



Litteraturstudium til arbejdet med en national naturvidenskabsstrategi

**BILAG 2: LITTERATUR IDENTIFICERET GENNEM
'SNOWBALLING'**

Indhold

INDHOLD	2
INDLEDNING	2
ENGELSKSPROGEDE META-REVIEWS.....	2
LITTERATUR OM NORDISKE FORHOLD INDEN FOR GENSTANDSFELT 1	5
LITTERATUR OM NORDISKE FORHOLD INDEN FOR GENSTANDSFELT 2	46
LITTERATUR OM NORDISKE FORHOLD INDEN FOR GENSTANDSFELT 3	64
LITTERATUR OM NORDISKE FORHOLD INDEN FOR GENSTANDSFELT 4	79

Indledning

Datagrundlaget for litteraturstudiet er 1223 publikationer inden for STEM didaktisk forskning om nordiske forhold og 48 centrale engelsksprogede meta-reviews, oversigter, og feltanalyser. Identificeringen af litteraturen kombinerer ekspert-validering og en søgestrategi, der kaldes 'forward and backward snowballing'. Se Bilag 1 for en nærmere gennemgang af metoden.

Engelsksprogede meta-reviews

- Abell, S. (2007). Research on science teacher knowledge. In S. Abell, & N. Lederman (Eds.): *Handbook of Research on Science Education*, (pp. 1105-1149). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Andreas Krapp & Manfred Prenzel (2011): Research on Interest in Science: Theories, methods, and findings, *International Journal of Science Education*, 33:1, 27-50
- Ball, D. L., Lubienski, S., and Mewborn, D. (2001). Research on teaching mathematics: The unsolved problem of teachers' mathematical knowledge. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed.) (pp. 433–456). New York: Macmillan.
- Barton, Angela Calabrese. "Science education in urban settings: Seeking new ways of praxis through critical ethnography." *Journal of Research in Science Teaching* 38.8 (2001): 899-917.
- Brotman, J. S., & Moore, F. M. (2008). Girls and Science: A Review of Four Themes in the Science Education Literature. *Journal of Research in Science Teaching*, 45(9), 971-1002. doi: 10.1002/tea.20241

- Brotman, Jennie S., and Felicia M. Moore. "Girls and science: A review of four themes in the science education literature." *Journal of research in science teaching* 45.9 (2008): 971-1002.
- Carlone, Heidi B., and Angela Johnson. "Understanding the science experiences of successful women of color: Science identity as an analytic lens." *Journal of research in science teaching* 44.8 (2007): 1187-1218.
- Chinn, C. A., & Malhotra, B. A. (2002). Epistemologically authentic inquiry in schools: A theoretical framework for evaluating inquiry tasks. *Science Education*, 86(2), 175-218. doi: 10.1002/sce.10001
- Clarke, D., & Hollingsworth, H. (2002). Elaborating a model of teacher professional growth. *Teaching and Teacher Education*, 18(8), 947-967.
- Clements, M.A.K., Bishop, A., Keitel-Kreidt, C., Kilpatrick, J., Leung, F.K.-S. (Eds.), Third International Handbook of Mathematics Education. Springer 2013.
- Dole, J. A., & Sinatra, G. M. (1998). Reconceptualizing change in the cognitive construction of knowledge. *Educational Psychologist*, 33(2-3), 109-128. doi: 10.1207/s15326985ep3302&3_5
- Drijvers, P., Monaghan, J., Thomas, M., Trouche, L. (2014). Use of Technology in Secondary Mathematics. Final Report for the International Baccalaureate. www.ibo.org/globalassets/publications
- Eberlein, T., Kampmeier, J., Minderhout, V., Moog, R. S., Platt, T., Varma-Nelson, P., & White, H. B. (2008). Pedagogies of engagement in science. *Biochemistry and Molecular Biology Education*, 36(4), 262-273. doi: 10.1002/bmb.20204
- Gess-Newsome, J. (2015). A model of teacher professional knowledge and skill including PCK; results of the thinking from the PCK summit. In A. Berry, & P. Friedrichsen (Eds.), Re-examining pedagogical content knowledge in science education (pp. 28-42) Routledge.
- Grevholm, B. (ed.) Nordic research in didactics of mathematics: past, present and future. Cappelen Dam, 2013. [udkom allerede 2004 første gang, så det må være et genoptryk]
- Hake, R. R. (1998). Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *American Journal of Physics*, 66(1), 64-74. doi: 10.1119/1.18809
- Hembree, R., & Dessart, D. (1986). Effects of Hand-Held Calculators in Precollege Mathematics Education: A Meta-Analysis. *Journal for Research in Mathematics Education*, 17(2), 83-99.
- Hofstein, A., & Lunetta, V. N. (2004). The laboratory in science education: Foundations for the twenty-first century. *Science Education*, 88(1), 28-54. doi: 10.1002/sce.10106
- Keys, C. W., & Brian, L. A. (2001). Co-constructing inquiry-based science with teachers: Essential research for lasting reform. *Journal of Research in Science Teaching*, 38(6), 631-645.
- Knapp, M. S. (1997). Between systemic reforms and the mathematics and science classroom: The dynamics of innovation, implementation, and professional learning. *Review of Educational Research*, 67(2), 227-266. doi: 10.3102/00346543067002227
- Korthagen, F., Loughran, J., & Russel, T. (2006). Developing fundamental principles for teacher education programs and practices. *Teaching and Teacher Education*, 22, 1020-1041.
- Kurnaz, M. A., & Calik, M. (2009). A thematic review of 'energy' teaching studies: focuses, needs, methods, general knowledge claims and implications. *Energy Education Science and Technology Part B-Social and Educational Studies*, 1(1-2), 1-26.
- Laugksch, R. C. (2000). Scientific literacy: A conceptual overview. *Science Education*, 84(1), 71-94. doi: 10.1002/(sici)1098-237x(200001)84:1<71::aid-sce6>3.0.co;2-c

- Lee, O. (2005). Science education with English language learners: Synthesis and research agenda. *Review of Educational Research*, 75(4), 491-530. doi: 10.3102/00346543075004491
- Lerman, S. (ED) Encyclopedia of Mathematics Education. Springer 2014
- Loucks-Horsley et al (2010): Designing Professional Development for Teachers of Science and Mathematics, 3rd edition, Corwin, Thousand Oaks, 2010
- Loughran, J. (2014). Developing understandings of practice - science teacher learning. In S. K. Abell, & N. G. Lederman (Eds.), Handbook of research on science education, volume II (pp. 811-829) Taylor and Francis.
- Lyons, T. (2006). Different countries, same science classes: Students' experiences of school science in their own words. *International Journal of Science Education*, 28(6), 591-613. doi: 10.1080/09500690500339621
- McLeod, D. (1994). Research on Affect and Mathematics Learning in the JRME: 1970 to the Present. *Journal for Research in Mathematics Education*, 25(6), 637-647.
- Michael, J. (2006). Where's the evidence that active learning works? *Advances in Physiology Education*, 30(4), 159-167. doi: 10.1152/advan.00053.2006
- Morgan, C., Craig, T., Schuette, M., Wagner, D. (2014). Language and communication in mathematics education: an overview of research in the field. ZDM vol. 46, Issue 6, pp 843–853.
- Niss, M. (1991). Applied mathematical problem solving, modelling, applications, and links to other subjects — State, trends and issues in mathematics instruction. *Educational Studies in Mathematics* 22, Issue 1, pp 37–68.
- Niss, M. (2004). Key Issues and Trends in Research on Mathematical Education. Proceedings of the Ninth International Congress on Mathematical Education pp 37-57. Springer 2004.
http://link.springer.com/chapter/10.1007%2F1-4020-7910-9_3
- Osborne, J. (2010). Arguing to Learn in Science: The Role of Collaborative, Critical Discourse. *Science*, 328(5977), 463-466. doi: 10.1126/science.1183944
- Osborne, J. F. (1996). Beyond constructivism. *Science Education*, 80(1), 53-82. doi: 10.1002/(sici)1098-237x(199601)80:1<53::aid-sce4>3.3.co;2-u
- Osborne, J., Simon, S., & Collins, S. (2003). Attitudes towards science: A review of the literature and its implications. *International Journal of Science Education*, 25(9), 1049-1079. doi:10.1080/0950069032000032199
- Renninger, K. A. & Hidi, S. (2011): Revisiting the Conceptualization, Measurement, and Generation of Interest, *Educational Psychologist*, 46:3, 168-184
- Sadler, T. D. (2004). Informal reasoning regarding socioscientific issues: A critical review of research. *Journal of Research in Science Teaching*, 41(5), 513-536. doi: 10.1002/tea.20009
- Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science education: Metacognition as part of a broader perspective on learning. *Research in Science Education*, 36(1-2), 111-139. doi: 10.1007/s11165-005-3917-8
- Snively, G., & Corsiglia, J. (2001). Discovering indigenous science: Implications for science education. *Science Education*, 85(1), 6-34. doi: 10.1002/1098-237x(200101)85:1<6::aid-sce3>3.3.co;2-i
- Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research*, 72(3), 387-431. doi: 10.3102/00346543072003387
- Sriraman, B., Bergsten, C., Goodchild, S., Palsdottir, G., Dahl, B. & Haapsalo, L. (Eds). The First Sourcebook on Nordic Research in Mathematics Education: Norway, Sweden, Iceland, Denmark and contributions from Finland. Info Age Publishing, 2010.

- Tytler, R. (2014). Attitudes, Identity, and Aspirations Toward Science. In N. G. Lederman & S. K. Abell (Eds.), *Handbook of Research on Science Education Volume II* (pp. 82-102). New York & Oxon, UK: Taylor & Francis.
- van Driel, J. H., Beijaard, D., & Verloop, N. (2001). Professional development and reform in science education: The role of teachers' practical knowledge. *Journal of Research in Science Teaching*, 38(2), 137-158. doi: 10.1002/1098-2736(200102)38:2<137::aid-tea1001>3.0.co;2-u
- Van Driel, J., Meirink, J.A., van Veen, K., & Zwart, R.C. (2012). Current trends and missing links in studies on teacher professional development in science education: a review of design features and quality of research. *Studies in Science Education*, 48(2), 129-160.
- Yore, L. D., Bisanz, G. L., & Hand, B. M. (2003). Examining the literacy component of science literacy: 25 years of language arts and science research. *International Journal of Science Education*, 25(6), 689-725. doi: 10.1080/0950069032000076661
- Zeidler, D. L., Sadler, T. D., Simmons, M. L., & Howes, E. V. (2005). Beyond STS: A research-based framework for socioscientific issues education. *Science Education*, 89(3), 357-377. doi: 10.1002/sce.20048
- Zimmerman, C. (2000). The development of scientific reasoning skills. *Developmental Review*, 20(1), 99-149. doi: 10.1006/drev.1999.0497

Litteratur om nordiske forhold inden for genstandsfelt 1

- Aho, E., Pitkänen, K., & Sahlberg, P. (2006). Policy Development and Reform Principles of Basic and Secondary Education in Finland since 1968. *Education, Working Paper Series*, Number 2. New York: The World Bank
- Airey, J., Linder, C. (2011). Bilingual Scientific Literacy. In C. Linder, L. Östman, D.A. Roberts, P.O. Wickman, G. Erickson, A. Mackinnon (Eds.): *Exploring landscapes of Scientific Literacy*. London: Routledge. P. 106 - 124
- Åkerblom, A. (2015). Exploring the pedagogic relation - Supporting six-year-olds in making sense of physical motion. *Nordic Early Childhood Education Research* Vol. 11
- Allerup, P.; Bredo, O.; Weng, P. (1998): Matematik og naturvidenskab i ungdomsuddannelser – en international undersøgelse. Danmarks Pædagogiske Institut.
- Alm, F. & Samuelsson, J. (2009). Villkor för implementering av Naturvetenskap och Teknik för Alla, NTA. *Nordina* 5(1), 89-102
- Almqvist, Jonas (2005). Learning and Artefacts: On the Use of Information Technology in Educational Settings. Doctoral thesis. Uppsala: Acta Universitatis Upsaliensis,
- Alrø, H. And Skovsmose, O. (1996): 'The Students' Good Reasons', *For the Learning of Mathematics* 16(3), 31-38.
- Alrø, H. And Skovsmose, O. (1996a): 'On the Right Track', *For the Learning of Mathematics* 16(1), 2-9 and 22.
- Alrø, H., Skovsmose, O. (2004). *Dialogue and Learning in Mathematics Education: Intention, Reflection, Critique*. Kluwer Academic Publishers
- Anderhag, Per, Wickman, Per-Olof (2007). An evaluation of how NTA is helping schools to attain the Science Studies syllabus goals at the grade 5 level. *Rapporter i didaktik*, 4. Stockholm: Lärarhögskolan i Stockholm , 2007.

- Andersen, A. M., & Sørensen, H. (2007). Naturvidenskabelige kompetencer - en profil over elevpræstationer. I: N. Egelund (Ed.), Pisa 2006 - danske unge i en international sammenligning. København: Danmarks Pædagogiske Universitetsskole
- Andersen, A. M., Breiting, S., Busch, H., Hyllested, T., Nielsen, K., Sølberg, J., et al. (2004). Naturfagsdidaktik som områdedidaktik. I: K. Schnack (Ed.), Didaktik på kryds og tværs. København: Danmarks Pædagogiske Universitets Forlag.
- Andersen, A. M., Egelund, N., Jensen, T. P., Krone, M., Lindenskov, L. & Mejding, J. (2001). Forventninger og færdigheder - danske unge i en international sammenligning. København: Amternes og Kommunernes Forskningsinstitut, Danmarks Pædagogiske Universitet og Socialforskningsinstituttet.
- Andersen, A., Dragsted, S., Nilsson, D. & Sørensen, H. (1997). Natur/teknik på vej - hvorhen? København: Danmarks Lærerhøjskole.
- Andersen, A.M. et al. (2005). Fra seminarium til skolepraksis i natur/teknik. Paperpræsentation ved Det 8. Nordiske Forskersymposium om undervisning i naturfag, Aalborg, maj 2005
- Andersen, N. O., Busch, H., Horst, S., & Troelsen, R. (2003). Fremtidens naturfaglige uddannelser: Naturfag for alle-vision og oplæg til strategi. Undervisningsministeriet
- Andersen, N.O. et al. (2008). Et fælles løft – rapport fra arbejdsgruppen til forberedelse af en national strategi for natur, teknik og sundhed. Undervisningsministeriet.
- Andersen, N.O., Busch, H., Horst, S. & Troelsen, R. (2003). Fremtidens Naturfaglige Uddannelser – Bd. 1: Strategiplan 2003-2008 og videre frem. København: Undervisningsministeriet
- Andersson, A. (2010). Can a Critical Pedagogy in Mathematics lead to Achievement, Engagement and Social Empowerment? In *Philosophy of Mathematics Education Journal*, 25
- Andersson, A., Ravn, O. (2012) A Philosophical Perspective on Contextualisations in Mathematics Education. In O. Skovsmose, B. Greer (Eds.) *Opening the Cage. Critique and Politics of Mathematics Education*. Sense Publishers Vol. 23
- Andersson, B. (2000). National evaluation for the improvement of science teaching. In R. Millar, J. Leach & J. Osborne (Eds.), *Improving science education*, (pp.62-78). Open University Press
- Andersson, B. & Bach, F. (2005). On designing and evaluating teaching sequences taking geometrical optics as an example. *Science Education*, 89, 196-218.
- Andersson, B., & WALLIN, A. (2000). Students' understanding of the greenhouse effect, the societal consequences of reducing CO₂ emission and problem of ozone layer depletion. *Journal of Research in Science Teaching*, 37(10), 1096-1111.
- Andersson, B., & Wallin, A. (2000). Students' understanding of the greenhouse effect, societal consequences of reducing CO₂ emissions and why Ozone Layer depletion is a problem. *Journal of Research in Science Teaching*, 37(10), 1096–1111.
- Andersson, B., BACH, F., & ZETTERQVIST, A. (2002). Understanding global and personal use of energy. *Journal of Baltic Science Education*, 1(2), 4-18.
- Andersson, Bjørn., & Bach, Frank. (1996). Developing new teaching sequences in science: The example of 'gases and their properties.' In G.Welford, J.Osborne, & P.Scott (Eds.), *Research in science education in Europe. Current issues and themes* (pp. 7–21). London: Falmer Press.
- Andersson, Erik, Öhman, Johan (2016). Young people's conversations about environmental and sustainability issues in social media. In: *Environmental Education Research*, ISSN 1350-4622, E-ISSN 1469-5871
- Andersson, Östman, öhman (2015). *I am sailing—towards a transactional analysis of 'body techniques'*. Routledge

- Andersson, S., Chronholm, J.A. (2012). Centrala teman för studenters relationer till utbildningsprogram.Teaching and Learning in Higher Education, NU 2012 (8).Chalmers Conference
- Andreasen, K. (2012). Deltagelsesformer ved Naturfagsmaraton blandt elever i en 6. Klasse. I MONA 2012 -3
- Andreasen, M., Damkjær, H. & Højgaard, T. (2010). Udvikling af matematik-fagteam – mateam – og god undervisning i matematik på skolens mellemtrin. Silkeborg: VIA, University College, Læreruddannelsen i Silkeborg
- Andrée, M. (2005). Ways of Using ‘Everyday Life’ in the Science Classroom. In K. Boersma, M. Goedhart, O. De Jong, H. Eijkelhof (Eds.) Research and the Quality of Science Education. Springer, pp 107-116
- Andrée, M. (2007). Den levda läroplanen. En studie av naturorienterande undervisningspraktiker i grundskolan. Doctorial dissertation at Stockholm Institute of Education, Stockholm: HLS Förlag.
- Andrews, P., Ryve, A., Hemmi, K., Sayers, J. (2014) PISA, TIMSS and Finnish mathematics teaching: an enigma in search of an explanation. In Educational Studies in Mathematics, Vol. 87, Iss. 1, 2014-9-23, p. 7–26
- Angell C., Ekern, T. (1999) Measuring friction on falling muffins cups Phys. Teach 37, 81
- Angell, C. , Kind, P.M., Henriksen, E. (2008), Implementation of empirical-mathematical modelling in upper secondary physics: Teachers’ interpretations and considerations. Nordina 2008 4 (2)
- Angell, C. (2004) EXPLORING STUDENTS' INTUITIVE IDEAS BASED ON PHYSICS ITEMS IN TIMSS – 1995. Proceedings of the IEA International Research Conference IRC-2004, Cyprus
- Angell, C., Guttersrud, Ø, Henriksen, E. (2004), Physics: Frightful, But Fun - Pupils' and Teachers' Views of Physics and Physics Teaching. Science Education 88 (5)
- Angell, C., Guttersrud, Ø, Henriksen, E. Kind, P.M. (2008), An empirical-mathematical modelling approach to upper secondary physics. Physics Education vol 43. No. 5
- Angell, C., Rohatgi, A. (2010) Fysikk i fritt fall? TIMSS Advanced 2008 i videregående skole.Norge: Unipub
- Angell, C.; Henriksen, Ellen Karoline & Isnes, Anders. (2003). Hvorfor lære fysikk? Det kan andre ta seg av! Fysikkfaget i norsk utdanning: innhold - oppfatninger - valg. In D. Jorde & Bungum, B. (Eds.), Naturfagdidaktikk. Perspektiver, forskning, utvikling (p. 165-198). Oslo: Gyldendal Akademisk.
- Anker-Hansen, J. (2015).Assessing Scientific Literacy as Participation in Civic Practices: Affordances and constraints for developing a practice for authentic classroom assessment of argumentation, source critique and decision-making. Doctoral thesis. Stockholm: Department of Mathematics and Science Education, Stockholm University
- Ann-Catherine.Man måste tänka själv : klasslärares uppfattningar av undervisning i de naturvetenskapliga läroämnen /Ann-Catherine Henriksson. - Åbo : Åbo Akademis förlag, 2016.
- Anna_Danielson (2011).Characterising the practice of physics as enacted in university student laboratories using ‘Discourse models’ as an analytical tool. Nordina, Vol 7, No 2 (2011).
- Anna-Karin Carstensen, Jonte Bernhard (2009). Student learning in an electric circuit theory course: critical aspects and task design. European Journal of Engineering Education. Volume 34, 2009 - Issue 4: Educational research impacting engineering education. Pp. 393 - 408
- Annika Manni, Karin Sporre, Christina Ottander (2016). Emotions and values – a case study of meaning-making in ESE. Environmental Education Research. . ISSN: 1350-4622.

- Antti Savinainen, Asko Mäkinen and Jouni Viiri (2013). Does focusing forces as interactions help students to identify forces?. In M. Hähkiöniemi, H. Leppäaho, P. Nieminen, J. Viiri(Eds.), Proceedings of the 2012 Annual Conference of Finnish Mathematics and Science Education Research Association.Jyväskylä 2013
- Antti Savinainen, Asko Mäkinen, Pasi Nieminen and Jouni Viiri (2011). An Intervention Using an Interaction Diagram for Teaching Newton's Third Law in Upper Secondary School. In A. Lindell, A.Kähkönen, J.Viiri (Eds.), Physics Alive. JYFL Research Report no. 10/201- Proceesings from GIREP-EPEC Conference 2011 august 1 - 5 Jyväskylä, Finland.
- Antti Savinainen, Asko Mäkinen, Pasi Nieminen, and Jouni Viiri (2013). Does using a visual-representation tool foster students' ability to identify forces and construct free-body diagrams? Phys. Rev. ST Phys. Educ. Vol. 9, Iss. 1 — January - June 2013
- Antti Savinainen, Asko Mäkinen, Pasi Nieminen, Jouni Viiri (2015). The Effect of Using a Visual Representation Tool in a Teaching-Learning Sequence for Teaching Newton's Third Law. Research in Science Education 2015, pp 1–17
- Antti_Savinainen, Jouni_Viiri (2008). The Force Concept Inventory as a Measure of Students Conceptual Coherence. International Journal of Science and Mathematics Education, December 2008, Volume 6, Issue 4, pp 719–740
- Apiola, Mikko (2013). Creativity-Supporting Learning Environments: Two Case Studies on Teaching Programming. Doctoral dissertation. Finland: University of Helsinki, Faculty of Science, Department of Computer Science, University of Helsinki
- Arbejdsgruppen for Fysik og Kemi (2002). Fysik og kemi: Naturvidenskab-for-alle: Folkeskolen, gymnasiet, tertiære uddannelser. København: Videnskabsministeriet
- Arbejdsgruppen for fysik og kemi. (2002). Fysik og kemi -Naturvidenskab-for-alle. København: Ministeriet for Videnskab, Teknologi og Udvikling.
- Ärlebäck, J.B. (2010). Mathematical modelling in upper secondary mathematics education in Sweden. Doctoral Thesis. Inköping: Linköping University Electronic Press
- Arvola, A.O., Lundegård i. (2012) 'It's Her Body'. When Students' Argumentation Shows Displacement of Content in a Science Classroom, Research in Science Education, Volume 42, Issue 6, pp 1121–1145
- Auli Arvola Orlander (2014). "What if we were in a test tube?" Students' gendered meaning making during a biology lesson about the basic facts of the human genitals. Cultural Studies of Science Education, June 2014, Volume 9, Issue 2, pp 409–431
- Baandrup, H., Christoffersen, K. Damberg, E. Dolin, J., Heise, I., Ingerslev, G. & Lau, J. (1996) forsøg nu! - om undervisningsdifferentiering og læreprocesser i gymnasiet og hf (Vbl. 17) København: Undervisningsministeriet, Gymnasieafdelingen.
- Bang, J. (1998): Læring og kompetence. Psyke & Logos 19, 415-434.
- Bangsgaard, T. Dolin, J., Rasmussen, A. -B og Trinhammer, O. (2001) Autentisk fysik (forsøgsrapport). Valby
- Beck, Steen & Gottlieb, Birgitte (2002): Elev/student en teoretisk og empirisk undersøgelse af begrebet studiekompetence. Bind 1 og 2. Gymnasiepædagogik nr. 31 og 32. Odense: Dansk Institut for Gymnasiepædagogik, Syddansk Universitet.
- Beerewinkel, A. And J. Börlin (2014). Surface Level: Teaching Time, Lesson Phases and Types of Interaction. In E. Hans, P. Labudde, K. Neumann, and J. Viiri (Eds.), Quality of Instruction in Physics – Comparing Finland, Germany and Switzerland, pp. 65–79. Waxmann Verlag gmbh.
- Bentzen, A. (2006). L Skal man være nørd for at blive dygtig fysikstuderende? I MONA 2006 -4

- Berg, Astrid, Eriksson, Inger, Löfgren, Ragnhild (2010). Observationer i kemiklassrummet - att lära sig se kemiska reaktioner. In: I. Eriksson (Ed.): Innehållet i fokus - kemiundervisning i finlandssvenska klassrum, Stockholm: Stockholms universitets förlag , 2010, 37-69 p.
- Berglund, A. & Eckerdal, A. (2015). Learning Practice and Theory in Programming Education: Students' Lived Experience. 2015 International Conference on Learning and Teaching in Computing and Engineering
- Bergqvist, E. (2007). Types of reasoning required in university exams in mathematics. *Journal of Mathematical Behavior*, 26(4), 348–370.
- Bergqvist, T., J. Lithner & L. Sumpter (2008) Upper secondary students' task reasoning, *International Journal of Mathematical Education in Science and Technology*, 39:1, 1-12
- Bergqvist, T., Lithner, J. (2012). Mathematical reasoning in teachers' presentations. *The Journal of Mathematical Behavior*, Volume 31, Issue 2, jpp 252–269
- Bergqvist, T., Lithner, J. And Sumpter, L., 2003, Reasoning characteristics in upper secondary school students' task solving., *Research Reports in Mathematics Education* 1,Department of Mathematics, Umeå° University.
- Bergrøth-Koskinen, U.M., Seppälä, R. (2012). Teacher-researchers Exploring Designbased Research to Develop Learning Designs in Higher Education Language Teaching. *Apples - Journal of Applied Language Studies*, Vol 6, 2, 2012, 95 - 112
- Bergrøth-Koskinen, Ulla-Maija, Riina Seppälä (2012). Teacher-researchers Exploring Design-based Research to Develop Learning Designs in Higher Education Language Teaching. *Apples – Journal of Applied Language Studies*, Vol. 6, 2 , 2012, 95–112
- Bergvall, Ida (2016). Bokstavligt, bildligt och symboliskt i skolans matematik: – en studie om ämnesspråk i TIMSS. Doctoral thesis.Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Educational Sciences, 10. Uppsala: Acta Universitatis Upsaliensis
- Berit Bungum, Saeed Manshadi & Dag Atle Lysne (2014) Mathematical speech and practical action: a case study of the challenges of including mathematics in a school technology project, *International Journal of Mathematical Education in Science and Technology*, 45:8, 1131-1145, DOI: 10.1080/0020739X.2014.914253
- Bernhard, Jonte (2010). Investigating engineering students' learning – learning as the learning of a complex concept. In: Proceedings of the Joint International IGIP-SEFI Annual Conference 2010, 2010
- Bernhard, Jonte, Carstensen, Anna-Karin (2016). Science education in a bilingual class: problematising a translational practice.In: J. Björkqvist, K. Edström, R.J. Hugo, J. Kontio, J. Roslöf, R. Sellens, S. Virtanen,The 12th International CDIO Conference, Turku University of Applied Sciences , 2016, 1072-1081 p.1072-1081
- Birkeland, A. (2015). Pre-service teachers' mathematical reasoning. Konrad Krainer; Nada Vondrov'a. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. Pp.977-982, Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education. <hal-01287296
- Björkholm, Eva, Hultén, Magnus (2013). Primary School Teachers' Development of Subject-Specific Knowledge in Technology during a Design Based Research Project. PATT27 Technology Education for the Future: A Play on Sustainability, Christchurch, New Zealand, 2-6 December 2013: A Play on Sustainability / [ed] P John Williams and Dilani Gedera, University of Waikato, New Zealand , 2013, 59-64 p
- Björkqvist, O. (2003). Matematikdidaktiken i Sverige: En lägesbeskrivning av forskningen och utvecklingsarbetet. Stockholm: Kungliga Vetenskapsakademien.

- Björkqvist, O. (2006). Mathematics education in Finland: What makes it work? In A. Rogerson (Ed.), Proceedings of the International Conference of the Mathematics Education into the 21st Century Project on “Reform, Revolution and Paradigm Shifts in Mathematics Education” (pp. 45–48). Johor Bahru, Malaysia: Universiti Teknologi, Malaysia.
- Björneloo, I. (2007). Innebörder av hållbar utveckling En studie av lärares utsagor om undervisning. I Göteborg studies in educational sciences, 0436-1121;250
- Björneloo, Inger, Landström, Jan, Pramling Samuelsson, Ingrid & Sträng, H. Monica (2003). ”Stenar sjunker hur små de än är.” Kompetensutveckling i naturvetenskap, miljö och teknik med personal inom barnomsorg och skola. IPD-rapporter Nr 2003:05. Göteborg: Göteborgs universitet, Institutionen för pedagogik och didaktik.
- Blomhøj, M. (2006). Konstruktion af episoder som forskningsmetode – læringsmuligheder i IT-støttet matematikundervisning. I: O. Skovsmose & M. Blomhøj (red.), Kunne det tænkes? – om matematiklæring (s. 228-254). København: Malling Beck.
- Blomhøj, M. & Jensen, T.H. (2003) Developing mathematical modelling competence: conceptual clarification and educational planning. *Teaching Mathematics Applications* (2016) 35 (3): 172-186
- Blomhøj, M. & Jensen, T.H. (2007). SOS-projektet – didaktisk modellering af et sammenhængsproblem. MONA, 2007(3), s. 25-53.
- Blomhøj, M. & Jensen, T.H. (2007). SOS-projektet – didaktisk modellering af et sammenhængsproblem. MONA, 2007(3), s. 25-53.
- Blomhøj, M. & Jensen, T.H. (2007). What's all the fuss about competence? Experiences with using a competence perspective on mathematics education to develop the teaching of mathematical modelling. I: W. Blum et al. (red.), Modelling and applications in mathematics education – The 14th ICMI-study (s. 45-56). New York: Springer.
- Blomhøj, M. & Kjeldsen, T.h. (2011). Students' Reflections in Mathematical Modelling Projects. G. Kaiser, W. Blum, R. B. Ferri & G. Stillman (Eds.)ICTMA 14 Trends in Teaching and Learning of Mathematical Modelling. London: Springer
- Boesen, J. (2006). Assessing Mathematical Creativity. Comparing national and teacher-made tests, explaining differences and examining impact. Doctoral thesis no. 34, 2006. Department of Mathematics and Mathematical Statistics, Umeå university
- Boesen, J., Lithner, J., & Palm, T. (2010). The relation between types of assessment tasks and the mathematical reasoning students use. *Educational studies in mathematics*, Volume 75, Issue 1, pp 89–105
- Bopry, J. & Eteläpelto, A. (Eds.). (2003). Collaboration and learning in virtual environments. Jyväskylä: University of Jyväskylä.
- Börlin, J. And P. Labudde (2014). Practical Work in Physics Instruction: An Opportunity to Learn? In E. Hans, P. Labudde, K. Neumann, and J. Viiri (Eds.), Quality of Instruction in Physics – Comparing Finland, Germany and Switzerland, pp. 112–127. Waxmann Verlag gmbh
- Bråten , Strømsø, Rouet, Britt (2011). The Role of Epistemic Beliefs in the Comprehension of Multiple Expository Texts: Toward an Integrated Model. *Educational Psychologist*, Volume 46, 2011 - Issue 1
- Bråten, I., Braasch, J. L. G., Strømsø, H. I. (2015) Establishing Trustworthiness when Students Read Multiple Documents Containing Conflicting Scientific Evidence. *Reading Psychology*, vol 36 2015 - Issue 4
- Bråten, I., Strømsø, H. (2009). Trust Matters: Examining the Role of Source Evaluation in Students' Construction of Meaning Within and Across Multiple Texts. *Reading Research Quarterly*. 2009, Volume 44, Issue 1, Pages 6–28

- Bråten, I., Strømsø, H., Andreassen, R. (2016). Sourcing in professional education: Do text factors make any difference?.*Reading and Writing*, October 2016, Volume 29, Issue 8, pp 1599–1628
- Brehmer,D., Ryve, A., Stenbrugge, H.V. (2016).Problem solving in Swedish mathematics textbooks for upper secondary school. *Scandinavian Journal of Educational Research*, Volume 60, Issue 6
- Breiting, S. (2000). Biologiundervisning ved brug af storylinemetoden. In E. Hakonsson (Ed.), Story linebogen. Vejle, Denmark: Kroghs Forlag.
- Bremholm, J. (2013). Veje og vildveje til læsning som ressource: Teksthændelser i naturfagsundervisning med og uden læseguide - Et interventionsstudie om literacy i naturfag i udskolingen. Ph.D-afhandling: . Institut for ddannelse og Pædagogik, Aarhus Universitet.
- Britt Jakobson, Monica Axelsson (2012).‘Beating about the bush’ on the how and why in elementary school science.*Education Inquiry*, Vol. 3, No. 4, December 2012, pp. 495–511
- Britt Jakobson, Per-Olof Wickman (2015). What Difference Does Art Make in Science? A Comparative Study of Meaning-Making at Elementary School.*Interchange*, November 2015, Volume 46, Issue 4, pp 323–343
- Britt jakobsonper-Olof Wickman (2007).Transformation through Language Use: Children’s Spontaneous Metaphors in Elementary School Science. *Science & Education*, March 2007, Volume 16, Issue 3, pp 267–289
- Britt Jacobsen (2009). Från begrepp till utforskande arbetssätt- forskning om NO-undervisning i grundskolans tidigare år, Utbildningsförvaltningen, Stockholms stad
- Broch, T. & Egelund, N. (2002). Et lærerperspektiv på natur/teknik og fysik/kemi undervisningen – en kvalitativ analyse. København: Danmarks Pædagogiske Universitet.
- Broström, Stig (2013). Science i børnehaven. MONA: Matematik og Naturfagsdidaktik, Nr. 4
- Broström, Stig (2015). Science in early childhood education. *Journal of Education and Human development*, Vol. 4, Nr. 2(1), 15.06.2015
- Brunstad, P.O. (2002). Longing for belonging: Youth culture in Norway. In J. Gidley & S.Inayatullah (Eds.), *Youth futures, comparative research and transformative visions* (pp.143- 54). London: Praeger Publishers.
- Brunström, Mats (2015). Matematiska resonemang i en lärandemiljö med dynamiska matematikprogram. Karlstad: Karlstads universitet, 2015. , 77 p.
- Bugge, Birthe Louise & Harder, Peter (2002): Skolen på frihjul: om lærerrollen og det forsvundne elevansvar. København: Gyldendal.
- Bungum, B., Henriksen, E., Angell, A., Tellefsen, C., Bøe, M.V. (2015). Relequant – Improving teaching and learning in quantum physics through educational design research. Nordina, Vol 11, No 2 (2015)
- Bursjöö, Ingela (2014). Utbildning för hållbar utveckling från en lärarhorisont: sammanhang, kompetenser och samarbete. Doctoral thesis.Göteborgs universitet. Naturvetenskapliga fakulteten
- Busch, H. (2005): Is Science Education Relevant? *Europhysics News*, Vol. 36, Nr. 5.
- Busch, H. & Troelsen, R. (2003). Naturfagsdidaktisk ouverture – begreber og udviklingstendenser. I: (Busch, Horst & Troelsen, 2003, s. 23-57).
- Busch, H., Horst, S. & Troelsen, R. (red.) (2003). Inspiration til fremtidens naturfaglige uddannelser. En antologi. København: Undervisningsministeriet.
- Busch, Henrik (2001): “Når Superman smider skjorten” i KVANT 12 (3).
- Byhring, A. K. (2014). Complexity and deliberation in collaborative socioscientific issues (SSI) inquiry discourse. Ph.d., Norwegian University of Life Sciences, Ås

- Byhring, A.K., Knain, E. (2014). Framing student dialogue and argumentation: Content knowledge development and procedural knowing in SSI inquiry group work. *Nordina*, Vol 10, No 2
- Caiman, C. (2015). *Naturvetenskap i tillblivelse: Barns meningsskapande kring biologisk mångfald och en hållbar framtid*. Stockholm: Institutionen för matematikämnet och naturvetenskapsämnenas didaktik, Stockholms universitet
- Caiman, C., Lundsgaard, I. (2015). Barns meningsskapande i ett projekt om biologisk mångfald och ekologi. *Nordina* Vol. 11 nr. 1
- Carstensen, A.K., Bernhard, J. (2015). Analysing and modelling engineering students' learning in the laboratory: A comparison of two methodologies. Conference papers. The 6th Research in Engineering Education Symposium (REES), Dublin, July 13-15, 2015.
- Cestari, M.L.: 1997, *Communication in Mathematics Classrooms. A Dialogical Approach*, Doctoral dissertation, University of Oslo, Oslo.
- Chaiklin, S. (2016). Teaching for competence in science education in Denmark. In J. Lavonen, K. Juuti, J. Lampiselkä, A. Uitto, & K. Hahl (Eds.), *Science Education Research : Engaging learners for a sustainable future*. (ESERA Conference Proceedings; Vol. 4). Helsinki.
- Christensen, C. (2009). Risk and school science education, *Studies in Science Education*, Volume 45, Issue 2
- Christensen, T. S. (2005). Integreret evaluering: en undersøgelse af den fagligt evaluerende lærer-elevsamtal. Syddansk Universitet. Det Humanistiske Fakultet.
- Christenson, N., Rundgren, S. C. (2015) A Framework for Teachers' Assessment of Socio-scientific Argumentation: An example using the GMO issue. *Journal of Biological Education*, Volume 49, 2015 - Issue 2
- Christenson, N., Rundgren, S.C., Höglund, H. (2012). Using the SEE-SEP Model to Analyze Upper Secondary Students' Use of Supporting Reasons in Arguing Socioscientific Issues. *Journal of Science Education and Technology*, Volume 21, Issue 3, pp 342–352
- Christenson, Rundgren, Zeidler (2014). The Relationship of Discipline Background to Upper Secondary Students' Argumentation on Socioscientific Issues. *Research in Science Education*, Volume 44, Issue 4, pp 581–601
- Christiansen, I. M. (1997): 'When Negotiation of Meaning is also Negotiation of Task,' *Educational Studies in Mathematics* 34(1), 1–25.
- Clausen, C., Dolin, J., Gregersen K. & Michelsen, C. (2000) *Eksamensopgaver i fysik - en analyse af opgavesættet ved skriftlig studentereksamen maj 1998*. København: Uddannelsesstyrelsen, Det Gymnasiale område
- Dahl, B. (2004). Analysing cognitive learning processes through group interviews of successful high school pupils: Development and use of a model. *Educational Studies in Mathematics* 7(1), 129–155.
- Dahl, B. (2004). Can different theories of learning work together? Some results from an investigation into pupils' metacognition. In DG 10 (Discussion Group 10): Different perspectives, positions, and approaches in mathematics education research. ICME-10 (the 10th International Congress on Mathematical Education), Copenhagen. Quadrennial International Congress. (ICMI, anno 1908).
- Dahl, B. (2004). How do gifted students become successful? A study in learning styles. In TSG 4 (Topic Study Group 4): Activities and programmes for gifted students. ICME-10 (the 10th International Congress on Mathematical Education). Copenhagen, DK. 4-11 July 2004
- Dahl, B. (2006). Various theoretical frameworks in concept construction and how to move forward as a field: A commentary to Pegg and Tall. *Zentralblatt für Didaktik der Mathematik* February 2006, Volume 38, Issue 1, pp 63–69

