2015

"You don't ask Paul Simon to do a duet with Nickelback": Examining mathematics teacher collaboration

Stephanie Behm Cross
Georgia State University, scross@gsu.edu

Susan Ophelia Cannon
Georgia State University, Sosophelia@gmail.com

Recommended Citation

Cross, S. B., & Cannon, S. O. (2015). "You don't ask Paul Simon to do a duet with Nickelback": Examining mathematics teacher collaboration. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.), Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. 1102–1105). East Lansing, MI: Michigan State University.

YOU DON'T ASK PAUL SIMON TO DO A DUET WITH NICKELBACK": EXAMINING MATHEMATICS TEACHER COLLABORATION

Stephanie Behm Cross
Georgia State University
scross@gsu.edu

Susan O. Cannon
Georgia State University
scannon5@student.gsu.edu

Utilizing narrative inquiry, this study documents the experiences of one middle level mathematics teacher (Andrew) as he works to design mathematics lessons focused on student empowerment and power-sharing. We share snapshots of Andrew's three-year story—a story focused on engagement, push-back, collaboration, and Andrew's decision leave his school after three years. Implications for teacher education and support programs are shared.

Keywords: Curriculum; Teacher Education-Preservice; Teacher Education-Inservice (Professional Development; Instructional Activities and Practices

Background Information and Relevance to PMENA Audience

Andrew and I are sitting together over drinks and cheese fritters on a Tuesday in February; he came directly from school so it is relatively quiet in the bar. Andrew is in his second year of full-time teaching at a local middle school and in his third year of participating in interviews with me—we have met regularly from the beginning of his university student teaching experience until now. We engage in casual conversation first and then he updates me a bit on his new position at Parkview as a 6th and 7th grade teacher teaching all four content areas; he's still overwhelmed at times but managing. I probe a bit more and ask about his recent mathematics lessons—he prides himself on creating "outside the box" projects—and he hesitates; "I'm leaving," he says. "I got my contract for next year…I didn't sign it."

Andrew was a part of a larger study focused on mathematics pre-service teachers' experiences throughout university coursework, but we were struck by his case in particular. In his words, Andrew taught lessons with one goal in mind: "to produce informed, driven, fulfilled individuals capable of making an impact on the world." From the beginning of student teaching he talked frequently about his desire to engage in "authentic power sharing" with students. Intrigued by Andrew's curriculum design process and also the struggles he faced as he engaged in this sort of teaching, we decided to follow him throughout his first few years of teaching. Using data from interviews, observations, and coursework artifacts, our study centered on one main research question: *What are the experiences of a new middle level mathematics teacher engaged in "against the grain" (Simon, 1992) teaching practices?*

Brief Literature Review

Research on new teacher induction concludes that nearly half of all new teachers in the U.S. exit the classroom within their first five years (AACTE, 2010). In urban schools, it only takes about 3 years for half of all new teachers to leave. This high rate of attrition often results from challenging working conditions and the absence of a supportive professional culture. For mathematics teachers in particular, this attrition may also be related to curricular issues as teachers are increasingly placed in schools where a predetermined curriculum dictates what mathematics is covered and how it is taught. Through the adoption of specific mathematics textbooks, pacing charts, or state and national frameworks, districts are mandating curriculum materials and curricular frameworks as a strategy for improving student achievement (Corcoran, 2003). As mathematics teacher educators, we need to understand how these mandates position new teachers as they engage in teaching while still learning how to teach.

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.

Inquiry and Analysis

We utilized narrative inquiry throughout this study; we "began with the experiences as expressed in lived and told stories" by Andrew (Creswell, 2007). Closely following Creswell's (2007) process for implementing narrative inquiry, we gathered data through the collection of Andrew's stories and reporting of his individual classroom experiences and "chronologically ordered the meaning of those experiences" (p. 54). Drawing on Clandinin and Connelly's (2000) procedural guidelines for narrative inquiry, we spent considerable time gathering Andrew's story through multiple types of information: interviews (eight formal recorded interviews and multiple informal conversations each year); written artifacts from Andrew including lesson plans, reflections on teaching, and statements of teaching philosophy; and stories about Andrew from others close to him. All formal interviews with Andrew and veteran educators who worked with him were audio-recorded and transcribed for inclusion in the data set, along with all written reflections and philosophies. We also created research memos after informal conversations or meetings with Andrew and others when audio-recordings were not used. As described by Creswell (2007), our narrative inquiry describes the story of Andrew "unfolding in a chronology of [his] experiences, set within [his] personal, social, and historical context, and including the important themes in those lived experiences" (p. 57).

