Exploring Teacher Professional Identity in Response to Curriculum Reform and Professional Development: The Teaching Life Stories of Chemistry Teachers

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Abstract

This study contributes to the existing literature in teacher education on teacher professional identity (Beijaard, Meijer & Verloop, 2004; Lamote & Engels, 2010; Rots, 2007), particularly in response to curriculum change and professional development. It proposes to offer a much better understanding of how chemistry teachers’ professional identities have evolved through their school and work experiences, and the tensions they experience associated with their beliefs about teaching and learning and their actual practice. Specifically, this study aims to identify how teachers’ professional identities have evolved following the introduction of the latest chemistry curricula in Manitoba. These latest chemistry curricula advocate for a more learner focused ‘tetrahedral orientation’ (Mahaffy, 2004) teaching practice that supports chemistry learning through the use of Johnstone’s (1991) three modes of representation – the symbolic, macroscopic and molecular levels – as well as a human element dimension. This study also aims to identify how teachers’ professional identities have evolved following their participation in long-term professional development offered by teacher educators at the University of Manitoba. Additionally, this study aims to determine whether teachers feel they have experienced tensions associated with their beliefs about teaching and learning and their current teaching practices as a result of sustained professional development. Finally, this study aims to determine whether the curriculum changes and associated professional development have led teachers to think about and reflect more on their teaching practice and whether this has led to a change in their beliefs about teaching and learning and their teaching practice. Urie Bronfenbrenner’s (1979) Model of the Ecology of Human Development was used as a theoretical
framework for this study. This study was informed by semi-structured interviews involving 32 teachers of chemistry that were conducted during the fourth phase of a five-year research and development project supported by the University of Manitoba’s Centres for Research in Youth, Science Teaching and Learning (CRYSTAL). These interviews suggested that teachers have experienced some tensions associated with their beliefs about teaching and learning and their current teaching practices. The study further elicited data from eight of these 32 teachers via a qualitative narrative inquiry study employing narrative interviews to reveal teachers’ perceptions of their evolving professional identities and chemistry teaching practices. Teaching life stories constructed from the narrative interview data revealed that these teachers feel that their professional identities have evolved through their school and work experiences, and that a change in curricula followed by supportive professional development has caused these teachers to reflect more on their teaching practices. Furthermore, though these teachers indicated that they have experienced tensions associated with how they want to teach and their actual teaching practices, they feel they have experienced a shift in their beliefs about teaching and learning such that they feel their teaching practices have improved through their more consistent use of the four modes of representation in chemistry learning. The qualitative data show, however, that these teachers still feel that they have a long way to go to achieve a truly learner focused classroom practice where these four modes of chemistry learning are being used the majority of the time. The study closes by recommending that a much broader study be undertaken to include more teachers of chemistry in Manitoba to verify and add to the findings of this study, and, among other suggestions, a study in which a control group is employed to determine if teachers’ beliefs and teaching practices would have been affected without the professional development sessions.