- Dahl, B. (2010) Kompetencer i matematik ved overgangen mellem det almene gymnasium og universitetet. Dansk Universitetspædagogisk Tidsskrift (9)
- Dahl, B.: 1996, 'Læring som sprogspilsoverskridelse. Nordic Studies in Mathematics Education 4(1), 7–24.
- Dahl, B.: 2002, 'A focus group study of Danish and English high-achieving high school pupils of mathematics: What can we learn from their verbalised explanations of how they learn mathematics?' Ph.D. Thesis. Roskilde University, IMFUFA, Denmark.
- Danielsson, K. () Att nära sig en naturvetenskaplig diskurs - Text och textanvändning i svenska och finlandssvenska kemiklassrum.
- Danmarks Evalueringssinstitut. (2001). Fysik i skolen - skolen i fysik, september 2001. København: Danmarks Evalueringssinstitut.
- Danmarks Evalueringssinstitut. (2001). Teknik og naturvidenskab. Kortlægning af initiativer der skal fremme interessen for teknik og naturvidenskab. København: Danmarks Evalueringssinstitut.
- Danmarks Evalueringssinstitut. (2002). Folkeskolens afgangsprøver - Prøvernes betydning og sammenhæng med undervisningen. København: Danmarks Evalueringssinstitut.
- Danmarks Evalueringssinstitut. (2002). Undersøgelsen af sammenhænge mellem elevers resultat ved Folkeskolens afgangsprøver og deres senere uddannelsesforløb. København: Danmarks Evalueringssinstitut.
- Davidsson, Eva (2009). Enhancing Visitors' Interest in Science – A Possibility or A Paradox?. *Research in Science Education*. March 2009, Volume 39, Issue 2, pp 197–213
- Docter, H. M., Sølberg, C.-E. (2001). Naturvidenskab, dannelses og kompetence (Papers from DCN No 6). Aalborg: DCN, Aalborg Universitet
- Dolin, J. (1997) Det skriftlige arbejde i fysik. I E. Heltberg & C. Kock (Eds.), *Skrivehåndbogen*. København: Gyldendal
- Dolin, J. (2000). Værdier og undervisning i fysik. Fysik og almendannelse, Askov Højskole
- Dolin, J. (2001) Samspillet mellem fagene, Uddannelse (5)
- Dolin, J. (2002) "Fysikfaget i forandring." Danish only) phd thesis. Roskilde University, Denmark.
- Dolin, J. (2005). Naturfagsdidaktiske problematikker. MONA, 2005(1), s. 7-23.
- Dolin, J. (2016). Idealer og realiteter i målorienteret undervisning. *Cursiv*, 67-112
- Dolin, J., Busch, H., Krogh, L. B. (2006). En sammenlignende analyse af PISA2006 science testens grundlag og de danske målkategorier i naturfagene. Center for Naturvidenskaberne og Matematikkens Didaktik. Syddansk Universitet
- Dolin, J., Krogh, L. & Troelsen, R. (2003). En kompetencebeskrivelse af naturfagene. I: H. Busch, S. Horst & R. Troelsen (red.), *Inspiration til fremtidens naturfaglige uddannelser* (s. 59-142). København: Undervisningsministeriet
- Dolin, J., Schilling, V. (2001) At lære fysik - et studium i gymnasieelevers læreprocesser i fysik. Uddannelsesstyrelsens temahæfteserie nr. 19 - 2001. Uddannelsesstyrelsen. Undervisningsministeriet 2001
- Dreier, O. (1999): Læring som ændring af personlig deltagelse I sociale kontekster. I Nielsen, K. & Kvale, S. (eds.): *Mesterlære – læring som social praksis*. København: Hans Reitzels Forlag.
- Duit, R. (1999). Conceptual change approaches in science education. In W. Schnotz, S. Vosniadou & M. Carretero (Eds.), *New perspectives on conception*
- Duit, R. (2004). Bibliography - STCSE: Students' and Teachers' Conceptions and Science Education. Kiel: IPN - Leibniz Institute for Science Education, University of Kiel.
- Duit, R., Komorek, M. & Wilbers, J. (1997). Studies on educational reconstruction of chaos theory. *Research in Science Education*, 27, 339-357

- Dysthe, O. (2000): Det flerstommige klasserum. Århus: Klim.
- Edlev, L. (2008). Natur og miljø i pædagogisk arbejde. Munksgaard Danmark.
- Ejbye-Ernst, N. (2008). Er det så ligetil? I MONA 2008 -3
- Ekborg, M., & Areskoug, M. (2006). How students teachers' understanding of the greenhouse effect develops during a teacher education programme. Nordina, 5(3), 17–29.
- Ekborg, M., Nyström, E., & Ottander, C. (2009, August–September). Working with socio-scientific issues (SSI) – Teachers' perspectives. Paper presented at the ESERA conference, Istanbul.
- Elam, M., & Bertilsson, M. (2003). Consuming, engaging and confronting science. The emerging dimensions of scientific citizenship. European Journal of Social Theory, 6, 233–251.
- Ellebæk, J.J., Østergaard, L.D. (2009). "Best practice" - visdommen i dansk naturfagsformidling. MONA 2009-4
- Ellen Karoline Henriksen (2015) Introduction: Participation in Science, Technology, Engineering and Mathematics (STEM) Education: Presenting the Challenge and Introducing Project IRIS. In E. K. Henriksen, J. Dillon, J. Ryder (Eds). Science and Technology Education. Understanding Student Participation and Choice. Springer:pp 1-14
- Elm, A. F. (2008). Interaktion och naturvetenskap i en förskola och en förskoleklass. Stockholms universitet Institutionen för didaktik och pedagogiskt arbete
- Elm, A. F. (2012). Design för lärande - barns meningsskapande i naturvetenskap, Stockholm: Institutionen för pedagogik och didaktik, Stockholms universitet
- Elmose, S. Mikkelsen, L.B. (2013). Naturfagene i den nye læreruddannelse? MONA 2013 -3
- Elstgest, Jos (1999). Rätt fråga vid rätt tillfälle. I: Harlen, W. (red.) Våga språnget! Om att undervisa barn i naturvetenskapliga ämnen. Stockholm: Liber.
- Emma Edstrand, Annika Lantz-Andersson, Roger Säljö, Åsa Mäkitalo (2016). Deciphering the Anatomy of Scientific Argumentation - The Emergence of Science Literacy. In: O. Erstad, K. Kumpulainen, Å. Mäkitalo, K.C. Schröder, P. Prullmann-Vengerfeldt, T. Jóhansdóttir (Eds.): Learning across Contexts in the Knowledge Society - Part of the series The Knowledge Economy and Education pp 39-60. Sense Publishers.
- Emma Petersson, Annika Lantz-Andersson & Roger Säljö (2013). VIRTUAL LABS AS CONTEXT FOR LEARNING – CONTINUITIES AND CONTINGENCIES IN STUDENT ACTIVITIES. In E. Christiansen, L. Kuure, A. Mørch, B. Lindstrøm (Eds.): PROBLEM-BASED LEARNING FOR THE 21st CENTURY. NEW PRACTICES AND LEARNING ENVIRONMENTS. AALBORG UNIVERSITY PRESS. P. 161 - 189
- Emmeche, C. (1999). Naturvidenskab - sand almen dannelse. Uddannelse (5)
- Enghag, M., Schenk, L. (2016). Nanoteknik och riskbedömnning som nytt kunskapsinnehåll i gymnasiets naturvetenskapliga kurser – en designstudie. Nordina, Vol 12, No 2
- Engström, Susanne, Gustafsson, Peter, Svenson, Anders (2012). Education for sustainable development and the relation to learning for entrepreneurship in the national technology program in the Swedish upper secondary school – is it a “happy couple”? Conference paper presented at: IOSTE XV Symposium: Science & Technology Education for Development, Citizenship and Social Justice / [ed] Mondher Abrougui, 2012
- Ensen, T.H. (2007). Udvikling af matematisk modelleringskompetence som matematikundervisningens omdrejningspunkt – hvorfor ikke? IMFUFA-tekst, (458). Roskilde: Roskilde Universitetscenter. Ph.d.-afhandling
- Erik Andersson, Situational political socialization: a normative approach to young people's adoption and acquisition of political preferences and skills, Journal of Youth Studies, 2015, 18, 8, 967
- Eriksen, T. R., Gerstoft, B. F. & Hansen, H. P, (Eds.) (1996). Erfaringer - et humanistisk og sundhedsvidenskabeligt perspektiv. København: Munksgaard

- Eriksson, M., Rundgren, C. (2012). Vargfrågan - Gymnasieelevers argumentation kring ett sociovetenskapligt dilemma. "The Wolf Issue - Upper Secondary Students' Argumentation about a Socio-Scientific Issue." *nordina* vol 8, No 1
- Evagorou, M., Dillon, J., Viiri, J., & Albe, V. (2015). Pre-service Science Teacher Preparation in Europe: Comparing Pre-service Teacher Preparation Programs in England, France, Finland and Cyprus. *Journal of Science Teacher Education*, 26 (1), 99-115. Doi:10.1007/s10972-015-9421-8
- Evalueringscenteret. (1998). De videregående matematik-, fysikog kemiuddannelser. København: Evalueringsinstituttet.
- EVENSEN, L.S., & VAGLE, W. (2003). Kvalitetssikring av Iceringsutbyttet i norsk skriftlig. Sammendragsrapport. Trondheim: Norwegian University of Science and Technology (NTNU).
- Falkesgaard, J. (2002): *Fremtidsgymnasiet?* Uddannelse nr. 1/2002.
- Fehr, A.V.D. (2016). Exploring social networks of science education actors in Danish Science Municipalities. Ph.D. Thesis. Copenhagen: The Faculty of Science, Department of Science Education. University of Copenhagen
- Finnäs, B. K. (2008). Det var intressant men måste tänka så mycket - Öppna laborationer och V-diagram i kemiundervisningen. Åbo Akademis Forlag
- Fischer, H. E., Neumann, K., Labudde, P., & Viiri, J. (Eds.). (2014). *Quality of Instruction in Physics : Comparing Finland, Germany and Switzerland*. Münster: Waxmann Verlag
- Fredlund, T., Airey, J., Linder, C. (2012). Exploring the role of physics representations: an illustrative example from students sharing knowledge about refraction, *European Journal of Physics*, Volume 33, Number 3
- Fredlund, Tobias (2015). Using a Social Semiotic Perspective to Inform the Teaching and Learning of Physics. Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology, ISSN 1651-6214 ; 1241. Uppsala: Acta Universitatis Upsaliensis, 2015
- Frejd, P. (2011), An investigation of mathematical modelling in the Swedish national course tests in mathematics. *Proceedings of CERME 7*, The Seventh Congress of the European Society for Research in Mathematics Education, 2011
- Frejd, P. (2014). Modes of Mathematical Modelling: An analysis of how modelling is used and interpreted in and out of school settings. Doctoral Thesis. Linköping University, Department of Mathematics, Mathematics and Applied Mathematics.
- Frejd, P. & Årlebäk, J.B. (2011). First Results from a Study Investigating Swedish Upper Secondary Students' Mathematical Modelling Competencies. G. Kaiser, W. Blum, R. B. Ferri & G. Stillman (Eds.) *ICTMA 14 Trends in Teaching and Learning of Mathematical Modelling*. London: Springer
- Fritzell, Christer (2004). Ett bildningsdidaktiskt perspektiv. I: Fritzén, Lena (red.) *På väg mot en integrativ didaktik*. Växjö: Växjö University Press, Växjö universitet.
- Fritzén, Lena ((2006). Integrativ didaktik – en möjlig teoretisk referensram för lärarutbildningen. Paper presenterat vid Didaktikkonferens i Kristianstad den 4 -5 maj 2006.
- Frøyland, M. (2003). Visjonen om naturvitenskapelig allmendannelse og betydningen av uformell læring. I Jorde, D. Og Bungum. B. (Eds.) *Naturfag-didaktikk. Perspektiver. Forskning. Utvikling*. Gyldendal Norsk Forlag 2003.
- Fundet via researchgate:
https://www.researchgate.net/publication/255630714_Competencies_Skills_and_Assessment

- Furberg, A. & Ludvigsen, S. (2008). Students' Meaning-making of Socio-scientific Issues in Computer Mediated Settings: Exploring learning through interaction trajectories. International Journal of Science Education, Volume 30, 2008, Issue 13
- Fyhn, A.B., Nutti, Y. J., Eira, E.S., Børresen, T., Hætta, O.E. (2015). Ruvden as a Basis for the Teaching of Mathematics. In E.S. Huaman, B. Sriraman (eds.) Indigenous Innovation - Universalities and Peculiarities. ADVANCES IN INNOVATION EDUCATION
- Gard Ove Sørvik (2015). Multiple school science literacies. Exploring the role of text during integrated inquiry-based science and literacy instruction. Doctoral thesis. Department of Teacher Education and School Research, Faculty of Educational Sciences UNIVERSITY OF OSLO
- Geijerstam, Å. (2006). Att skriva i naturorienterande ämnen i skolan. Doctoral thesis. Studia Linguistica Upsaliensia, ISSN 1652-1366 ; 3. Uppsala: Institutionen för lingvistik och filologi
- Georgsen, M. (2004). Fleksibel læring og undervisning. Aalborg Universitetsforlag.
- Grunwald, A. (2012). Elevuniversitetet om energi og klima - et samarbejde i netværk: Nye perspektiver for naturfagsinteressen? Nordina, 8(2/12), 108-121.
- Gruvberg, Christer (2008). Kemilaborationens bidrag till förståelse - högskolestudentens perspektiv. Doctoral Thesis. University of Gothenburg. Faculty of Science
- Gun' y Helga Gunnarsd'ottir, Gubj"org P'alsd'ottir. Instructional practices in mathematics classrooms.Konrad Krainer; Nada Vondrov'a. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. Pp.3036-3042, Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education.<hal-01289736>
- Gunnarsdóttir, G. H. (2010). Learning Environment: Influences of teaching materials. Conference proceedings from the fifth Nordic Research network on Special Needs Education in Mathematics, NORSMA5: Challenges in teaching mathematics: Becoming special for all.
- Gustavsson, L. Et al. (2016) Ways of dealing with science learning: a study based on Swedish early childhood education practice, International Journal of Science Education, 38:11, 1867-1881, DOI: 10.1080/09500693.2016.1220650
- Guttersrud, Ø. (2007) Mathematical Modelling in Upper Secondary Physics Education. Defining, Assessing and Improving Physics Students' Mathematical Modelling Competency. Phd thesis University of Oslo, Department of Physics
- Guttersrud, Ø., Carl Angell (2010) Mathematics in physics: Upper secondary physics students' competency to describe phenomena applying mathematical and graphical representations. Conference. Reims, Fance 2010
- Gyllenpalm, J., Wickman, P.O. (2011). "Experiments" and the inquiry emphasis conflation in science teacher education. Science Education. Volume 95, Issue 5, September 2011, Pages 908–926
- Gyllenpalm, J., Wickman, P.O. (2011). The Uses of the Term Hypothesis and the Inquiry Emphasis Conflation in Science Teacher Education. International Journal of Science Education Volume 33, 2011 - Issue 14
- Gyllenpalm, J., Wickman, P.O., & Holmgren, S.O. (2009). Teachers' Language on Scientific Inquiry: Methods of teaching or methods of inquiry? International Journal of Science Education, ifirst Article, 1-22.
- Gyllenpalm, J., Wickman,P.O., & Holmgren, S.(2010). Secondary science teachers' selective traditions and examples of inquiry-oriented approaches. Nordina 6(1), 44-60

- Gyllenpalm, Jakob (2010). Teachers' Language of Inquiry: The Conflation Between Methods of Teaching and Scientific Inquiry in Science Education. Doctoral Thesis. Stockholm: Department of Mathematics and Science Education, Stockholm University , 2010. , 61 p
- H. Muukkonen, K. Hakkarainen, M. Lakkala (1999). Collaborative technology for facilitating progressive inquiry: future learning environment tools. In C. Hoadley, J. Roschelle (Eds.), Proceedings of the CSCL '99: The third international conference on computer support for collaborative learning on title: Designing new media for a new millennium: Collaborative technology for learning, education, and training, Erlbaum, Mahwah, NJ (1999), pp. 406–415
- Hägglund, S., Johnsson, L., Wernersson, I. & Öhrn, E. (1997). Utvärdering av lokala jämställdhetsprojekt inom jämsams nätverk. Stockholm: Skolverket.
- Hähkiöniemi, M. (2016). Student teachers' questioning behaviour which elicit conceptual explanation from students. In C. Csíkos, A. Rausch, & J. Szitányi (Eds.), PME40 : Proceedings of the 40th Conference of the International Group for the Psychology of Mathematics Education. Volume 2 (pp. 337-344). International Group for the Psychology of Mathematics Education.
- Hähkiöniemi, M. (Årstad) USING QUESTIONING DIAGRAMS TO STUDY TEACHER– STUDENT INTERACTION.Nordic research in mathematics education
- Hakkarainen, K., Ilomäki, L. Lipponen, L., Muukkonen, H., Rahikainen, M., Tuominen, T., Lakkala, M. & Lehtinen, E. (2000). Students' skills and practises of using ICT: Results of a national assessment in Finland. Computers & Education, 34, 103 – 117.
- Halldén, O. (1999). Situating the question of conceptual change. In eighth European Conference for Research on Learning and Instruction, Göteborg, Sweden [Abstracts, p. 230].
- Halldén, O. (2002). Om att förstå, missförstå och inte förstå. Ett intentionellt perspektiv på inlärningssituationen. I H. Strömdahl (Red.) Kommunicera naturvetenskap i skolan – några forskningsresultat (57-74). Lund: Studentlitteratur.
- Hållsten, Stina (2008). Ingenjörer skriver: Verksamheter och texter i arbete och utbildning, Doctoral thesis. Stockholm: Acta Universitatis Stockholmiensis, 2008. , 241 p.
- Halvers Franzén, B. (2010). Barn och etik: möten och möjlighetsvillkor i två förskoleklassers vardag. Stockholm: Institutionen för pedagogik och didaktik, Stockholms universitet
- Hämäläinen, R., Cattaneo A.(2015). New TEL Environments for Vocational Education – Teacher's Instructional Perspective. Vocations and Learning, July 2015, Volume 8, Issue 2, pp 135–157
- Hamza, K.M., wickmanp.O. (2013).Student Engagement with Artefacts and Scientific Ideas in a Laboratory and a Concept-Mapping Activity. International Journal of Science Education, Volume 35, 2013 - Issue 13. P. 2254 - 2277
- Hamza, Karim (2010). Contingency in high-school students' reasoning about electrochemical cells: Opportunities for learning and teaching in school science. Doctoral Thesis.Stockholm: Department of Mathematics and Science Education, Stockholm University , 2010. , 68 p.
- Hamza, Karim (2013). Distractions in the School Science Laboratory.Research in Science Education, August 2013, Volume 43, Issue 4, pp 1477–1499
- Hamza, Karim, Lundegård, Iann (2011).Reification in Science Education Research: A Neglected Problem. Conference paper. ESERA 2011 Conference, Lyon, September 5-9, 2011
- HAMZA,K.M., WICKMAN, P.O. (2012). Supporting students' progression in science: Continuity between the particular, the contingent, and the general. Science Education, Volume 97, Issue 1, January 2013, Pages 113–138
- Hannula, M. (2016). Attitudes, Beliefs, Motivation, and Identity in Mathematics Education. ICME-13 Topical Surveys pp 1-35

- Hannula, M. S., Pehkonen, E., Maijala, H., & Soro, R. (2006). Levels of students' understanding of infinity. *Teaching Mathematics and Computer Science*, 4(2), 317
- Hansen P. J. K. (2010). Knowledge about the Greenhouse Effect and the Effects of the Ozone Layer among Norwegian Pupils Finishing Compulsory Education in 1989, 1993, and 2005 - What Now? *International Journal of Science Education* 32(3), 397-419
- Hansen, J. M. (2001). Byg bro mellem mennesket og omverdenen. *Uddannelse* (5) 5 - 9
- Hansen, N. S. (1996). Modelkompetencer - udvikling og afprøvning af et begrebsapparat (MFUFA tekst 321) Roskilde MFUFA/RUC
- HANSEN, P.J.K. (1999). Greenhouse effect and the effect of the ozone layer. New themes in the new Norwegian National Curriculum. Paper presented at the EWOC 1999: Fifth International Conference on School and Popular Meteorological and Oceanographic, Ballarat and Melbourne, Victoria, Australia.
- HANSEN, P.J.K. (2003). Weather and climate: Topics in Scandinavian curricula for compulsory schools. Paper presented at the EWOC 2003: VI International Conference on School and Popular Meteorological and Oceanographic Education, Departamento de Física, Universidad Europea de Madrid, Spain
- Hansen, R. (2016). På vej mod en målbevidst målstyret kompetenceorienteret matematikundervisning. *LUP - læreruddannelse og Profession*, Årg. 1 nr. 1
- Hansen, T.I. (2008). Læremiddeldidaktik – hvad er det? *Tidsskrift for læremiddeldidaktik* 2008(1) s. 4-13
- Hansen, V. L. (2008). The dual nature of mathematics. In M. Niss (Ed.), ICME-10 proceedings & regular lectures (pp. 1-11). Copenhagen: ICME-10. Regular Lecture
- Harr, R., Buch, T., Hanghøj, T. (2008), "Exploring the discrepancy between educational goals and educational game design". European Conference on Game Based Learning
- Hartmann-Petersen (2005). Almen, uorganisk og organisk kemi. Polyteknisk Forlag.
- Hasse, C. (1998): Learning to Pattern Physics Virtues: Male and Female Dissimilarities. I Jensen (1998): Justification and Enrolment Problems in Education Involving Mathematics and Physics. Roskilde University Press
- Hasse, C. (2001). Institutional Creativity: The Relational Zone of Proximal Development. *Culture & Psychology*, 7(2), s. 199-221. London: SAGE Publications
- Hasse, C., Sinding, A. (2012). The Cultural Context of Science Education. I D. Jorde, J. Dillon (Eds.) *Science Education Research and Practice in Europe*. Rotterdam: Sense Publishers. Pp. 237 - 252
- Hautamaäki, J., Harjunen, E., Hautamaäki, A., Karjalainen, T., Kupiainen, S., Lavonen, J., Pehkonen, E., Rantanen, P., & Scheinin, P. (2008). PISA 2006: Analysis, reflections, explanations (44). Helsinki: Ministry of Education.
- Hedefalk, M., Almqvist, J., Lundqvist, E. (2015). Teaching in Preschool. Pp. 20 - 36. *Nordic Studies in Education* Vol. 34/1
- Hedefalk, Maria (2014). Förskola för hållbar utveckling: Förutsättningar för barns utveckling av handlingskompetens för hållbar utveckling. Doctoral thesis. Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Educational Sciences, 3. Uppsala: Acta Universitatis Upsaliensis, 2014. , 108 p.
- Helaakoski, J., Viiri, J. (2014). Content and content structure of physics lessons and students' learning gains: Comparing Finland, Germany and Switzerland. In H. Fischer, P. Labudde, K. Neumann, J. Viiri (Eds.) *Quality of Instruction in Physics: Comparing Finland, Germany and Switzerland*. Münster: Waxmann Verlag

- HELENA JOHANSSON (2015) Mathematical Reasoning - In physics and real-life context. Division of Mathematics Department of Mathematical Sciences, Chalmers University of technologyand University of Gothenburg Gothenburg
- Helena Näs, Christina Ottander (2008). Student reasoning while investigating plant material. Nordina, Vol 4, No 2
- Helenius, O., & Tengstrand, A. (2005). Nybörjarstudenter och matematik: Matematikundervisningen under första året på tekniska och naturvetenskapliga utbildningar. Högskoleverkets Rapportserie, 36(1).
- Helldén, Gustav (2004). A study of recurring core developmental features in students' conceptions of some key ecological processes. Canadian Journal of Science, Mathematics and Technology Education 4 (1) 59-76.
- Helldén, Gustav (2005). Exploring understandings and responses to science: A program of longitudinal studies. Research in Science Education 35, 99-122.
- Hermans, Mikaela (2016) Från förståelse till agerande : niondeklassares och geografilärares syn på klimatförändringen och undervisningen om klimatförändringen. Fakulteten för pedagogik och välfärdsstudier. Åbo Akademi Vasa, Finland, 2016
- Hestenes D 1996 Modeling Methodology for Physics Teachers Proc. Int. Conf. On Undergraduate Physics Education (College Park August 1996)
- Himanka, J. (2000). Does the earth move? A search for a dialogue between two traditions of contemporary philosophy. The Philosophical Forum, 31, 57 – 83.
- Hirvonen, P. & Viiri, J. (2002). Physics student teachers' ideas about the objectives of practical work. Science & Education, 11, 305 – 316
- Högström, P. (2009). Laborativt arbete i grundskolans senare år -Lärares mål och hur de implementeras. Doctorial dissertation at Umeå University, Umeå: Print & Media.
- Högström, P., Ottander, C., & Benckert, S. (2005). Lärares mål med laborativt arbete: Utveckla förståelse och intresse. Nordina (5), 54-66.
- Högström, P., Ottander, C., & Benckert, S. (2005). Lärares mål med laborativt arbete: Utveckla förståelse och intresse. Nordina (5), 54-66
- Høines, M.J. (2006). Begynneropplæringen. Fagdidaktikk for barnetrinnets matematikkundervisning. 2. Udgave (1. Udgave 1987). Bergen, Norge: Caspar Forlag.
- Højgaard, T. (2009). Kompetencebeskrivelser og pensumtils i økonomi som undervisningsfag. Fagdidaktik i økonomifagene 2009 -3
- Højgaard, T. (2012). Comptencies and the fighting og syllabusitis. ICME12
- Højgaard, T., Jan Sølberg, Jeppe Bundsgaard, Steffen Elmose (2010). Kompetencemål i praksis – foranalysen bag projektet kompis. MONA 2010 -3
- Holmegaard, H. T. (2012). Students' narratives, negotiations, and choices: A longitudinal study of Danish students' transition process into higher education science, engineering and mathematics. Faculty of Science, University of Copenhagen.
- Horst, S. (1999). Illustrationens kraft - visuel formidling af fysik. Roskilde Universitetscenter
- Horst, S. (2006). Naturfagene i bevægelse. Undervisningsministeriets temahæfteserie nr. 4 – 2006.
- Horst, S. Dolin, J. Laursen, K. B., Andersen, H. M., Goldbech, O. Kjeldsen, T. H. (2012). Matematik og naturfagene i Ny Nordisk Skole. I MONA 2012 -4
- Hult, H. (2000). Laborationen - myt och verklighet: en kunskapsöversikt över laborationer inom teknisk och naturvetenskaplig utbildning (CUP:s Rapportserie Nr 6). Linköping, Sweden: Linköpings Universitet, Centrum för universitetspedagogik

- IANN LUNDEGÅRD, KARIM M. HAMZA (2014), Putting the Cart Before the Horse: The Creation of Essences out of Processes in Science Education Research, *Science Education*, 2014, 98, 1, 127
- Ideland, M. (2002). *Dagens gennyheter. Hur massmedier berättar om genetik och genteknik*. Lund: Nordic Academic Press.
- Ideland, Malin, Claes Malmberg, and Mikael Winberg. "Culturally equipped for socio-scientific issues? A comparative study on how teachers and students in mono-and multiethnic schools handle work with complex issues." *International Journal of Science Education* 33.13 (2011): 1835-1859.
- Ingerman, Å., Cedric Linder, Delia Marshall (2009). The learners' experience of variation: following students' threads of learning physics in computer simulation sessions, *Instructional Science*, May 2009, Volume 37, Issue 3, pp 273–292
- Ivarsson, J., Schultz, J. & Säljö, R. (2002). Map reading versus mind reading: revisiting children's understanding of the shape of the Earth. In M. Limón & L. Macon (Eds.), *Reconsidering conceptual change: Issues in theory and practice* (pp. 77 – 99). Dordrecht: Kluwer.
- J. Öhman (red.), *Learning to change our world*. Lund: Studentlitteratur
- Jaakkola, T., & Nurmi, S. (2008). Fostering elementary school students' understanding of simple electricity by combining simulation and laboratory activities. *Journal of Computer Assisted Learning*, 24(4), 271-283.
- Jacobsen, Britt, Wickmann, Per-Olof (2008). The Roles of Aesthetic Experience in Elementary School Science. *Research in Science Education*, January 2008, Volume 38, Issue 1, pp 45–65
- Jacobsen, J. C., Elmgaard, D. C. (2014). 'Det ene projekt afløser det andet..' Hvordan sikres kvalitet i naturfaglige projekter? En virkningsevaluering. Danmark: Institut for Naturfagernes Didaktik, KU
- Jacobsen, L. B. (2008). Formål med eksperimentelt arbejde i fysikundervisningen. MONA 2008, -4. Det naturvidenskabelige Fakultet
- Jacobsen, L. B. (2010). Linking physics labwork activities to their potential learning outcomes: does a declaration make a difference. Institut for Natur, Systemer og Modeller. Roskilde Universitet
- Jäder, Sidenvall, Sumpter (2016) Students' Mathematical Reasoning and Beliefs in Non-routine Task Solving. *International Journal of Science and Mathematics Education*, pp 1–18
- Jahreie, C., Krane, I. (2011). Learning in Science Education Across School and Science Museums – Design and Development Work in a Multi-Professional Group. *Nordic Journal of Digital Literacy*, 03 / 2011 (Volum 6)
- Jakobsson, A., Mäkitalo, & Säljö, R. (2009). Conceptions of knowledge in research on students' understanding of the greenhouse effect: Methodological positions and their consequences for representations of knowing. *Science Education*, 93(6), 978–995
- Jakobsson, Anders (2006). Students' Self-Confidence and Learning Through Dialogues in a Net-Based Environment. *Journal of Technology and Teacher Education* 14.2 (2006): 387-405.
- Jan Alexis Nielsen (2015) Assessment of Innovation Competency: A Thematic Analysis of Upper Secondary School Teachers' Talk, *The Journal of Educational Research*, 108:4, 318-330, DOI: 10.1080/00220671.2014.886178
- Jankvist (2011). New Avenues for History in Mathematics Education: Mathematical Competencies and Anchoring. *Science & Education*, Volume 20, Issue 9, pp 831–862
- Jankvist (2013). History, Applications, and Philosophy in Mathematics Education: haph—A Use of Primary Sources. *Science & Education*. Volume 22, Issue 3, pp 635–656

- Jankvist, U. (2010). An empirical study of using history as a ‘goal’. *Educational Studies in Mathematics* 74, 53–74.
- Jankvist, U. T. (2008). A teaching module on the history of public-key cryptography and RSA. *BSHM Bulletin*, 23(3), 157–168.
- Jankvist, U. T. (2008). Den matematikhistoriske dimension i undervisning—Gymnasialt set. *MONA*, 4(1), 24–45
- Jankvist, U. T. (2008). Evaluating a teaching module on the early history of error correcting codes. In M. Kourkoulas, & C. Tzanakis (Eds.), *Proceedings 5th international colloquium on the didactics of mathematics* (Vol. II, pp. 447–460). Rethymnon: The University of Crete
- Jankvist, U. T. (2008). Kodningsteoriens tidlige historie—Et undervisningsforløb til gymnasiet. Roskilde: IMFUFA
- Jankvist, U. T. (2008). RSA og den heri anvendte matematiks historie—Et undervisningsforløb til gymnasiet. Roskilde: IMFUFA
- Jankvist, U. T. (2009). A categorization of the ‘whys’ and ‘hows’ of using history in mathematics education. *Educational Studies in Mathematics*, 71(3), 235–261
- Jankvist, U. T. (2009). History of modern applied mathematics in mathematics education. *For the Learning of Mathematics*, 29(1), 8–13.
- Jankvist, U. T. (2009). On empirical research in the field of using history in mathematics education. *relime*, 12(1), 67–101.
- Jankvist, U. T. (2009). Students’ beliefs about the evolution and development of mathematics. In: *Proceedings from the CERME6 working group 15*. CERME (pp. 1–10)
- Jankvist, U. T. (2009). Using history as a ‘goal’ in mathematics education. Ph.D. Thesis, IMFUFA, Roskilde University, Roskilde. Number 464
- Jankvist, U. T. (2011). Anchoring Students’ Metaperspective Discussions of History in Mathematics. *Journal for Research in Mathematics Education* Vol. 42, No. 4, pp. 346–385
- Jankvist, U. T. (2011). The construct of anchoring – an idea for ‘measuring’ interdisciplinarity in teaching. *Philosophy of Mathematics Education Journal*
- Jankvist, U. T. (2013). On the Use of Primary Sources in the Teaching and Learning of Mathematics. *International Handbook of Research in History, Philosophy and Science Teaching*, pp 873–908
- Jankvist, U. T. (2015). History, Application, and Philosophy of Mathematics in Mathematics Education: Accessing and Assessing Students’ Overview and Judgment. Selected Regular Lectures from the 12th International Congress on Mathematical Education, pp 383–404
- Jankvist, U.T., Iversen, S.M. (2014). ‘Whys’ and ‘Hows’ of Using Philosophy in Mathematics Education. *Science & Education*, Volume 23, Issue 1, pp 205–222
- Jankvist, Uffe Thomas (2014). A historical teaching module on ‘the unreasonable effectiveness of mathematics’: Boolean algebra and Shannon circuits. *BSHM Bulletin: Journal of the British Society for the History of Mathematics*, Volume 29, 2014 - Issue 2
- Järvelä, S., M. Veermans, P. Leinonen (2008). Investigating student engagement in computer-supported inquiry: a process-oriented analysis. *Social Psychology of Education*, 11 (3) (2008), pp. 299–322
- Jauhiainen, J., Koponen, I., & Lavonen, J. (2001). The force concept inventory in diagnosing the conceptual understanding of Newtonian mechanics in Finnish upper secondary schools. In M. Ahtee, O. Björkvist, E.Pehkonen, & V. Vatanen (Eds.), *Research on mathematics and science education—From beliefs to cognition, from problem solving to understanding* (pp. 101– 114). Jyväskylä: Institute for Educational Research, University of Jyväskylä

- Jens Højgaard Jensen, Martin Niss & Uffe Thomas Jankvist (2016): Problem solving in the borderland between mathematics and physics, International Journal of Mathematical Education in Science and Technology
- Jensen, J. H. Niss, M., Wedege, T. (Eds.) (1998), Justification and Enrollment Problems in Education Involving Mathematics or Physics. Frederiksberg: Roskilde University Press
- Jensen, Jens Højgaard (2001): "Naturvidenskabens syndefald?" I Mere spredt fægtning. IMFUFA tekst nr. 404. Roskilde: IMFUFA, Roskilde Universitetscenter.
- Jensen, T.H. (2007). Assessing mathematical modelling competency. I: C. Haines, P. Galbraith, W. Blum & S. Khan (red.), Mathematical modelling (ICTMA 12): Education, engineering and economics (s. 141-148). Chichester, UK: Horwood.
- Jensen, T.H. (2008). Kompetencer, færdigheder og evaluering. Matematik: tidsskrift for regne og matematiklærere, (36)7 s. 43-46.
- Jensen, T.H. (2009), Modellering versus problemløsning – om kompetencebeskrivelser som kommunikationsværktøj. MONA (2)
- Jerneck, A., Olsson, L., Ness, B., Anderberg, S., Baier, M., Clark, E., ... Persson, J. (2011). Structuring sustainability science. Sustainability Science, 6(1), 69–82.
- Jesper Boesen, Johan Lithner & Torulf Palm (2016): Assessing mathematical competencies: an analysis of Swedish national athenematics tests, Scandinavian Journal of Educational Research,
- Jess, K. (2004). Formativ Evaluering i Matematikundervisningen – Ændringer i praksis. Nordisk Matematikdidaktik (NOMAD), 9(4)
- Jess, K. (2005), Konsekvenser af evaluering i matematikundervisning. MONA, 2005(2), 22-39
- Jessen, C. (2001). Vidensdeling og læring i et kulturelt perspektiv – om kulturens naturlige læreprocesser. I: IT i Uddannelserne. Danmarks Strategi for uddannelse, læring og IT. København:Undervisningsministeriet.
- Joacim Andersson, Leif Östman, Marie Öhman (2015), I am sailing—towards a transactional analysis of ‘body techniques’, Sport, Education and Society, 2015, 20, 6, 722
- Johan Öhman, Marie Öhman (2013).Participatory approach in practice: an analysis of student discussions about climate change. Environmental Education Research, Volume 19, 2013 - Issue 3. P. 324 - 341
- Johansen, G. (2014). ‘Science for all’ – a mission impossible? : a multimodal discourse analysis of practical work and inquiry in Norwegian upper secondary school. Phd. Norwegian University of Life Sciences, Ås
- Johansson, A.M., Wickman, P.O. (2012). Vad ska elever lära sig angående naturvetenskaplig verksamhet? - En analys av svenska läroplaner för grundskolan under 50 år."nordina 2012 Vol8, No 3
- Johansson, A.M., Wickman, P.O.(2013). Selektiva traditioner i grundskolans tidigare år: Lärares olika betoningar av kvalitéer i NO-undervisningen. Nordina: Nordic Studies in Science Education, Vol. 9, no 1, 50-65 p.50-65
- Johansson, Annie-Maj (2012).Undersökande arbetssätt i NO-undervisningen i grundskolans tidigare årskurser. Doctoral Thesis. Studies in science and technology education, ISSN 1652-5051 ; 58. Stockholm: Stockholm University
- Johansson, H. (2016) Mathematical Reasoning Requirements in Swedish National Physics Tests. International Journal of Science and Mathematics Education, Volume 14, Issue 6, pp 1133–1152
- Jonas Almqvist, Leif Östman (2006). Privileging and Artifacts: On the Use of Information Technology in Science Education. Interchange, November 2006, Volume 37, Issue 3, pp 225–250

- Jonna Malmberg, Sanna Järvelä, Paul A. Kirschner(2014). Elementary school students' strategic learning: does task-type matter? *Metacognition and Learning*, August 2014, Volume 9, Issue 2, pp 113–136
- Jonsson, B., Nordqvist, M., Liljekvist, Y., Lithner, J. (2014). Learning mathematics through algorithmic and creative reasoning. *The Journal of Mathematical Behavior*, Volume 36, Pages 20–32
- Jorde, D. (2000). Knowledge integration environment: reactions and comments. *International Journal of Science Education*, 22, 881 – 883.
- Jorde, D. (2003). *Naturfagsdidaktikk*. Gyldendal Norsk
- Jorde, D., Strømme, A., Sorborg, Ø., Erlien, W. & Mork, S. M. (2003). Virtual environments in science: Viten.no. Forsknings- og kompetansnettverk for IT i utdanning (ITU). Oslo: Unipub AS.
- Jorde, D., Strømme, A., Sorborg, Ø., Erlien, W., & Mork, S.M. (2003). Virtual environments in science: Viten.no. Forsknings- og kompetensnettverk for IT i utdanning (ITU). Oslo, Unipub AS.
- Jørgensen, B.C. (1998): Mathematics and Physics Education in Society – The Justification and Enrolment Problems from a General Perspective. I Jensen (1998): Justification and Enrolment Problems in Education Involving Mathematics and Physics. Roskilde University Press.
- Jouni_Viiri, Antti_Savinainen (2008). Teaching-Learning sequences: A Comparison of learning demand analysis and educational reconstruction. *Lat. Am. J. Phys. Educ.* Vol. 2, No. 2, May 2008
- Juntunen, M. (2015). Holistic and Inquiry-Based Education for Sustainable Development in Chemistry. Doctoral Dissertation. Helsinki: University of Helsinki, Faculty of Science, Department of Chemistry
- Juntunen, M. K. Aksela, M. (2014). Improving students' argumentation skills through a product life-cycle analysis project in chemistry education. *Chem. Educ. Res. Pract.*, 2014, 15, 639-649
- Juntunen, M.; Aksela, M (2013). Life-Cycle Thinking in Inquiry-Based Sustainability Education - Effects on Students' Attitudes towards Chemistry and Environmental Literacy. *CEPS Journal : Center for Educational Policy Studies Journal*3.2 (2013): 157-180.
- Juntunen, M.; Aksela, M. (2013). Life-Cycle Analysis and Inquiry-Based Learning in Chemistry Teaching. *Science Education International* Vol. 24, Issue 2, 2013, 150-166
- Juuti, K. (2003). Design of learning environments for physics education: Reaching usability via design research. Unpublished licentiate thesis. Department of Teacher Education, University of Helsinki.
- Juuti, K. (2005). Towards primary school physics teaching and learning: design research approach. RESEARCH REPORT 256. Helsinki: UNIVERSITY OF HELSINKI, FACULTY OF BEHAVIOURAL SCIENCES, DEPARTMENT OF APPLIED SCIENCES OF EDUCATION
- Juuti, K. & Lavonen, J. (2016). How teaching practices are connected to student intention to enrol in upper secondary school physics courses. *Research in Science & Technological Education*, Volume 34, 2016 - Issue 2. Pp. 204 - 218
- Juuti, K., & Lavonen, J. (2012). Design-based research in science education: One step towards methodology. *Nordic Studies in Science Education*, 2(2), 54-68
- Juuti, K., Lavonen, J., & Meisalo, V. (2004). Learning Newtonian mechanics in virtual and real learning environments in grade 6 in Finnish primary school. In V Uskov (Ed.), *Proceedings of the IASTED International conference on web-based education February 16–18 2004* (pp. 567-572). Anaheim: Acta press.

