

Kurslitteratur

för kurs på avancerad nivå

Matematikämnets didaktik med inriktning mot gymnasieskolans och högskolans matematikutbildning, 7,5 hp

Mathematics Education for Upper-Secondary School and University

Kurskod: UM8038

Gäller från: VT 2017

Fastställt: 20170109

Institution: Institutionen för matematikämnets och naturvetenskapsämnenas didaktik

Obligatorisk litteratur

Dreyfus, T. (1991). Advanced mathematical thinking processes. In D. Tall (Ed.), *Advanced mathematical thinking* (s. 25-41). Dordrecht: Kluwer Academic Publishers. (17s).

Finns som elektronisk resurs.

Dubinsky, E., & McDonald, M. A. (2002). APOS: A constructivist theory of learning in undergraduate mathematics education research. In D. Holton, M. Artigue, U. Kirchgräber, J. Hillel, M. Niss, & A. Schoenfeld (Eds.), *The teaching and learning of mathematics at university level: An ICMI Study* (s. 275-282). Dordrecht: Springer Netherlands. (8s)

Finns som elektronisk resurs.

Dubinsky, E., Weller, K., McDonald, M. A., & Brown, A. (2005). Some historical issues and paradoxes regarding the concept of infinity: An APOS-based analysis: Part 1. *Educational Studies in Mathematics*, 58(3), s. 335-359. (25s)

Grey, E., & Tall, D. (1994). Duality, ambiguity and flexibility: A proceptual view of simple arithmetic. *Journal for Research in Mathematics Education*, 26, s. 115-141. (27s)

Hanna, G. (2000). Proof, explanation and exploration: an overview. *Educational Studies in Mathematics*, 44(1-3), s. 5-23. (19 s)

- Hemmi, K., Lepik, M., & Viholainen, A. (2013). Analysing proof-related competences in Estonian, Finnish and Swedish mathematics curricula—towards a framework of developmental proof. *Journal of Curriculum Studies*, 45(3), s. 354-378. (25s)
- Kumsa, A., Pettersson, K., & Andrews, P. (2017). Obstacles to students' understanding of the limit concept. *Paper for the tenth Congress of the European Society for Research in Mathematics Education*. (8s) Finns som elektronisk resurs.
- Lithner, J. (2008). A research framework for creative and imitative reasoning. *Educational Studies in Mathematics*, 67(3), s. 55-276. (22s)
- Maharaj, A. (2010). An APOS Analysis of students' understanding of the concept of a limit of a function. *Pythagoras*, 71, s. 41-52. (11s)
- Meyer, J. H. F., & Land, R. (2005). Threshold concepts and troublesome knowledge (2): Epistemological considerations and a conceptual framework for teaching and learning. *Higher Education*, 49(3), s. 373-388. (16s)
- Ozmantar, M., & Monaghan, J. (2007). A dialectical approach to the formation of mathematical abstractions. *Mathematics Education Research Journal*, 19(2), 89-112. (24s)
- Raman Sundström, M., & Zandieh, M. (2009). The case of Brandon: the dual nature of key ideas in the classroom. *Nordisk Matematikdidaktik*, 14(2), s. 29-47. (19s)
- Sfard, A. (1991). On the dual nature of mathematical conceptions: Reflections on processes and objects as different sides of the same coin. *Educational Studies in Mathematics*, 22(1), s. 1-36. (36s)
- Sumpter, L. (2013). Themes and interplay of beliefs in mathematical reasoning. *International Journal of Science and Mathematics Education*, 11(5), s. 1115-1135. (21s)
- Tall, D., & Vinner, S. (1981). Concept images and concept definition in mathematics with particular reference to limits and continuity. *Educational Studies in Mathematics*, 12(2), s. 151-169. (19s)
- Vincent, B., LaRue, R., Sealey, V., & Engelke, N. (2015). Calculus students' early concept images of tangent lines. *International Journal of Mathematical Education in Science and Technology*, 46(5), s. 641-657. (17s)

Institutionen för matematikämnets och naturvetenskapsämnenas didaktik



Zazkis, R., & Leikin, R. (2010). Advanced mathematical knowledge in teaching practice: Perceptions of secondary mathematics teachers. *Mathematical Thinking and Learning*, 12(4), s. 263-281. (19s)

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