. B. Chapman, & J. Confrey (Eds.), *The adolescent brain: Learning, reasoning, and decision making* (pp. 155-182). Washington, DC: American Psychological Association.

Confrey, J., Maloney, A., Nguyen, K., Mojica, G., & Myers, M. (2009). Equipartitioning/splitting as a foundation of rational number reasoning using learning trajectories. *Proceedings of the 33rd Conference of the International Group for the Psychology of Mathematics Education*, (pp. 345-353), Thessaloniki, Greece.

Daro, P., Mosher, F., & Corcoran, T. (2011). *Learning trajectories in mathematics (Research Report No. 68)*. Madison, WI: Consortium for Policy Research in Education.

Bartell, T. G., Bieda, K. N., Putnam, R. T., Bradfield, K., & Dominguez, H. (Eds.). (2015). *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. East Lansing, MI: Michigan State University.

Fennema, E., Carpenter, T. P., Franke, M. L., Levi, L., Jacobs, V. R., & Empson, S. B. (1996). A
Herbel-Eisenmann, B., & Wagner, D. (2010). Appraising lexical bundles in mathematics classroom discourse: Obligation and choice. *Educational Studies in Mathematics, 75,* 43-63.
Horn, I. S. (2007). Fast kids, slow kids, lazy kids: Framing the mismatch problem in mathematics teachers' conversations. *The Journal of the Learning Sciences*, *16*(1), 37-79.
Kazemi, E., & Franke, M.L. (2004). Teacher learning in mathematics: Using student work to promote collective inquiry. *Journal of Mathematics Teacher Education*, 7, 203-235.
Langer-Osuna, J. M. (2011). How Brianna became bossy and Kofi came out smart: Understanding the trajectories of identity and engagement for two group leaders in a project-based mathematics classroom. *Canadian Journal of Science, Mathematics and Technology Education*, *11*(3), 207-225.
Strauss, A. & Corbin, J. (1998). *Basics of Qualitative Research: Grounded Theory Approaches and Techniques, 2nd Edition*. Thousand Oaks, CA: Sage.
Suh, H., Musselman, A. T., Herbel-Eisenmann, B. A., & Steele, M. D. (2013). Teacher positioning and agency to act: Talking about "low-level" students. In A. C. Superfine & M. Martinez (Eds.), *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Chicago, IL: University of Illinois at Chicago.
Sztajn, P., Confrey, J., Wilson, P. H., & Edgington, C. (2012). Learning trajectory based instruction: Towards a theory of teaching. *Educational Researcher, 41*(5), 147-156.
van Langenhove, L., & Harré, R. (1999). *Positioning theory: Moral context of intentional action.* Malden: Blackwell.
Visnovska, J., Zhao, Q., & Cobb, P. (2006). Professional-Development Design: Building On Current Instructional Practices To Achieve A Professional-Development Agenda. In Alatorre, S., Cortina, J. L., Saiz, M., & Mendez, A. (Eds.), *Proceedings Of The 28th Annual Meeting Of The North American Chapter Of The International Group For The Psychology Of Mathematics Education*. Merida, Mexico: Universidad Pedagogica Nacional, 2006, v. 2, p. 639-646.
Wilson, P. H., Edgington, C., & Confrey, J. (2010). *Equipartitioning Materials for Professional Development*. Unpublished manuscript: Raleigh, NC.
Wilson, P.H., Edgington, C., Sztajn, P., & DeCuir-Gunby, J. (2014). Teachers, attribution, and students' mathematical work. In J. Lo, K. Leatham, & L. Van Zoest (Eds.), *Current Research in Mathematics Teacher Education* (pp. 115 – 132). New York, NY: Springer.