- Juuti, K., Lavonen, J., & Meisalo, V. (2005). Issues on school e-laboratories in science teaching: Virtuality, reality and gender. In J.-P. Courtiat, C. Davarakis & T. Villemur (Eds.), Proceedings of WS 2, the 18th IFIP World Computer Congress on technology enhanced learning (pp. 43–58). New York: Springer
- Juuti, K., Lavonen, J., Kallunki, V. & Meisalo, V. (2004). Designing web-based learning environments for primary science and teacher education: a design research approach. In E.K. Henriksen and M. Ødegaard (Eds.), Naturfagenes didaktikk - en disiplin i forandring? (pp. 579 – 593). Kristiansand, Norway: Høyskoleforlaget.
- Juuti, K., Lavonen, J., Kallunki, V., & Meisalo, V. (2002, August). Designing a WWW-based environment for learning mechanics – Testing a prototype for further development. Paper presented at meeting of GIREP organisation in Lund, Sweden.
- Juuti, K., Lavonen, J., Kallunki, V., & Meisalo, V. (2003). Studying Newtonian mechanics in a virtual and real learning environment in an elementary school. Paper presented at ESERA organisation in Noordwijkerhout, The Netherlands
- Juuti; k., Lavonen, J., Meisalo, V. (2016). Pragmatic Design-Based Research – Designing as a Shared Activity of Teachers and Researchers. In D. Psillos, P. Kariotoglou (Eds.) Iterative Design of Teaching-Learning Sequences. Springer Netherlands. Pp 35-46
- Kaasila, R. & Lauriala, A. (2008) INTERACTIONISTIC PERSPECTIVE ON STUDENT TEACHER DEVELOPMENT DURING PROBLEM-BASED TEACHING PRACTICE. In G. F. Ollington (Ed.). Teachers and Teaching Strategies. Nova Science Publishers
- Kaasila, R., Pehkonen, E., & Hellinen, A. (2010) Finnish pre-service teachers' and upper secondary students' understanding on division and reasoning strategies used. Educational Studies in Mathematics, v73 n3 p 247-261
- Kaiserfeld, T. (1999). Laboratoriets didaktik: Fysiken på läroverken i början av 1900-talet. In S. Widmalm (Ed.), Vetenskapsbärarna: naturvetenskapen i det svenska samhället 1880-1950 (pp. 138-231). Hedemora: Gidlund
- Käkkäinen, S., Keinonen, T., Kukkonen, J., Hurri, A., & Vesala, P. (2009). What is the greenhouse effect?: Fifth graders' ideas. The International Journal of Learning, 16(6), 415–429
- Kallunki, V., Seija Karppinen & Kauko Komulainen (2016): Becoming animated when teaching physics, crafts and drama together: a multidisciplinary course for student-teachers, Journal of Education for Teaching, DOI: 0.1080/02607476.2016.1182373
- Kallunki, Veera (2009) A Historical Approach to Children's Physics Education : Modelling of DC-circuit Phenomena in a Small Group. Doctoral Thesis. University of Helsinki, Faculty of Science, Department of Physics
- Karim M Hamza, Per-Olof Wickman (2009). Beyond explanations: What else do students need to understand science? Science Education. Volume 93, Issue 6, November 2009. Pages 1026–1049
- Karim M. Hamza, Per-Olof Wickman (2008). Describing and analyzing learning in action: An empirical study of the importance of misconceptions in learning science. Science Education, Volume 92, Issue 1, January 2008. Pages 141–164
- Karim_Hamza, Per-Olof_Wickman (2008) REASONING ABOUT ELECTROCHEMICAL CELLS IN A CONCEPT MAPPING ACTIVITY AND IN THE SCHOOL LABORATORY. Proc. Of the Third Int. Conference on Concept Mapping, Tallinn, Estonia & Helsinki, Finland 2008
- Karin Rudberg, Leif Östman, Elisabeth Aaro Östman (2016), Students' meaning making in classroom discussions: the importance of peer interaction, Cultural Studies of Science Education,

- Karjalainen, T., & Laaksonen, S. (2008). PISA 2006 Sampling and Estimation. In J. Hautamäki, E. Harjunen, A. Hautamäki, T. Karjalainen, S. Kupiainen, S. Laaksonen, J. Lavonen, E. Pehkonen, P. Rantanen, & P. Scheinin (Eds.), PISA06 Finland. Analyses, Reflections, Explanations (pp. 231–239). Helsinki: Ministry of Education
- Kärkkäinen, S., Kukkonen, J., Keinonen, T. (2014). Scaffolding in a Medicine Education Intervention for Student Teachers Based on the PROFILES Three Stage Model. CEPS Journal : Center for Educational Policy Studies Vol. 4.No. 1 (2014): 85-100.
- Karlgren, K., & Ramberg, R. (1996). Language use and conceptual change in learning. Proceedings of the European Conference on Artificial Intelligence in Education (euroaied), Lisbon, Portugal
- Karlsson, N. (2012). Didaktik, teori och praktik i grundskolans matematikundervisning: Geometri, sannolikhetslära och matematisk modellering - Resultat av en forskningsförstudie. Södertörns högskola
- Kawalkar, Aisha; Vijapurkar, Jyotsna (2015). Aspects of Teaching and Learning Science: What students' diaries reveal about inquiry and traditional modes. International Journal of Science Education, Volume 37, Number 13, 2 September 2015, pp. 2113-2146(34)
- Kidman, Gillian & Uusimaki, Liisa (2004) Challenging Maths-Anxiety: An Intervention Model. In Niss, Mogens (Ed.) The 10th International Congress on Mathematical Education (ICME-10), 4-11 July 2004, Copenhagen, Denmark.
- Kjærnsli, M., Lie, S., Olsen, R.V., & Roe, A. (2007). Tid for tunge løft. Norske elevers kompetanse i naturfag, lesing og matematikk i PISA 2006. Oslo: Universitetsforlaget.
- Kjeldsen, T. H., & Blomhøj, M. (2009). Integrating history and philosophy in mathematics education at university level through problem-oriented project work. ZDM Mathematics Education, 41,87–103.
- Kjeldsen, T.H. & Blomhøj (2013) Developing Students' Reflections on the Function and Status of Mathematical Modeling in Different Scientific Practices: History as a Provider of Cases. Sci & Educ 22
- Klaar, S. Öhman, J. (2014). Doing, knowing, caring and feeling: exploring relations between nature-oriented teaching and preschool children's learning. International Journal of Early Years Education, Volume 22, 2014 - Issue 1. P. 37 - 58
- Klaar, S., Öhman, J. (2012). Action with friction: a transactional approach to toddlers' physical meaning making of natural phenomena and processes in preschool. European Early Childhood Education Research Journal, Volume 20, 2012 - Issue 3. P. 439 - 454
- Klaar, Susanne (2013). Naturorienterad utbildning i förskolan: Pragmatiska undersökningar av meningsskapandets individuella, sociala och kulturella dimensioner. Doctoral Thesis, Örebro: Örebro Universitet
- KNAIN, E. (2001). Ideologies in school science textbooks. International Journal of Science Education, 23(2), 319–329.
- Knain, E. (2016). En språkfundert kompetansemodell for planlegging av undervisning. Acta Didactica Norge. Vol 10, Nr 1 (2016)
- Knain, Erik. (2005) Identity and genre literacy in high-school students' experimental reports. International Journal of Science Education 2005 ;Volum 27.
- Kofoed, M., H. (2006) The Hiroshima and Nagasaki bombs: role-play and students' interest in physics. In Physics Education Vol 41 No. 6
- Kolstø, S. D. (2001). "To trust or not to trust, ..."—pupils' ways of judging information encountered in a socio-scientific issue. International Journal of Science Education, 23(9), 877–901

- Kolstø, S. D. (2001). Scientific literacy for citizenship: Tools for dealing with the science dimension of controversial socio-scientific issues. *Science Education*, 85(3), 291– 310.
- Kolstø, S. D. (2005, August–September). The relevance of values for coping with socioscientific issues in science education. Paper presented at the ESERA conference, Barcelona, Spain
- Kolstø, S. D. (2006). Patterns in students' argumentation confronted with a risk-focused socio-scientific issue. *International Journal of Science Education*, 28(14), 1689-1716.
- Kolstø, S. D. (2008). Science education for democratic citizenship through the use of the history of science. *Science & Education September 2008*, Volume 17, Issue 8, pp 977–997
- Kolstø, S. D., Bungum, B., Arnesen, E., Isnes, A., Kristensen, T., Mathiassen, K., et al. (2006). Science students' critical examination of scientific information related to socio-scientific issues. *Science Education*, 90(4), 632-655.
- KOLSTØ, S.D. (2000). Consensus projects: teaching science for citizenship. *International Journal of Science Education*, 22(6), 645-664
- KOLSTØ, S.D. (2001). Scientific literacy for citizenship: tools for dealing with the science dimension of controversial socioscientific issues. *Science Education*, 85(3), 291-310.
- Kolstø, S.D. (2006) Patterns in Students' Argumentation Confronted with a Risk-focused Socio-scientific Issue. *International Journal of Science Education*, Volume 28, 2006 - Issue 14
- Kolstø, S.D., Ratcliffe, M. (2007) Social Aspects of Argumentation. In Argumentation in S. Erduran, M. P. Jiménez-Aleixandre (Eds.) *Science Education*, Volume 35 of the series *Science & Technology Education Library* pp 117-136. Springer
- Kolstø. (2005). Science education students' critical examination of scientific information related to socioscientific issues. Paper presented at the ESERA conference 28 August– 1 September 2005 in Barcelona, Spain
- Kontkanen, S. Patrick Dillon, Teemu Valtonen, Lasse Eronen, Hannu Koskela, Pertti Väisänen (2016). Students' experiences of learning with ipads in upper secondary school – a base for proto-TPACK. *Education and Information Technologies*, pp 1–28
- Korhonen, Lavonen, Kukkonen, Sormunen, Juuti (2014) The Innovative School as an Environment for the Design of Educational Innovations. In H. Niemi, J. Multisilta, L. Lippinen, M. Vivitsou (Eds.) *Finnish Innovations and Technologies in Schools. A Guide towards New Ecosystems of Learning*. Sense Publishers. Pp 99-113
- Kristensen, P. (2007). Feltgeografi. Geografforlaget
- Krogh, L. B. & Thomsen, P. V. (2000). GFII-rapport nr. 1: Undervisningsstil og læringsudbytte - en undersøgelse af fysikundervisningen i 1. G. (cnds Skriftserie no. 1) Aarhus: Center for Naturfagernes Didaktik, Aarhus Universitet.
- Krogh, L. B., Arnborg, P., & Thomsen, P. V. (2001) GFIII-rapport, dela: Hvordan gik det så med fysikundervisnigen og elevernes udbytte? 2-g-opfølgning på GFII-undersøgelsen (CND's skriftserie no 3). Aarhus: Center for Naturfagernes Didaktik, Aarhus Universitet
- Krogh, Lars Brian, Andersen, Hanne Moeller (2013). “Actually, I May be Clever Enough to do it”. Using Identity as a Lens to Investigate Students’ Trajectories Towards Science and University. *Research in Science Education*, April 2013, Volume 43, Issue 2, pp 711–731
- Kukkonen, J.E., Kärkkäinen, S., Dillon, P., & Keinonen, T. (2013). The Effects of Scaffolded Simulation-Based inquiry Learning on Fifth Graders’ Representations of the Greenhouse Effect. *International Journal of Science Education*, 36(3), 406-424
- Kupari, P., Reinikainen, P., & Törnroos, J. (2007). Finnish Students' Mathematics and Science Results in Recent International Assessment Studies: PISA and TIMSS. In E. Pehkonen, M. Ahtee, & J. Lavonen (Eds.), *How Finns Learn Mathematics and Science?* (pp. 11–34). Rotterdam: Sense Publishers.

- Lambert, J. L., Lindgren, J., & Bleicher, R. (2012). Assessing elementary science methods students' understanding about global climate change. *International Journal of Science Education*, 34(8), 1167–1187.
- Lars _Østergaard (2005). Hvad har børns leg og deres brug af naturvidenskabelige metoder med hinanden at gøre? Ph.D. Afhandling. København: DPU
- Larsson, P.N. (2011). Biologiämnets texter : Text, språk och lärande i en språkligt heterogen gymnasieklass. Doctoral thesis. Malmö Studies in Educational Sciences;62. Malmö högskola, Lärarutbildningen
- Laukkonen, R. (2008). Finnish strategy for high-level education for all. In N. Soguel & P. Jaccard (Eds.), *Governance and Performance of Education Systems* (pp. 305–324). The Netherlands: Springer
- Lavonen, J. (2007). National science education standards and assessment in Finland. In D. Waddington, P. Nentwig, & S. Schaze (Eds.), *Making it comparable* (pp. 101–126). Berlin: Waxmann
- Lavonen, J. (2008). Scientific literacy assessment. In J. Hautamäki, E. Harjunen, A. Hautamäki, T. Karjalainen, S. Kupiainen, S. Laaksonen, et al. (Eds.), *PISA06 Finland. Analyses, reflections and explanations*. Helsinki: Ministry of Education
- Lavonen, j. (2011). What does the PISA 2006 Scientific Literacy Assessment data tell us about the success of implementation of education policy in Finland? Paper presented at the seminar in Lisbon University Friday, 25 of February 2011
- Lavonen, J. (2013). Building Blocks for High Quality Science Education: Reflections based on Finnish Experiences. *LUMAT* 1(3), 2013 Pp. 299 - 314
- Lavonen, J. & Meisalo, V. (2002). Research-based design of learning materials for technology-oriented science education. *Themes in Education*, 3, 107 – 131.
- Lavonen, J., & Laaksonen, S. (2009). Context of Teaching and Learning School Science in Finland: Reflections on PISA 2006 Results. *Journal of Research in Science Teaching*, 46(8), 922–944.
- Lavonen, J., Aksela, M., Juuti, K., & Meisalo, V. (2003). Designing a user-friendly microcomputer-based laboratory package through the factor analysis of teacher evaluations. *International Journal of Science Education*, 25, 1471-1487
- Lavonen, J., Jauhainen, J., Koponen, I., & Kurki-Suonio, K. (2004). Effect of a long term in-service training program on teachers' beliefs about the role of experiments in physics education. *International Journal of Science Education*, 26(3), 309–328.
- Lavonen, J., Juuti, K. (2012). Science at Finnish Compulsory School. In H. Niemi, A. Toom & A. Kallioniemi (Eds.) *Miracle of Education - The Principles and Practices of Teaching and Learning in Finnish Schools*. Sensepublishers. pp 131-147
- Lavonen, J., Juuti, K., Aksela, M., & Meisalo, V. (2006) A professional development project for improving the use of ICT in science teaching. *Technology, pedagogy and education*, 15, 159- 174
- Lavonen, J., Juuti, K., Byman, R., Uitto, A., & Meisalo, V. (2004). Teaching methods in ninth grade Finnish comprehensive school: A survey of student expectations. In R.M. Janiuk, & E. Samonekmiciuk (Eds.), *Proceedings of the International Organization for Science and Technology Education (IOSTE) xith Symposium (Science and Technology Education for a Diverse World—Dilemmas, needs and partnership)*, 25–30 July, Lublin, Poland C (pp. 157–158). Lublin: Maria Curie-Sklodowska University Press
- Lavonen, J., Juuti, K., Maisalo, V. (2007). Reading and writing facilitating ICT use in school science. *CATE '07 Proceedings of the 10th IASTED International Conference on Computers and Advanced Technology in Education*, Pages 447-452

- Lavonen, J., Meisalo, V. (2000). Science teachers and technology teachers developing electronics and electricity courses together. *International Journal of Science Education*, 22, 435-446.
- Lavonen, J., Meisalo, V. & Lattu, M. (2002). Collaborative problem solving in a control technology learning environment, a pilot study. *International Journal of Technology and Design Education*, 12, 139 – 160.
- Lavonen, J., Meisalo, V., & Juuti, K. (2004). The role of researchers in the implementation of educational policies: The Finnish LUMA Programme (1996–2002) as a Case Study. *Journal of Baltic Science Education*, 3(4), 34–42
- Lavonen, J., Meisalo, V., Lattu, M., Leinonen, L. & Wilusz, T. (2001). Using computers in science and technology education. In *itcse 2000 Working Group Reports (SIGCSE Bulletin 33*, pp. 127 – 135). New York, NY: ACM Press.
- Leach, J., Chr., A., P. (1999) Practical work in science education: Recent research studies. Frederiksberg: Roskilde University Press
- Leema Kuhn Berland, David Hammer (2012). Students' Framings and Their Participation in Scientific Argumentation. In M.S. Khine (Ed.): *Perspectives on Scientific Argumentation*.pp 73-93
- Lehesvuori, S., Viiri, J. & Rasku-Puttonen, H. (2011). Introducing dialogic teaching to science student teachers. *Journal of Science Teacher Education*, 22(8), 705-727
- Lehesvuori, S., Viiri, J., Rasku-Puttonen, H., Moate, J., Helaakoski, J. (2013). Visualizing communication structures in science classrooms: Tracing cumulativity in teacher-led whole class discussions. *JRST - Journal of Research and Science Teaching*, Vol 50 Issue 8, October 2013
- Leif Östman, Marie Öhman, Eva Lundqvist, Malena Lidar (2015). Teaching, Learning and Governance in Science Education and Physical Education: A Comparative Approach. *Interchange*, November 2015, Volume 46, Issue 4, pp 369–386.
- Leonor Varas, Erkki Pehkonen, Maija Ahtee & Salome Martinez (2012) MATHEMATICAL COMMUNICATION IN THIRD-GRADERS' DRAWINGS IN CHILE AND FINLAND. In T.Tso (Ed.) *PROCEEDINGS of the 36th Conference of the International Group for the Psychology of Mathematics Education Opportunities to Learn in Mathematics Education*
- Leppävirta, J. (2012). The Effect of Naïve Ideas on Students' Reasoning About Electricity and Magnetism. *Research in Science Education*, August 2012, Volume 42, Issue 4, pp 753–767
- Liberg, C., Geijerstam, Å., Folkeryd, J. (2011). Scientific Literacy and Students' Movability in Science Texts. In C. Linder, L. Östmna, D.A. Robertd, P.O. Wickman, G. Ericksen, A: mackinnon (Eds.): *Exploring the Landscape of Scientific Literacy*. New York: Routledge
- Lidar, Malena (2010). Erfarenhet och sociokulturella resurser: Analyser av elevers lärande i naturorienterande undervisning. Doctoral Thesis. Uppsala: Acta Universitatis Upsaliensis , 2010. , 90 p.
- Lidar, Malena, Lundqvist, Eva, Östman, Leif (2006). Teaching and learning in the science classroom: The interplay between teachers' epistemological moves and students' practical epistemology. *Science Education*. Volume 90, Issue 1, January 2006, Pages 148–163
- Lidar, Malene, almqvist, Jonas, Östman, Leif (2010). A pragmatist approach to meaning making in children's discussions about gravity and the shape of the earth. *Science Education*, Volume 94, Issue 4, July 2010. Pages 689–709
- Liljekvist, Y. (2014) Lärande i matematik: Om resonemang och matematikuppgifters egenskaper. Karlstad: Karlstads universitet
- Lindahl, M. Lundin, M. (2016). How do 15–16 year old students use scientific knowledge to justify their reasoning about human sexuality and relationships? *Teaching and Teacher Education* Volume 60, Pp 121–130

- Lindahl, M.G., Folkesson, a. (2016). On Attitude and Language in Students' Talk and Their Impact on Students' Texts. *Eurasia Journal of Mathematics, Science & Technology Education*, 12(8), 2199-2221
- Lindblad, S., Lindhe, G., & Naeslund, L. (1999). Ramfaktorteorin och praktiskt förfnuft. *Pedagogisk Forskning i Sverige*, 1, 93-109
- Lindgren Anne-Li, & Sparrman, Anna (2003). Om att bli dokumenterad: Etiska aspekter på förskolans arbete med dokumentation. I: *Pedagogiskforskning i Sverige*, Årg 8 Nr 1-2 2003, Barns perspektiv och barnperspektiv. Göteborgs universitet: Institutionen för pedagogik och didaktik.
- Lindhart, L., Ejdrup, F., Skipper-Jørgensen, A. (2010). Ræsonnementer i folkeskolens matematikundervisning – karakterisering, initiering, identificering og vurdering af ræsonnementskompetencen. MONA 2010-4
- Lindner, A. (2007). Avdunstning och molekyler: en longitudinell studie av hur grundskoleelever utvecklar sina uppfattningar om avdunstningsfenomen. Sverige: Institutionen för matematik och naturvetenskap. Högskolan Kristianstad
- Lindström, J-O. (2003). The National Course Tests in Mathematics 1994–2003: The test development process. Umeå, Sweden: Department of educational measurements, Umeå University.
- Linnansaari, J., Viljaranta, J., Lavonen, J., Schneider, B., & Salmela-Aro, K. (2015). Finnish Students Engagement in Science Lessons. *Nordina: Nordic Studies in Science Education*, 11 (2), 192-206
- Lithner (2015). Learning Mathematics by Creative or Imitative Reasoning. Selected Regular Lectures from the 12th International Congress on Mathematical Education, pp 487-506
- Lithner, J. (2000). Mathematical Reasoning in School Tasks. *Educational Studies in Mathematics*. Volume 41, Issue 2, pp 165–190
- Lithner, J. (2004). Mathematical reasoning in calculus textbook exercises. *Journal of Mathematical Behavior*, 23(4), 405–427
- Lithner, J. (2008) A research framework for creative and imitative reasoning, *Educational Studies in Mathematics*, Volume 67, Issue 3, pp 255–276
- Lithner, J., 2000, Mathematical reasoning and familiar procedures. *International Journal of Mathematical Education in Science and Technology*, 31, 83–95
- Lithner, J., 2000, Mathematical reasoning in task solving. *Educational Studies in Mathematics*, 41, 165–190.
- Lithner, J., 2003, Students' mathematical reasoning in university textbook exercises. *Educational Studies in Mathematics*, 52, 29–55
- Lithner, J., 2005, A framework for analysing qualities of mathematical reasoning: Version 3., *Research Reports in Mathematics Education* 3, Department of Mathematics, Umeå University
- Ljung Djärf, Agneta (2004). Spelet runt datorn. Datoranvändande som meningsskapande praktik i förskolan. Malmö: Malmö högskola, Lärarutbildningen
- Loukomies ,A., Lavonen, J., Juuti, K., Meisalo, V., Lampiselkä, J. (2016) Design and Development of Teaching-Learning Sequence (TLS) Materials Around Us: Description of an Iterative Process. In D. Psillos, P. Kariotoglou (Eds.) *Iterative Design of Teaching-Learning Sequences. Introducing the Science of Materials in European Schools*. Springer Netherlands: pp 201-231
- Loukomies, A. (2013). Enhancing Students Motivation towards School Science with an Inquiry - Based Site Visit Teaching Sequence: A Design - Based Research Approach. Doctoral dissertation. Helsinki: 2013, Department of Teacher Education.

- Ludvigsen, S., Rasmussen, I., Ingeborg, K., Moen, A., & Middleton, D. (2010). Intersecting trajectories of participation: Temporality and learning. In S. Ludvigsen, A. Lund, I. Rasmussen, & R. Säljö (Eds.), Learning across sites: New tools, infrastructures and practices (pp. 105–121). London, UK: Routledge.
- Lund-Larsen, M. (2010). Effekt af e-læring: En undersøgelse i folkeskolen af anvendelse af Matematikkens Univers. Evidencenter ® Det Nationale Videncenter for e-læring
- Lund, J. (2006). Geografisk feltguide. Malling Beck.
- Lunde, T., Rundgren, C.J., Rundgren, S.N.C. (2015). När läroplan och tradition möts – hur högstadielärare bemöter yttrre förväntningar på undersökande arbete i naturämneshandlningen. Nordina, 2015, Vol 11, No 1
- Lundsgaard, Iann, Wickman, Per-Olof (2007). Conflicts of interest: an indispensable element of education for sustainable development. Environmental Education Research, Volume 13, 2007 - Issue 1
- Lundegård, I. (2008). Self, values and the world – Young people in dialogue on sustainable development. In J. Öhman (Ed.): Values and Democracy in Education for Sustainable Development - Contributions from Swedish Research. Liber. P. 123 - 144
- Lundegård, I., Wickman, P.O. (2012). It takes two to tango: studying how students constitute political subjects in discourses on sustainable development. Environmental Education Research, Volume 18, 2012 - Issue 2. P. 153 - 169
- Lundegård, I. Wickman, P.O. (2009). Identity Transformation in Education for Sustainable Development: A Question of Location. Scandinavian Journal of Educational Research, Volume 53, 2009 - Issue 5. P. 461 - 479
- Lundgren, U. P. (1999). Ramfaktorteorি och praktisk utbildningsplanering. Pedagogisk Forskning i Sverige, 4(1), 31–41
- Lundin, M. (2007). Questions as a tool for bridging science and everyday language games. Cultural Studies of Science Education, January 2007, Volume 2, Issue 1, pp 265–279
- Lundqvist, E., Almqvist, J., Östma, L. (2009). Epistemological norms and companion meanings in science classroom communication. Science Education, Volume 93, Issue 5 Pages 859–874
- Lundqvist, E., Almqvist, J., Östman, L. (2012). Institutional traditions in teachers' manners of teaching. Cultural Studies of Science Education, March 2012, Volume 7, Issue 1, pp 111–127
- Lundström, M. (2011) Decision-making in health issues: Teenagers' use of science and other discourses. Doctoral thesis. Malmö Studies in Educational Sciences;64, Malmö University
- Lundström, M. (2013). Using video diaries in studies concerning scientific literacy. Electronic Journal of Science Education, Vol. 17, No. 3
- Lundström, M. (2015). Sjuk eller vaccinerad – vilket innebär störst risk? Ungdomars resonemang kring svininfluensan. Socialmedicinsk Tidsskrift, Vol 92, Nr. 6
- Lundström, M., Ekborg, M., Ideland, M. (2012). To vaccinate or not to vaccinate: how teenagers justified their decision. Cultural Studies of Science Education, Volume 7, Issue 1, pp 193–221
- Lundström, M., Jakobsson, A. (2012) Scientific trustworthiness – the considerations and perceptions of students. UTBILDNING & LÄRANDE 2012, VOL 6, NR 2
- Luukkainen, M., Vihavainen, A., Vikberg, T. (2012) Three Years of Design-based Research to Reform a Software Engineering Curriculum. SIGITE'12, October 11–13, 2012
- M. K. Juntunen and M. K. Aksela (2014). Education for sustainable development in chemistry – challenges, possibilities and pedagogical models in Finland and elsewhere. Chem. Educ. Res. Pract., 2014, 15, 488-500

- Madsen, T. & Wallentin, C. (2000). Aktivt och autentisk lärande (Utprövningsversion). Krisitanstad: Stiftelsen Företagsam Högskolan Kristianstad
- Magnussen, R. & Jessen, C. (2004). Research Report, Homicide. Copenhagen: Learning Lab Denmark.
- Magnussen, R. & Jessen, C. (2006), Naturfaglig praksis og spil-lignende læring, MONA, 2006(2), 7-26
- Magnussen, R., & Misfeldt, M. (2014). Når to bliver til flere: Om udfordringerne for innovationsdidaktikken i naturfagsundervisningen. Mona, 2014(1), 88-92.
- Magnussen, R., Jessen, C. (2004). Forskningsafrapportering. ITMF-projekt 497. Drabssag/Melved. Learning Lab
- Margareta Serder, Anders Jakobsson (2015). "Why bother so incredibly much?": student perspectives on PISA science assignments. Cultural Studies of Science Education, September 2015, Volume 10, Issue 3, pp 833–853
- MARGARETA SERDER, ANDERS JAKOBSSON (2015) Language Games and Meaning as Used in Student Encounters With Scientific Literacy Test Items. Science Education Vol 100, Issue 2, Dec 2015
- Margareta_Serder, Helene_Sörensen, Anders_Jakobsson, (2011). Opportunities and difficulties for students' engagement in PISA Science items. Conference Paper. Linköping Universitet.
- Maria Hedefalk, Jonas Almqvist, Malena Lidar (2014). Teaching for Action Competence. SAGE Open, July 2014.
- Marie Öhman, Mikael Quennerstedt (2008). Feel good—be good: subject content and governing processes in physical education. Physical Education and Sport Pedagogy, Volume 13, 2008 - Issue 4: Swedish physical education research, P. 365 - 379
- Markus Hähkiöniemi (2013) Teacher's reflections on experimenting with technology-enriched inquiry-based mathematics teaching with a preplanned teaching unit. The Journal of Mathematical Behavior Volume 32, Issue 3, Pages 295–308
- Mats_Gunnar_Lindahl,Cedric_Linder (2013) Students' Ontological Security and Agency in Science Education—An Example from Reasoning about the Use of Gene Technology. International Journal of Science Education Volume 35, 2013 - Issue 14
- Mattias Lundin (2010) INTRODUCING THE NATURE OF SCHOOL SCIENCE (NOSS)- Using Wittgenstein's language game concept to analyse meaning making in school science. In G. ÇAKMAKCI & M. F. TAŞAR (Eds.): CONTEMPORARY SCIENCE EDUCATION RESEARCH: SCIENTIFIC LITERACY AND SOCIAL ASPECTS OF SCIENCE. A collection of papers presented at ESERA 2009 Conference
- Mattias Lundin, Mats Lindahl (2014). Negotiating the relevance of laboratory work: Safety, procedures and accuracy brought to the fore in science education. Nordina, vol 10, No 1
- Mattias_Lundin (2008). Meaning Making of Precision and Procedures in School Science, Canadian Journal of Science, Mathematics and Technology Education, Volume 8, 2008 - Issue 1
- Meisalo, V. & Lavonen, J. (2000). Bits and processes on markets and webs: An analysis of virtuality, reality and metaphors in a modern learning environment. In M. Ahtee & T. Asunta (Eds.), Tietoa ja toimintaa: Matematiikan ja luonnontieteiden opetuksen tutkimuksia. Journal of Teacher Research (2/2000, pp. 10 – 27)
- Meisalo, V., Jari Lavonen, Kalle Juuti. Web-based interaction of unqualified primary teachers as off-campus students. International Journal of Web Based Communities, Volume 2, Issue 1 pp
- Meisalo, V., Lavonen, J., Sormunen, K., Vesisenaho, M. (2010) ICT in Finnish Initial Teacher Education - Country report for the OECD/CERI New Millennium Learners Project. ICT in

Initial Teacher Training. Reports of the Ministry of Education and Culture, Finland
2010:25

- Meisalo, V., Lavonen, J., Juuti, K. & Aksela, M. (2001). Chemistry Education in a Finnish Virtual School. In A . F. Aveiro, Portugal: University of Aveiro. Cachapuz (Ed.), Proceedings of the 6th European Conference on Research in Chemical Education 4. – 8. September 2001 (Paper S29, pp. 1 – 10).
- Mejding, J. (Ed.) (2004). PISA 2003 – Danske unge i en international sammenligning. København: Danmarks Pædagogiske Universitets Forlag.
- MESTAD, I., KOLSTØ, S.D. (2014). Using the Concept of Zone of Proximal Development to Explore the Challenges of and Opportunities in Designing Discourse Activities Based on Practical Work. Science Education, Volume 98, Issue 6. November 2014. Pp. 1054–1076
- Metsämuuronen, Jari; Kuosa, Tuomo; Laukkanen, Reijo (2013). Sustainable leadership and future-oriented decision making in the educational governance - a Finnish case. The International Journal of Educational Management, Volume 27, Number 4
- Michelsen, C. (2002). Begrebsdannelse ved domæneudvidelse: elevers tilegnelse af funktionsbegrebet i et integreret undervisningsforløb mellem matematik og fysik. Dansk Institut for Gymnasiepædagogik, Syddansk Universitet, Odense
- Michelsen, C. (2005) EXPANDING THE DOMAIN - VARIABLES AND FUNCTIONS IN AN INTERDISCIPLINARY CONTEXT BETWEEN MATHEMATICS AND PHYSICS. In Beckmann, A., Michelsen, C., & Sriraman, B (Eds.). Proceedings of the 1st International Symposium of Mathematics and its Connections to the Arts and Sciences. The University of Education, Schwäbisch Gmünd, Germany, pp.201-214.
- Michelsen, C., Iversen, S. (2009). Samspillet mellem matematik og de andre fag i gymnasieskolen - Matematikfaget og reformen af de ungdomsgymnasiale uddannelser. I MONA 2009 -2
- Mikael Quennerstedt (2008). Studying the Institutional Dimension of Meaning Making: A Way to Analyze Subject Content in Physical Education. Journal of Teaching in Physical Education, 2008, 27, 434-444
- Mikael Thelin (2012). Länkningen mellan kurstmål och kunskapskrav i geografiämnet i Gy 2011. Geografiska Notiser • Årgång 70 (2012) • Nummer 3
- Mikkelsen, L.B., Tunebjerg, T. & Andresen, B.B. (2008). Blended e-learning som fundament for efteruddannelseskoncept i naturfag. Synopsis, indsendt til symposium 9, Naturfagsdidaktik 2008
- Misfeldt, M. (2006). Mathematical Writing. Phd Thesis. Department of Education - Curriculum Research, Danish School of Education, Arts, Aarhus University
- Misfeldt, M. (2010). Evaluering af Matematikkens Univers. Et it-baseret undervisningsmiddel til matematisk kompetenceudvikling. Matematik: tidsskrift for regne- og matematiklærere, (38)3 s. 22-24.
- Misfeldt, M. (2011). Computers as medium for mathematical writing. Journal of the International Association for Semiotic Studies. Volume 2011, Issue 186
- Misfeldt, M. (2014). Trekantsberegninger og teknologi – et eksempel på hvordan teknologi har (eller bør have) indflydelse på udvikling af Matematikcurriculum. Mona (1)
- Misfeldt, M., Bendixen, F. (2009). Overgange mellem stx og universitetet - fagligheder og introforløb. I Forskningsrapporten Overgangsproblemer som udfordringer i uddannelsessystemet. Århus
- Mogensen, F., & Schnack, K. (2010). The action competence approach and the ‘new’ discourses of education for sustainable development, competence and quality criteria. Environmental Education Research, 16(1), 59–74

- Monica H. Sträng, Lisbeth Åberg-Bengtsson (2010). "Where do you Think the Water Comes From?" Teacher–Pupil Dialogues about Water as an Environmental Phenomenon.Scandinavian Journal of Educational Research. Volume 54, 2010 - Issue 4
- Mork, S., Jorde, D. (2004). We Know they Love Computers, but do they Learn Science? Using Information Technology for Teaching about a Socio-scientific Controversy. Themes in Education, 5: 1, 69-100, 2004
- Morten Misfeldt (2011). Læreres vurdering af et lærermiddels potentiale til at støtte matematisk kompetenceudvikling - Eksemplet Matematikkens Univers. MONA 2011 -1
- Muhonen, H., Rasku-Puttonen, H., Pakarinen, E., Poikkeus,A.M., Lerkkanen, M.K. (2016). Scaffolding; Creative processing; Pedagogical dialogue; Meaning making; Movie making. Teaching and Teacher Education, Volume 55, April 2016, Pages 143–154
- Muhonen, Rasku-Puttonen, Pakarinen, Poikkeus, Lerkkanen (2016). Scaffolding through dialogic teaching in early school classrooms.Teaching and Teacher Education Volume 55, April 2016, Pages 143–154
- Muhonen, Rasku-Puttonen, Pakarinen, Poikkeus, Lerkkanen(2017). Dialogic teaching; Scaffolding; Teacher-initiated; Child-initiated; Preschool; Primary school. International Journal of Educational Research, Volume 81, 2017, Pages 25–37
- Myllyviita, A., Aksela, M. (2009). Lline is a trans-European journal dedicated to the advancement of adult education, lifelong learning, intercultural collaboration and best practice research, lline Volume XIV,issue 2/2009 Lifelong learning as a right? European perspectives.
- Nana Quistgaard & Anne Kahr-Højland (2010) New and innovative exhibition concepts at science centres using communication technologies, Museum Management and Curatorship, 25:4, 423-436
- Neuvonen, L. Korkeamäki, R.L. (2015). Teacher as an orchestrator of collaborative planning in learner-generated video production. Learning, Culture and Social Interaction, Volume 7, December 2015, Pages 1–11
- Nielsen, B. L., Pontoppidan, B., Sillasen, M., Morgensen, A., Nielsen, K. (2013) QUEST – et storskalaprojekt til udvikling af naturfagsundervisning i MONA 2013 -2
- Nielsen, J. A. (2012) Arguing from Nature: The role of ‘nature’ in students’ argumentations on a socio-scientific issue. International Journal of Science Education,Volume 34, Issue 5
- Nielsen, J. A. (2012). Co-opting Science: A preliminary study of how students invoke science in value-laden discussions. International Journal of Science Education, Volume 34, 2012 - Issue 2
- Nielsen, J. A., & Dolin, J. (2016). Evaluering mellem mestring og præstation. MONA, 2016(1), 51–62.
- Nielsen, J.A. (2012) Science in discussions: An analysis of the use of science content in socioscientific discussions. Science Education, Vol. 96, No. 3, pp. 428–456
- Nielsen, J.A. (2013).Delusions About Evidence: On Why Scientific Evidence Should Not Be the Main Concern in Socioscientific Decision Making. Canadian Journal of Science, Mathematics and Technology Education, Volume 13, 2013 - Issue 4
- Nielsen, Jan Alexis (2012).Gymnasieelevers sociovidenskabelige argumentation. MONA 2012 (3), 21-39.
- Nielsen, L., Patronis, T. And Skovsmose, O. (1999);Connecting Corners of Europe: A Greek Danish Project in Mathematics Education, Systeme Arhus.
- Nielsen, R. H. (2002) Is educational research in university mathematics possible from a global social perspective? In P. Valero & O. Skovsmose (2002) (Eds.). Proceedings of the 3rd International MES Conference. Copenhagen: Centre for Research in Learning Mathematics, pp. 1-11.

