



Positioning in mathematics teaching and learning (5 ects) PHDMTL

Students in this seminar will gain familiarity with Positioning Theory and how it is used in mathematics education research. Discussion will compare the theory to other theories of communication and identity that share similar constructs, will underscore the importance of interaction in the teaching and learning of mathematics, and explain how different theories and their conceptual tools highlight different aspects of interaction.

Learning outcomes:

After completing the course, the candidate will be able to:

Knowledge

- understand the key concepts, issues and methods of Positioning Theory applied for research of mathematics education contexts
- understand relationships between positioning theory, and other related theories used in mathematics education research, including identity work, Foucauldian discourse studies, and Systemic Functional Linguistics

Skills

- formulate research questions that use Positioning Theory to interpret mathematics learning contexts, and ability to carry out the research to a high international standard
- critique studies using Positioning Theory and/or its concepts

General competencies

- identify and critique the use of methodological approaches, and theoretical and conceptual frameworks when reading scholarly literature in mathematics education
- write analytical text in scholarly genres common to international mathematics education research
- contribute constructively to scholarly dialogue about research and research reporting in mathematics education
- identify ethical issues in the application of Positioning Theory

Learning activities:

- reading mathematics education and Positioning Theory literature in preparation for seminar discussions

- discussing assigned readings to engage in critical dialogue in the seminar discussions
- writing and presenting assignments that extend beyond seminar discussion
- Giving constructive feedback to colleagues' writing and presentations

There will be six 3-hour seminar sessions and additional online discussions between the seminar session. Each seminar session will include discussion of two core readings. After the first session, each seminar will include presentations from students, sharing their individual work that extends beyond the core class discussion.

.Compulsory activity and compulsory attendance:

Students will be required to participate in the seminars actively and complete all assignments.

Course expenses:

There will be no extra costs for participation in the course. All readings will be available through the USN library system or publicly available on the Internet.

Forms of assessment:

The course is assessed on a pass/fail basis. Students who are not progressing towards a pass will be given direction in how they could move into a passing position. Formative assessment will guide all students in how to develop their thinking and writing in the course and beyond. Summative anecdotal feedback will give students an understanding of how their work may potentially contribute to the field of mathematics education research.

There will be three aspects to the assessment of the course.

1. Participation in class activities, including:
 - being ready to discuss readings as directed.
 - sharing and presenting pieces of one's work in progress for the other two assignments, as and when directed.
 - giving constructive feedback to colleagues, feedback that identifies strengths in their work and specific ways to develop their work
2. Prepare a short paper and presentation that profiles the work of a mathematics education scholar whose work analyzes discourse in a mathematics learning context. This paper will look carefully at two selected works from the author. It will critique the analysis from a Positioning Theory perspective—i.e., identify what aspects of Positioning Theory are present in the scholar's work (whether using the language of Positioning Theory or not), identify what aspects are not used, and reflect on the possibilities for extending understanding if the unused aspects of Positioning Theory were to be applied to the scholar's research data. The choice of scholar must be approved by the instructor.
3. The major essay will feature the application of Positioning Theory to analyze some text from a mathematics education context. In addition to identifying what can be learned about mathematics education from this analysis, the paper will reflect on the power of Positioning Theory for illuminating the mathematics teaching and learning. What challenges are experienced in the application of the theory and its concepts? What might be done to overcome these challenges? What next questions does the analysis inspire?

The essay will be between 10 and 15 pages of text (one and a half line spacing and 12 point font). It will be examined by approved internal and external examiners. A passed essay corresponds to grade B or better.

Literature (reading list):

- Alexander Schüler-Meyer. Multilingual learners' opportunities for productive engagement in a bilingual German-Turkish teaching intervention on fractions. CERME 10, Feb 2017, Dublin, Ireland.
- Darragh, L. (2016). Identity research in mathematics education. *Educational Studies in Mathematics*, 93(1), 19–33.
- Darragh, L. (2018). Loving and loathing: Portrayals of school mathematics in young adult fiction. *Journal for Research in Mathematics Education*, 49(2), 178-209.
- Davies, B., & Harré, R. (1999). Positioning and personhood. In R. Harré & L. van Langenhove (Eds.), *Positioning theory: Moral contexts of intentional action* (pp. 32-52). Blackwell.
- Esmonde, I., & Langer-Osuna, J. M. (2013). Power in numbers: Student participation in mathematical discussions in heterogeneous spaces. *Journal for Research in Mathematics Education*, 44(1), 288–315.
- Harré, R. (2012). Positioning theory: Moral dimensions of social-cultural psychology. In J. Valsiner (Ed.), *The Oxford handbook of culture and psychology* (pp. 191–206). Oxford University Press.
- Harré, R. (2015). Positioning Theory: State of play across disciplines. What have we learnt? The First Positioning Theory Symposium. Bruges, Belgium.
<https://www.youtube.com/watch?v=CxmHTk7aYto>
- Harré, R., & Slocum, N. (2003). Disputes as complex social events. *Common Knowledge*, 9(1), 100–118.
- Herbel-Eisenmann, B., Sinclair, N., Chval, K. B., Clements, D. H., Civil, M., Pape, S. J., ... & Wilkerson, T. L. (2016). Research Committee: Positioning Mathematics Education Researchers to Influence Storylines. *Journal for Research in Mathematics Education*, 47(2), 102-117.
- Herbel-Eisenmann, B., Wagner, D., Johnson, K., Suh, H. & Figueras, H. (2015). Positioning in mathematics education: Revelations on an imported theory. *Educational Studies in Mathematics*, 89(2), 185-204.
- Ingram, J. (2018). Moving forward with ethnomethodological approaches to analysing mathematics classroom interactions. *ZDM*, 50(6), 1065-1075.
- Johnson, K. R. (2016). Enduring positions: Religious identity in discussions about critical mathematics education. *Religion & Education*, 43(2), 230-245.
- Mendick, H. (2005). A beautiful myth? The gendering of being/doing 'good at maths'. *Gender and Education*, 17(2), 203-219.

Nasir, N. & Saxe, G. (2003). Ethnic and academic identities: A cultural practice perspective on emerging tensions and their management in the lives of minority students. *Educational Researcher*, 32(5), 14-18.

Searle, J. (1969). *Speech acts*. Cambridge University Press.

Sfard, A. (2001). There is more to discourse than meets the ears: Looking at thinking as communicating to learn more about mathematics learning. *Educational Studies in Mathematics*, 46, 13-57.

van Langenhove, L., & Harré, R. (1999). Introducing positioning theory. In R. Harré & L. van Langenhove (Eds.), *Positioning theory: Moral contexts of intentional action* (pp. 14-31). Blackwell.

Wagner D. & Herbel-Eisenmann, B. (2009). Re-mythologizing mathematics through attention to classroom positioning. *Educational Studies in Mathematics*, 72(1), 1-15.

Additionally, students will read widely for their assignment work.