

Curriculum Vitae

Helena Johansson

Kampetåvägen 11
SE-441 92 Alingsås, Sweden
+46 (0)739 - 80 35 69
ms.m.helena.johansson@gmail.com

Education

Degrees

- 2015-06-04: Doctor of philosophy (Ph.D.) in Mathematics, specialising in Educational Sciences, University of Gothenburg.
- 2013-11-20: Doctor of Licentiate in Mathematics, specialising in Educational Sciences, University of Gothenburg.
- 2007-12-18: Master in Education, Växjö University (now Linnaeus University).
- 2004-09-17: Master of Science in Mathematics with Orientation towards Industrial Mathematics, University of Gothenburg.

Other

- 2019-2020: Higher education and flexible learning (15 credits), Mid Sweden University.
- 2016, autumn: Course for postgraduate supervision, Mid Sweden University.
- 2005-2006: Various physics courses (90 credits), University of Gothenburg.

Positions

- 2018-08 – present Senior lecturer, Department of Mathematics and Science Education, Mid Sweden University.
- 2016-08 – 2018-07 Postdoc, Department of Mathematics and Science Education, Mid Sweden University.
- 2016-01 – 2018-07 Lecturer, Department of Teacher Education, University of Borås.
- 2015-08 – 2016-02 Guest lecturer, Department of Mathematical Sciences, Chalmers University of Technology and University of Gothenburg.
- 2013-01 – 2013-05 Visiting student researcher, Graduate School of Education, University of California Berkeley.

- 2009-09 – 2015-04 Doctoral student, Department of Mathematical Sciences, Chalmers University of Technology and University of Gothenburg.
- 2008-08 – 2012-12 Teacher in mathematics and physics, Kitas upper secondary school, Gothenburg.
- 2005-01 – 2008-06 Teacher in mathematics and physics, Alströmer upper secondary school, Alingsås.

Teaching experience

As a mathematics and physics teacher at upper secondary school I met students from various programs, vocational and preparatory for higher education, mainly from the technology and the natural science programs. During my time as a PhD student I was involved in the mathematics education at the natural science preparatory course at the university, as well as in mathematics courses in the teacher education. As a senior lecturer, my teaching experience has expanded after my PhD exam with more mathematics teaching at preparatory courses and for pre-service teachers, together with teaching the didactics of mathematics, as well as supervision of degree thesis at the teacher program.

Publications

Journals (peer reviewed)

- Johansson, H. & Österholm, M. (2019). Objectification of upper-secondary teachers' verbal discourse in relation to symbolic expressions. *The Journal of Mathematical Behavior*, 56. <https://doi.org/10.1016/j.jmathb.2019.100722>.
- Johansson, H. (2017). Dependence between creative and non-creative mathematical reasoning in national physics tests. *Nordic Studies in Mathematics Education*, 22(2), 93-119.
- Johansson, H. (2016). Mathematical Reasoning Requirements in Swedish National Physics Tests. *International Journal of Science and Mathematics Education* 14(6), 1133-1152. <https://doi.org/10.1007/s10763-015-9636-3>

Conference proceedings (peer reviewed)

- Johansson, H., Oskarsson, M., & Nyström, P. (2019). Fysikbegreppets flyktighet: En konsekvens av kursplaneförändringar? [The physics concept's volatility: A consequence of curriculum changes?]. In K. Stolpe, G. Höst, & A. Larsson (Eds.), *Från forskning till fysikundervisning: Bidrag från konferensen 10-11 april 2018 i Lund arrangerad av Nationellt Resurscentrum för Fysik* [From research to physics education: Contributions from the conference 10-11 of April 2018 in Lund arranged by the National Resource Center for Physics Education], (pp. 33-46). Linköping, Sweden: Linköping University Electronic Press.
- Johansson, H. (2015). Relation between mathematical reasoning ability and national formal demands in physics courses. In K. Beswick, T. Muir & J. Wells (Eds.). *Proceedings of*

39th *Psychology of Mathematics Education conference*, (Vol. 3, pp. 121-128). Hobart, Australia: PME.

Theses

Johansson, H. (2015). *Mathematical Reasoning – In physics and real-life context* (Doctoral thesis). Gothenburg, Sweden: University of Gothenburg.