- Nielsen, T. L. B. (2013). From Master's programme to labour market: A study on physics graduates' experience of the transition to the labour market.
- Nielsen, T. L. B., & Holmegaard, H. T. (2014). Fysikkandidaters overgang til arbejdsmarkedet. Institut for Naturfagernes Didaktik, Københavns Universitet. (IND's Skriftserie; Nr. 33)
- Niemenen, P. (2013). Representational consistency and the learning of forces in upper secondary school physics. *Jyväskylä studies in education, psychology and social research* 470.
- Niemenen, P., Savinainen, A., & Viiri, J. (2010). Force Concept Inventory-based multiple-choice test for investigating students' representational consistency. *Physical Review Special Topics - Physics Education Research*, 6 (020109). Doi:10.1103/physrevstper.6.020109
- Niemenen, P., Savinainen, A., Nurkka, N., Viiri, J. (2011). AN INTERVENTION FOR USING MULTIPLE REPRESENTATIONS OF MECHANICS IN UPPER SECONDARY SCHOOL COURSES. In: C. Bruguiére, A. Tiberghien, P. Clément(Eds.) *Science Learning and Citizenship (Proceedings of ESERA 2011)*
- Niemenen, P., Savinainen, A., Nurkka, N., Viiri, J. (2012). An Intervention for Using Multiple Representations of Force in Upper Secondary School Courses. In A. Lindell,A.L. Kähkönen,J. Viiri (Eds.) *Physics Alive. Proceedings - GIREP-EPEC Conference 2011 August 1 – 5, Jyväskylä, Finland.* P. 111 - 116
- Niina Nurkka, Asko Mäkinen, Jouni Viiri, Antti Savinainen, Pasi Niemenen (2011). CLASSROOM DISCOURSE TYPES AND STUDENTS' LEARNING OF AN INTERACTION DIAGRAM AND NEWTON'S THIRD LAW. In M. Welzel-Breuer, C. Marquez (Eds.) *Discourse and Argumentation in Science Education. ESERA 2011.* P- 58 - 64
- Niina Nurkkaa, Jouni Viirib, Karen Littletonc, Sami Lehesvuorib (2014). A methodological approach to exploring the rhythm of classroom discourse in a cumulative frame in science teaching. *Learning, Culture and Social Interaction Volume 3, Issue 1, March 2014, Pages 54–63*
- Nikander, P. (2008). Working with transcripts and translated data. *Qualitative Research in Psychology*, 5(3), 225–231.
- Nilsen, T., Angell, C. (2014). The importance of discourse and attitude in learning astronomy. A mixed methods approach to illuminate the results of the TIMSS 2011 survey. *nordina 2014 Vol 10 No. 1*
- Niss, M. , Andreasen, M., Hansen, K.F., Matthiasen, J., Mogensen, A., Skånstrøm, M., Holm, C. (2006). *Fremtidens matematik i folkeskolen. Rapport fra udvalget til forberedelse af en handlingsplan for matematik i folkeskolen.* København: Undervisningsministeriet
- Niss, M. (1999) kompetencer og uddannelsesbeskrivelse. *Uddannelse*, Vol. 9, 1999, s. 21-29.
- Niss, M. (2001). Issues and problems of research on the teaching and learning of applications and modelling. I: J.F. Matos, W. Blum, K. Houston & S.P. Carreira (red.), *Modelling and mathematics education (ICTMA 9): Applications in science and technology* (s. 72-88). Chichester, UK: Horwood.
- Niss, M. (2009). Modeling a Crucial Aspect of Students' Mathematical Modeling. In C.L: Galbraith, C. R: Haines, A. Hurford (Eds) *ICTMA 13: Modeling students' Mathematical Competencies.* London: Springer
- Niss, M. & Jensen, T.H. (red.). (2002). *Kompetencer og matematiklæring. Ideer og inspiration til udvikling af matematikundervisningen i Danmark, "KOM-projektet". Uddannelsesstyrelsens temahæfteserie nr. 18.* Undervisningsministeriet.
- Niss, M.: 1999, 'Aspects of the nature and state of research in mathematics education', *Educational Studies in Mathematics* 40, 1–24.
- Nordenbo, S.E. et al. (2008). *Lærerkompetencer og elevers læring i førskole og skole.* København: Dansk Clearinghouse for Uddannelsesforskning

- Norén, E. (2010). Flerspråkiga matematikklassrum: Diskurser i grundskolans matematikundervisning. Doctoral Thesis. Stockholm University, Faculty of Science, Department of Mathematics and Science Education.
- Norqvist, M. (2016). On Mathematical Reasoning - being told or finding out. Department of Mathematics and Mathematical Statistics, Umeå
- Nørregaard, H., Norrild, P. (2013), Naturfag i Tiden. Nytænkning af folkeskolens naturfag på 7.-9. Klassetrin. Om analyser og forslag fra en arbejdsgruppe. Nedsat af NTS-centeret. I MONA 2013 -1
- Norrild, P. (2007). Naturfagene i den nye læreruddannelse. MONA 2007(2), s. 7-19.
- Norrild, P. (2009). På vej mod nye mål i folkeskolens naturfagsundervisning. I MONA 2009 -1
- Norris, N., Asplund, R., macdonald, B., Schostak, J., & Zamorski, B. (1996). An independent evaluation of comprehensive curriculum reform in Finland. Helsinki: Finnish National Board of Education
- Nortvig, A. M. (2015). At sidde på skolebænken i egen sofa: En undersøgelse af hvordan e-læring ses at have indflydelse på muligheder for deltagelse og tilstedevær i undervisning og dermed udvikling af professionel identitet i relation til professionsuddannelse. Aalborg Universitetsforlag. (Ph.d.-serien for Det Humanistiske Fakultet, Aalborg Universitet). DOI: 10.5278/vbn.phd.hum.00009
- Nurkka, N. (2008). Use of Transfer Teachers in Developing a Teaching-Learning Sequence: A Case Study in Physiotherapy Education in Finland. Nordina. Vol 4, No 1 (2008)
- Öhman, Johan (2006). Den etiska tendensen i utbildning för hållbar utveckling: meningsskapande i ett genomlevandeperspektiv. Doctoral thesis. Örebro: Örebro universitetsbibliotek
- Öhman, Johan (2014). Om didaktikens möjligheter: ett pragmatiskt perspektiv. Utbildning och Demokrati, ISSN 1102-6472, Vol. 23, no 3, 33-52 p.
- Oikarinen, J.K., Järvelä, S., Kaasila, R. (2014).Finnish upper secondary students' collaborative processes in learning statistics in a CSCL environment. International Journal of Mathematical Education in Science and Technology, Volume 45, 2014 - Issue 3, pp. 325 - 248
- Olander, C. (2009), Teaching biological evolution - internal and external evaluation of learning outcomes. Nordina Vol 5, No 2 (2009)
- Olsen, R.V. (2005). Achievement tests from an item perspective: An exploration of single item data from the PISA and TIMSS studies, and how such data can inform us about students' knowledge and thinking in science, phd thesis, University of Oslo, Oslo: Unipub
- Ongstad, S. (2006). Fag i endring. Om didaktisering af kunnskap. I: S. Ongstad (red.), Fag og didaktikk i lærerutdanning – kunnskap i grenseland (s. 19-57). Oslo: Universitetsforlaget
- Orlander, A.A., Wickman, P.O. (2011).Bodily experiences in secondary school biology. Cultural Studies of Science Education, September 2011, Volume 6, Issue 3, pp 569–594
- Ørngreen, R. (2015). Reflections on Design-Based Research. Conference paper: 4th IFIP 13.6 Working Conference, HWID 2015, London, UK, June 25-26. In Nocera, Baricelli, Lopes, Campos, Clemmensen (Eds.) Human Work Interaction Design. Work Analysis and Interaction Design Methods for Pervasive and Smart Workplaces. From the series: IFIP Advances in Information and Communication Technology, Volume 468.
- Oser, F. K., & Baeriswyl, F. J. (2001). Choreographies of teaching: Bridging instruction to learning. In V. Richardson (Ed.), AERA's handbook of research on PREFERRED TEACHING METHODS 631 teaching (4th ed., pp. 1031–1065). Washington: American Educational Research Association
- Østergaard,L.D. (2008). Naturfag for de yngste - et aktionsforskningsprojekt i Nordjylland. Mona 2008-2, P.7 - 27

- Österlind, K. (2005). Concept formation in environmental education: 14-year olds' work on the intensified greenhouse effect and the depletion of the ozone layer. *International Journal of Science Education*, 27(8), 891–908.
- Östman, L. (1998). How companion meanings are expressed by science education discourse. In D. A. Roberts & L. Ostman (Eds.), *Problems of meaning in science curriculum* (pp. 54–70). New York: Teachers College Press.
- Östman, Leif (2010). Education for sustainable development and normativity. *Environmental Education Research*, Volume 16, 2010 - Issue 1: Democracy and Values in Environmental and Sustainability Education: Research Contributions from Denmark and Sweden
- Östman, Leif, Almqvist, Jonas (2010). What do values and norms have to do with scientific literacy? In C. Linder, L. Östman, D. A. Roberts, P.O. Wickman, G. Erickson, .A. Mackinnon (Eds.): *Exploring the landscape of scientific literacy*, London: Routledge , 2010, 160-175 p.
- Ottander, K. (2015) Gymnasieelevers diskussioner utifrån hållbar utveckling: meningsskapande, naturkunskapande, demokratiskapande. Doctoral Thesis. Studies in Science and Technology Education; 92. Umeå: Umeå universitet
- Palha, S., Dekker, R., Gravemeijer, K. (2015). THE EFFECT OF SHIFT-PROBLEM LESSONS IN THE MATHEMATICS CLASSROOM.Sonia_Palha, Rijkje_Dekker, Koen_gravemeijervolume 13, Issue 6, pp 1589–1623
- Palm, T., Boesen, J., Lithner, J. (2011). Mathematical reasoning requirements in Swedish upper secondary level assessments. *Mathematical Thinking and Learning* 13 (3), 221-246.
- Paludan, K. (2001): Naturvidenskab og elevernes natur. Uddannelse nr.5/2001.
- Paludan, Kirsten (2000): *Videnskaben, Verden og Vi. Om naturvidenskab og hverdagstænkning*. Aarhus: Aarhus Universitetsforlag.
- Parchmann, Ilka, Busker, Maike, Rudnik, Julian (2015). Context-Based Teaching and Learning on School and University Level. In Garcia-Martinez, J., Serrano-Torregrosa, E.[ed] ,*Chemistry Education: Best Practices, Innovative Strategies and New Technologies* / Berlin: Wiley-VCH Verlagsgesellschaft, 2015, 259-278 p.
- Partanen, A. (2015) SOCiomathematical NORMS NEGOTIATED IN THE DISCUSSIONS OF TWO SMALL GROUPS INVESTIGATING CALCULUS. *International Journal of Science and Mathematics Education*, Volume 13, Issue 4, pp 927–946
- Pasi Nieminen, Antti Savinainen, and Jouni Viiri (2012). Relations between representational consistency, conceptual understanding of the force concept, and scientific reasoning. *Phys. Rev. ST Phys. Educ. Res.* Vol. 8, Iss. 1 — January - June 2012
- Pasi Nieminen, Catarina F. Correia, Markus Hähkiöniemi, Natasha Serret, Jouni Viiri, Christine Harrison (). *FORMATIVE ASSESSMENT IN INQUIRY-BASED SCIENCE EDUCATION USING INTERACTIONS ON-THE-FLY*.
- Pasi nieminene, Antti Savinainen, Jouni Viiri (2013). GENDER DIFFERENCES IN LEARNING OF THE CONCEPT OF FORCE, REPRESENTATIONAL CONSISTENCY, AND SCIENTIFIC REASONING. *International Journal of Science and Mathematics Education*, October 2013, Volume 11, Issue 5, pp 1137–1156
- Pehkonen, E. & Törner, G. (1996). Mathematical beliefs and different aspects of their meanings. *Zentralblatt für Didaktik der Mathematik*, 96(4), 101–108.
- Pehkonen, E., Ahtee, M., & Lavonen, J. (2007). *How Finns learn mathematics and science?* Rotterdam: Sense Publishers
- Per Anderhag, Helena Danielsson Thorell, Carina Andersson, Andreas Holst, Johan Nordling (2014). *Syften och tillfälligheter i högstadie- och gymnasielaborationen: En studie om hur*

- elever handlar i relation till aktivitetens mål Purposes and contingencies in the lower and upper secondary school lab. Nordina, Vol 10, No 1 (2014).
- Per-Olof Wickman & Britt Jakobson (2005). Den naturvetenskapliga undervisningens estetik. *UTBILDNING & DEMOKRATI* 2005, VOL 14, NR 1, 81–100. TEMA: ESTETIK OCH UTBILDNING
- Per-Olof Wickman, Caroline Liberg, Leif Östman (2012). Transcending Science - Scientific Literacy and Bildung for the 21st Century. In D. Jorde, J. Dillon (Eds.) *Science Education Research and Practice in Europe Volume 5* of the series *Cultural Perspectives in Science*. Netherlands: Sense Publishers. Pp 39-61
- Per-Olof Wickman (ed.) (2008). *Experience in Science Education: Learning and Meaning-Making as situated talk and action*. Lawrence Erlbaum Associates, Publishers. London, New Jersey
- Pernaa , J & Aksela , M K. (2012). ' Model-based design research: A practical method for educational innovation ' in *Advances in Business-Related Scientific Research Conference 2012 in Venice : Conference proceedings* .
- Persson, Christel (2008). Sfärernas symfoni i förändring? Lärande i miljö för hållbar utveckling med naturvetenskaplig utgångspunkt. En longitudinell studie i grundskolans tidigare årskurser. Doctoral Thesis. *Studies in Science and Technology Education*, ISSN 1652-5051 ; 14. Institutionen för samhälls- och välfärdsstudier
- Persson, P. E. (2010). Räkna med bokstäver! En longitudinell studie av vägar till en förbättrad algebraundervisning på gymnasienivå. Doctoral thesis. Institutionen för matematik, Luleå tekniska universitet
- Persson, T. 2016. De naturvetenskapliga ämnesspråken. De naturvetenskapliga uppgifterna i och elevers resultat från TIMSS 2011 år 8. (The subject languages of science education. The science items and students' results from TIMSS 2011 year 8). Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Educational Sciences 9. 129 pp. Uppsala: Acta Universitatis Upsaliensis. ISBN 978-91-554-9536-7
- Persson, Tomas (2016). De naturvetenskapliga ämnesspråken: De naturvetenskapliga uppgifterna i och elevers resultat från TIMSS 2011 år 8. Doctoral Thesis. Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Educational Sciences, 9. Uppsala: Acta Universitatis Upsaliensis, 2016. , 129 p.
- Petersen, J.K. (1999): Kan naturen begrænse næringstilførslen i danske fjorde? Ny Viden Fra Miljøstyrelsen, 1999, Vol 1, Issue 4. Miljøstyrelsen.
- Petersen, M. R. (2010). TRANSFERRING ‘THE THEORY OF DIDACTICAL SITUATIONS’ FROM MATHEMATICS TO SCIENCE EDUCATION BY THE USE OF OBSERVATIONS. I C. Winsløw, R. Ewans (Eds.) *Didactics as Design Science. Peer-reviewed Papers from a Ph.D. Course at the University of Copenhagen*
- Petersen, M., Ahrenkiel, L., Michelsen, C. (2011). Kvalificering af elevernes stemme til udvikling af naturfagene – et praksiseksempel. I MONA 2011 -4
- Pontoppidan B. (2007). Hvem har lyst til at være naturfagslærer? MONA 2007(3), s. 92-95
- Prinds E. (1999). Rum til læring. København: CTU
- Quennerstedt, M. (2013). Practical epistemologies in physical education practice. *Sport, Education and Society*, Volume 18, 2013 - Issue 3. P. 311 - 333
- Quennerstedt, M., Annerstedt, C., Barker, D., Karlefors, I., Larsson, H., Öhman. M.(2014). What did they learn in school today? A method for exploring aspects of learning in physical education. *European Physical Education Review*, 2014, Vol. 20(2) 282–302
- Quennerstedt, M., Öhman, J., Öhman, M. (2011). Investigating learning in physical education—a transactional approach. *Sport, Education and Society*, Volume 16, 2011 - Issue 2

- Quennerstedt, Mikael (2006). Att lära sig hälsa, Doctoral Thesis. Örebro universitetsbibliotek
- Ragnhild Löfgren, Jan Schoultz, Glenn Hultman, Lars-Erik Björklund (2011). Kommunicera naturvetenskap i skolan – exempel från årskurs 3. Bengt-Göran Martinsson & Suzanne Parmenius Swärd (red.): Ämnesdidaktik – dåtid, nutid och framtid. Bidrag från femte rikskonferensen i ämnesdidaktik vid Linköpings universitet 26–27 maj 2010. Skrifter från Forum för ämnesdidaktik Linköpings universitet nr. 1.
- Raimo Kaasila & Erkki Pehkonen (2008) EFFECTIVE MATHEMATICS TEACHING IN FINLAND THROUGH THE EYES OF ELEMENTARY TEACHER STUDENTS. In Kaasila & Pehkonen. Effective Mathematics Teaching (April 3, 2008)
- Rantala, Uusiautti, Määttä (2014). "GOD LOVES A JOYFUL TEACHER" – AND SO DO PUPILS . International Journal of Academic Research in Education and Review. Vol. 2(3), pp. 49-55, April 2014
- Rantala, Uusiautti, Määttä (2016). Teaching Children with Joy. In S. Uusiautti & K. Määttä (Eds.) The Basics of Caring Research. Part 2. Sense Publishers. Pp. 21 -31
- Rasmussen, Charlotte Burgdorf Guldager Rasmussen & Petersen, Morten Rask Differentialligninger og reaktionshastigheder – Et tværfagligt undervisningsforløb mellem matematik og kemi. 2013 Center for Naturvidenskabernes og Matematikkens Didaktik, Syddansk Universitet
- Ratinen, I. (2011). Primary student-teachers' conceptual understanding of the greenhouse effect: a mixed method study. International Journal of Science Education, 34, 651–676. Doi:10.1080/09500693.2011.587845
- Ratinen, I., Viiri, J., & Lehesvuori, S. (2013). Primary School Student Teachers' Understandeng of Climate Change: Comparing the Results Given by Concept Maps and Communication Analysis. Research in Science Education, 43 (5), 1801-1823. Doi:10.1007/s11165-012-9329-7
- Ratinen, I., Viiri, J., Lehesvuori, S., & Kokkonen, T. (2015). Primary Student-Teachers' Practical Knowledge of Inquiry-Based Science Teaching and Classroom Communication of Climate Change. International Journal of Environmental and Science Education, 10 (5), 649-670
- Redfors, A., Hansson, L., Hansson, Ö., Juter, K. (2014) THE ROLE OF MATHEMATICS IN THE TEACHING AND LEARNING OF PHYSICS. The ESERA 2013 conference
- Reinikainen, P. (2007). Sequential Explanatory Study of Factors Connected with Science Achievement in Six Countries: Finland, England, Hungary, Japan, Latvia and Russia. Study based on TIMSS 1999. Research Reports 22. Jyväskylä: Institute for educational Research
- Rling, L., Grundén, H., Andersson, A. (2015) S. Mukhopadhyay, B. Greer (Eds.) Proceedings of the Eighth International Mathematics Education and Society Conference. Volume 3
- Rosvall, Hjelmér, Lappalainen (2016). Staying in the comfort zones – Low expectations in vocational education and training mathematics teaching in Sweden and Finland. European Educational Research Journal p. 1 - 15
- Rudsberg K., Öhman, J. (2014). The role of knowledge in participatory and pluralistic approaches to ESE. Environmental Education Research, Volume 21, 2015 - Issue 7
- Rudsberg, K. (2014). Elevers lärande i argumentativa diskussioner om hållbar utveckling. Doctoral Thesis. Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Educational Sciences, 4. Uppsala: Acta Universitatis Upsaliensis
- Rudsberg, K., ÖHMAN, J., ÖSTMAN, L. (2013) Analyzing Students' Learning in Classroom Discussions about Socioscientific Issues. Science Education, Vol 97 Issue 4, Pp. 594 - 620

- Rudsberg, Öhman (2010). Pluralism in practice – experiences from Swedish evaluation, school development and research. *Environmental Education Research*, Volume 16, 2010 - Issue 1: Democracy and Values in Environmental and Sustainability Education: Research Contributions from Denmark and Sweden. P. 95 - 111
- Säfström, A. I.(2013)Exercising Mathematical Competence: Practising Representation Theory and Representing Mathematical Practice. Göteborgs universitet. Naturvetenskapliga fakulteten
- Sageidet, B. M. (2016). Norwegian early childhood teachers' stated use of subject-related activities with children, and their focus on science, technology, environmental issues and sustainability. *Nordina* Vol. 12 nr. 2
- Sahlberg, (2011). Lessons from Finland. *American Educator*, 35 (2) (2011), pp. 32–36
- Säljö, R. (1998). Learning inside and outside schools: Discursive practices and sociocultural dynamics. In D.Roberts, & L.Östman (Eds.), *Problems of meaning in scientific curriculum* (pp. 39–53). New York: Teachers College Press.
- Säljö, R., & Bergqvist, K. (1997). Seeing the light: Discourse and practice in the optics lab. In L. B.Resnick, R. Säljö, C. Pontecorvo, & B. Burge (Eds.), *Discourse, tools, and reasoning: Essays on situated cognition* (pp. 385–405). Berlin: Springer
- Salmela, M., Uusiautti, S. (2015). A positive psychological viewpoint for success at school – 10 characteristic strengths of the Finnish high-achieving students. *High Ability Studies*, Volume 26, 2015 - Issue 1 Pp. 117 - 131
- Sami Lehesvuori (2013). Towards Dialogic Teaching in Science: Challenging Classroom Realities through Teacher Education. *Nordina*, Vol 9, No 2 (2013)
- Sami Lehesvuori, Ilkka Ratinen, Otto Kulhomäki, Jousia Lappi, Jouni Viiri (2011). Enriching primary student teachers' conceptions about science teaching: Towards dialogic inquirybased teaching. *Nordina*, Vol 7, No 2 (2011).
- Sandell, K., Öhman, J., Östman, L., Billingham, R., & Lindman, M. (2005). *Education for sustainable development: nature, school and democracy*. Lund: Studentlitteratur
- Sandvik, K., & Thorhaug, A. M. (2008). Professor Nukem: Communicating Research in the Age of the Experience Economy. *Nordicom Review*, 29(2)
- Savinainen, A. (2004). High school students' conceptual coherence of qualitative knowledge in the case of the force concept. *Dissertations 41*, Department of Physics, University of Joensuu
- Savinainen, A. (2016). FCI Leeds to Finland. *Physics Education* 51 (2016)
- Savinainen, A. And Scot, P. (2002), The Force Concept Inventory: a tool for monitoring student learning, *Phys. Educ.* 37, 45 (2002)
- Savinainen, A. And Viiri, J. (2004), Proceedings of the Physics Education Research Conference, Madison, 2003, AIP Conference Proceedings No. 720, edited by J. Marx, S. Franklin, and K. Cummings (AIP, New York, 2004), p. 77
- Savinainen, A., & Scott, P. (2002). Using the Force Concept Inventory to monitor student learning and to plan teaching. *Physics Education*, 37, 53 – 58
- Savinainen, A., & Viiri, J. (2003). Using the Force Concept Inventory to characterise students' conceptual coherence. In L. Haapasalo & K. Sormunen (Eds.), *Towards meaningful mathematics and science education*, Proceeding on the IXX Symposium of Finnish Mathematics and Science Education Research Association. Bulletin of Faculty of Education, no. 86, University of Joensuu (pp. 142– 152)
- Savinainen, A., Nieminen, P., Mäkinen, A. & Viiri, J. (2013). Teaching and evaluation materials utilizing multiple representations in mechanics. *Physics Education*, Volume 48, Number 3
- Savinainen, A., Nieminen, P., Viiri, J., Korkea-aho, J. And Talikka, A. (2007), Proceedings of the Physics Education Research Conference, Greensboro, 2007, AIP Conference Proceedings

- No. 951, edited by L. Hsu, C. Henderson, and L. Mccullough (AIP, New York, 2007), p. 176.
- Savinainen, A., Scott, P., & Viiri, J. (2005). Using a bridging representation and social interactions to foster conceptual change: Designing and evaluating an instructional sequence for Newton's third law. *Science Education*, 89(2), 175-195
- Schmidt, J. R. (2015). På sporet af magtspillet om dansk naturfagsundervisning: Neoliberal styring af folkeskolen og læreruddannelsen siden årtusindskiftet. Aalborg Universitetsforlag. (Ph.d.-serien for Det teknisknaturvidenskabelige Fakultet, Aalborg Universitet)
- Schmidt, J., Daugbjerg, P., Sillasen, M., Valero, P. (?). The neoliberal utopia and science education in Denmark. In
- Schmidt, K. Rattleff, P. & Hussmann, P. M. (2008). The Impact of CAS Use in Introductory Engineering Mathematics. *Progress in Industrial Mathematics at ECMI 2008*. Volume 15 of the series *Mathematics in Industry* pp 653-659
- Schnack, K. (2000). *Faglighed, undervisning og almen dannelses*. I: H.J. Kristensen & K. Schnack(red.), *Faglighed og undervisning* (s. 11-29). København: Gyldendal.
- Schoultz, J. (2000). Att samtala om/inaturvetenskap. Kommunikation, kontext och artefakt. Unpublished Filosofisk doktoreksamensrapport, Linköpings Universitet, Linköping
- Schoultz, J., Säljö, R., & Wyndham, J. (2001). Heavenly talk: Discourse, artifacts, and children's understanding of elementary astronomy. *Human Development*, 44, 103– 118.
- Schoultz, Jan (2002). Att utvärdera begreppsförståelse. I: Strömdahl (red.) *Kommunicera naturvetenskap i skolan – några forskningsresultat*. Lund: Studentlitteratur. SFS 1973:1205. Lag om förskoleverksamhet.
- Schreiner, C. (2006). Exploring a ROSE-garden: Norwegian youth's orientation towards science - seen as signs of late-modern identities (Doctoral Thesis, University of Oslo).
- Schreiner, C. & Sjøberg, S. (2004): Sowing the seeds of ROSE. Oslo: Institut for lærerutdanning og skoleudvikling, Oslo Universitet.
- Schreiner, C. and svein sjøberg () empowered for action? How do young people relate to environmental challenges?
- Schreiner, C., & Sjøberg, S. (2004). Sowing the seeds of ROSE: Background, rationale, questionnaire development and data collection for ROSE (The Relevance of Science Education)—A comparative study of students' views of science and science education (Acta Didactica 4/2004). Oslo: Department of Teacher Education and School Development, University of Oslo
- Schreiner, Camilla & Sjøberg, Svein. (2005). Et meningsfullt naturfag for dagens ungdom? Nordina: Nordic Studies in Science Education (2).
- Schreiner, Camilla; Henriksen, Ellen Karoline; Hansen, Pål J. Kirkeby (2005). Climate education: Empowering today's youth to meet tomorrow's challenges. *Studies in science education* 2005 ;Volum 41. S. 3-50
- Schultz, R. (red.). (2005). Matematiske kernekompentence i folkeskolen, i de gymnasiale uddannelser og i læreruddannelsen – 1. Delrapport. Odense: CVU Fyn.
- Science i vuggestue og børnehave. / Broström, Stig; Frøkjær, Thorleif. I: Mona, Vol. 2016, Nr. 1, 01.02.2016, s. 21-34.
- Scmidt, J., Daugbjerg, P. Sillasen, M., Valero, P. (2015) From the Literate Citizen to the Qualified Science Worker. *Neoliberal Rationality in Danish Science Education Reforms*. Routledge
- Seah, W.T, Andersson, A., Bishop, A., Clarkson, P. (2016). What would the mathematics curriculum look like if values were the focus? In *For the Learning of Mathematics* 36
- Sederberg, D., Kähkönen, A.-L., Lindell, A., Bryan, L., & Viiri, J. (2014). Progressions of Students' Mental Models of Magnetism Across Scale. In W. Kaminski, & M. Michelini (Eds.),

- Proceedings of selected papers of the GIREP - ICPE - MPTL International Conference. Teaching and Learning Physics today: Challenges? Benefits? (pp. 489-495). Udine: Università degli Studi di Udine.
- Seija Karppinen, Veera Kallunki, Seija Kairavuori, Kauko Komulainen, Sara Sintonen (2013). Interdisciplinary Integration in Teacher Education. In K. Tirri, E. Kuusisto (Eds.) Interaction in Educational Domains. Sense Publishers. Pp 149-158
- Serder, Margareta (2013). Discouraging results : problematizing test questions in science education. Conference paper: 10th Conference of the European Science Education Research Association (ESERA), Nicosia, Cyprus, 2-7 September 2013
- Serder, Margareta (2015). Mötens med PISA : kunskapsmätning som samspel mellan elever och provuppgifter i och om naturvetenskap. Doctoral Thesis. Malmö Studies in Educational Sciences;75. Malmö högskola
- Sidenvall, J., Lithner, J., Jäder, J. (2014). Students' reasoning in mathematics textbook task-solving. International Journal of Mathematical Education in Science and Technology
- Sidenvall, Johan (2015) Att lära sig resonera: Om elevers möjligheter att lära sig matematiska resonemang. Inköping: Linköping University Electronic Press
- Sillasen, M., Daugbjerg, P., Schmidt, J., Valero, P. (2011). Kvaliteter ved reformer af naturfagsundervisning i Danmark - læreres ressourcer og roller i reformprocesser. I MONA 2011 -1
- Sillasen, M., Daugbjerg, P., Schmidt, J., Valero, P. (2011). Kvaliteter ved reformer af naturfagsundervisning i Danmark - læreres ressourcer og roller i reformprocesser. I MONA 2011 -1
- Simen A. Sørby, Carl Angell (2012). Undergraduate students' challenges with computational modelling in physics. Nordina, Vol 8, No 3 (2012)
- Simonsen, Birgitte & Katzenelson, Noemi (2000): "Unges arbejdsbegreb". Arbejdsliv nr. 4.
- Sjøberg, S. (2002). SCIENCE EDUCATION – AN INTERDISCIPLINARY FIELD. Sense Publishers.
- Sjøberg, S. (1997). Scientific literacy and school science. Arguments and second thoughts. In E. Kallerud & S. Sjøberg (Eds.), Science, technology and citizenship. The public understanding of science and technology in science education and research policy (pp. 9–28). Oslo, Norway: Norwegian Institute for Studies in Research and Higher Education
- Sjøberg, S. (2002). Science for the children: Report from the science and scientists-projects (Acta Didactica 1/2002). Oslo, Norway: University of Oslo, Department of Teacher Education and School Development.
- Sjøberg, S. (2005). Naturfag som almendannelse - en kritisk fagdidaktik. Aarhus: Klim
- Sjøberg, S. (2007). PISA and 'real life challenges': Mission impossible? In S.T. Hopman, G. Brinek, & M. Retzl (Eds.), PISA zufolge PISA—PISA according to PISA (pp. 1–18) Vienna: LIT Verlag.
- Sjøberg, Svein. (2004). Naturfag som allmenndannelse: en kritisk fagdidaktikk. Oslo: Gyldendal Akademisk
- Skolverket (2004). Pisa 2003 - svenska femtonåringars kunskaper och attityder i ett internationellt perspektiv. Stockholm: Skolverket, Rapport 254.
- Skolverket (2008). TIMSS 2007 - Huvudrapport: Svenska grundskoleelevers kunskaper i matematik och naturvetenskap i ett internationellt perspektiv. Stockholm: Skolverket, Rapport 323.
- Skolverket, 2003, Lusten att lära - med fokus på matematik. Skolverkets nationella kvalitetsgranskningar
- Skott, J. (2006). Teoretiske løkker i matematikkens didaktik. Om relationen mellem empiri, teori og praksis. I: S. Ongstad (red.), Fag og didaktikk i lærerutdanning: kunnskap i grenseland. Oslo: Universitetsforlaget.

- Skott, J. (2014). Towards a Participatory Approach to ‘Beliefs’ in Mathematics Education. B. Pepin, B. Roesken-Winter (Eds.) From beliefs to dynamic affect systems in mathematics education. Part of the series Advances in Mathematics Education pp 3-23. Springer
- Skovsmose, O. (2011). An Invitation to Critical Mathematics Education. Sense Publishers
- Skovsmose, O. (1998) Undersøgelseslandskaber. Paper presented at the NOMUS HI:
Læreprocesser i matematik, Søminestationen
- Skovsmose, O. (1998b): ‘Linking Mathematics Education and Democracy: Citizenship, Mathematics Archaeology, Mathemacy and Deliberative Interaction’, Zentralblatt für Didaktik der Mathematik 98 (6), 195–203.
- Skovsmose, O. (1999): ‘Mathematical Agency, and Social Theorising’, Centre for Research in Learning Mathematics, Royal Danish School of Educational Studies, Roskilde University Centre, Aalborg University.
- Skovsmose, O. (2000): ‘Aporism and Critical Mathematics Education’, For the Learning of Mathematics 20 (1), 2–8.
- Skovsmose, O. And Nielsen, L. (1996): ‘Critical Mathematics Education’, in Bishop, A. Et al. (red.): International Handbook of Mathematics Education, Kluwer Academic Publishers, Dordrecht, 1257–1288.
- Skovsmose, O. And Valero, P. (2001): ‘Breaking Political Neutrality: The Critical Engagement of Mathematics Education with Democracy’, in Atweh, B., Forgasz, h. And Nebres, B. (eds.): Sociocultural Research on Mathematics Education, Lawrence Erlbaum Associates, Mahwah (New Jersey) and London, 37–55.
- Skovsmose, O. Zentralblatt für Didaktik der Mathematik (2001) 33: 123. Doi:10.1007/BF02652747
- Sølberg, J. (2006), Den lokale naturfaglige kultur - et fokus for udvikling, MONA, 2006(1), 7-22
- Sølberg, J., Jensen, A. (2012). Hvad kan vi lære ad sciencekommuneprojektet? I Mona 2012 -1
- Sollervall, H. (2014) Learning subtraction strategies from principle-based teaching activities.
Proceedings of MADIF 9, Svensk förening för matematikdidaktisk Forskning - SMDF, 2014
- Sollervall, H. & Stadler, E. (2015). Validating Affordances as an Instrument for Design and a Priori Analysis of Didactical Situations in Mathematics. International Journal for Mathematics Teaching and Learning
- Solovej, J. And Winsløw, C. (2001), Maple på første års matematik. Report no. 14, Centre for Educational Development in University Science, Aalborg.
- Sonia Palhaa, Rijkje Dekkera, Koen Gravemeijerb, Bernadette van Hout-Woltersa (2013). Developing shift problems to foster geometrical proof and understanding. The Journal of Mathematical Behavior. Volume 32, Issue 2, Pages 142–159
- Sørensen, H. (2007). Masser af rapporter og strategiplaner - men hvordan ændres praksis i fysiklokalet? Kommentar. MONA(2).
- Sørensen, H., & Østergaard, L. (2001). The relationship between prior experiences and engagements in learning. Paper presented at the NARST 2001, New Orleans.
- Sørensen, H., Horn, F., & Dragsted, S. (2005). Får natur/teknik en fremtid? MONA, 2005(1)
- Sothayapetch, Pavinee (2013). A comparative study of science education at the primary school level in Finland and Thailand. Doctoral dissertation. University of Helsinki, Faculty of Behavioural Sciences, Department of Teacher Education
- Sothayapetch, Pavinee; Lavonen, Jari; Juuti, Kalle (2013). A Comparative Analysis of PISA Scientific Literacy Framework in Finnish and Thai Science Curricula. Science Education International, v24 n1 p78-97 Mar 2013

- Sriraman, B., C.Michelsen, A. Beckmann & V. Freiman (Eds). (2008). Proceedings of the Second International Symposium on Mathematics and its Connections to the Arts and Sciences (MACAS2). University of Southern Denmark Press
- Steffen Møllegaard Iversen (2014) Skrivning og skriveudvikling i de gymnasiale matematikfag. Ph.d.-afhandling. Det humanistiske Fakultet - Institut for Kulturvidenskaber
- Sternäng, L., & Lundholm, C. (2011). Climate change and morality: Students' perspectives on the individual and society. *International Journal of Science Education*, 33(8), 1131–1148.
- Sträng, M., Åberg-Bengtsson, L. (2009). 'From the mountain and then?' Five-year-olds visiting the 'Way of the water' exhibition at a science centre. *I International Journal of Early Childhood* March 41:13
- Strömdahl, H. (2006). On standards in science education in the contemporary Swedish school system. Paper presented in the 3rd International Science education symposium Standards in science education. February 23–26, Kiel, Germany.
- Sumpter, L. (2016) Two Frameworks for Mathematical Reasoning at Preschool Level. *Mathematics Education in the Early Years* pp 157-169
- Sund, P. (2016). Discerning selective traditions in science education: a qualitative study of teachers' responses to what is important in science teaching. *Cultural Studies of Science Education*, June 2016, Volume 11, Issue 2, pp 387–409
- Sund, Per (2008). Discerning the extras in ESD teaching - A democratic issue. In: Values and democracy in education for sustainable development: contributions from Swedish research, Malmö: Liber , 2008, 56-74 p.
- Sund,P., Wickman, P.O. (2011). Socialization content in schools and education for sustainable development – II. A study of students' apprehension of teachers' companion meanings in ESD. *Environmental Education Research*, Volume 17, 2011 - Issue 5. P. 625 - 649
- Sundberg, B., Areljung, S., Due, K., Ekström, K., Tellgren, B. (2015). Understanding preschool emergent science in a cultural historical context through Activity Theory. Pp. 567 - 580. *European Early Childhood Education Research Journal European Early Childhood Education Research Journal* Vol. 24 issue 4
- Takala, T. M., MALMI, L., PUGLIESE, R., TAKALA, T. (2016). Empowering Students to Create Better Virtual Reality Applications: A Longitudinal Study of a VR Capstone Course, *Informatics in Education*, 2016, Vol. 15, No. 2, 287–317
- Thulin, S. (2001). Hur tänker förskolebarn om en process i naturen? C–uppsats i pedagogik. Kristianstad: Högskolan Kristianstad, Institutionen för Beteendevetenskap.
- Thulin, S. (2006). Vad händer med lärandets objekt?: en studie av hur lärare och barn i förskolan kommunicerar naturvetenskapliga fenomen, *Acta Wexionensia*, Nr 102/2006; Växjö University Press
- Thulin, S. (2009). Anthropomorphically speaking: on communication between teachers and children in early childhood biology education. *International Journal of Early Years Education International Journal of Early Years Education* Vol. 17, issue 2
- Thulin, S. (2011). Lärares tal och barns nyfikenhet: Kommunikation om naturvetenskapliga innehåll i förskolan. Göteborgs universitet. Utbildningsvetenskapliga fakulteten University of Gothenburg. Faculty of Education
- Thulin, S. (2011). Opening Doors for Learning Ecology in Preschool. In N. Pramling, I. Pramling (Eds.) *Educational Encounters: Nordic Studies in Early Childhood Didactics*. Pp. 65 - 84 *Educational Encounters: Nordic Studies in Early Childhood Didactics* Educational Encounters: Nordic Studies in Early Childhood Didactics Vol. 4
- Thulin, S. & Redfors, A. *Early Childhood Educ J* (2016). Doi:10.1007/s10643-016-0783-0

- Thulin, S., (2010). Barns frågor under en naturvetenskaplig aktivitet i förskolan. *Nordisk barnehageforskning* Vol. 3 nr. 1
- Tidemand, S., & Nielsen, J. A. (Accepted). The role of socioscientific issues in biology teaching – from the perspective of teachers. *International Journal of Science Education*. DOI: 10.1080/09500693.2016.1264644
- Tolppanen, Rantaniitty, McDermott, Aksela, Hand (2013). Effectiveness of a Lesson on Multimodal Writing in Science Education. *LUMAT* 2013 1(5)
- Tolppanen, S., Rantaniitty, T., Aksela, M. (2016) Effectiveness of a Lesson on Multimodal Writing. In B. Hand, M. McDermott, V. Prain (Eds.) *Using Multimodal Representations to Support Learning in the Science Classroom*. Springer International Publishing. Pp 39-57
- Trine Hyllested (2007). Når læreren tager skolen ud af skolen- en analyse af naturskolebesøg og andre ud af skolen aktiviteter med fokus på lærernes formål med at tage ud og deres interaktion med eleverne i forhold til at optimere betingelserne for elevernes læring. Ph.d. Afhandling.
- Tunebjerg, T. & Mikkelsen, L.B. (2007). NOFAN – et udviklingsprojekt om naturfagsundervisning. *Geografisk Orientering*, 2007(5)
- Tunebjerg, T., Mikkelsen, L.B. & Rosenild, S. (2007). Naturfagsundervisning i skolen i samarbejde med det lokale erhvervsliv. *Fysik.kemi*, 2007(1).
- Turmo, A. (2003). Science education and international studies. Large international studies as a frame for research in science education: A discussion with examples on how data from PISA 2000 can enlighten facets of the construct scientific literacy (Doctoral thesis University of Oslo).
- Turmo, A. (2004): Scientific Literacy and Socio-economic Background among 15-year-olds – A Nordic Perspective. *Scandinavian Journal of Educational Research*, Vol. 48, Nr. 3.
- Tynjälä, P. (1999). Towards expert knowledge? A comparison between a constructivist and a traditional learning environment in university. *International Journal of Educational Research*, 31(5), 357–442
- Ulriksen, L. (2012). Attracting Students and making them Stay - The importance of expectations and experiences in the recruitment and retention of engineering students. SEFI 40 th. Annual conference, 23 - 26. September 2012. Greece
- Ulriksen, L., Murning, S., Ebbensgaard, A. B. (2009). Når gymnasiet er en fremmed verden. Department of Science Education, Faculty of Science, Københavns Universitet
- Undervisningsministeriet (1999): De humanistiske og naturvidenskabelige kandidater og deres arbejdsmarked
- Undervisningsministeriet (1999): Ingeniøruddannelserne – før, nu og i fremtiden
- Undervisningsministeriet (2000): De tekniske uddannelser. Uddannelse og arbejdsmarked. Statistiske analyser af uddannelserne. Undervisningsministeriet
- Undervisningsministeriet (2000): Naturvidenskabelige klasser i gymnasiet. Rapport fra en arbejdsgruppe. Uddannelsesstyrelsens temahæfteserie nr.6/2000. Undervisningsministeriet.
- Undervisningsministeriet (2001): Tendenser for de videregående naturvidenskabelige uddannelser.
- Undervisningsministeriet (2002): Evaluering af forsøg med fagpakker i matematik-fysik og matematik-kemi 1997-2001. Udviklingsprogrammet for fremtidens ungdomsuddannelser. Hæfte nr. 21. Uddannelsesstyrelsen, okt. 2002.
- Undervisningsministeriet, IT- og Forskningsministeriet, Arbejdsministeriet og Erhvervsministeriet (2001): IT-arbejdskraft og uddannelser – Udbud og efterspørgsel.
- Undervisningsministeriet. (1997). Den svigende søgning til tekniske og naturvidenskabelige fag.
- Undervisningsministeriet. (2002). Bedre uddannelser - Handlingsplan juni 2002. København.

- Utdannings- og Forskningsdepartementet. (2002). "Realfag, naturligvis" Strategi for styrkning av realfagene 2002-2007 - tiltaksplan. Oslo: Utdannings- og Forskningsdepartementet.
- Välijärvi, J., Kupari, P., Linnakylä, P., Reinikainen, P., Sulkunen, S., Törnroos, J., et al. (2007). The Finnish success in PISA—And some reasons behind it. Jyväskylä: Institute for Educational Research.
- Valtonen, T., Hacklin, S., Kontkanen, S., Hartikainen-Ahia, A., Kärkkäinen, S., & Kukkonen, J. (2010). Pre-service teachers' experiences of using social software applications for collaborative inquiry, *Computers & Education*, 69, 85-95.
- Valtonen, T., S. Pöntinen, J. Kukkonen, P. Dillon, P. Väisänen, S. Hacklin (2011). Confronting the technological pedagogical knowledge of Finnish net generation student teachers. *Technology, Pedagogy and Education*, 20 (1) (2011), pp. 1–16
- Vartiainen, Pöllänen, Liljeström, Vanninen, Enkenberg (2016) Designing Connected Learning: Emerging learning systems in a craft teacher education course. *Design and Technology Education: An International Journal* 2016, 21.2, pp 32 - 40
- Vartiainen, H. (2014) Principles for Design - Oriented Pedagogy for Learning from and with Museum Objects. *Dissertations in Education, Humanities and Theology* No 60. Finland: Univeristy of Eastaern Finland.
- Vauras, M. (2006). Difficulties as content in the teacher education. In R. Jakku-Sihvonen & H. Niemi (Eds.), *Research-based Teacher Education in Finland—Reflections by Finnish Teacher Educators*, (pp. 173– 187). *Research in Educational Sciences* 25. Turku: Finnish Educational Research Association.
- Veli-Matti Vesterinen, Maija Aksela (2013). Design of Chemistry Teacher Education Course on Nature of Science. *Science & Education*, September 2013, Volume 22, Issue 9, pp 2193– 2225
- Vesterinen , V-M , Pernaa , J & Aksela , M K 2012 , ' Evaluation of educational design methodology utilizing concept mapping ' in Proceedings of the ESERA 2011conference : Science learning and Citizenship , pp. 142-146 .
- Vesterinen, V.-M., & Aksela, M. (2009). A novel course of chemistry as a scientific discipline: How do prospective teachers perceive nature of chemistry through visits to research groups? *Chemistry Education Research and Practice*, 10(2), 132–141
- Vesterinen, V.-M., Tolppanen, S. & Aksela, M. (2016). Toward citizenship science education: what students do to make the world a better place?, *International Journal of Science Education*, 38(1), 30-50
- Virtanen, T.E., Lerkkanen, M.K., Poikkeus, A.M. & Kuorelahti. M. (2015). The relationship between classroom quality and students' engagement in secondary school. *Educational Psychology, An International Journal of Experimental Educational Psychology*, Volume 35, 2015 - Issue 8
- Wedge, T. (1999): To know or not to know – mathematics, that is a question of context. *Educational Studies in Mathematics* 39, 205-227
- Wedge, T. (2000):*Matematikviden og Teknologiske Kompetencer hos Kortuddannede Voksne*, Ph.D. Thesis, Roskilde University Centre, Roskilde.
- Wennerås, C. & Wold, A. Nepotism and sexism in peer-review. *Nature*, vol. 387/1997, s. 341-343.
- West, Eva (2011). Learning for Everyday Life: Pupils' conceptions of hearing and knowledge about tinnitus from a teaching–learning sequence. *International Journal of Science Education*, Volume 33, 2011 - Issue 9
- West, Eva (2011).*Undervisning och lärande i naturvetenskap - Elevers lärande i relation till en forskningsbaserad undervisning om ljud, hörsel och hälsa*. Doctoral thesis. Göteborgs universitet. Utbildningsvetenskapliga fakulteten.

