The purpose of this dissertation study was to investigate how engaging in participatory action research (PAR) and using assessment instruments can support a college science instructor’s science teacher assessment literacy. I used a case study approach within the context of PAR focused on implementing assessment instruments. Multiple data sources were used in this study—interviews, observations, recordings of lesson planning sessions and reflections, and artifacts—to build the case.

The findings of this study demonstrate that engaging in PAR and using assessment instruments can support the development of science teacher assessment literacy. Furthermore, this study illustrates how departmental policies and mandates regarding assessment can constrain this process. This study also demonstrates that assessment instruments can be useful resources for college science instructors. This study also demonstrates that engagement in PAR by science faculty and science education researchers can be a feasible and an effective form of professional development.

This study raises questions about the extent to which faculty science assessment literacy may be constrained by departmental guidelines and policies for assessment, as well as the degree to which PAR can achieve its emancipatory aims in environments where faculty have limited academic freedom regarding course policies.