Contact Information

Jan Alexis Nielsen
Professor, Head of Department
Department of Science Education
E-mail: janielsen@ind.ku.dk
Tel:: +45 35 32 03 61

Research Interests

My current research focuses on assessment of generic socioscientific competencies (innovation, argumentation, communication, inquiry, modeling). I also study aspects related to teaching socio-scientific issues as well as aspects of the philosophy of science education. In my research I mainly apply discourse analysis, normative pragmatic analysis, action research, mixed method research, and inferential statistics.

Education

2011	Ph.D. in Science Education, University of Southern Denmark. Dissertation: Science in Discussions: An investigation of the argumentative role of science in students' socio- scientific discussions, 388 p. Supervisor: Claus Michelsen
2010	Visiting student, School of Education, Stanford University (Sep.-Dec.)
2007	M.A. in Philosophy and Mathematics, University of Aarhus.
2000	Technical student, HTX, VTG, Vejle

Academic Employment

2021–	Head of Department & Professor, DSE, University of Copenhagen
2020–2021	Deputy Head of Department for Teaching, DSE, University of Copenhagen
2019–	Head of Studies, DSE, University of Copenhagen
2016–2019	Head of Section, DSE, University of Copenhagen
2015–	Research Group Leader, DSE, University of Copenhagen
2015–	Associate Professor, DSE, University of Copenhagen
2014-15	Assistant Professor, DSE, University of Copenhagen.
2012-14	Postdoc, DSE, University of Copenhagen.
2011-12	Research Assistant, DSE, University of Copenhagen.
2008-11	PhD Student, NAMADI, University of Southern Denmark.
2007-08	Research Assistant, NAMADI, University of Southern Denmark.

Projects & Grants

2019–	DSEs PI, "Socioscientific issues in science teaching" (Ministry of Ed.); DKK500.000
2019-	Co-PI and Work Package Leader. “IQ-Lab” (Novo Nordisk Foundation); DKK9.300.000
2018-	PI. “Master degree program for science and mathematics teachers” (Ministry of higher ed. & science); DKK4.460.000
2016-2017	PI. “EU-Opstart” (Ministry of higher ed. & science); DKK50.000
2016	Co-PI. "Mapping practice for a national STEM strategy" (Ministry of Ed.); DKK300.000
2016	PI, "Literature review for a national STEM strategy" (Ministry of Ed.); DKK400.000
2012-2016	Co-PI, member of coordinator team, ASSIST-ME; (EU FP7); DKK3.400.000
2012-2014	Danish PI and WP-leader, PRESEES (EU, LLP-Comenius); DKK325.000.
2012-2015	Danish PI, PROFILES (EU, FP7); DKK 948.000.
2012-2013	Co-PI, “Evaluation of Biotechnology”; DKK180.000.
2012-2015	PI, “Upper Secondary school Rethought”; DKK700.000.
2007-2010	Co-PI, PARSEL (EU FP6)
2007-2009	Co-PI, ScienceMath (EU Comenius)
2007–2008	Faculty participant, IFUN (EU InterReg)
2011	NARST International Committee Scholar, Travelling Grant.
2010	Knud Højgaards Fond, Denmark, Travelling Grant.
2010	FMKJs Rejsestipendium, Travelling Grant.
2006	Thesis Travel Stipend, University of Aarhus.

Academic Functions

2020	Panel member, Research Council Norway
2018–	Committee member, Novo Nordisk Foundation, Committee on Science Education and Outreach
2018–	Editorial board member, Life & School: Journal for the Theory and Practice of Education
2018–	Editorial board member, ARISE – The Journal of Action Research and Innovation in Science Education
2018	Member of Working group for advising on new science examination, Danish Ministry of Education
2017–	Associate Editor, EURASIA Journal of Mathematics, Science and Technology Education
2014 –	Strand co-chair, European Science Education Research Association (ESERA), Strand 8: Scientific literacy and socio scientific issues.
2013 – 2014	Chair, Task force for identifying assessment formats that capture of innovation competency, liaised by the Danish ministry of Education.
2013 –	Strand chair, BigBang, Danish Science Education Conference, Strand 1: Danish Science Education Research (DASERA) Strand
2013–2016	Vice-Chair, Local Liaison Committee, Department of Science Education, University of Copenhagen.
2013–2016	Member, Local Communication Committee, Department of Science Education, University of Copenhagen.

