

Multilingual mathematics teachers' professional identity in multilingual mathematics context

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This presentation discusses the relevance of investigating multilingual mathematics teachers' professional identity in multilingual mathematics contexts. Research on mathematics education still lacks cases of teachers with a diverse linguistic background more than the language of instruction. A participatory view of identity will be followed in order to provide empirical results on how is to be and become a multilingual mathematics teacher in multilingual contexts. The theoretical framework of Patterns of Participation will be adapted. An ethnographic longitudinal study of three teachers in lower secondary mathematics level in Sweden is proposed. The data will be generated from teachers observations in classroom and interviews about their educational and professional background, as well as instances of classroom interaction with students.

Introduction

Research in mathematics education has highlighted the complexity of teaching in language diverse classrooms across settings (e.g. Gutierrez, 2002; Planas & Civil, 2015; Delacour, 2020). The positive effects of sensitized teachers on students' mathematical development have been pointed out (Gutiérrez, 2002). Nevertheless, existing results on teachers' positions to inclusive language practices in such classrooms notice that it is more than a matter of the teacher's linguistic repertoire itself (e.g. Gutiérrez, 2002; Planas & Civil, 2015). Although, the lack of consideration of mathematics teachers with diverse linguistic backgrounds, such as multilingualism, has been addressed (Planas & Civil, 2015; Chronaki and Planas, 2016), highlighting the need to challenge the existing images of teachers in multilingual classrooms presented in the literature (Chronaki and Planas, 2016). At the local level of Sweden, Delacour (2020) highlighted that multilingual teachers' identities have not been extensively studied yet, focusing on the multiple contextual factors that contribute to how a teacher in such case shapes her identity.

Thus, this project aims to develop empirical insights and provide theoretical perspective of the process of being and becoming a multilingual¹ mathematics teacher in multilingual mathematics classrooms. Following the theoretical viewpoint of identity, and especially professional identity the following research question are being posed.

How teaching in multilingual mathematics classroom, as well as other past and present experiences contribute to multilingual mathematics teachers' professional identity?

How multilingual mathematics teachers' professional identity transform over time?

Theoretical background

Following a participatory view of identity, the theoretical framework of Patterns of Participation (PoP) (Skott, 2018) will be implemented, for studying teacher's identities in language diverse contexts. PoP integrates the concepts of practice and figure worlds configured by Wenger and Holland respectively, with symbolic interactionism. PoP investigates what and how prior practices and figured worlds contribute to teacher's experiences of being, becoming and belonging as he/she engages with their profession. It also focuses on the changes that may occur in the interplay of those over time.

Methodology

Three cases of multilingual mathematics teachers in lower secondary mathematics classrooms in Sweden will be studied, for a longitudinal period, producing evidence of teachers' professional identities in the long term. Ethnographic methods will be followed, such as open-ended interviews and observations. Interviews will give access to the past teaching and educational experiences, but also present ones. The focus of the observations will be the teacher, specifically in the mathematics classroom teachers' actions and interactions with students in the cases of the integration of language and mathematics, as well as observations of the teacher at the school setting. The data analysis, following the PoP framework will be conducted along with the data collection, without predefined codes or categories, navigating the data collection process.

Notes

1. Multilingual teachers: use multiple languages in one or more contexts in their everyday life.

References

- Chronaki, A., & Planas, N. (2018). Language diversity in mathematics education research: A move from language as representation to politics of representation. *ZDM*, 50(6), 1101–1111.
- Delacour, L. (2020). Expectations and discourses in multilingual preschool mathematics: Case study of a teacher of immigrant background. *Philosophy of Mathematics Education Journal*, 36, 1–13.
- Gutierrez, R. (2002). Beyond essentialism: The complexity of language in teaching mathematics to Latina/o students. *American educational research journal*, 39(4), 1047–1088.
- Planas, N. & Civil, M. (2015). Bilingual mathematics teachers and learners: the challenge of alternative worlds. In K. Beswick, T. Muir & J. Wells (Eds.), *Proceedings of 39th Psychology of Mathematics Education conference* (Vol. 4, pp. 41–48). Hobart, Australia: PME.
- Skott, J. (2018). Re-centring the individual in participatory accounts of professional identity. In G. Kaiser, M. Forgasz, A. Graven, E. Simmt, & B. Xu (Eds.), *Invited lectures from the 13th International Congress on Mathematical Education* (pp. 601–618). Cham: Springer.