- West, Eva, Wallin, Anita (2013). Students' Learning of a Generalized Theory of Sound Transmission from a Teaching–Learning Sequence about Sound, Hearing and Health. *International Journal of Science Education*. Volume 35, 2013 - Issue 6
- Westman, Anna-Karin (2016). Meningsskapande möten i det naturvetenskapliga klassrummet. Doctoral Thesis. Doktorsavhandlingar i pedagogiskt arbete, ISSN 1650-8858 ; 64. Umeå: Umeå universitet , 2016.85 p.
- Wickman, P.-O. (2012). Using pragmatism to develop didactics in Sweden. *Zeitschrift für Erziehungswissenschaft*, November 2012, Volume 15, Issue 3, pp 483–501
- Wickman, P.-O. And Östman, L. (2002), Learning as discourse change: A sociocultural mechanism. *Sci. Ed.*, 86: 601–623. Doi:10.1002/sce.10036
- Wickman, P.-O., & Östman, L. (2001). University students during practical work: Can we make the learning process intelligible? In H.Behrendt, H.Dahncke, R.Duit, W.Gräber, M.Komorek, A.Kross, & P.Reiska (Eds.), *Research in science education—Past, present, and future* (pp. 319–324). Dordrecht, The Netherlands: Kluwer.
- Wickman, P.-O., & Östman, L. (2002). Induction as an empirical problem: How students generalise during practical work. *International Journal of Science Education*, 24, 465–486.
- Wickman, P.O. (2004). The practical epistemologies of the classroom: A study of laboratory work. *Science Education*, Volume 88, Issue 3. May 2004. Pages 325–344
- Wickman, Per-Olof, Ligozat, Florence (2010). Scientific Literacy as Action. In C. Linder, L. Östman, D.A: Roberts, P.O. Wickman, G. Erickson, A. Mackinnon (Eds.) *Exploring Landscapes of Scientific Literacy*. New York: Routledge , 2011. 145-159 p.
- Winsløw, C. (2003). Semiotic and discursive variables in cas-based didactical engineering. In *Educational Studies in Mathematics*, Volume 52, Issue 3, pp 271–288
- Winsløw, C. (2004). Semiotics as an analytic tool for the didactics of mathematics. *Nordic Studies in Mathematics Education*, 2004
- Winsløw, C.: 2000, 'Linguistic aspects of computer algebra systems in higher mathematics education', *Proceedings of the 24th International Conference, Psychology of Mathematics Education*, Vol. 4, Hiroshima, Japan, pp. 281–288.
- Winsløw, C.: 2002, 'Dreyfus' potential in first year calculus', in A.D. Cockburn and E. Nardi (eds), *Proceedings of the 26th International Conference, Psychology of Mathematics Education*, Vol. 4, Norwich, United Kingdom, pp. 410–417.
- Wyndhamn, J., & Säljö, R. (1997) Word problems and mathematical reasoning—A study of children's mastery of reference and meaning in textual realities *Learning and Instruction*. Volume 7, Issue 4,
- Wyndhamn, J., Riesbeck, E. & Schoultz, J. (2000). Problemlösning som metafor och praktik. Institutionen för tillämpad lärarkunskap, Linköpings universitet

Litteratur om nordiske forhold inden for genstandsfelt 2

- Allerup, P.; Bredo, O.; Weng, P. (1998): Matematik og naturvidenskab i ungdomsuddannelser – en international undersøgelse. Danmarks Pædagogiske Institut.
- Alrø, H., Høines, M.J. (2012). Inquiry - without posing questions? *The Mathematics Enthusiast*, Vol. 9, No. 3
- Alsted, H., Christiansen, J. & Ellebæk, J.J. (2003). Nyuddannede natur/teknik-læreres undervisningsfaglighed. Rapport fra et forsknings- og udviklingsarbejde ved CVU Sønderjylland.

- Anderhag, P., Helena Danielsson Thorell, Carina Andersson, Andreas Holst, Johan Nordling (2014). Syften och tillfälligheter i högstadies- och gymnasielaborationen: En studie om hur elever handlar i relation till aktivitetens mål Purposes and contingencies in the lower and upper secondary school lab. NorDina, Vol 10, No 1 (2014).
- Anderhag, Per, Wickman, Per-Olof (2007). An evalutation of how NTA is helping schools to attain the Science Studies syllabus goals at the grade 5 level. Rapporter i didaktik, 4. Stockholm: Lärarhögskolan i Stockholm , 2007.
- Anders Berglund, Anna Eckerdal (2015). Learning Practice and Theory in Programming Education: Students' Lived Experience. 2015 International Conference on Learning and Teaching in Computing and Engineering
- Andersen, A. M., Breiting, S., Busch, H., Hyllested, T., Nielsen, K., Sølberg, J., et al. (2004). Naturfagsdidaktik som områdedidaktik. I: K. Schnack (Ed.), Didaktik på kryds og tværs. København: Danmarks Pædagogiske Universitets Forlag.
- Andersen, A. M., Egelund, N., Jensen, T. P., Krone, M., Lindenskov, L. & Mejding, J. (2001). Forventninger og færdigheder - danske unge i en international sammenligning. København: Amternes og Kommunernes Forskningsinstitut, Danmarks Pædagogiske Universitet og Socialforskningsinstituttet.
- Andersen, A.M. et al. (2005). Fra seminarium til skolepraksis i natur/teknik. Paperpræsentation ved Det 8. nordiske Forskersymposium om undervisning i naturfag, Aalborg, maj 2005
- Andersen, A.M., Dragsted, S., Evans, R. & Sørensen, H. (2004). The Relationship between Changes in Teachers' Self-efficacy Beliefs and the Science Teaching Environment of Danish First-Year Elementary Teachers. Journal of Science Teacher Education, February 2004.
- Andersen, A.M., Dragsted, S., Evans, R. & Sørensen, H. (2004). The Relationship Between Teaching Environments and Personal Capability Beliefs of Two Cohorts of New Elementary Science Teachers in Denmark.
- Andersen, H. M., & Krogh, L. B. (2010). Science and mathematics teachers' core teaching conceptions and their implications for engaging in cross-curricular innovations. Nordic Studies in Science Education, 6(1), 61-79.
- Andersen, N.O., Busch, H., Horst, S. & Troelsen, R. (2003). Fremtidens naturfaglige uddannelser.Naturfag for alle – vision og oplæg til strategi. København: Undervisningsministeriet
- Andersen, N.O., Busch, H., Horst, S. & Troelsen, R. (2003). Fremtidens Naturfaglige Uddannelser – Bd. 1: Strategiplan 2003-2008 og videre frem. København: Undervisningsministeriet
- Andersson, A. (2011). A “Curling teacher” in mathematics education: teacher identities and pedagogy development. In Mathematics Education Research Journal Vol. 23. Issue 4. Pp 437 - 454
- Andersson, A., Ravn, O. (2012) A Philosophical Perspective on Contextualisations in Mathematics Education. In O. Skovsmose, B. Greer (Eds.) Opening the Cage. Critique and Politics of Mathematics Education. Sense Publishers Vol. 23
- Andersson, Björn., & Bach, Frank. (1996). Developing new teaching sequences in science: The example of ‘gases and their properties.’ In G.Welford, J.Osborne, & P.Scott (Eds.), Research in science education in Europe. Current issues and themes (pp. 7–21). London: Falmer Press.
- Andersson, Kristina (2011). Lärare för förändring: att synliggöra och utmana föreställningar om naturvetenskap och genus. Doctoral Thesis. Studies in Science and Technology Education, ISSN 1652-5051 ; 36. Linköping: Linköping University Electronic Press , 2011

- Andreasen, M., Damkjær, H. & Højgaard, T. (2010). Udvikling af matematik-fagteam – MaTeam – og god undervisning i matematik på skolens mellemtrin. Silkeborg: VIA, University College, Læreruddannelsen i Silkeborg
- Andreasen, M., Damkjær, H.S. & Højgaard, T. (2011). MaTeam-projektet – om matematiklærerfagteam, matematiklærerkompetencer og didaktisk modellering. MONA 2011-3, 26-45
- Angell, C. , Kind, P.M., Henriksen, E. (2008), Implementation of empirical-mathematical modelling in upper secondary physics: Teachers' interpretations and considerations. Nordina 2008 4 (2)
- Anker-Hansen, J. (2015). Assessing Scientific Literacy as Participation in Civic Practices: Affordances and constraints for developing a practice for authentic classroom assessment of argumentation, source critique and decision-making. Doctoral thesis. Stockholm: Department of Mathematics and Science Education, Stockholm University
- Appel, N.-H.B. & Daugbjerg, P.S. (2010). Naturfagsdidaktisk videreuddannelse af folkeskolelærere – til gavn for hvem?. I: S. Elmose, Naturfagsdidaktik i anvendelse. Aarhus: VIA Systime
- Arfwedson, G. B., & Arfwedson, G. (2002). Didaktik för lärare: En bok om lärares yrke i teori och praktik (2a. uppl.). Stockholm: HLS förlag, G. (2002). Didaktik för lärare: En bok om lärares yrke i teori och praktik (2a. uppl.). Stockholm: HLS förlag
- Beerenwinkel, A. and J. Börlin (2014). Surface Level: Teaching Time, Lesson Phases and Types of Interaction. In E. Hans, P. Labudde, K. Neumann, and J. Viiri (Eds.), Quality of Instruction in Physics – Comparing Finland, Germany and Switzerland, pp. 65–79. Waxmann Verlag GmbH.
- Berg, Astrid, Eriksson, Inger, Löfgren, Ragnhild (2010). Observationer i kemiklassrummet - att lära sig se kemiska reaktioner. In: I. Eriksson (Ed.): Innehållet i fokus - kemiundervisning i finlandssvenska klassrum, Stockholm: Stockholms universitets förlag , 2010, 37-69 p.
- Bergsten, C. (2002). Faces of Swedish research in mathematics education. In C. Bergsten, G. Dahland & B. Grevholm (Eds.), Research and action in the mathematics classroom (pp. 21-36). Linköping: SMDF
- Bergsten, C. and Grevholm, B. (2004). The didactic divide and the education of teachers of mathematics in Sweden. Nordic Studies in Mathematics Education 9,(2), 123-144.
- Bergsten, C. Grevholm, B, mfl. (2009) Learning to Teach Mathematics: Expanding the Role of Practicum as an Integrated Part of a Teacher Education Programme R. Even, D.L. Ball (Eds.)The Professional Education and Development of Teachers of Mathematics. Volume 11 of the series New ICMI Study Series pp 57-70
- Bergsten, C., Botten, G., Fuglestad, A.-B., Grevholm, B., Holden, I. & Lingefjärd, T. (2003, May). The education and competence development of mathematics teachers in Norway and Sweden. A study material for the symposium. Paper prepared for the international research symposium on the education of mathematics teachers, Malmö University College
- Berhard, J. (2010). Insightful learning in the laboratory: Some experiences from 10 years of designing and using conceptual labs. European Journal of Engineering Education. Volume 35, 2010 - Issue 3. P. 271 - 287
- Bjerneby Häll, M. (2002). Varför undervisning i matematik? (Licentiatavhandling. FiF-avhandling 60/02). Institutionen för beteendevetenskap, Linköpings universitet.
- Björkholm, Eva, Hultén, Magnus (2013). Primary School Teachers' Development of Subject-Specific Knowledge in Technology during a Design Based Research Project. PATT27 Technology Education for the Future: A Play on Sustainability, Christchurch, New

- Zealand, 2-6 December 2013: A Play on Sustainability / [ed] P John Williams and Dilani Gedera, University of Waikato, New Zealand , 2013, 59-64 p
- Björkqvist, O. (2003). Matematikdidaktiken i Sverige: En lägesbeskrivning av forskningen och utvecklingsarbetet. Stockholm: Kungliga Vetenskapsakademien.
- Bjuland, R. (2004). Student teachers' reflections on their learning process through collaborative problem solving in geometry. *Educational Studies in Mathematics*, Volume 55, Issue 1, pp 199–225
- Bjuland, R.: 2002, Problem Solving in Geometry. Reasoning Processes of Student Teachers Working in Small Groups: A Dialogical Approach, Published doctoral dissertation, University of Bergen, Bergen.
- Blomhøj, M. & Kjeldsen (2006) Teaching mathematical modelling through project work, T.H. Zentralblatt für Didaktik der Mathematik (2006) 38: 163. doi:10.1007/BF02655887
- Boesen, J. (2007). Why emphasise imitative reasoning? Teacher-made tests
- Borba, M. and Skovsmose, O. (1997): 'The Ideology of Certainty in Mathematic Education'For the Learning of Mathematics 17(3), 17–23.
- Brandt, H., Johansen, B. L. (2009). IT i læreruddannelsen. I MONA 2009
- Breiting, S. & Mogensen, F. (2003). Biologiundervisningens situation i folkeskolen og dens mulige fremtid. København: Biologforbundets Sekretariat.
- Broch, T. & Egelund, N. (2002). Et lærerperspektiv på natur/teknik og fysik/kemi undervisningen – en kvalitativ analyse. København: Danmarks Pædagogiske Universitet.
- Brodahl, C., & Smestad, B. (2009). A Taxonomy as a Vehicle for Learning. *Interdisciplinary Journal of Knowledge and Learning Objects*, 5, 111-127.
- Broström, Stig (2013). Science i børnehaven. MONA: Matematik og Naturfagsdidaktik, Nr. 4
- Broström, Stig (2015). Science in early childhood education. *Journal of Education and Human development*, Vol. 4, Nr. 2(1), 15.06.2015
- Broström, Stig; Frøkjær, Thorleif (2016). Science i vuggestue og børnehave.. I: Mona, Vol. 2016, Nr. 1, 01.02.2016, s. 21-34.
- Bugge, Birthe Louise & Harder, Peter (2002): Skolen på frihjul: om lærerollen og det forsvundne elevansvar. København: Gyldendal.
- Bulien, T. (2008) Matematikkopplevelser i lærerutdanningen : en fenomenologisk orientert narrativ analyse av studenttekster .UNIVERSITETET I TROMSØ. Det samfunnsvitenskapelige fakultet. Institutt for pedagogikk og lærerutdanning
- Bursjöö, Ingela (2014). Utbildning för hållbar utveckling från en lärarhorisont: sammanhang, kompetenser och samarbete. Doctoral thesis.Göteborgs universitet. Naturvetenskapliga fakulteten
- Busch, H., Horst, S. & Troelsen, R. (red.) (2003). Inspiration til fremtidens naturfaglige uddannelser. En antologi. København: Undervisningsministeriet.
- Busch, Henrik (2001): "Når Superman smider skjorten" i KVANT 12 (3).
- Carstensen, Anna-Karin, Bernhard, Jonte (2015). Design Science Research – an engineering research approach to improve methods for engineering education research. Conference paper. The 6th Research in Engineering Education Symposium (REES), Dublin, July 13-15, 2015.
- Carstensen, Anna-Karin, Jonte Bernhard (2009). Student learning in an electric circuit theory course: critical aspects and task design. *European Journal of Engineering Education*. Volume 34, 2009 - Issue 4: Educational research impacting engineering education. Pp. 393 - 408
- Christensen, C. (2009). Risk and school science education, *Studies in Science Education*, Volume 45, Issue 2

- Christenson, Rundgren, Zeidler (2014). The Relationship of Discipline Background to Upper Secondary Students' Argumentation on Socioscientific Issues. *Research in Science Education*, Volume 44, Issue 4, pp 581–601
- Christiansen, J. & Ellebæk, J.J. (2004). Udviklingen i nyuddannede natur/teknik-læreres undervisningsfaglighed (PCK) – i et longitudinelt perspektiv. Rapport fra et forsknings- og udviklingsarbejde ved CVU Sønderjylland
- Christina Ottander, Bodil Sundberg (2013). The Conflict Within the Role: A Longitudinal Study of Preschool Student Teachers' Developing Competence In and Attitudes Towards Science Teaching in Relation to Developing a Professional Role. *Journal of Early Childhood Teacher Education*, Volume 34, 2013 - Issue 1: Early Childhood Teacher Education: Why Does It Matter? How Does It Matter? P. 80 - 94
- Danielsson, A. & Warwick, P. (2014). 'All We Did was Things Like Forces and Motion ...': Multiple Discourses in the development of primary science teachers. *International Journal of Science Education*, Volume 36, 2014 - Issue 1. P. 102 - 128
- Danmarks Evalueringsinstitut. (2001). Fysik i skolen - skolen i fysik, september 2001. København: Danmarks Evalueringsinstitut.
- Danmarks Evalueringsinstitut. (2002). Undersøgelsen af sammenhænge mellem elevers resultat ved Folkeskolens afgangsprøver og deres senere uddannelsesforløb. København: Danmarks Evalueringsinstitut.
- Davidsson, Eva (2009). Enhancing Visitors' Interest in Science – A Possibility or A Paradox?. *Research in Science Education*. March 2009, Volume 39, Issue 2, pp 197–213
- Dolin, J. (2016). Idealer og realiteter i målorienteret undervisning. *Cursiv*, 67-112
- Dolin, J., Ingerslev, G. (2002). Forsøgsarbejde i Gymnasiet - som lærerne ser det (Gymnasiepædagogik 26). Odense: Dansk Institut for Gymnasiepædagogik
- Dolin, J., Krogh, L. & Troelsen, R. (2003). En kompetencebeskrivelse af naturfagene. I: H. Busch, S. Horst & R. Troelsen (red.), *Inspiration til fremtidens naturfaglige uddannelser* (s. 59-142). København: Undervisningsministeriet
- Dolin, Jens. "Fysikfaget i forandring." Danish only) PhD thesis. Roskilde University, Denmark (2002).
- Dragsted, S. (1998). Skolens naturfaglige kultur. *Kvan*, 18(52)
- Dragsted, S. (2003). Naturfagene i folkeskolen. I: H. Busch, S. Horst & R. Troelsen (red.), *Inspiration til fremtidens naturfaglige uddannelser. En antologi* (s. 211-242). København: Undervisningsministeriet, Uddannelsesstyrelsen.
- Duit, R. (2004). Bibliography - STCSE: Students' and Teachers' Conceptions and Science Education. Kiel: IPN - Leibniz Institute for Science Education, University of Kiel.
- Dysthe, O. (2000): Det flerstommige klasserum. Århus: Klim.
- Edlev, L. (2008). Natur og miljø i pædagogisk arbejde. Munksgaard Danmark.
- Eivind Kaspersen, Birgit Pepin & Svein Arne Sikko (2016): Measuring student teachers' practices and beliefs about teaching mathematics using the Rasch model, *International Journal of Research & Method in Education*, DOI: 10.1080/1743727X.2016.1152468
- Ejbye-Ernst, N. (2008). Er det så ligetil? I MONA 2008 -3
- Ekborg, M. (2002) Naturvetenskaplig utbildning för hållbar utveckling? En longitudinell studie av hur studenter på grundskollärarprogrammet utvecklar för miljöundervisning relevanta kunskaper i naturkunskap. Doctoral thesis. Göteborg Studies in Educational Sciences 188, Acta Universitatis Gothoburgensis
- Ekborg, M. (2005). Is heat generated from a crematorium an appropriate source for district heating? Student teachers' reasoning about a complex environmental issue. *Environmental Education Research* Volume 11, 2005 - Issue 5

- Ekborg, M., & Areskoug, M. (2006). How students teachers' understanding of the greenhouse effect develops during a teacher education programme. *Nordina*, 5(3), 17–29.
- Ekborg, M., Ideland, M., Malmberg, C. (2009). Science for life – a conceptual framework for construction and analysis of socio-scientific cases. *Nordina*, Vol 5, No 1
- Ekborg, M., Nyström, E., & Ottander, C. (2009, August–September). Working with socio-scientific issues (SSI) – Teachers' perspectives. Paper presented at the ESERA conference, Istanbul.
- Ellebæk, J. J. (2005). Support af nye natur/teknik-lærere. I MONA 2006 -2
- Ellebæk, J.J. (2005). Udviklingen i nyuddannede natur/teknik-læreres undervisningsfaglighed – i et longitudinelt perspektiv. Paperoplæg ved Det 8. nordiske Forskersymposium om undervisning i naturfag, Aalborg, maj 2005.
- Ellebæk, J.J. & Evans, B. (2005). Support af nye natur/teknik lærere. MONA 2005-2, 40-55
- Enghag, M., Schenk, L. (2016). Nanoteknik och riskbedömnning som nytt kunskapsinnehåll i gymnasiets naturvetenskapliga kurser – en designstudie. *NorDina*, Vol 12, No 2
- Eriksen, T. R., Gerstoft, B. F. & Hansen, H. P, (Eds.) (1996). Erfaringer - et humanistisk og sundhedsvidenskabeligt perspektiv. København: Munksgaard
- Evagorou, M., Dillon, J., Viiri, J., & Albe, V. (2015). Pre-service Science Teacher Preparation in Europe: Comparing Pre-service Teacher Preparation Programs in England, France, Finland and Cyprus. *Journal of Science Teacher Education*, 26 (1), 99-115. doi:10.1007/s10972-015-9421-8
- Evans, R. (2005). Supervision of student teachers? I: A.M. Andersen et al., Fra seminarium til skolepraksis. Rundbordssamtale ved Det 8. nordiske Forskersymposium om undervisning i naturfag, Aalborg, maj 2005
- Fehr, A.V.D. (2016). Exploring social networks of science education actors in Danish Science Municipalities. Ph.D. Thesis. Copenhagen: The Faculty of Science, Department of Science Education. University of Copenhagen
- Fredlund, Tobias (2015).Using a Social Semiotic Perspective to Inform the Teaching and Learning of Physics.Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science and Technology, ISSN 1651-6214 ; 1241.Uppsala: Acta Universitatis Upsaliensis, 2015
- Fundet via researchgate:
https://www.researchgate.net/publication/255630714_Competencies_Skills_and_Assessment
- Grevholm, B. (1999). Teacher students' development of concepts in mathematics and mathematics education. In G. Brekke & T. Breiteg (Eds.), *Proceedings from NORMA98* (pp. 138-145). Kristiansand: Agder College
- Grevholm, B. (2000). Research on student teachers' development of concepts in mathematics and mathematics education. In J. Lithner & H. Wall (Eds.), *Problem driven research in mathematics education (Research reports in mathematics education, No 1, pp. 87-95)*. Umeå University
- Grevholm, B. (2002). Lärarutbildning (NCM–rapport 2002:1). Göteborg: NCM.
- Grevholm, B. (2007) WHY IS THE EDUCATION OF TEACHERS OF MATHEMATICS PROBLEMATIC? TEACHING MATHEMATICS: RETROSPECTIVE AND PERSPECTIVES. PROCEEDINGS May 10-11, 2007, Riga
- Gyllenpalm, J. & Per-Olof Wickman (2011). The Uses of the Term Hypothesis and the Inquiry Emphasis Conflation in Science Teacher Education. *International Journal of Science Education*, Volume 33, 2011 - Issue 14. P. 1993 - 2015

- Gyllenpalm, J., Wickman, P.O. (2011). "Experiments" and the inquiry emphasis conflation in science teacher education. *Science Education*. Volume 95, Issue 5, September 2011, Pages 908–926
- Gyllenpalm, J., Wickman, P.O. (2011). The Uses of the Term Hypothesis and the Inquiry Emphasis Conflation in Science Teacher Education. *International Journal of Science Education* Volume 33, 2011 - Issue 14
- Gyllenpalm, J., Wickman, P.O., & Holmgren, S. (2010). Secondary science teachers' selective traditions and examples of inquiry-oriented approaches. *NorDiNa* 6(1), 44-60
- Gyllenpalm, Jakob (2010). Teachers' Language of Inquiry: The Conflation Between Methods of Teaching and Scientific Inquiry in Science Education. Doctoral Thesis. Stockholm: Department of Mathematics and Science Education, Stockholm University , 2010. , 61 p
- Hägglund, S., Johnsson, L., Wernersson, I. & Öhrn, E. (1997). Utvärdering av lokala jämställdhetsprojekt inom JÄMSAMs nätverk. Stockholm: Skolverket.
- Hähkiöniemi, M. (Årsta) USING QUESTIONING DIAGRAMS TO STUDY TEACHER-STUDENT INTERACTION. Nordic research in mathematics education
- Häll, M. (2006) Allt har förändrats och allt är sig likt En longitudinell studie av argument för grundskolans matematikundervisning. Avhandling. Institutionen för beteendevetenska
- Halldén, O. (1999). Situating the question of conceptual change. In eighth European Conference for Research on Learning and Instruction, Göteborg, Sweden [Abstracts, p. 230].
- Hållsten, Stina (2008). Ingenjörer skriver: Verksamheter och texter i arbete och utbildning, Doctoral THesis. Stockholm: Acta Universitatis Stockholmiensis, 2008. , 241 p.
- Hamza, Karim (2013). Distractions in the School Science Laboratory. *Research in Science Education*, August 2013, Volume 43, Issue 4, pp 1477–1499
- Hannula, M. (2016). Attitudes, Beliefs, Motivation, and Identity in Mathematics Education. ICME-13 Topical Surveys pp 1-35
- Hannula, M. S., Kaasila, R., Laine, A., & Pehkonen, E. (2005). Structure and typical profiles of elementary teacher students' view of mathematics. In H. L. Chick & J. L. Vincent (Eds.), *Proceedings of the 29th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 3, pp. 89-96). Melbourne: University of Melbour
- Hansen, N. S. (1996). Modelkompetencer - udvikling og afprøvning af et begrebsapparat (MFUFA tekst 321) Roskilde MFUFA/RUC
- HANSEN, P.J.K. (2003). The greenhouse effect and the effects of the ozone layer: Norwegian teacher students' development of knowledge and teaching skills. Paper presented at the EWOC 2003: VI International Conference on School and Popular Meteorological and Oceanographic Education, Departamento de Física, Universidad Europea de Madrid, Spain.
- Hansen, V. L. (2008). The dual nature of mathematics. In M. Niss (Ed.), ICME-10 proceedings & regular lectures (pp. 1–11). Copenhagen: ICME-10. Regular Lecture
- Hansson, Ö. & Grevholm, B. (2003). Preservice teachers' conceptions about $y=x+5$: Do they see a function? In N. A. Pateman, B. J. Dougherty & J. Zilliox (Eds.), *Proceedings of 2003 joint meeting of PME and PME-NA*, vol. 3 (pp. 25-39). University of Hawaii.
- Hansson, O. 2006. Studying the views of preservice teachers on the concept of function. Doctoral Thesis. Luleå: Department of Mathematics, Luleå University of Technology
- Hartmann-Petersen (2005). Almen, uorganisk og organisk kemi. Polyteknisk Forlag.
- Helena Rasku-Puttonen, Jouni Viiri, Sami Lehesvuor (2009). Guiding student teachers towards more dialogic science teaching. In: G. ÇAKMAKCI & M. F. TAŞAR (Eds.) *CONTEMPORARY SCIENCE EDUCATION RESEARCH: SCIENTIFIC*

LITERACY AND SOCIAL ASPECTS OF SCIENCE. A collection of papers presented at ESERA 2009 Conference.

- Hirvonen, P. & Viiri, J. (2002). Physics student teachers' ideas about the objectives of practical work. *Science & Education*, 11, 305 – 316
- Högström, P. (2009). Laborativt arbete i grundskolans senare år -Lärares mål och hur de implementeras. Doctorial dissertation at Umeå University, Umeå: Print & Media.
- Högström, P., Ottander, C., & Benckert, S. (2005). Lärares mål med laborativt arbete: Utveckla förståelse och intresse. *Nordina* (5), 54-66.
- Högström, P., Ottander, C., & Benckert, S. (2005). Lärares mål med laborativt arbete: Utveckla förståelse och intresse. *Nordina* (5), 54-66
- Højgaard, T. (2009). Kompetencebeskrivelser og pensumtitis i økonomi som undervisningsfag. *Fagdidaktik i økonomifagene* 2009 -3
- Højgaard, T., Jan Sølberg, Jeppe Bundsgaard, Steffen Elmose (2010). kompetencemål i praksis – foranalysen bag projektet KOMPIS. *MONA* 2010 -3
- Holmquist, M. (2004, January). Prospective mathematics teachers' learning in geometry – The beginning of a longitudinal study on teacher education. Paper presented at MADIF4 conference, Malmö
- Horst, S. (2006). Naturfagene i bevægelse. Undervisningsministeriets temahæfteserie nr. 4 – 2006.
- Ideland, M. (2002). Dagens gennyheter. Hur massmedier berättar om genetik och genteknik. Lund: Nordic Academic Press.
- Ideland, Malin, Claes Malmberg, and Mikael Winberg. "Culturally equipped for socio-scientific issues? A comparative study on how teachers and students in mono-and multiethnic schools handle work with complex issues." *International Journal of Science Education* 33.13 (2011): 1835-1859.
- Jacobsen, J. C., Elmgaard, D. C. (2014). 'Det ene projekt afløser det andet..' Hvordan sikres kvalitet i naturfaglige projekter? En virkningsevaluering. Danmark: Institut for Naturfagernes Didaktik, KU
- Jakku-Sihvonen R. & Niemi H. (Eds.). (2006). Research-based Teacher Education in Finland– Reflections by Finnish Teacher Educators. *Research in Educational Sciences* 25. Turku: Finnish Educational Research Association
- Jankvist, U.T. & Niss, M. (2015). A framework for designing a research-based “maths counsellor” teacher programme. *Educational Studies in Mathematics*. Volume 90, Issue 3, pp 259–284
- Jauhainen, Johanna (2013) Effects of an in-service training program on physics teachers' pedagogical content knowledge : The role of experiments and interacting bodies in teaching Newtonian mechanics. Doctoral Dissertation. University of Helsinki, Faculty of Behavioural Sciences, Department of Teacher Education. University of Helsinki, Faculty of Science, Department of Physics
- Jensen, F. (2014) The Impact of Outreach and Out-of-School Activities on Norwegian Upper Secondary Students' STEM Motivations. in E. K. Henriksen, J. Dillon, J. Ryder (Eds). *Science and Technology Education. Understanding Student Participation and Choice*. Springer: pp 185 - 199
- Jensen, Jens Højgaard (2001): "Naturvidenskabens syndefald?" i Mere spredt fægtning. IMFUFA tekst nr. 404. Roskilde: IMFUFA, Roskilde Universitetscenter.
- Jerneck, A., Olsson, L., Ness, B., Anderberg, S., Baier, M., Clark, E., ... Persson, J. (2011). Structuring sustainability science. *Sustainability Science*, 6(1), 69–82.
- Jess, K. (2004). Formativ Evaluering i Matematikundervisningen – Ændringer i praksis. *Nordisk Matematikdidaktik (NOMAD)*, 9(4)

- Johan_Öhman, Marie_Öhman (2013). Participatory approach in practice: an analysis of student discussions about climate change. *Environmental Education Research*, Volume 19, 2013 - Issue 3. P. 324 - 341
- Johansson, A.M., Wickman, P.O.(2013). Selektiva traditioner i grundskolans tidigare år: Lärares olika betoningar av kvalitéer i NO-undervisningen. *NorDiNa: Nordic Studies in Science Education*, Vol. 9, no 1, 50-65 p.50-65
- Johansson, M. (2009). Lyfta matematiken Hållbar skolutveckling för skolledare, lärare och elever. *BUF: Forskningsrapportserien* 2009:1
- Johnsen, M., Alrø, H. (2010). Trenger en å spørre for å være spørrende? *Tidsskriftet FoU i praksis* 4 (3)
- Jokiranta, K., Lehesvuori, S., & Viiri, J. (2015). The nature of teacher discourse during practical work in lower secondary physics education. In P. Hästö, & H. Silfverberg (Eds.), *Matematiikan ja luonnontieteiden opetuksen tutkimusseuran tutkimuspäivät 2014*(pp. 23-33). Matematiikan ja luonnontieteiden opetuksen tutkimusseura. Retrieved from http://www.protsv.fi/mlseura/julkaisut/malu_2014FINAL.pdf
- Jorde, D., Strømme, A., Sorborg, Ø., Erlien, W., & Mork, S.M. (2003). Virtual environments in science: Viten.no. *Forsknings- og kompetensnettverk for IT i utdanning* (ITU). Oslo, Unipub AS.
- Jørgensen, B.C. (1998): Mathematics and Physics Education in Society – The Justification and Enrolment Problems from a General Perspective. In Jensen (1998): Justification and Enrolment Problems in Education Involving Mathematics and Physics. Roskilde University Press.
- Juuti, K. (2005). Towards primary school physics teaching and learning: design research approach. *RESEARCH REPORT 256*. Helsinki: UNIVERSITY OF HELSINKI, FACULTY OF BEHAVIOURAL SCIENCES, DEPARTMENT OF APPLIED SCIENCES OF EDUCATION
- Juuti, K., & Lavonen, J. (2012). Design-based research in science education: One step towards methodology. *Nordic Studies in Science Education*, 2(2), 54-68
- Juuti, K., Lavonen, J. & Meisalo, V. (2003). Phenomenographical approach to design for a hypertext teacher's guide to MBL. In D. Psillos, P. Kariotoglou, V. Tsifles, E. Hatzikraniotis, G. Fassoulopoulos & M. Kallery (Eds.), *Science Education in the Knowledge-Based Society* (pp. 333 – 341). Dordrecht: Kluwer.
- Juuti, K., Lavonen, J., Kallunki, V. & Meisalo, V. (2004). Designing web-based learning environments for primary science and teacher education: a design research approach. In E.K. Henriksen and M. Ødegaard (Eds.), *Naturfagenes didaktikk - en disiplin i forandring?* (pp. 579 – 593). Kristiansand, Norway: Høyskoleforlaget.
- Kaasila, R. (2007) Mathematical biography and key rhetoric. *Educational Studies in Math*
- Kaasila, R. (2007). Using narrative inquiry for investigating the becoming of a mathematics teacher. *ZDM - InternationalJournal of Mathematics Education*, 39(3), 20
- Kaasila, R. & Lauriala, A. (2008) INTERACTIONISTIC PERSPECTIVE ON STUDENT TEACHER DEVELOPMENT DURING PROBLEM-BASED TEACHING PRACTICE. In G. F. Ollington (Ed.). *Teachers and Teaching Strategies*. Nova Science Publishers
- Kaasila, R., Hannula, M. S., Laine, A., & Pehkonen, E. (2006). Autobiographical narratives, identity and view of mathematics. In M. Bosch (Ed.), *Proceedings of the fourth congress of the European Society for Research in Mathematics Education*. Sant Feliu de Guixols, Spain - 17-21 February 2005 (pp. 215-
- Kaasila, R., Lauriala, A. (2010). Towards a collaborative, interactionist model of teacher change. *Teaching and Teacher Education* (26)

- Kaasila, R., Lauriala, A. (2012) How do pre-service teachers' reflective processes differ in relation to different contexts?, European Journal of Teacher Education, 35:1, 77-89
- Kaasila, R., Markku S. Hannula, Anu Laine and Erkki Pehkonen (2008) Socio-Emotional Orientations and Teacher Change. Educational Studies in Mathematics, Vol. 67, No. 2 (Feb., 2008), pp. 111-123
- Kaiserfeld, T. (1999). Laboratoriets didaktik: Fysiken på läroverken i början av 1900-talet. In S. Widmalm (Ed.), Vetenskapsbärarna: naturvetenskapen i det svenska samhället 1880-1950 (pp. 138-231). Hedemora: Gidlund
- Kallunki, V., Seija Karppinen & Kauko Komulainen (2016): Becoming animated when teaching physics, crafts and drama together: a multidisciplinary course for student-teachers, Journal of Education for Teaching, DOI: 0.1080/02607476.2016.1182373
- Käpylä, M., Heikkilä, J-P., & Asunta, T. (2009). Influence of content knowledge on pedagogical content knowledge: The case of teaching photosynthesis and plant growth. International Journal of Science Education, 31(10), 1395-1415
- Klaar, Susanne (2013). Naturorienterad utbildning i förskolan: Pragmatiska undersökningar av meningsskapandets individuella, sociala och kulturella dimensioner. Doctoral Thesis, Örebro: Örebro Universitet
- Kleve, B. (2007). Mathematics Teachers' Interpretation of the Curriculum Reform, L97, in Norway. Faculty of Mathematics and Sciences Agder University College Norway
- Kontkanen, S., Dillon, P., Valtonen, T., Renkola, S., Vesisenaho, M., Väisänen, P. (2016). Pre-service teachers' experiences of ICT in daily life and in educational contexts and their proto-technological pedagogical knowledge. Education and Information Technologies July 2016, Volume 21, Issue 4, pp 919–943
- Kontkanen, S., Dillon, P., Valtonen, T., Renkola, S., Vesisenaho, M., & Väisänen, P. (2014). Preservice teachers' experiences of ICT in daily life and in educational contexts and their proto-technological pedagogical knowledge. Education and Information Technologies. Advance online publication retrieved from <http://link.springer.com/article/10.1007%2Fs10639-014-9361-5>
- Koponen, I. T., Mäntylä, T. & Lavonen, J. (2004). The role of physics departments in developing student teachers' expertise in teaching physics. European Journal of Physics, 25, 645 – 653.
- Krabbe Sillasen, M., Kronvald, O. & Andersen, E.R. (2007). Det gik så galt som fryget! MONA, 2007(4), s. 69-72.
- Kristina Andersson (2012). "It's Funny that We Don't See the Similarities when that's what We're Aiming for"—Visualizing and Challenging Teachers' Stereotypes of Gender and Science. Research in Science Education, April 2012, Volume 42, Issue 2, pp 281–302
- Krogh, L. B. & Thomsen, P. V. (2000). GFII-rapport nr. 1: Undervisningsstil og læringsudbytte - en undersøgelse af fysikundervisningen i 1. g. (CNDs Skrifterserie no. 1) Aarhus: Center for Naturfagernes Didaktik, Aarhus Universitet.
- Krogh, Lars, and Hanne Møller Andersen. "Naturfagslæreres vidensgrundlag." Mona: Matematik Og Naturfagsdidaktik (2008).
- Lambert, J. L., Lindgren, J., & Bleicher, R. (2012). Assessing elementary science methods students' understanding about global climate change. International Journal of Science Education, 34(8), 1167–1187.
- Lars-Erik Björklund (2008). Från Novis till Expert: Förtrogenhetskunskap i kognitiv och didaktisk belysning. Studies in Science and Technology Education No 17. Linköpings universitet, Institutionen för samhälls- och välfärdsstudier

- Lattu, M. (2003). The School from the teacher's perspective: The teaching space of eleven change-oriented teachers (Research report (246). Helsinki, Finland: University of Helsinki, Department of Teacher Education.
- Lavonen, J. (2013). How Finnish Teachers are Encouraged to Adopt Information and Communication Technology.
- Lavonen, J. & Meisalo, V. (2002). Research-based design of learning materials for technology-oriented science education. *Themes in Education*, 3, 107 – 131.
- Lavonen, J., Heidi Krzywacki, Eric Sanchez, Valérie Fontanieu, Roger Erb, Bernd Bühler, Thomas Jurke, Manuela Welzel-Breuer, Sönke Graf, Clemens Nagel, Zhelyazka Raykova, George Ioannidis (2010). PROMOTING SCIENCE TEACHERS' ABILITY TO ADOPT USABLE ICT TOOLS IN PRACTICE: DESIGN OF A EUROPEAN TEACHER EDUCATION COURSE, In S. Dolinšek, T. Lyons XIV (Eds.) Socio-cultural and Human Values in Science and Technology Education. IOSTE Symposium, Bled, Slovenia, June 13. - 18. 2010
- Lavonen, J., Krzywacki-Vainio, H., Aksela, M., Krokfors, L., Oikkonen, J., & Saarikko, H. (2007). Preservice teacher education in chemistry, mathematics and physics. In E. Pehkonen, M. Ahtee, & J. Lavonen (Eds.), How Finns learn mathematics and science. Rotterdam: Sense Publisher.
- Lavonen, J., Meisalo, V. (2000). Science teachers and technology teachers developing electronics and electricity courses together. *International Journal of Science Education*, 22, 435-446.
- Lavonen, Jari; Krzywacki, Heidi (2012). Teacher Education in Finland : Knowledge Building in the Chemistry and Physics Teacher Education Programme at Helsinki University. Hokkaido University
- Lavonen, Krzwacki, Koistinen, Welzel-Breuer, Erb (2012). In-service teacher education course module design focusing on usability of ICT applications in science education. NorDina Vol 8, No 2 (2012)
- Leden, L., Hansson, L., Redfors, A., Ideland, M. (2015). Teachers' Ways of Talking About Nature of Science and Its Teaching. *Science & Education*, November 2015, Volume 24, Issue 9, pp 1141–1172
- Lehesvuori, S. (2013). Towards Dialogic Teaching in Science: Challenging Classroom Realities through Teacher Education. NorDina, Vol 9, No 2 (2013)
- Lehesvuori, S., Ilkka Ratinen, Otto Kulhomäki, Jousia Lappi, Jouni Viiri (2011). Enriching primary student teachers' conceptions about science teaching: Towards dialogic inquirybased teaching. NorDina, Vol 7, No 2 (2011).
- Lehesvuori, S., Ratinen, I., Kulhomäki, O., Lappi, J., & Viiri, J. (2011). Enriching primary student teachers' conceptions about science teaching: towards dialogic inquiry-based teaching. Nordina, 7(2), 140–159.
- Lehesvuori, S., Viiri, J. & Rasku-Puttonen, H. (2011). Introducing dialogic teaching to science student teachers. *Journal of Science Teacher Education*, 22(8), 705-727
- Lehesvuori, S., Viiri, J., & Scott, P. (2009). A Programme on Teachers' Talk in Subject Teacher Training: An Approach to Develop and to Reform Student Teachers' Classroom Talk. In A. Selkirk, & M. Tichenor (Eds.), Teacher Education - Policy, Practice and Research (pp. 367-387). New York: Nova Science Publishers, Inc.
- Lehtinen, A., Nieminen, P., & Viiri, J. (2016). Pre-Service Primary Teachers' Beliefs of Teaching Science With Simulations. In J. Lavonen, K. Juuti, J. Lampiselkä, A. Uitto, & K. Hahl (Eds.), Electronic Proceedings of the ESERA 2015 Conference. Science Education Research: Engaging Learners for a Sustainable Future (pp. 1949-1959). ESERA Conference Proceedings, 4. Helsinki, Finland: University of Helsinki.