Reviewer for: Research in Science Education, International Journal of Science Education, Science Education, Science & Education, Educational Research Review, Nordisk tidsskrift i naturfagdidaktikk (NorDiNa), National Association for Research in Science Teaching (NARST), European Science Education Research Association (ESERA), International Organisation of Science and Technology Education (IOSTE), The Icelandic Research Fund.

Recent Teaching

2018	Writing to get published in STEM education research (PhD course)
2015–	Master in Science Education (graduate level), lecturing, workshops.
2015-2016	Writing for Publication in STEM Research (PhD course).
2011-	Science Communication (graduate and undergraduate level), course administration, co-planning, lecturing, instructing exercise classes, and final examination of students.
2011-	Introduction to University Pedagogy (PhD- & Assistant Professor level), co-planning and lecturing.
2013-	Advanced Science Education (graduate level), co-planning, lecturing, instructing exercise classes on the topic of socioscientific issues.
2009	Interdisciplinarity and Modelling (graduate level), course administration, lecturing, instructing exercise classes, and final examination of students.
2007-11	Master degree program in science teaching (graduate level), lecturing.
2007-	Supervisor for Bachelor and Master projects

Ph.D. Students

2019–	Jonas Tarp Jørgensen (Co-supervisor)
2018	Catharine Thiel Sandholt (Chair, assessment committee)
2018–	Sanne Schnell Nielsen (Main supervisor)
2017–	Sofie Tidemand (Main supervisor)
2017–	Amanda Poole, U. of Warwick (Host)
2018	Jonna Wiblom, University of Stockholm (Member of 90% assessment committee)
2017	Dyana Wijayanti (Chair, assessment committee)
2016	Louise Windfeldt (Chair, assessment committee)
2015	Martin Eriksson, University of Karlstad (Member of 90% assessment committee)

Invited talks

2019	Invited Keynote Speaker at "ESERA international conference", Bologna, Italy
2018	Invited Keynote Speaker at "ESERA Summer School 2018", Jyväskylä, Finland
2018	Invited plenary speaker, national conference, "Teknologipagt – på vej fra god ide til effektiv praksis", Copenhagen, Denmark
2017	Invited seminar speaker, Linnaeus University, Kalmar, Sweden
2015	Invited plenary speaker, regional conference, University of Cyprus, Nicosia, Cyprus
2015	Invited workshop leader, Norwegian University of Science and Technology (NTNU), Trondheim, Norway
2015	Invited seminar speaker, King's College London, England
2015	Invited plenary speaker, national conference on ISI2015, Copenhagen, Denmark

2015	Invited workshop leader, University College Copenhagen, Denmark
2014	Invited plenary speaker, regional meeting for university college science education research, University College Zealand, Korsør, Denmark
2014	Invited seminar speaker, University College Copenhagen, Denmark
2014	Invited plenary speaker at the "22th Symposium on Chemical and Science Education", Bremen, Germany.
2012	Invited plenary speaker, local conference, Freie Universität Berlin, Germany.
2011	Invited plenary speaker, regional conference, Ecole Normale Supérieure de Cachan, Paris,
2011	Invited colloquium-speaker, University of Southern Denmark.
2010	Invited seminar speaker, Science Education Research Seminar, Stanford University, USA.
2010	Invited plenary speaker at the "20th Symposium on Chemical and Science Education", Bremen, Germany

Peer Reviewed Publications

Dolin, J., Bruun, J., & Nielsen, J. A. (2023). Et internationalt STM-perspektiv på evaluering. *Sammenlignende Fagdidaktik*, (7), 57-76. https://doi.org/10.7146/sammenlignendefagdidaktik.v2023i7.138201

Nielsen, S. S., & Nielsen, J. A. (2022). Alignment between teachers' practices and political intentions in the context of a reformed modelling-oriented science curriculum in Danish lower secondary school. *Nordic Studies in Science Education*, *18*(3), 369-383. https://doi.org/10.5617/nordina.9340

Agustian, H. Y., Pedersen, M. I., Finne, L. T., Jørgensen, J. T., Nielsen, J. A., & Gammelgaard, B. (2022). Danish university faculty perspectives on student learning outcomes in the teaching laboratories of a pharmaceutical sciences education. *Journal of Chemical Education*, *99*(11), 3633–3643. https://doi.org/10.1021/acs.jchemed.2c00212

