

Martha M. Canipe – Teaching Statement

My teaching philosophy is grounded in the relationship between learning and identity development (Nasir, 2002; Wenger, 1998). In working with teachers, both preservice as well as inservice, this means supporting the development of identities as teachers of science in diverse classrooms. For advanced graduate students, this means supporting the development of identities as scholars of education. In both cases, I draw on the ideas of Wenger (1998) to consider how I can support the development of identities as members of the community of science teachers or education scholars respectively. Wenger noted that in order to develop an identity as a member of a community, an individual must negotiate what it means to be a person in that context. In my teaching I aim to engage individuals in making sense of who they are and will be as members of a community.

Supporting the Development of Identities as Teachers of Science

My goal is to support preservice teachers' development of identities as capable, confident teachers of science in diverse classrooms. Some of the preservice elementary teachers I have worked with enter the science methods course with negative feelings about science. Therefore, I strive to provide a supportive environment in which they are able to explore ideas about what it means to be a teacher of science and develop confidence about their ability to teach science to students from diverse backgrounds. In order to meet my goal of supporting the development of identities as capable, confident teachers of science, I emphasize principles of good science teaching. These principles include engaging students in the practices of science and engineering, eliciting and responding to student ideas, supporting authentic use of language in the context of science, and accessing and using students' Funds of Knowledge (Gonzalez, Moll, & Amanti, 2005). Across the science methods semester I utilize a variety of approaches and assignments to engage preservice teachers in learning about these areas. My aim is to provide a supportive environment in which preservice teachers can explore teaching science in ways that align with the three dimensions (scientific and engineering practices, cross-cutting concepts, and disciplinary core ideas) outlined in the *Framework for K-12 Science Education* (National Research Council, 2012) and *Next Generation Science Standards* (NGSS Lead States, 2013).

One approach I use to support the development of identities as teachers of science is to engage preservice teachers in science activities that reflect the three intertwined dimensions of science teaching (National Research Council, 2012; NGSS Lead States, 2013). During these activities I ask preservice teachers to think about what they are doing through both the lens of a student as well as that of a teacher. During the activities, I model the same pedagogical strategies that I expect preservice teachers to use with their own students. These strategies include encouraging the use of science notebooks to record observations and ideas during the activities as well as questions that foster the development of evidence-based claims. After completing the activities, I guide preservice teachers in analyzing not only how they engaged in the activity, but also analyzing the teaching moves that I made and how these moves would support student learning. In this way the preservice teachers begin to make sense of what it means to be a teacher of science who supports student learning in science.

Furthermore, I design course assignments to support my goals for the preservice teachers. For example, early in the semester the preservice teachers are asked to conduct a science talk in their

field placement classroom. The purpose of this assignment is to help preservice teachers learn about the rich experiences and Funds of Knowledge (Gonzalez et al., 2005) that their students bring with them to learning about science. Once they have conducted the science talk, preservice teachers analyze the ideas that their students shared and reflect on how this informs how they will teach science. The culminating assignment for the semester is a science lesson that the preservice teachers teach in their field placement classrooms. The planning process for this lesson is scaffolded to give preservice teachers an opportunity to focus on their learning goals for students, how they will adapt and use curriculum materials, how they will elicit and respond to student ideas, and how they will assess student learning using formative and summative assessments. These course assignments encourage preservice teachers to think critically about what it means to be a teacher of science in diverse classrooms and apply the principles learned in the methods course to their beginning practice as teachers of science.

Additionally, I encourage preservice teachers to consider collaboration as part of being a member of the community of science teachers. One way that I do this is through the use of use of online tools (e.g. GoogleDocs and PollEverywhere) to support collaboration and learning. For example, teams of students co-plan science lessons using a shared GoogleDoc. This allows them to work together synchronously or asynchronously, a particular advantage for students who may be juggling school, family, and work obligations. Another advantage of using these shared documents for planning is that I am able to offer feedback and suggestions as students are in the process of planning rather than waiting until the lesson plan is complete. By supporting preservice teachers in their use of these kinds of collaborative technologies, it is my hope that they will continue to use them to collaborate as members of the teaching community.

Supporting the Development of Identities as Scholars of Education

Similar to my goal for teacher identity development, my goal for working with advanced graduate students will be to support their identity development as capable, confident scholars of education. In order to meet this goal my advanced graduate courses will support students in engaging in scholarly practices of academic writing, analyzing and critiquing research literature, and engaging in educational research. Academic writing is a central task of being a scholar. Therefore, I plan to engage students in learning about writing through analyzing academic writing moves in research literature and working to incorporate these moves in their own writing. Engaging students in research is another way I plan to strengthen their identities as scholars of education. For example, as the teaching assistant for a masters-level action research course I supported students in analyzing data and developing findings for action research projects they had conducted.

Summary

Using the relationship between identity and learning as a guiding philosophy for my teaching enables me to support learners of a variety of levels from preservice teachers to more advanced graduate students. By grounding my teaching in the goal of supporting identity development as capable, confident members of the community into which my students are entering, I am able help students develop an initial practice as well as provide them with tools to support their continued identity development as more expert members of their respective communities.

References

- Gonzalez, N., Moll, L. C., & Amanti, C. (Eds.). (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Nasir, N. S. (2002). Identity, goals, and learning: Mathematics in cultural practice. *Mathematical Thinking and Learning*, 4(2-3), 213–247. http://doi.org/10.1207/S15327833MTL04023_6
- National Research Council. (2012). *A framework for K-12 science education practices, crosscutting concepts, and core ideas*. Washington, D.C.: National Academies Press.
- NGSS Lead States. (2013). *Next generation science standards: For states, by states*. Washington, DC: National Academies Press.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, U.K.; New York, N.Y.: Cambridge University Press.