ABSTRACT

Three separate research manuscripts were written to examine the challenges and affordances of designing and enacting curriculum and assessment practices in an upper-level agroecology course titled, *Advanced Practices of Sustainable Agriculture*. The studies integrate theoretical lenses of situated learning, communities of practice, and identity and agency in cultural worlds to describe the process of science identity formation. Five instructors and thirteen students participated in the research. During the fifteen-week semester in Fall 2013, pre/post narrative interviews, weekly instructor planning sessions, classes, student assignments, and artifacts were collected. Interviews were transcribed and remaining data were analyzed using NVivo10 and qualitative methods. The first research manuscript employed case study methodology to explore the sociocultural tensions within the classroom. Two ethnographic vignettes described the nature of four interconnected sociocultural tensions: (1) individual tensions, (2) community tensions, (3) local/global tensions, and (4) local tensions. The second manuscript aimed to expand the purposes of Science, Technology, Engineering, and Math (STEM) education reform to accommodate disciplines like agroecology that is framed as a Feminist – STEM (F-STEM) discipline. Four features of Equitable Science Assessment Practices (ESAP) were characterized using qualitative analysis and poetic representation: (1) allowing flexibility, (2) sharing authority, (3) laminating voices, and (4) scaffolding social justice. The third manuscript integrated the mapping and tracing of rhizomes with the practice of reflexivity in qualitative research to describe a process of becoming *Bermuda Grass*, a rhizome encountered and mimicked by the researcher. This dissertation contributes to a framework for the political ecology of education focused on supporting learner identity transformation through classroom assessment practices.