Nielsen, S. S., & Nielsen, J. A. (2021). A Competence-Oriented Approach to Models and Modelling in Lower Secondary Science Education: Practices and Rationales Among Danish Teachers. *Research in Science Education*, *51*, 565–593. https://doi.org/10.1007/s11165-019-09900-1

Nielsen, S. S., & Nielsen, J. A. (2021). Models and Modelling: Science Teachers' Perceived Practice and Rationales in Lower Secondary School in the Context of a Revised Competence-Oriented Curriculum. *Eurasia Journal of Mathematics, Science and Technology Education*, *17*(4). https://doi.org/10.29333/ejmste/10790

Nielsen, J. A. (2020). Demokratiforberedende naturfagsundervisning gennem samfundsrelevante problemstillinger. In C. Haas, & C. Matthiesen (Eds.), *Fagdidaktik og demokrati* (pp. 51-68). Samfundslitteratur.

Nielsen, J. A., Evagorou, M., & Dillon, J. (2020). New Perspectives for Addressing Socioscientific Issues in Teacher Education. In M. Evagorou, J. A. Nielsen, & J. Dillon (Eds.), *Science Teacher Education for Responsible Citizenship: Towards a Pedagogy for Relevance through Socioscientific Issues* (pp. 193-199). Springer. https://doi.org/10.1007/978-3-030-40229-7_12

Evagorou, M., Nielsen, J. A., & Dillon, J. (Eds.) (2020). *Science Teacher Education for Responsible Citizenship: Towards a Pedagogy for Relevance through Socioscientific Issues*. Springer. Contemporary Trends and Issues in Science Education Vol. 52

Nielsen, J. A. (2020). Teachers and Socioscientific Issues – An Overview of Recent Empirical Research. In M. Evagorou, J. A. Nielsen, & J. Dillon (Eds.), *Science Teacher Education for Responsible Citizenship: Towards a Pedagogy for Relevance through Socioscientific Issues* (pp. 13-20). Springer. https://doi.org/10.1007/978-3-030-40229-7_2

Nielsen, J. A. (2019). Innovationskompetence i scenariebaserede eksamensformer. In T. Hanghøj, M. Misfeldt, J. Bundsgaard, S. S. Fougt, & V. Hetmar (Eds.), *Hvad er scenariedidaktik?* (pp. 216-237). Aarhus Universitetsforlag.

Evans, R. H., Clesham, R., Dolin, J., Hošpesová, A., Jensen, S. B., Nielsen, J. A., Stuchlíková, I., Tidemand, S., & Žlábková, I. (2018). Teacher perspectives about using formative assessment. In J. Dolin, & R. Evans (Eds.), *Transforming assessment: Through an interplay between practice, research and policy* (pp. 227-248). Springer. https://doi.org/10.1007/978-3-319-63248-3_9

Ropohl, M., Nielsen, J. A., Olley, C., Rönnebeck, S., & Stables, K. (2018). The concept of competence and its relevance for science, technology, and mathematics education. In J. Dolin, & R. Evans (Eds.), *Transforming Assessment: Through an Interplay Between Practice, Research and Policy* (pp. 3-25). Springer. https://doi.org/10.1007/978-3-319-63248-3_1

Rönnebeck, S., Nielsen, J. A., Olley, C., Ropohl, M., & Stables, K. (2018). The Teaching and Assessment of Inquiry Competences. In J. Dolin, & R. Evans (Eds.), *Transforming Assessment: Through an Interplay Between Practice, Research and Policy* (pp. 27-52). Springer. https://doi.org/10.1007/978-3-319-63248-3_2

Nielsen, J. A., Dolin, J., & Tidemand, S. (2018). Transforming Assessment Research: Recommendations for Future Research. In J. Dolin, & R. Evans (Eds.), *Transforming Assessment: Through an Interplay Between Practice, Research and Policy* (pp. 279-290). Springer. https://doi.org/10.1007/978-3-319-63248-3_11

Holmeier, M., Grob, R., Nielsen, J. A., Rönnebeck, S., & Ropohl, M. (2018). Written Teacher Feedback: Aspects of Quality, Benefits and Challenges. In J. Dolin, & R. Evans (Eds.), *Transforming Assessment: Through an Interplay Between Practice, Research and Policy* (pp. 175-208). Springer. https://doi.org/10.1007/978-3-319-63248-3_7