Andrew's Story

When he entered his teacher education program, Andrew was several years older than most students in his cohort. He talked about his path to education and his road to finding passion:

> It took me ten years to get through a degree. I was out doing other things. Looking back on it was trying to discover what a passion for me would be. Then I decided to give education a shot. I walked in my first class and my professors came in and gave this impassioned rant about oppression and training and—I mean, really, he gave a step-by-step account of my life in education thus far. I was convicted and inspired and thought, "Okay, something feels different." I'd finally found that one thing that I have to do.

During student teaching, Andrew continued to talk about his passion:

> What drives my passion is that I feel like I was failed by my education. It wasn't that I wasn't good at it; I graduated top of my class. I was able to do what they wanted me to do. I figured out pretty early that I could give back what was asked of me and do it well. It doesn't sit right with me to know that millions of others are coming up the same way.

Andrew's curriculum appeared to come out of a space of frustration with what he encountered as a student, and also his desire for his students to develop a passion for and reason to engage in mathematics. During student teaching, when Andrew was required to create and teach a 4-week unit around several standards related to ratios and proportions within the 7th grade mathematics curriculum, he talked about wanting his students to encounter life and math "more naturally" and decided to design a math unit around fear:

> Okay, we're taking the next four weeks of math to study proportions, but more so talk about our fears, and how we can decide whether or not our fears are rational. Are we okay with our fears being a little unreasonable if it means it keeps us out of danger? We can explore how fear might be mongered purposefully by media in order to get something. Through all that, we encounter proportions; we encounter ratios; we encounter a mathematical thing that yes, is going to be tested on the [end of grade test], but encountering it that way, it's more meaningful, and I think there's room for that.

After teaching this unit, Andrew and others (his mentor teacher and many students) reported success. Andrew discussed his students' initial apprehension when he positioned himself as a

facilitator, someone off to the side allowing student voice and choice to dictate the classroom environment and activities. Andrew wrote the following reflection at the end of student teaching:

> I am convinced that if the purpose of education is to produce informed, driven, fulfilled individuals capable of making an impact on the world, then authentic power sharing is absolutely necessary in our schools, and this sharing must be prominent in relationships, in what content is taught, and in how content is taught.

Andrew received an offer to come on as a lead teacher the following year, and he frequently cited his fear unit as the reason he got the job. Like most new teachers, Andrew found himself struggling at the beginning of his first year of full-time teaching, explaining that "I don't feel like I belong in my classroom right now." However, different from most new teachers, Andrew cited collaboration as one of his biggest frustrations and felt like there are "all these demands and all these emphases on collaboration that force me to be on a particular pace." Andrew related this to Paul Simon and Nickelback:

> I went to see Paul Simon speak earlier this year and the topic was "The solo artist in an increasingly collaborative culture." What I took away from it was that you've got people who are gifted. He is a gifted guy. And you wouldn't ask Paul Simon to do a duet with the guy from Nickelback, right? …. You wouldn't ask Mozart to collaborate with Beethoven. They are both fantastic—but they have their own way of doing things and it would likely be disastrous. That's kind of the way I feel about collaboration right now.

When talking about collaboration with other teachers, Andrew also talked about "having had more freedom as a student teacher." He explained further:

> I'm not playing into my strengths, you know. That's where the not having a sense of belonging comes from. My strengths of sitting and going through this organic process of taking math content and figuring out, okay, what can we learn from this? What is the big idea that may not even be content related, but we'll use the content to get there. That's where I'm at my best and I'm not—I just can't do that right now.

