

QUINT

11 - 13 JUNE
University of Oslo

CONFERENCE 2024



Analyzing Teaching Quality –
Instruments, improvements and implications.
What have we learned?

CONFERENCE PROGRAMME

Organised by: Nordic Centre of Excellence Quality in Nordic Teaching
– QUINT & University of Oslo

Conference convener: QUINT Centre Director Professor Kirsti Klette

Financed by: NordForsk as a Nordic Centre of Excellence within the programme Education for Tomorrow. Additional funding partners include the Academy of Finland, the Swedish Research Council, the Research Council of Norway, the Ministry of Education, Science and Culture (Iceland), and the Danish Agency for Science and Higher Education.

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Dear conference delegates and guests,

Welcome to the QUINT Conference 2024!

Our theme this year is “Analyzing Teaching Quality – instruments, improvements and implications. What have we learned?”

Significant improvements have been made in ways of conceptualizing, operationalizing and measuring teaching quality over the last years. Still, the field grapples with (i) issues of ways of conceptualizing teaching quality, (ii) differences and inconsistency in terminology and language used, (iii) level of grains size, (iv) measurement issues (scoring rubrics and requirements and reliability issues) and last but not least theoretical grounding and epistemologies underlying the different frameworks. A related - and significantly important area - is (v) how research on teaching quality can be useful for teachers and (vi) teacher education to thus strengthen (vii) teacher-researcher collaboration.

Both these areas; (A) ways of conceptualizing and measuring teaching quality and (B) how to use research on teaching in teacher education and teachers' professional learning, will be addressed in the upcoming QUINT conference, supported with highly profiled and well acknowledged keynote speakers in both these areas.

In this final QUINT conference we aim at summarizing existing and emerging research on teaching quality, be it in conceptualizing and measuring teaching quality or teacher-researcher collaboration.



Professor Kirsti Klette
QUINT Centre Director

Oslo, June 2024

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KEYNOTE SESSIONS

Courtney Bell | Measuring Socio-Cognitive Interactions at Scale: Challenges and Innovations in Measuring Teaching Quality in Education



Teaching quality matters—in every country, for all students. Yet the field does not agree on or use measures of teaching quality that satisfy common considerations for reliability, validity, and practicality. Dr. Bell will discuss the construct of teaching quality in its socio-historical and scientific context. Using this frame, she will report preliminary findings from a systematic review of teaching quality measurement modes. The review addresses the constraints and affordances of varied measurement modes with a focus on approaches made possible by new technological advances. By exploring the reliability, validity, and practicality of diverse measurement modes, Dr. Bell identifies potential lines of new research for QUINT collaborators and the broader international research community.

Courtney Bell is Director of the Wisconsin Center for Education Research & Professor of Learning Sciences at the University of Wisconsin-Madison.

Pamela Grossman | Focusing on core practices and practice-based pedagogies to foster teacher development: Current and future research



Teaching is among the most crucial professions in any society. We know that what teachers do in their instruction will have a significant impact on their students' lives and learning, reaching far beyond the time spent together in the classroom. Education can be a powerful tool to increase equity, enable democracy, and eradicate poverty—and many of us have experienced firsthand the lifelong positive impact one single teacher can have on our lives.

Worldwide, scholars, policy makers and teacher educators are working toward creating sustainable and effective systems for shaping teaching quality – through teacher recruitment and education, and by providing professional development for teachers and retaining them in the job.

While acknowledging the value and importance of teachers, we also know preparing teachers for the demands of the classroom is a complex task. Research indicates that in during the preparation, teaching candidates often learn about teaching rather than how to teach, what some have termed the problem of “enactment” in teacher education. Studies from across the world have shown that teacher candidates do not consider themselves fully prepared to function as a teacher. More experienced teachers also experience a lack of opportunities to try out new practices and get feedback to help them continue to improve.

The work on core practices and pedagogies for teaching practice proposes one way to address this problem of enactment. In this keynote, QUINT researchers Marte Blikstad-Balas, Inga Staal Jensen, Michael Tengberg and Birna Svanbjörnsdóttir will share some insights and empirical examples of QUINT research studies across the Nordic countries. They will discuss how and why attention to specific core practices of teaching, in combination with the use of video as a practice-based pedagogy for teacher learning, can contribute to foster teacher development.

Professor Pam Grossman will then provide an overview of the current state of research on core practices and the pedagogies of practice from a global perspective, highlighting the work of QUINT researchers as well as other researchers and conclude with possible directions for future research in this area.

Pam Grossman is Professor of Education in the Learning, Teaching, and Literacies division at the Graduate School of Education at the University of Pennsylvania.

J. F. Martínez & D. Gitomer | Challenges and Opportunities of Observational Teaching Metrics to Assess and Improve Teaching



Teaching quality matters—in every country, for all students. Yet the field does not agree on or use measures of teaching quality that satisfy common considerations for reliability, validity, and practicality. Dr. Bell will discuss the construct of teaching quality in its socio-historical and scientific context. Using this frame, she will report preliminary findings from a systematic review of teaching quality measurement modes. The review addresses the constraints and affordances of varied measurement modes with a focus on approaches made possible by new technological advances. By exploring the reliability, validity, and practicality of diverse measurement modes, Dr. Bell

identifies potential lines of new research for QUINT collaborators and the broader international research community.

José Felipe Martínez is a Professor of Social Research Methodology at UCLA's School of Education and Information Studies.

Drew Gitomer is the Rose and Nicholas DeMarzo Chair in Education, Learning and Teaching, at the Rutgers Graduate School of Education.