Belova, N., Dittmar, J., Hansson, L., Hofstein, A., Nielsen, J. A., Sjöström, J., & Eilks, I. (2017). Cross-curricular goals and raising the relevance of science education. In K. Hahl, K. Juuti, J. Lampiselkä, A. Uitto, & J. Lavonen (Eds.), *Cognitive and Affective Aspects in Science Education Research: Selected Papers from the ESERA 2015 Conference* (pp. 297-307). Springer. https://doi.org/10.1007/978-3-319-58685-4_22

Dolin, J., Nielsen, J. A., & Tidemand, S. (2017). Evaluering af naturfaglige kompetencer. *Acta Didactica Norden*, *11*(3), 1-28. Article 2. https://doi.org/10.5617/adno.4702

Tidemand, S., & Nielsen, J. A. (2017). The role of socioscientific issues in biology teaching – from the perspective of teachers. *International Journal of Science Education*, *39*(1), 44-61. https://doi.org/10.1080/09500693.2016.1264644

Achiam, M., & Nielsen, J. A. (2016). Attention to Content: Some Lessons From School-Oriented Education Research. In L. Avraamidou, & W.-M. Roth (Eds.), *Intersections of Formal and Informal Science* (pp. 33-40). Routledge.

Nielsen, J. A. (2015). Assessment of Innovation Competency: A Thematic Analysis of Upper Secondary School Teachers' Talk. *Journal of Educational Research*, *108*(4), 318-330. https://doi.org/10.1080/00220671.2014.886178

Elmeskov, D. C., Bruun, J., & Nielsen, J. A. (2015). *Evaluering af bioteknologi A som forsøgsfag i stx og htx*. Det Natur- og Biovidenskabelige Fakultet, Københavns Universitet. MONA Forskningsrapportserie Vol. 1 http://www.ind.ku.dk/mona/serie/2015-1/Nr1-Biotek-final.pdf

Nielsen, J. A., & Holmegaard, H. T. (2015). Innovation and employability: Moving beyond the buzzwords - a theoretical lens to improve chemistry education. In I. Eilks, & A. Hofstein (Eds.), *Relevant Chemistry Education: From Theory to Practice* (pp. 317-334). Brill | Sense. https://doi.org/10.1007/978-94-6300-175-5_17

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. Bruguière, A. Tiberghien, & P. Clément (Eds.), *Topics and trends in current science education: 9th ESERA Conference Selected Contributions.* (pp. 85-100). Springer Science+Business Media.

Evagorou, M., Albe, V., Angelides, P., Couso, D., Chirlesan, G., Evans, R. H., Dillon, J., Garrido, A., Guven, D., Mugaloglu, E., & Nielsen, J. A. (2014). Preparing pre-service science teachers to teach socio-scientific (SSI) argumentation. *Science Teacher Education*, *69*, 39-48. http://www.ase.org.uk/journals/science-teacher-education/2014/

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*, *13*(4), 373-385. https://doi.org/10.1080/14926156.2013.845323

Nielsen, J. A. (2013). Dialectical Features of Students' Argumentation: A critical review of argumentation studies in science education. *Research in Science Education*, *43*(1), 371-393. https://doi.org/10.1007/s11165-011-9266-x

Horst, S., Johannsen, B. F., Nielsen, J. A., & Rump, C. Ø. (2013). Evaluering af undervisning. In L. Rienecker, P. Stray Jørgensen, J. Dolin, & G. Holten Ingerslev (Eds.), *Universitetspædagogik* (1. ed., pp. 409-422). Samfundslitteratur.

Thomas Jankvist, U., Nielsen, J. A., & Michelsen, C. (2013). Preparing future teachers for interdisciplinarity: Designing and implementing a course for pre-service upper secondary teachers. *Nordic Studies in Mathematics Education*, *18*(2), 71-92.

Nielsen, J. A., & Johannsen, B. F. (2013). Talent og talentpleje. In E. Damberg, J. Dolin, G. Holten Ingerslev, & P. Kaspersen (Eds.), *Gymnasiepædagogik: En grundbog* (2. ed., pp. 440-442). Hans Reitzels Forlag.