- Lehtinen, A., Nieminen, P., & Viiri, J. (2016). Preservice teachers' TPACK beliefs and attitudes toward simulations. *Contemporary Issues in Technology and Teacher Education*, 16(2), 151-171.
- Liberg, C., Geijerstam, Å., Folkeryd, J. (2011). Scientific Literacy and Students' Movability in Science Texts. In C. Linder, L. Östmna, D.A. Robertd, P.O. Wickman, G. Erickson, A: MacKinnon (Eds.): Exploring the Landscape of Scientific Literacy. New York: Routledge
- Liljekvist, Y., Bommel, J.V.(2013)Kunskaper för matematikundervisning – ett lärarutbildarperspektiv. KAPET Karlstads universitets Pedagogiska Tidskrift, årgång 9, nr 1, 2013
- Lindhart, L., Ejdrup, F., Skipper-Jørgensen, A. (2010). Ræsonnementer i folkeskolens matematikundervisning – karakterisering, initiering, identificering og vurdering af ræsonnementskompetencen. MONA 2010-4
- Loukomies, A., Lavonen, J., Juuti, K. (2015). Fostering pre-service teachers' motivation-related practical wisdom through a mentoring procedure. SAJCE - South African Journal of Childhood Education, vol.5 n.1 Cape Town 2015
- Lundin, M. (2010) INTRODUCING THE NATURE OF SCHOOL SCIENCE (NOSS)- Using Wittgenstein's language game concept to analyse meaning making in school science.In G. ÇAKMAKCI & M. F. TAŞAR (Eds.): CONTEMPORARY SCIENCE EDUCATION RESEARCH: SCIENTIFIC LITERACY AND SOCIAL ASPECTS OF SCIENCE. A collection of papers presented at ESERA 2009 Conference
- Lundqvist, E.(2009). Undervisningssätt, lärande och socialisation: Analyser av lärares riktningsgivare och elevers meningsskapande i NO-undervisning. Doctoral thesis. Uppsala: Acta Universitatis Upsaliensis
- Lutovac, S. & Raimo Kaasila (2011) Beginning a pre-service teacher's mathematical identity work through narrative rehabilitation and bibliotherapy, *Teaching in Higher Education*, 16:2, 225-236, DOI: 10.1080/13562517.2010.515025
- Lutovac, S. Kaasila, r. (2014) Pre-service teachers' future-oriented mathematical identity work (2014).*Educational Studies in Mathematics* (85). 129 - 142 Pp
- Magnus Hultén, Eva Björkholm (2016). Epistemic habits: primary school teachers' development of pedagogical content knowledge (PCK) in a design-based research project. *International Journal of Technology and Design Education*, August 2016, Volume 26, Issue 3, pp 335–351
- Magnussen, R. & Jessen, C. (2004). Research Report, Homicide. Copenhagen: Learning Lab Denmark.
- Meisalo, V., Jari Lavonen, Kalle Juuti. Web-based interaction of unqualified primary teachers as off-campus students. *International Journal of Web Based Communities*, Volume 2, Issue 1 pp
- Meisalo, V., Lavonen, J., Sormunen, K., Vesisenaho, M. (2010) ICT in Finnish Initial Teacher Education - Country report for the OECD/CERI New Millennium Learners Project. *ICT in Initial Teacher Training. Reports of the Ministry of Education and Culture*, Finland 2010:25
- Meisalo, V., Lavonen., J., Juuti, K. & Aksela, M. (2001). Chemistry Education in a Finnish Virtual School. In A . F. Aveiro, Portugal: University of Aveiro. Cachapuz (Ed.), *Proceedings of the 6th European Conference on Research in Chemical Education* 4. – 8. September 2001 (Paper S29, pp. 1 – 10).
- Michelsen, C., Nielsen, J. A. (2008) Science and mathematics teachers of the future. I *Interracoës* Vol. 4 No. 9

- Mikael_Thelin (2012). Länkningen mellan kursmål och kunskapskrav i geografiämnet i Gy 2011. Geografiska Notiser • Årgång 70 (2012) • Nummer 3
- Mikkelsen, L.B., Tunebjerg, T. & Andresen, B.B. (2008). Blended e-learning som fundament for efteruddannelseskoncept i naturfag. Synopsis, indsendt til symposium 9, Naturfagsdidaktik 2008
- Mikkelsen; L.B. & Tunebjerg,T. (2008). Efteruddannelse af naturfagslærere med inddragelse af uformelle læringsmiljøer. MONA 2008-2, 49-68
- Minkee Kim, Jari LavonenKalle JuutiJack HolbrookMia Rannikmäe (2013).TEACHER'S REFLECTION OF INQUIRY TEACHING IN FINLAND BEFORE AND DURING AN IN-SERVICE PROGRAM: EXAMINATION BY A PROGRESS MODEL OF COLLABORATIVE REFLECTION. International Journal of Science and Mathematics Education, April 2013, Volume 11, Issue 2, pp 359–383
- Misfeldt, M. (2011). Læreres vurdering af et læremiddels potentiale til at støtte matematisk kompetenceudvikling - Eksemplet Matematikkens Univers. MONA 2011 -1
- Misfeldt, M. (2016). Supporting primary-level mathematics teachers' collaboration in designing and using technology-based scenarios. Journal of Mathematics Teacher Education. Volume 19, Issue 2, pp 227–241
- Misfeldt, M., Jankvist, U. T. & Aguilar, M.S. (2016). Teachers' Beliefs about the Discipline of Mathematics and the Use of Technology in the Classroom. Mathematics Education, 11(2), 395-419
- Miyakawa, T., Winsløw, C. (2013).Developing mathematics teacher knowledge: the paradigmatic infrastructure of "open lesson" in Japan. Journal of Mathematics Teacher Education, Volume 16, Issue 3, pp 185–209
- Monica H. Sträng, Lisbeth Åberg-Bengtsson (2010). "Where do you Think the Water Comes From?" Teacher–Pupil Dialogues about Water as an Environmental Phenomenon.Scandinavian Journal of Educational Research. Volume 54, 2010 - Issue 4
- Mork, S. (2005). Argumentation in science lessons: Focusing on the teacher's role. NorDina, Vol 1, No 1
- Mosvold, R., Fauskanger, J. (2013). Teachers' Beliefs about Mathematical Knowledge for Teaching Definitions. International Electronic Journal of Mathematics Education, Vol.8, No.2-3
- Neuvonen, L. Korkeamäki, R.L. (2015). Teacher as an orchestrator of collaborative planning in learner-generated video production. Learning, Culture and Social Interaction, Volume 7, December 2015, Pages 1–11
- Nielsen, B. L. (2009).Praksis i spil i læreruddannelsens naturfaglige linjefag. MONA
- Nielsen, B. L. (2012) Naturfagslæreres konstruktion af forståelse og fortolkning af erfaring i den første praksis. MONA 2012 -2
- Nielsen, B. L. (2012).Naturfagslæreres konstruktion. MONA 2012 -2
- Nielsen, B. L., Pontoppidan, B., Sillasen, M., Morgensen, A., Nielsen, K. (2013) QUEST – et storskalaprojekt til udvikling af naturfagsundervisning i MONA 2013 -2
- Nielsen, J. A., & Dolin, J. (2016). Evaluering mellem mestring og præstation. MONA, 2016(1), 51-62.
- Nielsen, K., Horst, S. (2012). Ny Nordisk Skole - hvad med naturfagene? I MONA 2012 -2
- Nielsen, L., Patronis, T. and Skovsmose, O. (1999):Connecting Corners of Europe: A Greek Danish Project in Mathematics Education, Systeme Arhus.
- Nielsen, T. L. B., & Holmegaard, H. T. (2014). Fysikkandidaters overgang til arbejdsmarkedet. Institut for Naturfagernes Didaktik, Københavns Universitet. (IND's Skriftserie; Nr. 33)
- Nikander, P. (2008). Working with transcripts and translated data. Qualitative Research in Psychology, 5(3), 225–231.

- Nilsson, G. (2005). Att äga pi : praxisnära studier av lärarstudenters arbete med geometrilaborationer. Doctoral Thesis. University of Gothenburg Faculty of Education
- Nilsson, P. (2008), Teaching for Understanding: The complex nature of pedagogical content knowledge in pre-service education. International Journal of Science Education 30: 1281-1299. doi: 10.1080/09500690802186993
- Nilsson, P. (2010). Capturing the Complexity of Practice: A self-study in the context of engineering education. Studying Teacher Education: A journal of self-study of teacher education practices, Volume 6, 2010 - Issue 2
- Nilsson, P. (2013). Developing a scholarship of teaching in engineering: supporting reflective practice through the use of a critical friend. Reflective Practice, International and Multidisciplinary Perspectives, Volume 14, 2013 - Issue 2. P. 196 - 208
- Nilsson, P. (2013)What do we know and where do we go? Formative assessment in developing student teachers' professional learning of teaching science. Teachers and Teaching - theory and practice, Volume 19, 2013 - Issue 2: Formative assessments and Teacher Professional Learning. P. 188 - 201
- Nilsson, P. (2014), When Teaching Makes a Difference: Developing science teachers' pedagogical content knowledge through learning study. International Journal of Science Education, Volume 36, Number 11, 24 July 2014, pp. 1794-1814(21)
- Nilsson, P. (2014). From Theoretical Explanation to Practical Application: Coteaching in a Pre-service Primary Physics Course. Coteaching in International Contexts, Volume 1 of the series Cultural Studies of Science Education pp 223-243
- Nilsson, P., Anna_Vikström (2015). Making PCK Explicit—Capturing Science Teachers' Pedagogical Content Knowledge (PCK) in the Science Classroom. International Journal of Science Education, Volume 37, 2015 - Issue 17. P. 2836 -2857
- Nilsson, P., Jan_Van_Driel (2010). Teaching together and learning together – Primary science student teachers' and their mentors' joint teaching and learning in the primary classroom. Teaching and Teacher Education, Volume 26, Issue 6, August 2010, Pages 1309–1318
- Nilsson, P., Jan_Van_Driel (2011). How Will We Understand What We Teach? - Primary Student Teachers' Perceptions of their Development of Knowledge and Attitudes Towards Physics. Research in Science Education, August 2011, Volume 41, Issue 4, pp 541–560
- Nilsson, P., John Loughran (2012). Exploring the Development of Pre-Service Science Elementary Teachers' Pedagogical Content Knowledge. Journal of Science Teacher Education. November 2012, Volume 23, Issue 7, pp 699–721
- Nilsson, Pernilla (2008). Learning to Teach and Teaching to Learn: Primary science student teachers' complex journey from learners to teachers. Doctoral Thesis. Studies in Science and Technology Education, ISSN 1652-5051 ; 19. Linköping: Linköping University Electronic Press , 2008.
- Nilsson, Pernilla. "Recognizing the needs-Student teachers learning to teach from teaching." Nordina: Nordic Studies in Science Education 4.1 (2008): 92-107.
- Nordenbo, S.E. et al. (2008). Lærerkompetencer og elevers læring i førskole og skole. København: Dansk Clearinghouse for Uddannelsesforskning
- Öhman, Johan (2006). Den etiska tendensen i utbildning för hållbar utveckling: meningsskapande i ett genomlevandeperspektiv. Doctoral thesis. Örebro: Örebro universitetsbibliotek
- Öhman, Johan (2014). Om didaktikens möjligheter: ett pragmatiskt perspektiv. Utbildning och Demokrati, ISSN 1102-6472, Vol. 23, no 3, 33-52 p.
- Ongstad, S. (2006). Fag i endring. Om didaktisering af kunnskap. I: S. Ongstad (red.), Fag og didaktikk i lærerutdanning – kunnskap i grenseland (s. 19-57). Oslo: Universitetsforlaget

- Ørngreen, R. (2015). Reflections on Design-Based Research. Conference paper: 4th IFIP 13.6 Working Conference, HWID 2015, London, UK, June 25-26. In Nocera, Baricelli, Lopes, Campos, Clemmensen (Eds.) Human Work Interaction Design. Work Analysis and Interaction Design Methods for Pervasive and Smart Workplaces. From the series: IFIP Advances in Information and Communication Technology, Volume 468.
- Østergaard, K. (2013). Theory and practice in mathematics teacher education. IV IVE congrès international sur la TAD (Toulouse, 21-26 avril 2013)
- Östman, L. (1998). How companion meanings are expressed by science education discourse. In D. A. Roberts & L. Ostman (Eds.), Problems of meaning in science curriculum (pp. 54–70). New York: Teachers College Press.
- Östman, Leif, Almqvist, Jonas (2010). What do values and norms have to do with scientific literacy? In C. Linder, L. Östman, D. A. Roberts, P.O. Wickman, G. Erickson, .A. MacKinnon (Eds.): Exploring the landscape of scientific literacy, London: Routledge , 2010, 160-175 p.
- Pansell, A., Lisa Björklund Boistrup. Justifications for mathematics teaching: A case study of a mathematics teacher in collegial collaboration. Konrad Krainer; Nada Vondrov'a. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. pp.1637-1643, Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education
- Pehkonen, E. & Törner, G. (1996). Mathematical beliefs and different aspects of their meanings. Zentralblatt für Didaktik der Mathematik, 96(4), 101–108.
- Pehkonen, E., & Pietilä, A. (2004). On relationships between beliefs and knowledge in mathematics education. In M. Mariotti (Ed.), Proceedings of the Third Congress of European Society for Research in Mathematics Education (CD/ROM). Italy: University
- Peng, A., Håkan Sollervall, Erika Stadler, Yueqiang Shang, Li Ma. Swedish and Chinese teachers' views on what constitutes a good mathematical test task: A pilot study. Konrad Krainer; Nada Vondrov'a. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. pp.1738-1744, Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education.
- Persson, E. (2009) Det kommer med tiden. Från lärarstudent till matematiklärare. Stockholm: Stockholms Universitet
- Petersen, J. H. (2011). Hvordan bliver fagdidaktiske værktøjer fra læreruddannelsen til en del af læreres undervisningsfaglighed? MONA nr. 2 (2011)
- Petersen, J.K. (1999): Kan naturen begrænse næringstilførslen i danske fjorde? Ny Viden Fra Miljøstyrelsen, 1999, Vol 1, Issue 4. Miljøstyrelsen.
- Pontoppidan B. (2007). Hvem har lyst til at være naturfagslærer? MONA 2007(3), s. 92-95
- Pontoppidan, B. () AN ALTERNATIVE APPROACH FOR COURSES IN TEACHER EDUCATION FRAMED BY A COLLABORATE PARTNERSHIP SETTING
- Raimo Kaasila, Markku Hannula & Anu Laine (2012). "MY PERSONAL RELATIONSHIP TOWARDS MATHEMATICS HAS NECESSARILY NOT CHANGED BUT..." ANALYZING PRE-SERVICE TEACHERS' MATHEMATICAL IDENTITY TALK. International Journal of Science and Mathematics Education, 2012 (10) 4, Pp. 975-995
- Ramussen, J., Bayer, M., Brodersen, M. (2010) Komparativt studie om indholdet i læreruddannelser i Canada, Danmark, Finland og Singapore. Rapport til regeringens rejsehold. Danmarks Pædagogiske Universitet
- Rasku-Puttonen, H., Eteläpelto, A., Arvaja, M. & Häkkinen, P. (2003). Teacher's role in supporting project-based learning in technology-supported environments. In J. Bopry & A. Eteläpelto

- (Eds.), *Collaboration and learning in virtual environments* (pp. 123 – 130). Jyväskylä: University of Jyväskylä.
- Rasmussen, K. (2016). Lesson study in prospective mathematics teacher education: didactic and paradigmatic technology in the post-lesson reflection. *Journal of Mathematics Teacher Education*, Volume 19, Issue 4, pp 301–324
- Ratinen, I. (2011). Primary student-teachers' conceptual understanding of the greenhouse effect: a mixed method study. *International Journal of Science Education*, 34, 651–676. doi:10.1080/09500693.2011.587845
- Ratinen, I., Viiri, J., & Lehesvuori, S. (2013). Primary School Student Teachers' Understandeng of Climate Change: Comparing the Results Given by Concept Maps and Communication Analysis. *Research in Science Education*, 43 (5), 1801-1823. doi:10.1007/s11165-012-9329-7
- Ratinen, I., Viiri, J., Lehesvuori, S., & Kokkonen, T. (2015). Primary Student-Teachers' Practical Knowledge of Inquiry-Based Science Teaching and Classroom Communication of Climate Change. *International Journal of Environmental and Science Education*, 10 (5), 649-670
- Røkenes, F.M., Krumsvik, R.J. (2016). Prepared to teach ESL with ICT? A study of digital competence in Norwegian teacher education. *Computers & Education*, Volume 97, June 2016, Pages 1–20
- Rolka, K., Rösken, B., Liljedahl, P. (2006). Challenging the MAThematical Beliefs of Preservice Elementary School Teachers. In Novotná, J., Moraová, H., Krátká, M. & Stehlíková, N. (Eds.). *Proceedings 30th Conference of the International Group for the Psychology of Mathematics Education*, Vol. 4, pp. 441-448. Prague: PME. 4 - 441
- Rønning, F. (2013). Group theory – A relevant topic for prospective teachers? In Z. Davis & S. Jaffer (Eds.), *Proceedings of the 19th Annual Congress of the Association for Mathematics Education of South Africa*, Vol. 1. (pp. 159 – 169). Cape Town: AMESA.
- Ryve, A. (2007). What is actually discussed in problem-solving courses for prospective teachers?. *Journal of Mathematics Teacher Education*, Volume 10, Issue 1, pp 43–61
- Sageidet, B. M. (2016). Norwegian early childhood teachers' stated use of subject-related activities with children, and their focus on science, technology, environmental issues and sustainability. *Nordina* Vol. 12 nr. 2
- Sahlberg, P. (2004). Teaching and globalization. *Managing Global Transitions*, 2(1), 65–83
- Säljö, R., & Bergqvist, K. (1997). Seeing the light: Discourse and practice in the optics lab. In L. B. Resnick, R. Säljö, C. Pontecorvo, & B. Burge (Eds.), *Discourse, tools, and reasoning: Essays on situated cognition* (pp. 385–405). Berlin: Springer
- Savinainen, A. and J. Viiri (2004), *Proceedings of the Physics Education Research Conference*, Madison, 2003, AIP Conference Proceedings No. 720, edited by J. Marx, S. Franklin, and K. Cummings (AIP, New York, 2004), p. 77
- Savinainen, A., P. Nieminen, J. Viiri, J. Korkea-aho, and A. Talikka (2007), *Proceedings of the Physics Education Research Conference*, Greensboro, 2007, AIP Conference Proceedings No. 951, edited by L. Hsu, C. Henderson, and L. McCullough (AIP, New York, 2007), p. 176.
- Scmidt, J., Daugbjerg, P. Sillasen, M., Valero, P. (2015) From the Literate Citizen to the Qualified Science Worker. neoliberal Rationality in Danish Science Education Reforms. Routledge
- Seija Karppinen, Veera Kallunki, Seija Kairavuori, Kauko Komulainen, Sara Sintonen (2013). Interdisciplinary Integration in Teacher Education. In K. Tirri, E. Kuusisto (Eds.) *Interaction in Educational Domains*. Sense Publishers. pp 149-158
- Sikke, S.A., Lyngved, R., Pepin, B. (2011). Working with Mathematics and Science Teachers on IBL Approaches: Teacher Concerns. *Acta Didactica Norge*, Vol. 6 Nr. 1 Art. 17

- Sillasen, M., Daugbjerg, P., Schmidt, J. Valero, P. (2011). Kvaliteter ved reformer af naturfagsundervisning i Danmark - læreres ressourcer og roller i reformprocesser. I MONA 2011 -1
- Sillasen, M., Daugbjerg, P., Schmidt, J. Valero, P. (2011). Kvaliteter ved reformer af naturfagsundervisning i Danmark - læreres ressourcer og roller i reformprocesser. I MONA 2011 -1
- Sillasen, M.K. (2014). Forandringsprocesser i netværk af sociale naturfaglige praksisser. En socio-kulturel-politisk analyse af natur/teknik-læreres professionelle udvikling i uddannelsesreformer. Ph.D. Aalborg: Institut for Læring og Filosofi, Aalborg Universitet
- Simola, H. (2005). The Finnish miracle of PISA: Historical and sociological remarks on teaching and teacher education. Comparative Education, 41(4), 455–470.
- Sjøberg, S. (2002). Science for the Children? Report from the SAS-project (Science And Society), a cross-cultural study of factors of relevance for the teaching and learning of science and technology
- Sjøberg, S. (2006). Naturfag i skole og samfunn: en tverrfaglig historie. I: S. Ongstad (red.), Fag og didaktik i lærerutdanning (s. 61-84). Oslo: Universitetsforlaget.
- Sjöström, J. (2013). Towards Bildung-Oriented Chemistry Education. In Science and Education Vol. 22, Issue 7 Pp 1873 - 1890
- Skog, K. (2014) .Power, positionings and mathematics – discursive practices in mathematics teacher education: Climbing Lion’s Head .Stockholm: Department of Mathematics and Science Education, Stockholm University , 2014. , 239 p.
- Skott, J. (2001). The Emerging Practices of a Novice Teacher: The Roles of His School Mathematics Images. In Journal of Mathematics Teacher Education 4: 3 - 28
- Skott, J. (2004). The Forced Autonomy of Mathematics Teachers. Educational Studies in Mathematics. Volume 55, Issue 1, pp 227–257
- Skott, J. (2009). Contextualising the notion of ‘belief enactment’. Journal of Mathematics Teacher Education, Journal of Mathematics Teacher Educationol. 12, Issue 1: 27 - 46
- Skott, J. (2011) “Beliefs vs. Patterns of participation – towards coherence in understanding the role the teacher” Proceedings from the MAVI 17 conference, Bochum, German, 17-20 september 2011
- Skott, J. (2013). Understanding the role of the teacher in emerging classroom practices: searching for patterns of participation. ZDM Mathematics Education (2013) 45:547–559
- Skovsmose, O. (2011). An Invitation to Critical Mathematics Education. Sense Publishers
- Skovsmose, O. (1999): ‘Mathematical Agency, and Social Theorising’, Centre for Research in Learning Mathematics, Royal Danish School of Educational Studies, Roskilde University Centre, Aalborg University.
- Søgaard, M. (ukendt). Naturfagsnetværket i Faaborg-Midtfyn Kommune. I C. Michelsen (Ed.) Fremtidens naturfaglige lærere II - Fem refleksioner over praksis. Syddansk Universitet
- Sølberg, J. (2004, 25.-30. juli 2004). Exploring the effect of development projects on school science culture. Paper præsenteret ved XI IOSTE Symposium, Lublin, Poland.
- Sølberg, J. (2006), Den lokale naturfaglige kultur - et fokus for udvikling, MONA, 2006(1), 7-22
- Sølberg, J. (2007). Udvikling af lokale naturfaglige kulturer - Barrierer og muligheder for skoleudvikling i forbindelse. Danmarks Pædagogiske Universitet med Science Team K projektet
- Sølberg, J., Jensen, A. (2012). Hvad kan vi lære ad sciencekommuneprojektet? I Mona 2012 -1
- Sollervall, H. (2014) Learning subtraction strategies from principle-based teaching activities. Proceedings of MADIF 9, Svensk förening för MatematikDidaktisk Forskning - SMDF, 2014

- Sollervall, H. & Stadler, E. (2015). Validating Affordances as an Instrument for Design and a Priori Analysis of Didactical Situations in Mathematics. International Journal for Mathematics Teaching and Learning
- Sonja Lutovac & Raimo Kaasila () Using Narratives as Innovative Tools in Mathematics Education Course in Finnish Teacher Education
- Sørensen, H. (2007). Masser af rapporter og strategiplaner - men hvordan ændres praksis i fysiklokalet? Kommentar. MONA(2).
- Sørensen, H., Horn, F., & Dragsted, S. (2005). Får natur/teknik en fremtid? MONA, 2005(1)
- Sothayapetch, Pavinee (2013). A comparative study of science education at the primary school level in Finland and Thailand. Doctoral dissertation. University of Helsinki, Faculty of Behavioural Sciences, Department of Teacher Education
- Sriraman, B., C.Michelsen, A. Beckmann & V. Freiman (Eds). (2008). Proceedings of the Second International Symposium on Mathematics and its Connections to the Arts and Sciences (MACAS2). University of Southern Denmark Press
- Sund, P. (2015). Experienced ESD-schoolteachers' teaching – an issue of complexity. Environmental Education Research. Volume 21, 2015 - Issue 1. P. 24 - 44
- Sund, P., Per-Olof Wickman (2008). Teachers' objects of responsibility: something to care about in education for sustainable development? Environmental Education Research, Volume 14, 2008 - Issue 2. Pp. 145 - 163
- Sundqvist, P. (2016). TEKNIK I FÖRSKOLAN ÄR INTE NÅGOT NYTT, MEN IDAG ÄR VI MERA MEDVETNA OM VAD VI KALLAR TEKNIK. PERSONALENS BESKRIVNINGAR AV TEKNIK SOM INNEHÄLLSOMRÄDE I FÖRSKOLAN. Mälardalen University Press Licentiate Theses No. 233. Mälardalen Studies in Educational Sciences No. 24
- Susanne Walan, Shu-Nu Chang Rundgren (2014). Investigating Preschool and Primary School Teachers' Self-Efficacy and Needs in Teaching Science: A Pilot Study. c e p s Journal | Vol.4 | No 1 | Year 2014
- Tidemand, S., & Nielsen, J. A. (Accepted). The role of socioscientific issues in biology teaching – from the perspective of teachers. International Journal of Science Education. DOI: 10.1080/09500693.2016.1264644
- Undervisningsministeriet (2001): Tendenser for de videregående naturvidenskabelige uddannelser.
- Utdannings- og Forskningsdepartementet. (2002). "Realfag, naturligvis" Strategi for styrkning av realfagene 2002-2007 - tiltaksplan. Oslo: Utdannings- og Forskningsdepartementet.
- Uusiautti, S.; Määttä, K. (2012). How to Train Good Teachers in Finnish Universities? Student Teachers' Study Process and Teacher Educators' Role in It. European Journal of Educational Research, v1 n4 p339-352 2012
- Uusiautti, S.; Maatta, K. (2013). Significant Trends in the Development of Finnish Teacher Education Programs (1860-2010). Education Policy Analysis Archives, v21 n59 Jul 2013
- Valtonen, T., Jari Kukkonen, Sini Kontkanen, Kari Sormunen, Patrick Dillon, Erkko Sointu (2015). The impact of authentic learning experiences with ICT on pre-service teachers' intentions to use ICT for teaching and learning. Computers & Education, Volume 81, February 2015, Pages 49–58
- Vauras, M. (2006). Difficulties as content in the teacher education. In R. Jakku-Sihvonen & H. Niemi (Eds.), Research-based Teacher Education in Finland—Reflections by Finnish Teacher Educators, (pp. 173– 187). Research in Educational Sciences 25. Turku: Finnish Educational Research Association.

- Vesterinen , V-M , Pernaa , J & Aksela , M K 2012 , ' Evaluation of educational design methodology utilizing concept mapping ' in Proceedings of the ESERA 2011 conference : Science learning and Citizenship , pp. 142-146 .
- Vesterinen, V.-M., & Aksela, M. (2009). A novel course of chemistry as a scientific discipline: How do prospective teachers perceive nature of chemistry through visits to research groups? *Chemistry Education Research and Practice*, 10(2), 132–141
- Vesterinen, Veli-Matti, Maija Aksela (2013). Design of Chemistry Teacher Education Course on Nature of Science. *Science & Education*, September 2013, Volume 22, Issue 9, pp 2193–2225
- Viiri, J., & Saari, H. (2004). Teacher talk in science education. In A. Laine, J. Lavonen, & V. Meisalo (Eds.), *Current research on mathematics and science education 2004* (pp. 448–466). Helsinki, Finland: University of Helsinki.
- Viiri, J., & Saari, H. (2006). Teacher talk patterns in science lessons. Use in teacher education. *Journal of Science Teacher Education*, 17, 347–365.
- Viiri, J., & Saari, H. (2006). Teacher talk patterns in science lessons. Use in teacher education. *Journal of Science Teacher Education*, 17, 347–365.
- Wedge, T., Skott, J. (2006). Changing views and practices? A study of the KappAbel mathematics competition. *Research report Norwegian Center for Mathematics Education*, NTNU
- Wennerås, C. & Wold, A. Nepotism and sexism in peer-review. *Nature*, vol. 387/1997, s. 341-343.
- Wickman, P.-O. (2012). Using pragmatism to develop didactics in Sweden. *Zeitschrift für Erziehungswissenschaft*, November 2012, Volume 15, Issue 3, pp 483–501
- Wickman, P.O. (2004). The practical epistemologies of the classroom: A study of laboratory work. *Science Education*, Volume 88, Issue 3. May 2004. Pages 325–344
- Winsløw, Bergsten, Butlen, David, Gomez, Grevholm, Li, Moreira, Robinson, Sayac, Schwille, Tatto, White, Wood (2009) *First Years of Teaching*. In R. Even, D.L. Ball (eds.), *The Professional Education and Development of Teachers of Mathematics*
- Winsløw, C. (2004). Semiotics as an analytic tool for the didactics of mathematics. *Nordic Studies in Mathematics Education*, 2004
- Winsløw, C. (2011). A comparative perspective on teacher collaboration: the cases of lesson study in Japan and of multidisciplinary teaching in Denmark. In: G. Gueudet, B. Pepin and L. Trouche (Eds), *Mathematics curriculum material and teacher documentation: from textbooks to shared living resources*, pp. 291-304. New York: Springer.
- Winsløw, C.: 2001, 'Two dimensions of the conception of mathematics in tertiary education', Paper presented at the third Nordic Conference on Mathematics Education
- Winsløw, C.: 2002, 'Dreyfus' potential in first year calculus', in A.D. Cockburn and E. Nardi (eds), *Proceedings of the 26th International Conference, Psychology of Mathematics Education*, Vol. 4, Norwich, United Kingdom, pp. 410–417.

Litteratur om nordiske forhold inden for genstandsfelt 3

- Albrechtsen, T. (2009) Interessebegrebet i ROSE-undersøgelsen. MONA 2009 -3
- Allerup, P.; Bredo, O.; Weng, P. (1998): Matematik og naturvidenskab i ungdomsuddannelser – en international undersøgelse. Danmarks Pædagogiske Institut.
- Alm,F. & Samuelsson, J.(2009). Villkor för implementering av Naturvetenskap och Teknik för Alla, NTA. NorDiNa 5(1), 89-102

- Anderhag, P. (2014). Taste for Science: How can teaching make a difference for students' interest in science? Doctoral Thesis. Doctoral thesis from the department of mathematics and science education, 9. Stockholm: Department of Mathematics and Science Education, Stockholm University
- Andersen & Cathrin, K.K., Maule, C.F. (2006). Fysik er også for piger. MONA 2006-2. P. 86 - 89
- Andersen, A. M., & Sørensen, H. (2007). Elevers holdninger til og interesse for naturfag og naturvidenskab. In N. Egelund (Ed.), PISA 2006 - danske unge i en international sammenligning (pp. 99-139). København: Danmarks Pædagogiske Universitetsforlag
- Andersen, A. M., & Sørensen, H. (2007). Naturvidenskabelige kompetencer - en profil over elevpræstationer. I: N. Egelund (Ed.), Pisa 2006 - danske unge i en international sammenligning. København: Danmarks Pædagogiske Universitetsskole
- Andersen, A. M., Breiting, S., Busch, H., Hyllested, T., Nielsen, K., Sølberg, J., et al. (2004). Naturfagsdidaktik som områdedidaktik. I: K. Schnack (Ed.), Didaktik på kryds og tværs. København: Danmarks Pædagogiske Universitets Forlag.
- Andersen, A. M., Egelund, N., Jensen, T. P., Krone, M., Lindenskov, L. & Mejding, J. (2001). Forventninger og færdigheder - danske unge i en international sammenligning. København: Amternes og Kommunernes Forskningsinstitut, Danmarks Pædagogiske Universitet og Socialforskningsinstituttet.
- Andersen, H.M. & Nielsen, V.G. (2003). Kemi i gymnasiet – elevernes opfattelse af faget i 1. g/1. htx. Århus: Center for Naturfagernes Didaktik, Aarhus Universitet.
- Andersen, N.O., Busch, H., Horst, S. & Troelsen, R. (2003). Fremtidens Naturfaglige Uddannelser – Bd. 1: Strategiplan 2003-2008 og videre frem. København: Undervisningsministeriet
- Andersson, A. (2010). Can a Critical Pedagogy in Mathematics lead to Achievement, Engagement and Social Empowerment? In *Philosophy of Mathematics Education Journal*, 25
- ANDERSSON, B., BACH, F., & ZETTERQVIST, A. (2002). Understanding global and personal use of energy. *Journal of Baltic Science Education*, 1(2), 4-18.
- Andersson, E. (2015). Situational political socialization: a normative approach to young people's adoption and acquisition of political preferences and skills, *Journal of Youth Studies*, 2015, 18, 8, 967
- Andersson, Erik, Öhman, Johan (2016). Young people's conversations about environmental and sustainability issues in social media. In: *Environmental Education Research*, ISSN 1350-4622, E-ISSN 1469-5871
- Andersson, S., Chronholm, J.A. (2012). Centrala teman för studenter relationer till utbildningsprogram. *Teaching and Learning in Higher Education*, NU 2012 (8). Chalmers Conference
- Andrée, M. & Hansson, L. (2013). Marketing the 'Broad Line': Invitations to STEM education in a Swedish recruitment campaign. *International Journal of Science Education*. Volume 35, 2013 - Issue 1
- Andrée, Maria, Lena Hansson (2014). Recruitment Campaigns as a Tool for Social and Cultural Reproduction of Scientific Communities: A case study on how scientists invite young people to science. *International Journal of Science Education* Volume 36, 2014 - Issue 12
- Angell, C., Guttersrud, Ø, Henriksen, E. (2004), Physics: Frightful, But Fun - Pupils' and Teachers' Views of Physics and Physics Teaching. *Science Education* 88 (5)
- Angell, C., Paulsen, A. C (2003). Elevernes stemmer - fysikfaget, undervisningen og lærerroller, som eleverne opfatter det i det almene gymnasium i Danmark. IMFUFA tekts nr. 413, Roskilde universitetscenter
- Angell, Carl; Henriksen, Ellen Karoline & Isnes, Anders. (2003). Hvorfor lære fysikk? Det kan andre ta seg av! Fysikkfaget i norsk utdanning: innhold - oppfatninger - valg. In D. Jorde &

- Bungum, B. (Eds.), *Naturfagdidaktikk. Perspektiver, forskning, utvikling* (p. 165-198). Oslo: Gyldendal Akademisk.
- Anni Loukomies, Dimitris Pnevmatikos, Jari Lavonen, Anna Spyrtou, Reijo Byman, Petros Kariotoglou, Kalle Juuti (2013). Promoting Students' Interest and Motivation Towards Science Learning: the Role of Personal Needs and Motivation Orientations. *Research in Science Education December 2013, Volume 43, Issue 6, pp 2517–2539*
- Anni Loukomies, Jari Lavonen (2010). ENHANCING STUDENTS" MOTIVATION AND INTEREST WITH SCIENCE INQUIRY ACTIVITIES AND OUT-OF-SCHOOL VISITS. In S. Dolinšek, T. Lyons XIV (Eds.) *Socio-cultural and Human Values in Science and Technology Education. IOSTE Symposium, Bled, Slovenia, June 13. - 18. 2010*
- Berland, L. K. & David Hammer (2012). Students' Framings and Their Participation in Scientific Argumentation. In M.S. Khine (Ed.): *Perspectives on Scientific Argumentation*.pp 73-93
- Björkqvist, O. (2003). *Matematikdidaktiken i Sverige: En lägesbeskrivning av forskningen och utvecklingsarbetet*. Stockholm: Kungliga Vetenskapsakademien.
- Bøe, M. V., Ellen Karoline Henriksen (2014)Expectancy-Value Perspectives on Choice of Science and Technology Education in Late-Modern Societies. in E. K. Henriksen, J.Dillon, J. Ryder (Eds). *Science and Technology Education. Understanding Student Participation and Choice*. Springer: pp 17-29.
- Bøe, M.V. (2012). Science choice in Norwegian upper secondary school: What matters? *Science Education Volume 96, Issue 1 January 2012, Pp. 1–20*
- BØE, M.V., HENRIKSEN, E.K. (2013). Love It or Leave It: Norwegian Students' Motivations and Expectations for Postcompulsory Physics. *Science Education, Volume 97, Issue 4 July 2013 Pp. 550–573*
- Britt Jakobson, Per-Olof Wickman (2015). What Difference Does Art Make in Science? A Comparative Study of Meaning-Making at Elementary School. *Interchange, November 2015, Volume 46, Issue 4, pp 323–343*
- Broch, T., Egelund, N. (2001). Elevers interesse for naturfag og teknik - et elevperspektiv på undervisningen. København: Danmarks Pædagogiske Universitet
- Broström, Stig (2013). *Science i børnehaven. MONA: Matematik og Naturfagsdidaktik*, Nr. 4
- Broström, Stig (2015). Science in early childhood education. *Journal of Education and Human development*, Vol. 4, Nr. 2(1), 15.06.2015
- Broström, Stig; Frøkjær, Thorleif. (2013). Ja tak til mere science i dagtilbud. *Vera : tidsskrift for pædagoger*, Nr. 64, 2013,
- Bruun, J. (2009). *Kropslige øvelser i fysikundervisningen. MONA 2009 -1. Det Naturvidenskabelige Universitet*
- Bugge, Birthe Louise & Harder, Peter (2002): *Skolen på frihjul: om lærerrollen og det forsvundne elevansvar*. København: Gyldendal.
- Bungum, B., Rødseth, Lykknes, A., Murvoll, K.M. (2010). WHAT BROUGHT THEM INTO SCIENCE? UNIVERSITY STUDENTS' INTEREST PROFILES AND MOTIVATION FOR CHOOSING SCIENCE AT UNIVERSITY LEVEL. IN G. ÇAKMAKCI & M. F. TAŞAR (Eds.): *CONTEMPORARY SCIENCE EDUCATION RESEARCH: LEARNING AND ASSESSMENT*. ESERA 2009 Conference
- Busch, H. (2004): 15-åriges interesse for naturvidenskab, teknologi og naturfag i skolen. De første resultater fra den danske ROSE-undersøgelse. Danmarks Pædagogiske Universitet.
- Busch, H. (2004). Pige- og drengeemner i naturfag. *Aktuel Naturvidenskab*, no. 5, 2004
- Busch, H. (2005): Is Science Education Relevant? *Europhysics News*, Vol. 36, Nr. 5.