Johansson, H. (2013). *Mathematical Reasoning in Physics Tests – Requirements, Relations, Dependence* (Licentiate thesis). Gothenburg, Sweden: University of Gothenburg.

Johansson, H. (2007). *Elevers vardagsföreställningar och fysikundervisningens utformande* [Students' naïve conceptions and the organisation of physics teaching]. (Degree theses, Master of Education). Växjö, Sweden: Växjö University (now Linnaeus University).

Johansson, H. & Hromic, M. (2004). *Identifiering av fysiska parametrar för en AGV (autonomous guided vehicle)* [Possibility of estimating the physical parameters in the control system for an AGV]. (Degree thesis, Master of Science). Gothenburg, Sweden: University of Gothenburg and Chalmers University of Technology.

Reports

Johansson, H., Oskarsson, M., & Nyström, P. (2018). *Glömska eller ytliga fysikkunskaper: Fördjupad analys av svenska elevers sjunkande fysikresultat i TIMSS Advanced 2015* [Forgotten or superficial physics knowledge: An in-depth analysis of Swedish students' decreasing physics results in TIMSS Advanced 2015]. Stockholm, Sweden: Swedish National Agency for Education.

Nyström, P., Kjellsson Lind, A., Dahlberg, U., & Johansson, H. (2016). *Hur samstämmiga är svenska styrdokument och nationella prov med ramverk och uppgifter i TIMSS Advanced 2015?* [How aligned are the Swedish policy documents and national tests with the framework and the tasks in TIMSS Advanced 2015?]. Stockholm, Sweden: Swedish National Agency for Education.

Conference presentations (peer reviewed abstracts)

Johansson, H. & Kilhamn, C. (2019). Grade 6 teachers' objectification of the algebra discourse. In Graven, M., Venkat, H., Essien, A. & Vale, P. (Eds.). (2019). *Proceedings of the 43rd Conference of the International Group for the Psychology of Mathematics Education* (Vol 4, p. 51). Pretoria, South Africa: PME. [Oral Communication].

Johansson, H., Österholm, M., Flodén, L., & Heidtmann, P. (2018). Teachers' and students' perception of the gap between secondary and tertiary mathematics. In Bergqvist, E., Österholm, M., Granberg, C., & Sumpter, L. (Eds.). (2018). *Proceedings of the 42nd Conference of the International Group for the Psychology of Mathematics Education* (Vol. 5, p.77). Umeå, Sweden: PME. [Oral Communication].

Johansson, H. & Österholm, M. (2018). Clash of cultures? Teachers' and students' perceptions of differences between secondary and tertiary mathematics education. Short

presentation at *MADIF 11, the eleventh Swedish Mathematics Education Research Seminar*, Karlstad, Sweden, January 23-24, 2018.

- Johansson, H. & Österholm, M. (2017). Upper-secondary teachers' objectification of symbols by their use of language. In Kaur, B., Ho, W.K., Toh, T.L., & Choy, B.H. (Eds.). *Proceedings of the 41st Conference of the International Group for the Psychology of Mathematics Education*, (Vol. 1, p. 215). Singapore: PME. [Oral Communication].
- Johansson, H. (2016). Real-Life Context and Mathematical Reasoning – Influences on Students' Success on Mathematics Tasks. Paper presented in Topic study group 18 at *The 13th International Congress on Mathematical Education (ICME-13)*, Hamburg, Germany, July 24-31, 2016.
- Johansson, H. (2013). Relation between imitative and creative mathematical reasoning when solving physics tasks. In A. M. Lindmeier & A. Heinze (Eds.), *Proceedings of the 37th Conference of the International Group for the Psychology of Mathematics Education*, (Vol. 5, p. 80). Kiel, Germany: PME. [Oral Communication]
- Johansson, H. (2012). Mathematical Reasoning Requirements in Swedish National Physics Tests. Poster presented at *The 12th International Congress on Mathematical Education (ICME-12)*, Seoul, Korea, July 8-15, 2012.
- Johansson, H. (2012). Mathematical reasoning requirements to solve tasks in physics tests. In C. Bergsten, E. Jablonka & M. Raman (Eds.), *Evaluation and Comparison of Mathematical Achievement: Dimensions and Perspectives: Proceedings of MADIF 8, The Eighth Mathematics Education Research Seminar, Umeå, January 24-25, 2012* (pp. 211-212). Linköping: Sweden: SMDF. [Short presentation]