Bruun, J., & Nielsen, J. A. (2013). The creation of a disciplinary subject as investigated by amplified linguistic networks of Danish curriuculum texts. In *International School and Conference on Network Science, 2013, Book of abstracts*

Nielsen, J. A. (2012). Gymnasieelevers sociovidenskabelige argumentation. *MONA: Matematik og Naturfagsdidaktik*, *2012* (3), 21-39.

Nielsen, J. A. (2012). Science in Discussions: An analysis of the use of science content in socio-scientific discussions. *Science Education*, *96*(3), 428-456. https://doi.org/10.1002/sce.21001

Nielsen, J. A. (2012). Arguing from Nature: The role of 'nature' in students' argumentations on a socio-scientific issue. *International Journal of Science Education*, *34*(5), 723-744. https://doi.org/10.1080/09500693.2011.624135

Nielsen, J. A. (2011). Co-opting Science: A preliminary study of how students invoke science in value-laden discussions. *International Journal of Science Education*, *34*(2), 275-299. https://doi.org/10.1080/09500693.2011.572305

Nielsen, J. A. (2010). Structuring Discursive Trajectories: Provisional Thoughts on Designing for Critical Discussions and Socio-scientific Decision-making. In C. Winsløw, & B. Evans (Eds.), *Didactics as a Design Science - peer reviewed papers from a Ph.d.-course at the University of Copenhagen* (pp. 23-34). Department of Science Education, University of Copenhagen.

Nielsen, J. A. (2010). The uses and roles of Science in Socio-scientific Decision-making contexts. In S. Dolinšek, & S. Dolinšek (Eds.), *Socio-cultural and Human Values in Science and Technology Education. Proceedings from the 14th Symposia of the International Organization for Science and Technology Education* (pp. 1436-1438). Institute for Innovation and Development of University of Ljubljana.

Michelsen, C., & Nielsen, J. A. (2009). ScienceMath - developing mathematical literacy through interdisciplinarity and modelling. In C. Winsløw (Ed.), *Nordic Research on Mathematics Education: Proceedings from NORMA08* (pp. 375-376). Brill | Sense.

Nielsen, J. A. (2009). Structuring Students ´ Critical Discussions Through Processes of Decision-Making on Socio-Scientific Controversies. *Revista de Estudos Universitários*, *35*(2), 139-165.

Michelsen, C., & Nielsen, J. A. (2008). Between Teaching and Researching: Envisaging Ownership Benefits of Involving Teachers from an In-service Teacher Training Program in the PARSEL Project. *Science Education International*, *19*(3), 315-324.

Michelsen, C., Nielsen, J. A., & Petersen, M. R. (2008). Science and mathematics teachers of the future. *Interaccoes*, *4* (9), 97-112.

Reports

Nielsen, J. A. (2019). *Kandidatuddannelse for naturfags-/matematiklærere i grundskolen. Delrapport om forundersøgelsens systemiske perspektiv (L1).*

Nielsen, J. A. (Ed.) (2017). *Litteraturstudium til arbejdet med en national naturvidenskabsstrategi*. Institut for Naturfagenes Didaktik, Københavns Universitet.

Nielsen, J. A., Waaddegaard, N. H., Dolin, J., & Bruun, J. (2017). Undervisning og læring i STEM. In J. A. Nielsen (Ed.), *Litteraturstudium til arbejdet med en national naturvidenskabsstrategi* (pp. 19-49). Institut for Naturfagenes Didaktik, Københavns Universitet.

Nielsen, J. A. (2015). *Evaluering af projektet Gymnasiet tænkt forfra 2012-2015*. Institut for Naturfagenes Didaktik, Københavns Universitet.

Sølberg, J., Waaddegaard, N. H., Hansen, F. L., Trolle, O., Elmeskov, D. C., Johannsen, B. F., & Nielsen, J. A. (2015). *Innovation, Science og Inklusion 2015: Slutrapport af ISI 2015*. Institut for Naturfagenes Didaktik, Københavns Universitet.

Nielsen, J. A. (2015). *Rapport fra arbejdsgruppe for prøveformer der tester innovationskompetencer i gymnasiet*. Institut for Naturfagenes Didaktik, Københavns Universitet.

Sølberg, J., Nielsen, J. A., Fonsbøl, N. B., & Lykke Hansen, F. (2013). *Projekt Syd: Delrapport A*. http://ntsnet.dk/projektsyd