- Busch, H. (2005). ROSE-undersøgelsen – hvad ved vi om danske elevers interesse for naturvidenskab og naturfag i folkeskolen? I: S. Sjøberg (red.). *Naturfaglig dannelses*. Århus: Klim.
- Busch, H. (2005b). Den relevante naturfagsundervisning? Uddannelse, 2005(6)
- Busch, H. & Sørensen, H. (2005). Piger, drenge og naturfag. Uddannelse
- Busch, H., Horst, S. & Troelsen, R. (red.) (2003). *Inspiration til fremtidens naturfaglige uddannelser. En antologi*. København: Undervisningsministeriet.
- Busch, Henrik (2001): "Når Superman smider skjorten" i KVANT 12 (3).
- Byman, R. Lavonen, J., Juuti, K., Meisalo, V. (2012). Motivational Orientations in Physics Learning: A Self-Determination Theory Approach. *Journal of Baltic Science Education*, Vol. 11, No. 4, 2012
- Caroline_Liberg, Åsa_af_Geijerstam, Jenny_Folkeryd (2011). Scientific Literacy and Students' Movability in Science Texts. In C. Linder, L. Östmna, D.A. Robertd, P.O. Wickman, G. Ericksen, A: MacKinnon (Eds.): *Exploring the Landscape of Scientific Literacy*. New York: Routledge
- Caspersen, S. (2012). Interesseudvikling gennem Nørddagsprojekt. I MONA 2012 -2
- Christina Ottander, Bodil_Sundberg (2013). The Conflict Within the Role: A Longitudinal Study of Preschool Student Teachers' Developing Competence In and Attitudes Towards Science Teaching in Relation to Developing a Professional Role. *Journal of Early Childhood Teacher Education*, Volume 34, 2013 - Issue 1: Early Childhood Teacher Education: Why Does It Matter? How Does It Matter? P. 80 - 94
- Dahlgren Johansson, Anna (2010) Children's conceptions about mathematics and mathematics education. In Tallinn, Estonia / [ed] Kirsti Kislenko, Current state of research on mathematical beliefs XVI: proceedings of the MAVI-16 Conference June 26-29, 2010
- Dahlgren, L.O. & Szczepanski, A. (2001): *Udendørspædagogik – boglig dannelses og sanselig erfaring*. København: Forlaget Børn & Unge.
- Danielsson, Anna, and Cedric Linder. "Learning in physics by doing laboratory work: towards a new conceptual framework." *Gender and Education* 21.2 (2009): 129-144.
- Danmarks Evalueringsinstitut. (2001). *Teknik og naturvidenskab. Kortlægning af initiativer der skal fremme interessen for teknik og naturvidenskab*. København: Danmarks Evalueringsinstitut.
- Danmarks Evalueringsinstitut. (2002). *Undersøgelsen af sammenhænge mellem elevers resultat ved Folkeskolens afgangsprøver og deres senere uddannelsesforløb*. København: Danmarks Evalueringsinstitut.
- Davidsson, Eva (2009). Enhancing Visitors' Interest in Science – A Possibility or A Paradox?. *Research in Science Education*. March 2009, Volume 39, Issue 2, pp 197–213
- Dohn, N. B. (2007). Elevers interesse i naturfag – et didaktisk perspektiv. I MONA -3
- Dohn, N. B. (2007). Gymnasieelevers situationelle interesse i forskellige læringsammenhænge i faget biologi. Ph.d.-afhandling. Syddansk Universitet
- Dohn, N. B. (2014?). Motiverende og interesseskabende naturfagsundervisning. *Netsnet.dk*
- Dolin, J. (2002) "Fysikfaget i forandring." Danish only) PhD thesis. Roskilde University, Denmark (2002).
- Dolin, J., Krogh, L. & Troelsen, R. (2003). En kompetencebeskrivelse af naturfagene. I: H. Busch, S. Horst & R. Troelsen (red.), *Inspiration til fremtidens naturfaglige uddannelser* (s. 59-142). København: Undervisningsministeriet
- Duit, R. (2004). *Bibliography - STCSE: Students' and Teachers' Conceptions and Science Education*. Kiel: IPN - Leibniz Institute for Science Education, University of Kiel.
- Dysthe, O. (2000): *Det flerstemmige klasserum*. Århus: Klim.

- Egelund, N. (Ed.). (2007). PISA 2006 - Danske unge i en international sammenligning. København: Danmarks Pædagogiske Universitetsforlag.
- Egelund, N. & Hulvei, P. (2002). Folkeskoleelevers holdninger til naturfag og teknik. En kvantitativ undersøgelse omfattende 1050 elever. København: Danmarks Pædagogiske Universitet.
- Egelund, N.; Broch, T. (2002): Et forældreperspektiv på naturfagsundervisningen – delrapport i projektet »Elevers interesse for naturfag og teknik«. Danmarks Pædagogiske Universitet
- Egelund, N.; Broch, T. (2002): Naturfag og teknik – hvad ved vi i dag om elevinteresser, om forudsætninger for undervisning og om resultater? Danmarks Pædagogiske Universitet.
- Egelund, Niels & Broch, Tordis (2002): Naturfag og teknik hvad ved vi i dag om elevinteresser, om forudsætninger for undervisning og om resultater? København: Danmarks Pædagogiske Universitet
- Eilks, I & Hofstein, A. (Eds.) (2015): Relevant Chemistry Education. From Theory to Practice. Sense Publishers.
- Eilks, I., Nielsen, J.A., Hofstein, A. (2014). Learning About the Role and Function of Science in Public Debate as an Essential Component of Scientific Literacy. In C. Bruguiére, A. Tibergien, P Clément (Eds.) Vol. 1, Contributions from Science Education Research, 9th ESERA Conference Selected Contributions, pp 85-100. Springer
- Ejbye-Ernst, N. (2008). Er det så ligetil? I MONA 2008 -3
- Ekborg, M., Ideland, M., Malmberg, C. (2009). Science for life – a conceptual framework for construction and analysis of socio-scientific cases. Nordina, Vol 5, No 1
- Ekborg, M., Nyström, E., & Ottander, C. (2009, August–September). Working with socio-scientific issues (SSI) – Teachers' perspectives. Paper presented at the ESERA conference, Istanbul.
- Elam, M., & Bertilsson, M. (2003). Consuming, engaging and confronting science. The emerging dimensions of scientific citizenship. European Journal of Social Theory, 6, 233–251.
- Eriksen, T. R., Gerstoft, B. F. & Hansen, H. P, (Eds.) (1996). Erfaringer - et humanistisk og sundhedsvidenskabeligt perspektiv. København: Munksgaard
- Fehr, a.v.d. (2016). Exploring social networks of science education actors in danish science municipalities. Ph.d. Thesis. Copenhagen: the faculty of science, department of science education. University of copenhagen
- Gedrovics, J., Wäreborn, I. & Jeronen, E. (2006). Science subjects choice as a criterion of students' attitudes to science. Journal of Baltic Science Education, 1(9), 74–85.
- Grunwald, A. (2012). Elevuniversitetet om energi og klima - et samarbejde i netværk: Nye perspektiver for naturfagsinteressen? NorDiNa, 8(2/12), 108-121.
- Håkan Ahlbom (2013). Why Choose a Regional Engineering Education Programme? In I-B. Skogh, M. J. de Vries (Eds.): Technology Teachers as Researchers, Volume 10 of the series International Technology Education Studies pp 173-198. Sense Publishers
- Halldén, O. (1999). Situating the question of conceptual change. In eighth European Conference for Research on Learning and Instruction, Göteborg, Sweden [Abstracts, p. 230].
- Hamza, K.M., WickmanP.O. (2013).Student Engagement with Artefacts and Scientific Ideas in a Laboratory and a Concept-Mapping Activity. International Journal of Science Education, Volume 35, 2013 - Issue 13. P. 2254 - 2277
- Hannula, M. (2007). Finnish research on affect in mathematics: Blended theories, mixed methods and some findings. ZDM: the international journal on mathematics education 39(3), 197-203.
- Hannula, M. (2016). Attitudes, Beliefs, Motivation, and Identity in Mathematics Education. ICME-13 Topical Surveys pp 1-35
- Hannula, M. S. (2004). Affect in mathematical thinking and learning, Annales Universitatis Turkuensis B 273. Turku: University of Turk

- Hannula, M. S. (2005). Shared cognitive intimacy and self-defence: Two socio-emotional processes in problem solving. *Nordic Studies in Mathematics Education*, 10(1),
- Hansen, M.N. (1997): Social and Economic Inequality in the Educational Career: Do the Effects of Social Background Characteristics Decline? *European Sociological Review*, Vol. 13, Nr. 3.
- Hansen, M.N. (1999): Utdanningspolitikk og ulikhet. *Rekruttering til høyere utdanning 1985-1996*. Universitetsforlaget.
- Hartmann-Petersen (2005). Almen, uorganisk og organisk kemi. Polyteknisk Forlag.
- Hasse, C. (2014). The material co-construction of hard science fiction and physics. *I Cultural Studies of Science Education* (10)
- Hoff, A. (2001), Børns holdninger til fysik og kemi - belyst gennem TIMSS-undersøgelsen. København: Danmarks Pædagogiske Universitet
- Holmegaard, H. T., Lars Ulriksen, Lene Møller Madsen (2015). A Narrative Approach to Understand Students' Identities and Choices, In E.K. Henriksen, J. Dillon, J. Ryder (Eds.): Understanding Student Participation and Choice in Science and Technology Education. pp 31-42. Springer Netherlands
- Holmegaard, H.T. (2015). Performing a Choice-Narrative: A qualitative study of the patterns in STEM students' higher education choices. *International Journal of Science Education*. Volume 37, 2015 - Issue 9
- Holmegaard, H.T., Madsen, L.M. (2014). To Choose or Not to Choose Science: Constructions of desirable identities among young people considering a STEM higher education programme. *International Journal of Science Education* Volume 36, 2014 - Issue 2
- Holmegaard, H.T., Ulriksen, L., & Madsen, L.M. (2012). The process of choosing what to study. A longitudinal study of upper secondary students' identity work when choosing higher education. *Scandinavian Journal of Educational Research* 58(1):1-20 · June 2012
- Holmegaard, H.T., Ulriksen, L., & Madsen, L.M. (2012). The process of choosing what to study. A longitudinal study of upper secondary students' identity work when choosing higher education. *Scandinavian Journal of Educational Research* 58(1):1-20 · June 2012
- Horst, S. (2006). Naturfagene i bevægelse. Undervisningsministeriets temahæfteserie nr. 4 – 2006.
- Huset Mandag Morgen (1998). Hvad kommer livet os ved? – et debatoplæg om danskernes forhold til naturvidenskab og teknik. Huset Mandag Morgens Strategiske Forum.
- Ideland, M. (2002). Dagens gennyheter. Hur massmedier berättar om genetik och genteknik. Lund: Nordic Academic Press.
- Ideland, Malin, Claes Malmberg, and Mikael Winberg. "Culturally equipped for socio-scientific issues? A comparative study on how teachers and students in mono-and multiethnic schools handle work with complex issues." *International Journal of Science Education* 33.13 (2011): 1835-1859.
- Jacobsen, B. (2009). Från begrepp till utforskande arbetssätt- forskning om NO-undervisning i grundskolans tidigare år, Utbildningsförvaltningen, Stockholms stad
- Jacobsen, J. C., Elmgaard, D. C. (2014). 'Det ene projekt afløser det andet..' Hvordan sikres kvalitet i naturfaglige projekter? En virkningsevaluering. Danmark: Institut for Naturfagernes Didaktik, KU
- Jäder, Sidenvall, Sumpter (2016) Students' Mathematical Reasoning and Beliefs in Non-routine Task Solving. *International Journal of Science and Mathematics Education*, pp 1–18
- Jankvist, U. T. (2015). Changing students' images of "mathematics as a discipline". *The Journal of Mathematical Behavior*. Volume 38, Pages 41–56
- Jankvist, U. T. (2015). History, Application, and Philosophy of Mathematics in Mathematics Education: Accessing and Assessing Students' Overview and Judgment. Selected Regular Lectures from the 12th International Congress on Mathematical Education, pp 383-404

- Järvelä, S. (2001): Shifting research on motivation and cognition to an integrated approach on learning and motivation in context. In Violet, S. & Järvelä, S. (eds.): Motivation in learning contexts: Theoretical advances and methodological implications. (3-14) Pergamon, Elsevier Science Ltd.
- Järvelä, S., M. Veermans, P. Leinonen (2008). Investigating student engagement in computer-supported inquiry: a process-oriented analysis. *Social Psychology of Education*, 11 (3) (2008), pp. 299–322
- Jensen, C.J. (2006). To uforenelige verdener? MONA, 2006(1),
- Jensen, Cathrine Jespersen (2006). Det naturlige valg? En analyse af unges valg af tekniske og naturvidenskabelige fag og uddannelser. Ph.D. afhandling. København: Danmarks Pædagogiske Universitet
- Jensen, F. (2014). Short stories of educational choice: in the words of science and technology students. In e. K. Henriksen, j.dillon, j. Ryder (eds). *Science and technology education. Understanding student participation and choice*. Springer:pp. 135 - 151
- Jensen, F. & Bøe, M. V. (2013) the influence of a two-day recruitment event on female upper secondary students' motivation for science and technology higher education. *International journal of gender, science and technology*, vol 5, no 3 (2013)
- Jensen, F. & Sjaastad, J. (2013). A norwegian out-of-school mathematics project's influence on secondary students' stem motivation. *international journal of science and mathematics education*, december 2013, volume 11, issue 6, pp 1437–1461
- Jensen, F.A., & Henriksen, E.K. (2010). IRIS working document 5.1. Part II: The effect of initiatives to recruit young people to science, technology, engineering and mathematics education. Oslo: IRIS - Interest & Recruitment In Science
- Jensen, Jens Højgaard (2001): "Naturvidenskabens syndefald?" i Mere spredt fægtning. IMFUFA tekst nr. 404. Roskilde: IMFUFA, Roskilde Universitetscenter.
- Jessen, C. (2001). Børn, leg og computerspil. Odense Universitetsforlag
- Jidesjö, Åsa Danielsson (2016). Student experience and interest in science: Connections and relations with further education. *NorDina Vol 12 No 1 2016*
- Jidesjö, Å., Danielsson, Å., Björn, A. (2015). Interest and Recruitment in Science: A Reform, Gender and Experience Perspective. *Procedia - Social and Behavioral Sciences*, Volume 167, 8 January 2015, Pages 211-216
- Jorde, D. (2000). Knowledge integration environment: reactions and comments. *International Journal of Science Education*, 22, 881 – 883.
- Jørgensen, B.C. (1998): Mathematics and Physics Education in Society – The Justification and Enrolment Problems from a General Perspective. In Jensen (1998): *Justification and Enrolment Problems in Education Involving Mathematics and Physics*. Roskilde University Press.
- Juntunen, M.; Aksela, M (2013). Life-Cycle Thinking in Inquiry-Based Sustainability Education - Effects on Students' Attitudes towards Chemistry and Environmental Literacy. *CEPS Journal : Center for Educational Policy Studies Journal*3.2 (2013): 157-180.
- Juuti, K. (2005). Towards primary school physics teaching and learning: design research approach. RESEARCH REPORT 256. Helsinki: UNIVERSITY OF HELSINKI, FACULTY OF BEHAVIOURAL SCIENCES, DEPARTMENT OF APPLIED SCIENCES OF EDUCATION
- Juuti, K. & Lavonen, J. (2016). How teaching practices are connected to student intention to enrol in upper secondary school physics courses. *Research in Science & Technological Education*, Volume 34, 2016 - Issue 2. Pp. 204 - 218

- Juuti, K., Lavonen, J., Uitto, A., Byman, R., & Meisalo, V. (2004). Students' reasons to choose or reject physics. In E. Mecholová (Ed.), Proceedings of selected papers of the GIREP 2004 Conference on teaching and learning physics in new contexts (pp. 185– 186). Ostrava: University of Ostrava
- Juuti, K., Lavonen, J., Uitto, A., Byman, R., & Meisalo, V. (2010). Science Teaching Methods Preferred by Grade 9 Students in Finland. International Journal of Science and Mathematics Education, 8, 611-632. Keywords: creativity; interest; nonparametric; secondary school; survey; teaching methods
- Juuti, K., Lavonen, J., Uitto, A., Byman, R., Meisalo, V. (2004). Boys' and girls' interest in physics in different contexts: A Finnish survey. In A. Laine, J. Lavonen & V. Meisalo (Eds.), Current research on mathematics and science education: Proceedings of the XXI annual symposium of the Finnish Association of Mathematics and Science Education Research (Research Report 253, pp. 55 – 79). Helsinki, Finland: University of Helsinki, Department of Applied Sciences of Education.
- Kaae, B. C., & Madsen, L. M. (2003). Holdninger og ønsker til Danmarks natur. Skov & Landskab, Københavns Universitet. (By- og Landsplanserien; Nr. 21).
- Karim M Hamza, Per-Olof Wickman (2009). Beyond explanations: What else do students need to understand science? Science Education. Volume 93, Issue 6, November 2009. Pages 1026– 1049
- Karlsen, U.D. (2001): Some Things Never Change: Youth and Occupational Preferences. *Acta Sociologica*, Vol. 44.
- Karolina Broman, Shirley Simon (2015). Upper secondary school students' choice and their ideas on how to improve chemistry education.international. Journal of Science and Mathematics Education. December 2015, Volume 13, Issue 6, pp 1255–1278
- Karolina_Broman,Margareta_Ekborg,Dan_Johnels (2011). Chemistry in crisis? Perspectives on teaching and learning chemistry in Swedish upper secondary schools. NorDina 2011, vol 7 -1. Pp. 43 - 60
- Kidman, Gillian & Uusimaki, Liisa (2004) Challenging Maths-Anxiety: An Intervention Model. In Niss, Mogens (Ed.) The 10th International Congress on Mathematical Education (ICME-10), 4-11 July 2004, Copenhagen, Denmark.
- Kjærnsli, M. & Lie, S. (2011). Students' preference for science careers: international comparisons based on PISA 2006. International Journal of Science Education, 33(1), 121–144.
- Klaar, Susanne (2013). Naturorienterad utbildning i förskolan: Pragmatiska undersökningar av meningsskapandets individuella, sociala och kulturella dimensioner. Doctoral Thesis, Örebro: Örebro Universitet
- Kofoed, M., H. (2006) The Hiroshima and Nagasaki bombs: role-play and students' interest in physics. In Physics Education Vol 41 No. 6
- Kolstø, S. D. (2004). Students' argumentations: Knowledge, values and decisions. In E. K. Henriksen & M. Ødegaard (Eds.), *Naturfagenes didaktikk—en disiplin i forandring?* (pp. 63 – 78). Proceedings from the 7th Nordic Conference on Science Education. Kristiansand: Høyskoleforlaget AS.
- Krapp, A. (2002). Structural and dynamic aspects of interest development: Theoretical considerations from an ontogenetic perspective. Learning and Instruction, 12, 383–409
- Krapp, A. (2005). Basic needs and the development of interest and intrinsic motivational orientations. Learning and Instruction, 15, 381–395
- Krogh, L. B. (2006). 'Cultural Border Crossings' i fysikundervisningen – et kulturelt perspektiv på unges forhold til fysik'. Steno Department for Studies of Science and Science Education.

- Krogh, L. B. & Thomsen, P. V. (2000). GFII-rapport nr. 1: Undervisningsstil og læringsudbytte - en undersøgelse af fysikundervisningen i 1. g. (CNDs Skriftserie no. 1) Aarhus: Center for Naturfagernes Didaktik, Aarhus Universitet.
- Krogh, L. B., Arnborg, P., & Thomsen, P. V. (2001) GFIII-rapport, delA: Hvordan gik det så med fysikundervisnigen og elevernes udbytte? 2-g-opfølgning på GFII-undersøgelsen (CND's skriftserie no 3). Aarhus: Center for Naturfagernes Didaktik, Aarhus Universitet
- Krogh, Lars Brian, Andersen, Hanne Moeller (2013). "Actually, I May be Clever Enough to do it". Using Identity as a Lens to Investigate Students' Trajectories Towards Science and University. Research in Science Education, April 2013, Volume 43, Issue 2, pp 711–731
- Lavonen, J., & Laaksonen, S. (2009). Context of Teaching and Learning School Science in Finland: Reflections on PISA 2006 Results. Journal of Research in Science Teaching, 46(8), 922–944.
- Lavonen, J., Angell, C., Byman, R., Henriksen, E., & Koponen, I. (2007). Social interaction in upper secondary physics classrooms in Finland and Norway: A survey of students' expectations. Scandinavian Journal of Educational Research, 51(1), 81–101
- Lavonen, J., Byman, R., Juuti, K., Meisalo, V., & Uitto, A. (2005). Pupil Interest in Physics: A Survey in Finland. Nordina 2(1), 72–85.
- Lavonen, J., Gedrovics, J., Byman, R., Meisalo, V., Juuti, K. & Uitto, A. (2008). Students' motivational orientations and career choice in science and technology. A comparative investigation in Finland and Latvia. Journal of Baltic Science Education, 7(2), 86–102.
- Lavonen, J., Juuti, K., Uitto, A., Meisalo, V., & Byman, R. (2005). Attractiveness of science education in the Finnish comprehensive school. In A. Manninen, K. Miettinen & K. Kiviniemi (Eds.), Research findings on young people's perceptions of technology and science education: MIRROR results and good practises (pp. 5–30). Helsinki: Technology Industries of Finland.
- Lindahl, B. (2003): Lust att lära naturvetenskap och teknik? En lungitudinell studie om vägen till gymnasiet. Ph.d.-afhandling. Göteborg Universitet.
- Linnansaari, J., Viljaranta, J., Lavonen, J., Schneider, B., & Salmela-Aro, K. (2015). Finnish Students Engagement in Science Lessons. NorDiNa: Nordic Studies in Science Education, 11 (2), 192-206
- Løken, M. (2014). When Research Challenges Gender Stereotypes: Exploring Narratives of Girls' Educational Choices. in E. K. Henriksen, J. Dillon, J. Ryder (Eds). Science and Technology Education. Understanding Student Participation and Choice. Springer: pp 277 - 295
- Lossius, L.L.(2014). Praksis som læringsmetode i ingeniørutdanningen – erfaringer fra ingeniørstudiet i undervannsteknologi - drift og vedlikehold ved Høgskolen i Bergen (HiB). Uniped Årgang 37, 2/2014, side 419
- Loukomies, A. (2013). Enhancing Students Motivation towards School Science with an Inquiry - Based Site Visit Teaching Sequence: A Design - Based Research Approach. Doctoral dissertation. Helsinki: 2013, Department of Teacher Education.
- Loukomies, A., Lavonen, J., Juuti, K. (2015). Fostering pre-service teachers' motivation-related practical wisdom through a mentoring procedure. SAJCE - South African Journal of Childhood Education, vol.5 n.1 Cape Town 2015
- Lövheim, Daniel (2014). Scientists, Engineers and the Society of Free Choice: Enrollment as Policy and Practice in Swedish Science and Technology Education 1960–1990. Science & Education, September 2014, Volume 23, Issue 9, pp 1763–1784
- Lund, H.H. (2005). Piger og fysik – en umulig kombination? Uddannelse, 2005(2).

- Lundegård, I. (2008). Self, values and the world – Young people in dialogue on sustainable development. In J. Öhman (Ed.): Values and Democracy in Education for Sustainable Development - Contributions from Swedish Research. Liber. P. 123 - 144
- Lundin, M. (2010) Introducing The Nature Of School Science (Noss)- Using Wittgenstein's Language Game Concept To Analyse Meaning Making In School Science.In G. Çakmakci & M. F. Taşar (Eds.): Contemporary Science Education Research: Scientific Literacy And Social Aspects Of Science. A Collection Of Papers Presented At ESERA 2009 Conference
- Lundin, M., Mats Lindahl (2014). Negotiating the relevance of laboratory work: Safety, procedures and accuracy brought to the fore in science education. NorDina, VOL 10, No 1
- Lykkegaard, E., Ulriksen, L. (2016). Choices and changes: Eccles' Expectancy-Value model and upper-secondary school students' longitudinal reflections about their choice of a STEM education. International Journal of Science Education Volume 38, 2016 - Issue 5
- Lykkegaard, E., Ulriksen, L.(2016). Role model and prototype matching: Upper-secondary school students' meetings with tertiary STEM students. NorDina Vol 12, No 1 (2016)
- Magnussen, R. & Jessen, C. (2004). Research Report, Homicide. Copenhagen: Learning Lab Denmark.
- Margareta Serder, Anders Jakobsson (2015). "Why bother so incredibly much?": student perspectives on PISA science assignments. Cultural Studies of Science Education, September 2015, Volume 10, Issue 3, pp 833–853
- Margareta_Serder, Helene_Sörensen, Anders_Jakobsson, (2011). Opportunities and difficulties for students' engagement in PISA Science items. Conference Paper. Linköping Universitet.
- Maria Andrée, Lena Hansson (2015). Recruiting the Next Generation Scientists and Industrial Engineers: How Industrial Actors Engage in and Motivate Engagement in STEM Initiatives. Procedia - Social and Behavioral Sciences 167 (2015) 75 – 78
- Meisalo, V., Lavonen, J., Juuti, K. & Aksela, M. (2001). Chemistry Education in a Finnish Virtual School. In A . F. Aveiro, Portugal: University of Aveiro. Cachapuz (Ed.), Proceedings of the 6th European Conference on Research in Chemical Education 4. – 8. September 2001 (Paper S29, pp. 1 – 10).
- Metsämuuronen, J., Tuohilampi, L. (2014). Changes in Achievement in and Attitude toward Mathematics of the Finnish Children from Grade 0 to 9—A Longitudinal Study. Journal of Educational and Developmental Psychology 2014 Vol. 4 No 2
- Misfeldt, M. (2010). Hvilen faglighed mødes nye studerende med? – analyse af introforløb på naturvidenskabelige uddannelser. Dansk Universitetspædagogisk Tidsskrift 2010 -9
- Mork, S., Jorde, D. (2004). We Know they Love Computers, but do they Learn Science? Using Information Technology for Teaching about a Socio-scientific Controversy. Themes in Education, 5: 1, 69-100, 2004
- Näs, H. & Christina Ottander (2008). Student reasoning while investigating plant material. NorDina, Vol 4, No 2
- Naturvidenskabelig kompetence. I: J. Meiding (Ed.), Pisa 2003 - danske unge i international sammenhæng
- Naturvidenskabeligt Uddannelsesråd (2001): Kandidater i Matematik-, Fysik- og Kemi-fagene: Hvor gik de hen? En kortlægning af produktion og beskæftigelse for perioden 1985-1999. Undervisningsministeriet
- Nielsen, L., Patronis, T. and Skovsmose, O. (1999): Connecting Corners of Europe: A Greek Danish Project in Mathematics Education, Systeme Arhus.
- Nielsen, R. H. (2002) Is educational research in university mathematics possible from a global social perspective? in P. Valero & O. Skovsmose (2002) (Eds.). Proceedings of the 3rd

- International MES Conference. Copenhagen: Centre for Research in Learning Mathematics, pp. 1-11.
- Nielsen, T. L. B., & Holmegaard, H. T. (2014). Fysikkandidaters overgang til arbejdsmarkedet. Institut for Naturfagernes Didaktik, Københavns Universitet. (IND's Skriftserie; Nr. 33)
- Nordiska Ministerrådet. (2001). Rekruttering til studier i matematikk, naturvitenskap og teknologi i de nordiske landene. Oslo: Nordisk Ministerråd - Forskning og Højere uddannelse
- Norén, E. (2010). Flerspråkiga matematikklassrum: Diskurser i grundskolans matematikundervisning. Doctoral Thesis. Stockholm University, Faculty of Science, Department of Mathematics and Science Education.
- Öhman, Johan (2006). Den etiska tendensen i utbildning för hållbar utveckling: meningsskapande i ett genomlevandeperspektiv. Doctoral thesis. Örebro: Örebro universitetsbibliotek
- Olsen, Rolf Vægar (2011). Profiles of Students' Interest in Science Issues around the World: Analysis of data from PISA 2006. International Journal of Science Education Volume 33, 2011 - Issue 1: Students' Interest in Science across the World: Findings from the PISA study. Pp. 97 - 120
- Ørnsgreen, R. (2015). Reflections on Design-Based Research. Conference paper: 4th IFIP 13.6 Working Conference, HWID 2015, London, UK, June 25-26. In Nocera, Baricelli, Lopes, Campos, Clemmensen (Eds.) Human Work Interaction Design. Work Analysis and Interaction Design Methods for Pervasive and Smart Workplaces. From the series: IFIP Advances in Information and Communication Technology, Volume 468.
- Østergaard, L. (2005). Hvad har børns leg og deres brug af naturvidenskabelige metoder med hinanden at gøre? Ph.D. afhandling. København: DPU
- Østergaard, L.D. (2007). "Det lyder interessant - lad os prøve det!" - et spørgsmål om motivation. MONA 2007 -4
- Østergaard,L.D. (2008). Naturfag for de yngste - et aktionsforskningsprojekt i Nordjylland. Mona 2008-2, P.7 - 27
- Östman, L. (1998). How companion meanings are expressed by science education discourse. In D. A. Roberts & L. Ostman (Eds.), Problems of meaning in science curriculum (pp. 54–70). New York: Teachers College Press.
- Östman, L., Marie Öhman, Eva Lundqvist, Malena Lidar (2015). Teaching, Learning and Governance in Science Education and Physical Education: A Comparative Approach. Interchange, November 2015, Volume 46, Issue 4, pp 369–386.
- Östman, Leif, Almqvist, Jonas (2010). What do values and norms have to do with scientific literacy? In C. Linder, L. Östman, D. A. Roberts, P.O. Wickman, G. Erickson, .A. MacKinnon (Eds.): Exploring the landscape of scientific literacy, London: Routledge , 2010, 160-175 p.
- Ottander, Christina, Ekborg, Margareta (2012). Students' Experience of Working with Socioscientific Issues - a Quantitative Study in Secondary School. Research in Science Education, December 2012, Volume 42, Issue 6, pp 1147–1163
- Palmgren, Per J. (2016). It takes two to tango : an inquiry into healthcare professional education environments. Doctoral Thesis. Inst för lärande, informatik, management och etik / Dept of Learning, Informatics, Management and Ethics.
- Paludan, K. (1998). Naturvidenskabsopfattelser og studievalg. Århus: AU.
- Paludan, K. (1999): Rapport om projektet naturvidenskabsopfattelse og uddannelsesvalg 1996-1998. Århus Universitet.
- Paludan, K. (2001): Naturvidenskab og elevernes natur. Uddannelse nr.5/2001.
- Pehkonen, E., maija_ahtee, pirjo_tikkanen,anu_laine () pupils' conceptions on mathematics lessons revealed via their drawings

- Per Anderhag, Karim Mikael Hamza, Per-Olof Wickman (2015). What Can a Teacher Do to Support Students' Interest in Science? A Study of the Constitution of Taste in a Science Classroom. *Research in Science Education* October 2015, Volume 45, Issue 5, pp 749–784
- Petersen, J.K. (1999): Kan naturen begrænse næringstilførslen i danske fjorde? *Ny Viden Fra Miljøstyrelsen*, 1999, Vol 1, Issue 4. Miljøstyrelsen.
- Petersen, M. K. (2012). Interesseudvikling i naturfagene gennem faglig progression. En undersøgelse af samspillet mellem begrebsændringer og interesseudvikling i gymnasiets biologiundervisning. Center for Naturvidenskabernes og Matematikkens Didaktik, Syddansk Universitet Volume 13
- Pless, M. (2001). *Unge om ingeniørfaget. Om at knække ligningen eller fi nde sig selv?* København: Ingeniørforeningen i Danmark.
- Pless, M., & Katzenelson, N. (2005). Niende klasse og hvad så? - en midtvejsrapport om unges uddannelsesvalg og overgang fra grundskole til ungdomsuddannelse og arbejde. København: Center for Ungdomsforskningvn.
- Pless, M., & Katzenelson, N. (2007). *Unges veje mod ungdomsuddannelserne*. København: Center for Ungdomsforskning.
- Quennerstedt, Mikael (2006). *Att lära sig hälsa*, Doctoral Thesis. Örebro: Örebro universitetsbibliotek
- Ramberg, I.; Kallerud, E. (2000): Ungdoms forhold til naturfag/-vitenskap og teknologi. En gjennomgang av studier av holdninger og interesser som påvirker ungdoms fagvalg. Høgskolen i Nord-Trøndelag.
- Ryder, J., Ulriksen, L., Bøe, M.V. (2015). Understanding Student Participation and Choice in Science and Technology Education: The Contribution of IRIS. In E.K. Henriksen, J. Dillon, J. Ryder (Eds.) *Understanding Student Participation and Choice in Science and Technology Education*. Netherlands: Springer. pp 351-366
- Säljö, R., & Bergqvist, K. (1997). Seeing the light: Discourse and practice in the optics lab. In L. B. Resnick, R. Säljö, C. Pontecorvo, & B. Burge (Eds.), *Discourse, tools, and reasoning: Essays on situated cognition* (pp. 385–405). Berlin: Springer
- Savinainen, A. and J. Viiri (2004), Proceedings of the Physics Education Research Conference, Madison, 2003, AIP Conference Proceedings No. 720, edited by J. Marx, S. Franklin, and K. Cummings (AIP, New York, 2004), p. 77
- Savinainen, A., P. Nieminen, J. Viiri, J. Korkea-aho, and A. Talikka (2007), Proceedings of the Physics Education Research Conference, Greensboro, 2007, AIP Conference Proceedings No. 951, edited by L. Hsu, C. Henderson, and L. McCullough (AIP, New York, 2007), p. 176.
- Schreiner, C. (2006). Exploring a ROSE-garden: Norwegian youth's orientation towards science - seen as signs of late-modern identities (Doctoral Thesis, University of Oslo).
- Schreiner, C. Sjøberg, S. () empowered for action? How do young people relate to environmental challenges?
- Schreiner, C. Sjøberg, S. (). Science education and young people's identity construction - two mutually incompatible projects? In science education and youth's identity construction.
- Schreiner, C., & Sjøberg, S. (2004). Sowing the seeds of ROSE: Background, rationale, questionnaire development and data collection for ROSE (The Relevance of Science Education)—A comparative study of students' views of science and science education (Acta Didactica 4/2004). Oslo: Department of Teacher Education and School Development, University of Oslo

- Schreiner, C., & Sjøberg, S. (2007). Science education and youth's identity construction: Two incompatible projects? In D. Corrigan, J. Dillon, & R. Gunstone (Eds.), *The re-emergence of values in science education* (pp. 231–247). Rotterdam: Sense Publishers
- Schreiner, C., Henriksen, E.K., Sjaastad, J., Jensen, F., & Løken, M. (2010). *Vilje-con-valg: Valg og bortvalg av realfag i høyere utdanning*. Oslo: Norwegian Centre for Science Education
- Schreiner, C., Henriksen, E.K., Sjaastad, J., Jensen, F., & Løken, M. (2010). *Vilje-con-valg: Valg og bortvalg av realfag i høyere utdanning*. KIMEN - En skriftserie fra Naturfagsenteret(2), 1-107.
- Schreiner, Camilla & Sjøberg, Svein. (2005). Et meningsfullt naturfag for dagens ungdom? Nordina: Nordic Studies in Science Education (2).
- Schreiner, Camilla; Henriksen, Ellen Karoline; Hansen, Pål J. Kirkeby (2005). Climate education: Empowering today's youth to meet tomorrow's challenges. *Studies in science education* 2005 ;Volum 41. s. 3-50
- Sendrup, L. & Frimodt-Møller, I. (2001). *Kønsadskilt undervisning, gruppearbejde og lærersamarbejde. En anden pædagogisk historie*. Paritas Grafik
- Simonsen, Birgitte & Katznelson, Noemi (2000): "Unges arbejdsbegreb". *Arbejdsliv* nr. 4.
- Sinding, A. B. (2007). Når kulturen ekskluderer - piger i fysikfaget, MONA, 2007(1), 18-31
- Sinding, A.B. (2007). Den kulturelle eksklusion af piger og kvinder i fysik. *Kontur - Tidsskrift for Kulturstudier*, 2007, Issue 16, p. 74-76
- Sinnes, A. (2006). Three Approaches to Gender Equity in Science Education. *Nordina* 2(1), 72-83
- Sirkku Männikkö-Barbutiu (2011), Developing Teaching in Technology – From Isolation to Cooperation. In M.J. de Vries (Ed.): *Positioning Technology Education in the Curriculum*. Volume 8 of the series *International Technology Education Studies* pp 103-117. Sense Publishers
- Sjaastad, J. (2010, June). The influence of parents, teachers and celebrities in young people's choice of science in higher education. Paper presented at the XIV. IOSTE Symposium, Bled, Slovenia
- Sjaastad, Jørgen (2012). Sources of Inspiration: The role of significant persons in young people's choice of science in higher education. *International Journal of Science Education*, Volume 34, 2012 - Issue 10. Pp. 1615 - 1636
- Sjøberg, S. (2000). Interesting all children in 'science for all'. In R. Millar, J. Leach, & J. Osborne (Eds.), *Improving science education* (pp. 165–186). Buckingham, UK & Philadelphia, PA: Open University Press
- Sjøberg, S. (2001). ROSE: The Relevance of Science Education. A comparative and cooperative international study of the contents and context of science education.
- Sjøberg, S. (2002). Science for the Children? Report from the SAS-project (Science And Society), a cross-cultural study of factors of relevance for the teaching and learning of science and technology
- Sjøberg, S. (2002). Three contributions to science education (Vol. 2 - 2002). Oslo: Department of Teacher Education and School Development, University of Oslo.
- Sjøberg, S. (2003). Science and technology education: Current challenges and possible solutions. In E.W. Jenkins (Ed.), *Innovations in science and technology education* (Vol. VIII, pp. 201–228). Paris: UNESCO.
- Sjøberg, S., & Busch, H. (2005). *Ungdomskulturen: Elevernes erfaringer, holdninger og interesser*. I: S. Sjøberg, *Naturfag som almendannelse*. Århus: Klim.
- Sjøberg, S., & Schreiner, C. (2006). Elevenes forhold til naturfag og teknologi: Et nordisk og internasjonalt perspektiv basert på ROSE-prosjektet. I: L. Bering, J. Dolin, L. B. Krogh, J.