As Andrew moved into his third year of teaching at Parkview, he interviewed for and accepted a position as a 7th grade teacher tasked with teaching all content areas. When we met in October, he continued to talk about a lack of opportunity to create math lessons "my way" and about how hard it was to teach lessons that he did not design: "When I design a lesson or unit, I know the purpose of each piece of the lesson, and I can more easily modify in the moment. It's much harder to do that when using someone else's plan." Despite this frustration, he thought it might get better as thought about how to integrate the subjects. He will not, however, have the chance to find out. When we met in February he told us he had resigned. When asked what his plans were next he responded: "I do not know what I'll be doing next year, but I will not be at Parkview. I haven't been able to talk about it yet and it's hard to say out loud, but I'm done."

Findings and Discussion

Andrew talked a lot about the overall purpose of schooling during the three years we worked with him. He talked about the importance of developing close relationships with students. He spoke frequently about his desire to design math lessons that would empower students to take control of their own learning. Considering carefully the role of mathematics in this quest, Andrew spoke of the importance of designing lessons around "bigger" questions about culture, society, and topics of particular interest to middle schoolers. He felt quite certain that it was then, as students engaged in projects around these topics, that they would learn the math.

Despite this belief, Andrew found himself quite often using daily lessons designed by other teachers—lessons that (1) did not align with his belief that there should be some larger goal in mind when teaching math and (2) lessons that Andrew felt would not position him to be "at his best" in the classroom. In short, Andrew's recognition of this inconsistency between actions (his use of other teachers' lesson plans) and beliefs (that the lesson plans he designed himself designed to empower students were better) caused cognitive dissonance (Festinger, 1957).

Cognitive dissonance theory (CDT) posits that dissonance is resolved in three basic ways: change beliefs, change actions, or change perceptions of actions (Festinger, 1957). When analyzing Andrew's narrative through the lens of CDT, it is interesting to consider the choices he had as he tried to resolve dissonance and move towards internal consistency. First, Andrew could have *changed his belief*—he could have concluded that designing empowering lessons around larger questions was no longer important. This happens to many new teachers in the field; they believe in the power of new curricular innovations learned during university coursework but then their beliefs about what could happen in a mathematics classroom change when they are in the field. This move to alleviate cognitive dissonance was unlikely for Andrew. He felt strongly that math should be taught differently and did not waiver in that during his three years teaching.

Alternatively, Andrew could have *changed his actions.* This was also unlikely for Andrew and for most teachers faced with competing responsibilities and assignments in their first few years in the field. Changing his actions to align with his original beliefs and cognition would mean that Andrew would have had to design all lessons on his own. In order to teach in the way he wanted to teach, Andrew would have likely had to work nights and weekends designing these new curricular units; there was simply no time in the day to do that work.

Finally, Andrew's third choice was to *change his perception of action*. Andrew's narrative made it clear that he tried to justify his actions in his first and second years as a lead classroom teacher, at least for a short period of time. He found himself reconceptualizing his decision to utilize other teachers' lessons because he wanted a life outside of work. He rationalized his decision to collaborate and use others' lessons because his administration asked him to work with other teachers and share lessons. For Andrew and other new teachers, policies (and politics) in place in his school—like a severe lack of planning time, additional responsibilities often placed upon teachers at charter schools, etc.—could be seen as levers that push teachers towards changing their perceptions of actions designed to relieve dissonance—actions made in their classrooms that do not align with their beliefs. Even worse, like in Andrew's case, teachers leave teaching all together. For Andrew, who no longer felt that his passion—the thing he "could not *not do"*—was teaching, leaving was the only option.

References

American Association of Colleges for Teacher Education. (2010). *Reforming teacher preparation: The critical clinical component*. Washington, DC: Author.

Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. San Francisco: Jossey-Bass.

Corcoran, T. (2003). *The use of research evidence in instructional improvement*. Philadelphia: Consortium for Policy Research in Education (CPRE Policy Brief No RB 40).

Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Simon, R. L. (1992). *Teaching against the grain: Texts for a pedagogy of possibility*. Toronto: Ontario Institute for Studies in Education.