SCHOOL OF EDUCATION

Supporting New Members as They Transition into Our Science Education Community of Practice

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BACKGROUND

We bring in new members to our IU science education doctoral program with the promise that, while here, they will "build upon [their] own passion for science with the knowledge and skills to teach this material effectively to a diverse, multicultural student body. [They]'ll also hone [their] data interpretation skills and participate in diverse research projects aimed at improving young learners' understanding of scientific concepts and best practices for educating the next generation of science teachers" ("Degrees & Programs: Science Education", 2015). Ours, like most doctoral programs, is steeped in traditional theoretical notions of CoP and identity (e.g., Danielowicz, 2001; Lave & Wenger, 1991; LeCourt, 2004; Giddens, 1979; Wenger, 1998). We realized, however, that our higher education community involves unique characteristics that must be taken into account when applying these understandings.

PURPOSE

The purpose of this self-study, the first in a series of studies, was to explore how well the traditional interdependent processes inherent in the curriculum of our science education doctoral program is functioning in terms of bringing newcomers, first-year doctoral students, into the contemporary field of science education.

METHOD

Self-study is being defined as rigorous, critical inquiry in which science teacher educators research themselves and their practices. The specific methodology used in this study was heuristic. Heuristic methodology (Moustakas, 1990) seeks to uncover the nature of phenomenon that is being studied through the use of internal pathways of self through utilizing the processes of self-reflection, exploration, and elucidation (Douglass & Moustakas, 1985). The qualitative data tools included: 1) audiotapes from collaborative researcher reflective meetings, 2) researchers' individual written reflections, 3) field notes of individual and seminar meetings, 4) audiotapes of six doctoral student focus-group meetings, and 5) written documents, including forum responses, from seminars and program activities. A heuristic analysis process was utilized the capture the experience and our understandings within.

ABBREVIATED RESULTS

We organized our findings in subsections that relate to the exploration of our CoP and our insights into confronting our own understandings of how we are supporting the development of our students' identities as science educators.

1. Our Understandings of the Boundaries and Peripheries of our CoP : Overall, our findings challenged our narrow definition of our CoP - one we did not realize we held. Fortunately, the unintended boundaries of the CoP that resulted did not result in the loss of new potential members. This was, in part, due to the aspects of our curriculum that allowed the students to extend those boundaries on their own.
2. Our Understandings and Practices Associated with the Students' Identity Development: Through our discussions, we realized that while we expected them to develop an identity as a science educator, we never painted a picture of what one actually was throughout this first year.
3. Our Understandings of How to Help the Students Negotiate the Path to the CoP: We were able to capture the competing voices advising the students. Often this was the result of other students' naive notions of the complex higher education community. We uncovered the internal, yet unintentional, resources they developed for negotiating meaning over time.
4. Our Distinction Between Reified Standards and Competent Engagement: Our analysis revealed three challenges to our curriculum, as well as how our community was/was not responding to them. The first was the boundaries we established around our CoP. The second was our insufficient response to the need for an inclusive environment. The third was out ability to response to the work/life balance issue that plagues much of higher education.

EXAMPLE IMPLICATION

Our findings have implications for our theoretical and practical notions of doctoral education at many levels. One example is the aspects of the nature of doctoral education that need better understood by students. These include: 1.Our community has a necessarily high degree of individualization. Students cannot expect to exactly duplicate previous students' experiences. 2. Our community is a complex system. It is multi-disciplinary and multi-departmental. 3. Our community has tentative aspects. 4. Our community has high expectations for all of its members. The items on checklists are not simple tasks to be checked off.

REFRENCES

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