- Sølberg, H. Sørensen & R. Troelsen (Eds.), Naturfagsdidaktikkens mange facetter (1 ed., pp. 6). København: Danmarks Pædagogiske Universitets forlag
- Sjøberg, S., & Schreiner, C. (2010). The ROSE project: An overview and key findings. Oslo: University of Oslo
- Sjøberg, S., Schreiner, C. (2012). Results and Perspectives from the Rose Project - Attitudinal aspects of young people and science in a comparative perspective. In D. Jorde, J. Dillon (Eds.): Science Education Research and Practice in Europe, Volume 5 of the series Cultural Perspectives in Science Education pp 203-236. Sense Publishers
- Sjøberg, Svein, Schreiner, Camilla (2005). Perceptions and Images of Science and Science Education. Communicating European Research 2005 pp 151-158
- Sjøberg, Svein, Schreiner, Camille (2012). A Comparative View on Adolescents Attitudes towards Science. In M. W. Bauer, R. Shukla, N. Aluum (Eds.). The Culture of Science: How the Public Relates to Science Across the Globe. Routledge
- Skolverket (2004). Pisa 2003 - svenska femtonåringars kunskaper och attityder i ett internationellt perspektiv. Stockholm: Skolverket, Rapport 254.
- Skov, P. (1998). Unges fremtid – meget afgøres tidligt. Erfaringer fra en forløbsundersøgelse. København: Danmarks Pædagogiske Institut.
- Skovmose, O. (2011). An Invitation to Critical Mathematics Education. Sense Publishers
- Skovsmose, O. Zentralblatt für Didaktik der Mathematik (2001) 33: 123. doi:10.1007/BF02652747
- Sølberg, J. (2006), Den lokale naturfaglige kultur - et fokus for udvikling, MONA, 2006(1), 7-22
- Sørensen, H. (2007). Masser af rapporter og strategiplaner - men hvordan ændres praksis i fysiklokalet? Kommentar. MONA(2).
- Sørensen, H., & Andersen, A. M. (1996). Group-work in primary science - a problem for girls? Paper presented at the Gasat 8, Conference Proceedings til GASAT 8.
- Sørensen, H., & Østergaard, L. (2001). The relationship between prior experiences and engagements in learning. Paper presented at the NARST 2001, New Orleans.
- Sriraman, B., C. Michelsen, A. Beckmann & V. Freiman (Eds). (2008). Proceedings of the Second International Symposium on Mathematics and its Connections to the Arts and Sciences (MACAS2). University of Southern Denmark Press
- Stadler, E. (2009). Stadieövergången mellan gymnasiet och universitetet Matematik och lärande ur ett studerandeperspektiv. Växjö universitet Fakulteten för matematik/naturvetenskap/teknik. Matematiska och systemtekniska institutionen
- Thelin, M. (2012). Länkningen mellan kurstmål och kunskapskrav i geografiämnet i Gy 2011. Geografiska Notiser • Årgång 70 (2012) • Nummer 3
- Thulin, Susanne (2001). Hur tänker förskolebarn om en process i naturen? C-uppsats i pedagogik. Kristianstad: Högskolan Kristianstad, Institutionen för Beteendevetenskap.
- Tolppanen, S. (2015). Creating a better world: Questions, actions and expectations of international students on sustainable development and its education (Doctoral thesis). University of Helsinki, Helsinki.
- Troelsen, R. (2005). Unges interesse for naturfag – hvad ved vi, og hvad kan vi bruge det til? MONA, 2005(2),
- Troelsen, R. (2006). Interesse og interesse for naturfag. NorDiNa. Nordic Studies in Science Education. 5, december 2006
- Troelsen, R. (2006). Om interesse for naturfagene: Hvad er det, og hvordan påvirkes den? Bering, J. Dolin, L. Krogh, J. Sølberg, H. Sørensen & R. Troelsen (red.), Naturfagsdidaktikkens mange facetter. Proceedings fra Det 8. nordiske Forskersymposium for undervisning i naturfagene. Aalborg

- Troelsen, R. P. (2008). "Der er så meget andet i verden end fysik!" Unge's interesse for og valg af naturfag. Danmarks Pædagogiske Universitetsskole, Aarhus Universitet
- Troelsen, Rie Popp & Sølberg, Jan (red.) (2008). Den danske ROSE-undersøgelse – en antologi. Institut for Curriculumforskning, Danmarks Pædagogiske Universitetsskole, Aarhus Universitet.
- Turmo, A. (2005). Gender differences in students' achievement, attitudes, and self-concept in science: New evidence from the TIMSS 2003 study in Norway. Paper presented at the ESERA, Barcelona.
- Uitto, A., Juuti, K., Lavonen, J., Byman, R., & Meisalo, V. (2011). Secondary school students' interests, attitudes and values concerning school science related to environmental issues in Finland. Environmental Education Research Volume 17, 2011 - Issue 2, Pp. 167 - 186
- Uitto, A. (2014). Interest, attitudes and self-efficacy beliefs explaining upper-secondary school students' orientation towards biology-related careers, International Journal of Science and Mathematics Education. 12(6), 1425-1444.
- Uitto, A., Juuti, K., Lavonen, J. & Meisalo, V. (2006). Students' interest in biology and their out-of-school experiences. Journal of Biological Education, 40(3), 124–129.
- Uitto, A., Juuti, K., Lavonen, J., & Meisalo, V. (2006). Students' interest in biology and their out-of-school experiences? Journal of Biology Education, 40(3), 124–129
- Ulriksen, L. (2003). Børne- og ungdomskultur og naturfaglige uddannelser. I: (Busch, Horst & Troelsen, 2003, s. 285-317).
- Ulriksen, L. (2012). Attracting Students and making them Stay - The importance of expectations and experiences in the recruitment and retention of engineering students. SEFI 40 th. annual conference, 23 - 26. september 2012. Greece
- Ulriksen, L. (2014) The First-Year Experience: Students' Encounter with Science and Engineering Programmes. In the Words of Science and Technology Students. in E. K. Henriksen, J.Dillon, J. Ryder (Eds). Science and Technology Education. Understanding Student Participation and Choice. Springer: Pp 241 - 257
- Ulriksen, L. & Holmegaard, H. (2007). Rigtige piger går ikke på htx, men piger er glade for at gå der, MONA, 2007(2), 29-46
- Ulriksen, L., Henriette Tolstrup Holmegaard, Lene Møller Madsen (2013) Weaving a Bridge of Sense: Students' Narrative Constructions as a Lens for Understanding Students' Coping with the Gap between Expectancies and Experiences When Entering Higher Education. European Educational Research Journal, Volume 12 Number 3 2013
- Ulriksen, L., Jensen, S. B., Madsen, L. M., & Holmegaard, H. T. (2013). Forstå, Fange og Fastholde: Gymnasielever, undervisning og interesse for naturfag. Odense: Erhvervsskolernes Forlag.
- Ulriksen, L., Madsen, L. M., Tolstrup H. (2011) Hvorfor bliver de ikke? – Hvad fortæller forskningen om frafald på videregående STEM-uddannelser? I MONA 2011 -4
- Undervisningsministeriet (1999): De humanistiske og naturvidenskabelige kandidater og deres arbejdsmarked
- Undervisningsministeriet (2000): De tekniske uddannelser. Uddannelse og arbejdsmarked. Statistiske analyser af uddannelserne. Undervisningsministeriet
- Undervisningsministeriet (2000): Naturvidenskabelige klasser i gymnasiet.Rapport fra en arbejdsgruppe. uddannelsesstyrelsens temahæfteserie nr.6/2000. Undervisningsministeriet.
- Undervisningsministeriet (2001): Tendenser for de videregående naturvidenskabelige uddannelser.
- Undervisningsministeriet, IT- og Forskningsministeriet, Arbejdsministeriet og Erhvervsministeriet (2001): IT-arbejdskraft og uddannelser – Udbud og efterspørgsel.
- Undervisningsministeriet. (1997). Den svigende søgning til tekniske og naturvidenskabelige fag.

- Valero, P. (2012) Re-interpreting students' interest in mathematics: Youth culture resisting Modern subjectification. In B. D. Paola, J. Díez-Palomar (Eds.) *FACILITATING ACCESS AND PARTICIPATION: MATHEMATICAL PRACTICES INSIDE AND OUTSIDE THE CLASSROOM*
- Valero, P. (2015). Re-interpreting Students' Interest in Mathematics: Youth Culture and Subjectivity. In U. Gellert, J. G. Rodríguez, C. Hahn, S. Kafoussi (Eds.): *Educational Paths to Mathematics*. Part of the series *Advances in Mathematics Education* pp 15-32. Springer International Publishing
- Virtanen, T.E., Lerkkanen, M.K., Poikkeus, A.M. & Kuorelahti. M. (2015). The relationship between classroom quality and students' engagement in secondary school. *Educational Psychology, An International Journal of Experimental Educational Psychology*, Volume 35, 2015 - Issue 8
- Wedgege, T., Skott, J. (2006). Changing views and practices? A study of the KappAbel mathematics competition. Research report Norwegian Center for Mathematics Education, NTNU
- Weng, P. (1996). *Matematik og naturvidenskab i folkeskolen - en international undersøgelse*. København: Danmarks Pædagogiske Institut.
- Wennerås, C. & Wold, A. Nepotism and sexism in peer-review. *Nature*, vol. 387/1997, s. 341-343.
- Wickman, P.-O. & Britt Jakobson (2005). Den naturvetenskapliga undervisningens estetik. *UTBILDNING & DEMOKRATI* 2005, VOL 14, NR 1, 81–100. TEMA: ESTETIK OCH UTBILDNING
- Wickman, P.-O. & K. M. Hamza (2015). Signs of taste for science: a methodology for studying the constitution of interest in the science classroom. *Cultural Studies of Science Education*, June 2015, Volume 10, Issue 2, pp 339–368
- Wickman, P.-O., & Östman, L. (2001). University students during practical work: Can we make the learning process intelligible? In H. Behrendt, H. Dahncke, R. Duit, W. Gräber, M. Komorek, A. Kross, & P. Reiska (Eds.), *Research in science education—Past, present, and future* (pp. 319–324). Dordrecht, The Netherlands: Kluwer.
- Winsløw, C.: 2002, 'Dreyfus' potential in first year calculus', in A.D. Cockburn and E. Nardi (eds), *Proceedings of the 26th International Conference, Psychology of Mathematics Education*, Vol. 4, Norwich, United Kingdom, pp. 410–417.
- Wistoft, K., Stovgaard, M. (2012) *Lyst til at lære - Evaluering af konceptet "Haver til Maver"*. I Mona 2012 nr. 1
- Zeuner, L. & Linde, P.C. (1997). *Livsstrategier og uddannelsesvalg. En kultursociologisk undersøgelse blandt elever i matematisk gymnasium og htx*. København: Socialforskningsinstituttet

Litteratur om nordiske forhold inden for genstandsfelt 4

- Airey, J., Linder, C. (2011). Bilingual Scientific Literacy. In C. Linder, L. Östman, D.A. Roberts, P.O. Wickman, G. Erickson, A. MacKinnon (Eds.): *Exploring landscapes of Scientific Literacy*. London: Routledge. P. 106 - 124
- Allerup, P.; Bredo, O.; Weng, P. (1998): *Matematik og naturvidenskab i ungdomsuddannelser – en international undersøgelse*. Danmarks Pædagogiske Institut.
- Andersen & Cathrin, K.K., Maule, C.F. (2006). *Fysik er også for piger*. MONA 2006-2. P. 86 - 89

- Andersen, A. M., & Sørensen, H. (2007). Elevers holdninger til og interesse for naturfag og naturvidenskab. In N. Egelund (Ed.), PISA 2006 - danske unge i en international sammenligning (pp. 99-139). København: Danmarks Pædagogiske Universitetsforlag
- Andersen, A. M., & Sørensen, H. (2007). Naturvidenskabelige kompetencer - en profil over elevpræstationer. I: N. Egelund (Ed.), Pisa 2006 - danske unge i en international sammenligning. København: Danmarks Pædagogiske Universitetsskole
- Andersen, A. M., Breiting, S., Busch, H., Hyllested, T., Nielsen, K., Sølberg, J., et al. (2004). Naturfagsdidaktik som områdedidaktik. I: K. Schnack (Ed.), Didaktik på kryds og tværs. København: Danmarks Pædagogiske Universitets Forlag.
- Andersen, A. M., Egelund, N., Jensen, T. P., Krone, M., Lindenskov, L. & Mejding, J. (2001). Forventninger og færdigheder - danske unge i en international sammenligning. København: Amternes og Kommunernes Forskningsinstitut, Danmarks Pædagogiske Universitet og Socialforskningsinstituttet.
- Andersen, N.O., Busch, H., Horst, S. & Troelsen, R. (2003). Fremtidens Naturfaglige Uddannelser – Bd. 1: Strategiplan 2003-2008 og videre frem. København: Undervisningsministeriet
- Andersson, B., Bach, F., & Zetterqvist, A. (2002). Understanding global and personal use of energy. Journal of Baltic Science Education, 1(2), 4-18.
- Andersson, Erik, Öhman, Johan (2016). Young people's conversations about environmental and sustainability issues in social media. In: Environmental Education Research, ISSN 1350-4622, E-ISSN 1469-5871
- Andersson, Kristina (2011). Lärare för förändring: att synliggöra och utmana föreställningar om naturvetenskap och genus. Doctoral Thesis. Studies in Science and Technology Education, ISSN 1652-5051 ; 36. Linköping: Linköping University Electronic Press , 2011
- Andersson, S., Chronholm, J.A. (2012). Centrala teman för studenters relationer till utbildningsprogram.Teaching and Learning in Higher Education, NU 2012 (8).Chalmers Conference
- Anker-Hansen, J. (2015). Assessing Scientific Literacy as Participation in Civic Practices: Affordances and constraints for developing a practice for authentic classroom assessment of argumentation, source critique and decision-making. Doctoral thesis. Stockholm: Department of Mathematics and Science Education, Stockholm University
- Areljung, S., Ottander, C. & Due, K. Res Sci Educ (2016). doi:10.1007/s11165-016-9557-
- Aukrust, V. G. (2008). Boys' and girls' conversational participation across four grade levels in Norwegian classrooms: Taking the floor or being given the floor? Gender and Education, 20(3), 237–252
- Baandrup, H., Christoffersen, K. Damberg, E, Dolin, J., Heise, I., Ingerslev, G. & Lau, J. (1996) FØrsøg nu! - om undervisningsdifferentiering og læreprocesser i gymnasiet og hf (Vbl. 17) København: Undervisningsministeriet, Gymnasieafdelingen.
- Bacher, C., Steffen M. Iversen, Kjeld Bagger Laursen, Lars Ulriksen (2012). Dovne drenge eller døbringende matematik? MONA 1 (2012).
- Bagger, A., Roos, H. (2015). How Research Conceptualises the Student in Need of Special Education in Mathematics. Linköping: Svensk förening för MatematikDidaktisk Forsknin
- Bagger, A., Roos, H. (2014). Who is the Student in Need of Special Education in Mathematics? MAFIF 2014
- Bergvall, Ida (2016). Bokstavligt, bildligt och symboliskt i skolans matematik: – en studie om ämnesspråk i TIMSS. Doctoral thesis.Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Educational Sciences, 10. Uppsala: Acta Universitatis Upsaliensis

- Bernhard, Jonte, Carstensen, Anna-Karin (2016). Science education in a bilingual class: problematising a translational practice. In: J. Björkqvist, K. Edström, R.J. Hugo, J. Kontio, J. Roslöf, R. Sellens, S. Virtanen, The 12th International CDIO Conference, Turku University of Applied Sciences , 2016, 1072-1081 p.1072-1081
- Björkqvist, O. (2003). Matematikdidaktiken i Sverige: En lägesbeskrivning av forskningen och utvecklingsarbetet. Stockholm: Kungliga Vetenskapsakademien.
- Bøe, Gudrun Maria Vetleseter; Henriksen, Ellen Karoline; Lyons, Terry; Schreiner, Camilla (2011). Participation in science and technology: young people's achievement-related choices in late-modern societies. *Studies in science education* 2011 ;Volum 47.(1) s. 37-72
- Broström, Stig (2013). Science i børnehaven. MONA: Matematik og Naturfagsdidaktik, Nr. 4
- BRUNSTAD, P.O. (2002). Longing for belonging: Youth culture in Norway. In J. Gidley & S.Inayatullah (Eds.), *Youth futures, comparative research and transformative visions* (pp.143- 54). London: Praeger Publishers.
- Bugge, Birthe Louise & Harder, Peter (2002): Skolen på frihjul: om lærerollen og det forsvundne elevansvar. København: Gyldendal.
- Busch, H. & Sørensen, H. (2005). Piger, drenge og naturfag. Uddannelse
- Busch, H., Horst, S. & Troelsen, R. (red.) (2003). Inspiration til fremtidens naturfaglige uddannelser. En antologi. København: Undervisningsministeriet.
- Busch, Henrik (2001): "Når Superman smider skjorten" i KVANT 12 (3).
- Dahl, B. (2004). How do gifted students become successful? A study in learning styles. In TSG 4 (Topic Study Group 4): Activities and programmes for gifted students. ICME-10 (the 10th International Congress on Mathematical Education). Copenhagen, DK. 4-11 July 2004
- Dahl, B. & Sriraman, B. (2009) On Bringing Interdisciplinary Ideas to Gifted Education. In L.V. Shvinina (Ed).International Handbook on Giftednedd. Part one. Canada: Springer
- Dam, T., Linderoth, U. H., Drejer, K. (2014). Det diskrete sociale pres - om konsekvenser af usagte forventninger til piger og drenge i natur/teknik. I MONA 2014 -3
- Danielson, A. (2011).Characterising the practice of physics as enacted in university student laboratories using 'Discourse models' as an analytical tool. NorDina, Vol 7, No 2 (2011).
- Danielsson, A: T. (2009). Doing Physics - Doing Gender. An exploration of Physics students' Identity Constitution in the Context of Laboratory Work. *Acta Universitatis Upsalienses.* Uppsala Dissertations from the Faculty of Science and Technolgy 83. 270. pp. Uppsala. 978-91-554-7454-6
- Danielsson, Anna, and Cedric Linder. "Learning in physics by doing laboratory work: towards a new conceptual framework." *Gender and Education* 21.2 (2009): 129-144.
- Danmarks Evalueringsinstitut. (2002). Undersøgelsen af sammenhænge mellem elevers resultat ved Folkeskolens afgangsprøver og deres senere uddannelsesforløb. København: Danmarks Evalueringsinstitut.
- Danmarks Naturfredningsforening. (2004). Børn og natur. TNS Gallup for Danmarks Naturfredningsforening.
- Davidsson, Eva (2009).Enhancing Visitors' Interest in Science – A Possibility or A Paradox?. Research in Science Education. March 2009, Volume 39, Issue 2, pp 197–213
- Dolin, J., Krogh, L. & Troelsen, R. (2003). En kompetencebeskrivelse af naturfagene. I: H. Busch, S. Horst & R. Troelsen (red.), *Inspiration til fremtidens naturfaglige uddannelser* (s. 59- 142). København: Undervisningsministeriet
- Duit, R. (2004). Bibliography - STCSE: Students' and Teachers' Conceptions and Science Education. Kiel: IPN - Leibniz Institute for Science Education, University of Kiel.
- Dysthe, O. (2000): Det flerstommige klasserum. Århus: Klim.

- Egelund, N. (2002): Hvad er forskellen på 15-16 årige elever med gode og mindre gode kundskaber i naturfag og teknik? Danmarks Pædagogiske Universitet
- Egelund, N. (Ed.). (2007). PISA 2006 - Danske unge i en international sammenligning. København: Danmarks Pædagogiske Universitetsforlag.
- Ejbye-Ernst, N. (2008). Er det så ligetil? I MONA 2008 - 3
- Ekborg, M., Nyström, E., & Ottander, C. (2009, August–September). Working with socio-scientific issues (SSI) – Teachers' perspectives. Paper presented at the ESERA conference, Istanbul.
- Ellen Karoline Henriksen (2015) Introduction: Participation in Science, Technology, Engineering and Mathematics (STEM) Education: Presenting the Challenge and Introducing Project IRIS. in E. K. Henriksen, J.Dillon, J. Ryder (Eds). Science and Technology Education. Understanding Student Participation and Choice. Springer:pp 1-14
- Erik Andersson, Situational political socialization: a normative approach to young people's adoption and acquisition of political preferences and skills, Journal of Youth Studies, 2015, 18, 8, 967
- Eriksen, T. R., Gerstoft, B. F. & Hansen, H. P, (Eds.) (1996). Erfaringer - et humanistisk og sundhedsvidenskabeligt perspektiv. København: Munksgaard
- Frejd, P. & Ärlebäk, J.B. (2011). First Results from a Study Investigating Swedish Upper Secondary Students' Mathematical Modelling Competencies. G. Kaiser, W. Blum, R. B. Ferri & G. Stillman (Eds.)ICTMA 14 Trends in Teaching and Learning of Mathematical Modelling. London: Springer
- Gedrovics, J., Wäreborn, I. & Jeronen, E. (2006). Science subjects choice as a criterion of students' attitudes to science. Journal of Baltic Science Education, 1(9), 74–85.
- Hähkiöniemi, M. (Årstal) Using questioning diagrams to study teacher–student interaction.Nordic research in mathematics education
- Halldén, O. (1999). Situating the question of conceptual change. In eighth European Conference for Research on Learning and Instruction, Göteborg, Sweden [Abstracts, p. 230].
- Hamza, Karim (2013). Distractions in the School Science Laboratory.Research in Science Education, August 2013, Volume 43, Issue 4, pp 1477–1499
- Hansen, M.N. (1997): Social and Economic Inequality in the Educational Career: Do the Effects of Social Background Characteristics Decline? European Sociological Review, Vol. 13, Nr. 3.
- Hansen, M.N. (1999): Utdanningspolitikk og ulikhet. Rekruttering til høyere utdanning 1985-1996. Universitetsforlaget.
- Hartmann-Petersen (2005). Almen, uorganisk og organisk kemi. Polyteknisk Forlag.
- Hasse, C. (1998): Learning to Pattern Physics Virtues: Male and Female Dissimilarities. I Jensen (1998): Justification and Enrolment Problems in Education Involving Mathematics and Physics. Roskilde University Press
- Hasse, C. (2002). Gender diversity in play with Physics. The problem of premises for participation in activities. Mind, Culture and Activity, 9(4), 250–270
- Hasse, C., Sinding, A. (2012). The Cultural Context of Science Education. I D. Jorde, J. Dillon (Eds.) Science Education Reseach and Practice in Europe. Rotterdam: Sense Publishers. Pp. 237 - 252
- Horst, S. (2006). Naturfagene i bevægelse. Undervisningsministeriets temahæfteserie nr. 4 – 2006.
- Ideland, M. (2002). Dagens gennyheter. Hur massmedier berättar om genetik och genteknik. Lund: Nordic Academic Press.
- Ideland, Malin, Claes Malmberg, and Mikael Winberg. "Culturally equipped for socio-scientific issues? A comparative study on how teachers and students in mono-and multiethnic schools handle work with complex issues." International Journal of Science Education 33.13 (2011): 1835-1859.

- Ideland, Malin, Malmberg, Claes (2012). Body talk: students' identity construction while discussing a socioscientific issue. *Cultural Studies of Science Education*. June 2012, Volume 7, Issue 2, pp 279–305
- Jacobsen, B. (2009). Från begrepp till utforskande arbetssätt- forskning om NO-undervisning i grundskolans tidigare år, Utbildningsförvaltningen, Stockholms stad
- Jacobsen, J. C., Elmgaard, D. C. (2014). 'Det ene projekt afløser det andet..' Hvordan sikres kvalitet i naturfaglige projekter? En virkningsevaluering. Danmark: Institut for Naturfagenes Didaktik, KU
- Jæger, M.M.; Holm, A. (2004): Penge, (ud)dannelse, forbindelser eller brains? En test af fire forælderressourcers betydning for unges uddannelsesvalg i Danmark. *Dansk Sociologi*, Årg. 15, Nr. 3.
- Jakobsson, Anders (2006). Students' Self-Confidence and Learning Through Dialogues in a Net-Based Environment. *Journal of Technology and Teacher Education* 14.2 (2006): 387-405.
- Jensen, C.J. (2006). To uforenelige verdener? MONA, 2006(1),
- Jensen, Cathrine Jespersen (2006). Det naturlige valg? En analyse af unges valg af tekniske og naturvidenskabelige fag og uddannelser. Ph.D. afhandling. København: Danmarks Pædagogiske Universitet
- Jensen, Jens Højgaard (2001): "Naturvidenskabens syndefald?" i Mere spredt fægtning. IMFUFA tekst nr. 404. Roskilde: IMFUFA, Roskilde Universitetscenter.
- Jensen, T.H. (2009), Modellering versus problemløsning – om kompetencebeskrivelser som kommunikationsværktøj. MONA (2)
- Jensen, T.P., Mogensen, K.B. & Holm, A. (1997). Valg og veje i ungdomsuddannelserne. København: AKF Forlaget.
- Johansson, M. (2007), Mathematal Meaning Making and Textbook Tasks. In *For the Learning of Mathematics*, Vol. 27, No. 1
- Jorde, D., Strømme, A., Sorborg, Ø., Erlien, W., & Mork, S.M. (2003). Virtual environments in science: Viten.no. Forsknings- og kompetensnettverk for IT i utdanning (ITU). Oslo, Unipub AS.
- Juuti, K., Lavonen, J., & Meisalo, V. (2005). Issues on school e-laboratories in science teaching: Virtuality, reality and gender. In J.-P. Courtiat, C. Davarakis & T. Villemur (Eds.), *Proceedings of WS 2, the 18th IFIP World Computer Congress on technology enhanced learning* (pp. 43–58). New York: Springer
- Juuti, K., Lavonen, J., Uitto, A., Byman, R., Meisalo, V. (2004). Boys' and girls' interest in physics in different contexts: A Finnish survey. In A. Laine, J. Lavonen & V. Meisalo (Eds.), *Current research on mathematics and science education: Proceedings of the XXI annual symposium of the Finnish Accociation of Mathematics and Science Education Research* (Research Report 253, pp. 55 – 79). Helsinki, Finland: University of Helsinki, Department of Applied Sciences of Education.
- Kidman, Gillian & Uusimaki, Liisa (2004) Challenging Maths-Anxiety: An Intervention Model. In Niss, Mogens (Ed.) *The 10th International Congress on Mathematical Education (ICME-10)*, 4-11 July 2004, Copenhagen, Denmark.
- Klaar, S., Öhman, J. (2012). Action with friction: a transactional approach to toddlers' physical meaning making of natural phenomena and processes in preschool. *European Early Childhood Education Research Journal*, Volume 20, 2012 - Issue 3. P. 439 - 454
- Klaar, Susanne (2013). Naturorienterad utbildning i förskolan: Pragmatiska undersökningar av meningsskapandets individuella, sociala och kulturella dimensioner. Doctoral Thesis, Örebro: Örebro Universitet

- Kristina Andersson (2012). "It's Funny that We Don't See the Similarities when that's what We're Aiming for"—Visualizing and Challenging Teachers' Stereotypes of Gender and Science. Research in Science Education, April 2012, Volume 42, Issue 2, pp 281–302
- Krogh, L. B. (2006). 'Cultural Border Crossings' i fysikundervisningen – et kulturelt perspektiv på unges forhold til fysik'. Steno Department for Studies of Science and Science Education.
- Krogh, Lars Brian, Andersen, Hanne Moeller (2013). "Actually, I May be Clever Enough to do it". Using Identity as a Lens to Investigate Students' Trajectories Towards Science and University. Research in Science Education, April 2013, Volume 43, Issue 2, pp 711–731
- Laursen, P. F. (2000). Skolen uden tabere - Bloom revurderet. Dansk Pædagogisk Tidsskrift, 39 - 47
- Lavonen, J. & Meisalo, V. (2002). Research-based design of learning materials for technology-oriented science education. Themes in Education, 3, 107 – 131.
- Lavonen, J., Gedrovics, J., Byman, R., Meisalo, V., Juuti, K. & Uitto, A. (2008). Students' motivational orientations and career choice in science and technology. A comparative investigation in Finland and Latvia. Journal of Baltic Science Education, 7(2), 86–102.
- Liberg, C., Geijerstam, Å., Folkeryd, J. (2011). Scientific Literacy and Students' Movability in Science Texts. In C. Linder, L. Östmn, D.A. Robertd, P.O. Wickman, G. Ericksen, A: MacKinnon (Eds.): Exploring the Landscape of Scientific Literacy. New York: Routledge
- Lindahl, B. (2003): Lust att lära naturvetenskap och teknik? En lungitudinell studie om vägen till gymnasiet. Ph.d.-afhandling. Göteborg Universitet.
- Lindenskov, L. (2006). Matematikvanskeligheder i inkluderende undervisning for børn, unge og voksne. Nordic Studies in Mathematics Education 11(4), 65-96
- Lindenskov, L., and Peter Weng "Math-holes" – theory and empirical data– A pilot study in school year 1-3. Linnanmäki, K. (ed.) Different Learners – Different Math? The 4th Nordic Research Conference on Special Needs Education in Mathematics. Vaasa: Faculty of education, Åbo Akademi University.
- Lindenskov, L., Pia Beck Tonnesen, Peter Weng, Camilla Hellsten Østergaard. Theories to be combined and contrasted: Does the context make a difference? Early intervention programmes as case. Konrad Krainer; Nada Vondrov'a. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. pp.2675- 2680, Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education.
- Løken, M. (2014). When Research Challenges Gender Stereotypes: Exploring Narratives of Girls' Educational Choices. in E. K. Henriksen, J.Dillon, J. Ryder (Eds). Science and Technology Education. Understanding Student Participation and Choice. Springer: pp 277 - 295
- Lykkegaard, E., Ulriksen, L.(2016). Role model and prototype matching: Upper-secondary school students' meetings with tertiary STEM students. NorDina Vol 12, No 1 (2016)
- Magnussen, R. & Jessen, C. (2004). Research Report, Homicide. Copenhagen: Learning Lab Denmark.
- Maria Christina Secher Schmidt (2016) Dyscalculia ≠ maths difficulties. An analysis of conflicting positions at a time that calls for inclusive practices, European Journal of Special Needs Education, 31:3, 407-421
- Mattson, C. (2008). Social Uddannelsesmobiliteit på kandidat og forskeruddannelser. København: SFI - Det Nationale Forskningscenter for Velfærd
- Mattson, L. (2013). Tracking mathematical giftedness in an egalitarian context. Chalmers university of technology and university of gothenburg, Göteborg, Sweden 2013

- Mattson, L. & Bengmark, S. (2011) On Track to Gifted Education in Mathematics in Sweden. The Elements of Creativity and Giftedness in Mathematics Volume 1 of the series Advances in Creativity and Giftedness pp 81-101
- Meisalo, V., Lavonen., J., Juuti, K. & Aksela, M. (2001). Chemistry Education in a Finnish Virtual School. In A . F. Aveiro, Portugal: University of Aveiro. Cachapuz (Ed.), Proceedings of the 6th European Conference on Research in Chemical Education 4. – 8. September 2001 (Paper S29, pp. 1 – 10).
- Monica H. Sträng, Lisbeth Åberg-Bengtsson (2010). “Where do you Think the Water Comes From?” Teacher–Pupil Dialogues about Water as an Environmental Phenomenon.Scandinavian Journal of Educational Research. Volume 54, 2010 - Issue 4
- Mork, S., Jorde, D. (2004). We Know they Love Computers, but do they Learn Science? Using Information Technology for Teaching about a Socio-scientific Controversy. Themes in Education, 5: 1, 69-100, 2004
- Naturvidenskabelig kompetence. I: J. Meiding (Ed.), Pisa 2003 - danske unge i international sammenhæng
- Naturvidenskabeligt Uddannelsesråd (2001): Kandidater i Matematik-, Fysik- og Kemi-fagene: Hvor gik de hen? En kortlægning af produktion og beskæftigelse for perioden 1985-1999. Undervisningsministeriet
- Nielsen, L., Patronis, T. and Skovsmose, O. (1999):Connecting Corners of Europe: A Greek Danish Project in Mathematics Education, Systeme Arhus.
- Norén, E. (2015). Agency and positioning in a multilingual mathematics classroom. Educational Studies in Mathematics, Vol. 89, Issue 2
- Orlander, A. A. (2014). “What if we were in a test tube?” Students’ gendered meaning making during a biology lesson about the basic facts of the human genitals. Cultural Studies of Science Education, June 2014, Volume 9, Issue 2, pp 409–431
- Orlander, Auli Arvola, Med kroppen som insats: Diskursiva spänningsfält i biologiundervisningen på högstadiet. Doctoral thesis. Stockholm: Institutionen för matematikämnets och naturvetenskapsämnenas didaktik, Stockholms universitet , 2011. , 96 p.
- Ørngreen, R. (2015). Reflections on Design-Based Research. Conference paper: 4th IFIP 13.6 Working Conference, HWID 2015, London, UK, June 25-26. In Nocera, Baricelli, Lopes, Campos, Clemmensen (Eds.) Human Work Interaction Design. Work Analysis and Interaction Design Methods for Pervasive and Smart Workplaces. From the series: IFIP Advances in Information and Communication Technology, Volume 468.
- Östman, L. (1998). How companion meanings are expressed by science education discourse. In D. A. Roberts & L. Ostman (Eds.), Problems of meaning in science curriculum (pp. 54–70). New York: Teachers College Press.
- Östman, Leif, Almqvist, Jonas (2010). What do values and norms have to do with scientific literacy? In C. Linder, L. Östman, D. A. Roberts, P.O. Wickman, G. Erickson, .A. MacKinnon (Eds.): Exploring the landscape of scientific literacy, London: Routledge , 2010, 160-175 p.
- Ottander, Christina, Ekborg, Margareta (2012). Students’ Experience of Working with Socioscientific Issues - a Quantitative Study in Secondary School. Research in Science Education, December 2012, Volume 42, Issue 6, pp 1147–1163
- Ottemo, A. (2015). Feministiska Ambitioner I Det Teknovetenskapliga Klassrummet. Pedagogisk Utveckling Och Interaktivt Lärande (Pil) Göteborgs Universitet Pil-Enhets Skriftserie 2015:02

- Ottemo, Andreas (2015). Kön, kropp, begär och teknik: Passion och instrumentalitet på två tekniska högskoleprogram. Doctoral Thesis. Göteborgs universitet. Utbildningsvetenskapliga fakulteten, University of Gothenburg. Faculty of Education
- Paludan, K. (2001): Naturvidenskab og elevernes natur. Uddannelse nr.5/2001.
- Pasi NieminenE, Antti Savinainen, Jouni Viiri (2013). Gender Differences In Learning Of The Concept Of Force, Representational Consistency, And Scientific Reasoning. International Journal of Science and Mathematics Education, October 2013, Volume 11, Issue 5, pp 1137–1156
- Petersen, J.K. (1999): Kan naturen begrænse næringstilførslen i danske fjorde? Ny Viden Fra Miljøstyrelsen, 1999, Vol 1, Issue 4. Miljøstyrelsen.
- Pless, M., & Katznelson, N. (2005). Niende klasse og hvad så? - en midtvejsrapport om unges uddannelsesvalg og overgang fra grundskole til ungdomsuddannelse og arbejde. København: Center for Ungdomsforskningvn.
- Pless, M., & Katznelson, N. (2007). Unge veje mod ungdomsuddannelserne. København: Center for Ungdomsforskning.
- Reisby, Kirsten (red.) (2001): Kønsblik på bacheloruddannelser. (2. rapport fra projekt "Kønnets betydning barrierer og karrierer i de højere uddannelser og forskning.) København: Danmarks Pædagogiske Universitet.
- Roos, Helena (2015) Inclusion in mathematics in primary school: what can it be?. Linnéuniversitetet
- Ryder, J., Ulriksen, L., Bøe, M.V. (2015). Understanding Student Participation and Choice in Science and Technology Education: The Contribution of IRIS. In E.K. Henriksen, J. Dillon, J. Ryder (Eds.) Understanding Student Participation and Choice in Science and Technology Education. Netherlands: Springer. pp 351-366
- Säljö, R., & Bergqvist, K. (1997). Seeing the light: Discourse and practice in the optics lab. In L. B. Resnick, R. Säljö, C. Pontecorvo, & B. Burge (Eds.), Discourse, tools, and reasoning: Essays on situated cognition (pp. 385–405). Berlin: Springer
- Savinainen, A. and J. Viiri (2004), Proceedings of the Physics Education Research Conference, Madison, 2003, AIP Conference Proceedings No. 720, edited by J. Marx, S. Franklin, and K. Cummings (AIP, New York, 2004), p. 77
- Savinainen, A., P. Nieminen, J. Viiri, J. Korkea-aho, and A. Talikka (2007), Proceedings of the Physics Education Research Conference, Greensboro, 2007, AIP Conference Proceedings No. 951, edited by L. Hsu, C. Henderson, and L. McCullough (AIP, New York, 2007), p. 176.
- Schreiner, C. & Sjøberg, S. (). Science Education And Young People's Identity Construction - Two Mutually Incompatible Projects? In Science Education And Youth's Identity Construction.
- Sendrup, L. & Frimodt-Møller, I. (2001). Kønsadskilt undervisning, gruppearbejde og lærersamarbejde. En anden pædagogisk historie. Paritas Grafik
- Simonsen, Birgitte & Katznelson, Noemi (2000): "Unge arbejdsbegreb". Arbejdsliv nr. 4.
- Sinding, A. B. (2007). Når kulturen ekskluderer - piger i fysikfaget, MONA, 2007(1), 18-31
- Sinding, A. B. (2007). Når kulturen ekskluderer - piger i fysikfaget, MONA, 2007(1), 18-31
- Sinding, A.B. (2007). Den kulturelle eksklusion af piger og kvinder i fysik. Kontur - Tidsskrift for Kulturstudier, 2007, Issue 16, p. 74-76
- Sinnes, A. (2006). Three Approaches to Gender Equity in Science Education. Nordina 2(1), 72-83
- Sinnes, A.T., Løken M. (2014). Gendered education in a gendered world: looking beyond cosmetic solutions to the gender gap in science. Cultural Studies of Science Education. June 2014, Volume 9, Issue 2, pp 343–364

- Sjaastad, J. (2010, June). The influence of parents, teachers and celebrities in young people's choice of science in higher education. Paper presented at the XIV. IOSTE Symposium, Bled, Slovenia
- Sjøberg, S. (2001). ROSE: The Relevance of Science Education. A comparative and cooperative international study of the contents and context of science education.
- Sjøberg, S. (2002). Science for the Children? Report from the SAS-project (Science And Society), a cross-cultural study of factors of relevance for the teaching and learning of science and technology
- Sjøberg, S. (2002). Three contributions to science education (Vol. 2 - 2002). Oslo: Department of Teacher Education and School Development, University of Oslo.
- Sjøberg, S., & Schreiner, C. (2006). Elevenes forhold til naturfag og teknologi: Et nordisk og internasjonalt perspektiv basert på ROSE-prosjektet. I: L. Bering, J. Dolin, L. B. Krogh, J. Sølberg, H. Sørensen & R. Troelsen (Eds.), Naturfagsdidaktikkens mange facetter (1 ed., pp. 6). København: Danmarks Pædagogiske Universitets forlag
- Sjøberg, Svein. (2000). Kjønn og naturvitenskapens 'kroppsspråk'. Nordisk Pedagogik, 20(2), 80-89.
- Skov, P. (1998). Unges fremtid – meget afgøres tidligt. Erfaringer fra en forløbsundersøgelse. København: Danmarks Pædagogiske Institut.
- Skovmose, O. (2011). An Invitation to Critical Mathematics Education. Sense Publishers
- Sørensen, H. (2007). Gender inclusive science education? In D. Corrigan, J. Dillon, & R. Gunstone (Eds.), The re-emergence of values in science education (pp. 249–267). Rotterdam: Sense Publishers
- Sørensen, H. (2007). Masser af rapporter og strategiplaner - men hvordan ændres praksis i fysiklokalet? Kommentar. MONA(2).
- Sørensen, H., & Andersen, A. M. (1996). Group-work in primary science - a problem for girls? Paper presented at the GASAT 8, Conference Proceedings til GASAT 8.
- Sørensen, H., & Østergaard, L. (2001). The relationship between prior experiences and engagements in learning. Paper presented at the NARST 2001, New Orleans.
- Sriraman, B., C. Michelsen, A. Beckmann & V. Freiman (Eds.). (2008). Proceedings of the Second International Symposium on Mathematics and its Connections to the Arts and Sciences (MACAS2). University of Southern Denmark Press
- Stadler, E. (2009). Stadieövergången mellan gymnasiet och universitet Matematik och lärande ur ett studerandoperspektiv. Växjö universitet Fakulteten för matematik/naturvetenskap/teknik. Matematiska och systemtekniska institutionen
- Stadler, H., Duit, R., & Benke, G. (2000). Do boys and girls understand physics differently? Physics Education, 35, 417–42
- Sumpter, L. (2016) 'Boys Press All the Buttons and Hope It Will Help': Upper Secondary School Teachers' Gendered Conceptions About Students' Mathematical Reasoning. International Journal of Science and Mathematics Education, Volume 14, Issue 8, pp 1535–1552
- Thelin, M. (2012). Länkningen mellan kursmål och kunskapskrav i geografiämnet i Gy 2011. Geografiska Notiser • Årgång 70 (2012) • Nummer 3
- Tirri, K., Tolppanen, S., Aksela, M., & Kuusisto, E. (2012). A cross-cultural study of gifted students' scientific, societal, and moral questions concerning science. Education Research International, 2012,
- Tolppanen, S., & Aksela, M. (2013). Important social and academic interactions in supporting gifted youth in non-formal education. LUMAT, 1(3), 279–298.
- Troelsen, R. (2005). Unges interesse for naturfag – hvad ved vi, og hvad kan vi bruge det til? MONA, 2005(2),

- Troelsen, Rie Popp & Sølberg, Jan (red.) (2008). Den danske ROSE-undersøgelse – en antologi. Institut for Curriculumforskning, Danmarks Pædagogiske Universitetsskole, Aarhus Universitet.
- Turmo, A. (2001): The relationship Between 15-year olds' Scientific Literacy and their Socio Economic Background – a Nordic perspective. Department of Teacher Education and School Development, University of Oslo.
- Turmo, A. (2004): Scientific Literacy and Socio-economic Background among 15-year-olds – A Nordic Perspective. Scandinavian Journal of Educational Research, Vol. 48, Nr. 3.
- Turmo, A. (2005). Gender differences in students' achievement, attitudes, and self-concept in science: New evidence from the TIMSS 2003 study in Norway. Paper presented at the ESERA, Barcelona.
- Uitto, A. , Juuti, K., Lavonen, J., Byman, R., & Meisalo, V. (2011). Secondary school students' interests, attitudes and values concerning school science related to environmental issues in Finland. Environmental Education Research Volume 17, 2011 - Issue 2, Pp. 167 - 186
- Ulriksen, L. & Holmegaard, H. (2007). Rigtige piger går ikke på htx, men piger er glade for at gå der, MONA, 2007(2), 29-46
- Undervisningsministeriet (1999): De humanistiske og naturvidenskabelige kandidater og deres arbejdsmarked
- Undervisningsministeriet (2000): De tekniske uddannelser. Uddannelse og arbejdsmarked. Statistiske analyser af uddannelserne. Undervisningsministeriet
- Undervisningsministeriet (2000): Naturvidenskabelige klasser i gymnasiet.Rapport fra en arbejdsgruppe. uddannelsesstyrelsens temahæfteserie nr.6/2000. Undervisningsministeriet.
- Undervisningsministeriet (2001): Tendenser for de videregående naturvidenskabelige uddannelser.
- Vesterinen,Tolppanen Aksela (2015). How Students See The Role Of Science And Technology In Solving Humanitarian And Environmental Problems? In J.A. Nielsen & M. Ossevoort (Eds.) Scientific literacy and socio scientific issues
- Viljaranta, J., Räikkönen, E., Aunola, K., & Nurmi, J.-E. (2014). The Role of Academic Performance, Self-Concept of Ability and Gender in Adolescents' Educational Plans in Finland. In The Power of Education Research for Innovation in Practice and Policy : The 2014 Annual Meeting of the American Educational Research Association. American Educational Research Association (AERA).
- Weng, P. (1996). Matematik og naturvidenskab i folkeskolen - en international undersøgelse. København: Danmarks Pædagogiske Institut.
- Wennerås, C. & Wold, A. Nepotism and sexism in peer-review. Nature, vol. 387/1997, s. 341-343.
- Wistedt, I. (1998): Recruiting Female Students to Higher Education in Mathematics, Physics and Technology. Högskoleverket
- Zeynep Ünsal, Britt Jakobson, Bengt-Olov Molander, Per-Olof Wickman (2016). Science education in a bilingual class: problematising a translational practice. Cultural Studies of Science Education, pp 1–24