Hannah Bijlsma | Teaching quality in the Dutch educational system from the perspectives of school inspectors, students, and teachers



Because teaching quality is the most important, malleable factor that impacts student achievement, it is important to monitor the quality of teaching, in schools as well as on educational system level. In a collaborative project between the University of Twente and the Dutch School Inspectorate, an instrument was developed to collect the perceptions of observers (inspectors), students and teachers on teaching quality and we collected data at the Dutch educational system level.

In this keynote, I will present some of our findings and discuss how these insights can inform both research endeavors and practical applications within schools. Especially, I will focus on the implications of the differences between the ratings of the three rater types, how the instrument that was developed can be used in schools, and how I use it in my own teaching practice. Furthermore, some new possibilities for measuring teaching quality will

be mentioned. I will end with call to action: the importance of collaboration among researchers, practitioners and policy makers for improving teaching quality in schools and on county level. And after that, the floor is open for the panel and the audience.

Hannah Bijlsma is a primary school teacher and a post-doctoral researcher in the Faculty of Social Sciences at Radboud University in Nijmegen, the Netherlands.



	TUESDAY, 11 JUNE	WEDNESDAY, 12 JUNE				THURSDAY, 13 JUNE		
09.00 – 10:00	Registration Foyer	Symposium 2A Stort møterom	Symposium 2B Auditorium 2	Paper session 2C Undervisningsrom 1	Paper session 2D Undervisningsrom 2	Keynote Session: Pam Grossman Auditorium 1		
10:00 – 10:30	Welcome/Opening Auditorium 1							
10:30 – 12:00	Keynote session: Courtney Bell Auditorium 1	Keynote Session: Drew Gitomer & Felipe Martines Auditorium 1				Symposium 5A Stort møterom	Paper session 5B Undervisningsrom 1	Paper session 5C Undervisningsrom 2
12:00 – 13:00	Lunch Sverdrup spiseri	Lunch Sverdrup spiseri				Lunch Sverdrup spiseri		
13:00 – 14:30	Symposium 1A Stort møterom	Symposium 1B Auditorium 2	Paper session 1C Undervisningsrom 1	Symposium 3A Auditorium 2	Workshop 3B Stort Møterom	Paper session 3C Undervisningsrom 1	Paper session 3D Undervisningsrom 2	Panel Debate Auditorium 2
14.30 – 15:00	Coffee break Downstairs Foyer	Coffee break Downstairs Foyer				Coffee break Downstairs Foyer		
15:00 – 16:30	Plenum Session: Teacher Evaluation with H. Bijlsma + commentators Auditorium 1	Symposium 4A Auditorium 2	Workshop 4B Stort Møterom	Paper session 4C Undervisningsrom 1	Paper session 4D Undervisningsrom 2	Session 6 Formal/Informal Meetings & Discussions		
Evening	Group Photo Foyer (16:30)	Conference Dinner Torgterrassen Bar & Brasserie (19:00)						
	Reception Foyer (17:00 – 19:00)							

09.00 am – 10:00 am

Registration Foyer

10.00 am – 10:30 am

Welcome Auditorium	Conference introduction by QUINT Centre Director Kirsti Klette + musical performance.
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10.30 am – 12:00 pm

Keynote Session Auditorium 1	Measuring Socio-Cognitive Interactions at Scale: Challenges and Innovations in Measuring Teaching Quality in Education Courtney Bell
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----- Lunch -----

1pm - 2:30 pm

Symposium 1A Stort møterom	Subject Specificity Matters Investigating teaching quality across subjects and countries			
	Chair: Kirsti Klette Discussant: Marte Blikstad-Balas			
	Observation manuals as lenses into classroom teaching – towards a common language of instruction? Kirsti Klette	Teaching quality in Nordic classrooms from the perception of students Michael Tengberg, Berglind Gísladóttir, Astrid Roe & Anders Stig Christensen	Features of Discourse in Nordic Classrooms Berglind Gísladóttir	Intellectual challenge in Nordic classrooms Jóhann Örn Sigurjónsson

Symposium 1B Auditorium 2	Teaching and learning in Nordic schools from a multilingual perspective			
	Chair: Hermína Gunnþórsdóttir — University of Akureyri Discussant: Mariana Castro — University of Wisconsin-Madison			
	Second Language and Mother Tongue Education for Immigrant Children in Nordic Educational Policies: Search for a Common Nordic Dimension Anna Slotte, Hermína Gunnþórsdóttir & Maria Ahlholm,	Quality teaching for linguistically diverse students in Nordic lower secondary classrooms Anna Slotte, Hermína Gunnþórsdóttir, Line Krogager Andersen & Maria Ahlholm,	Plurilingual Education – Language Awareness Across Educational Levels Line Krogager Andersen	Arabic L1 speaking pupils' argumentation skills in L2 Finnish on grades 3 to 5 Maria Ahlholm

Paper Session 1C Undervisningsrom 1	Policies for Teacher Education			
	Chair: Birna Svanbjörnsdóttir			
	The role of organization- and leadership structure for the work of teacher education program leaders Inga Staal Jensen	Shaping Policy: Analyzing Stakeholder Perceptions of National Teacher Education Reforms in Norway Geoffrey Evan Carlisle	From Awareness to Action: Diversity Conceptions and Differentiated Instruction of Teachers in Chinese Teacher Education Programs Xiangyuan Feng	Quality features in Teacher Education Programs Ida Katrine Riksaasen Hatlevik

----- Coffee break -----

3:00 pm - 4:30 pm

Plenum Session Auditorium 1	Teacher Evaluation Hannah Bijlsma + commentators
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4:30 pm - 4:45 pm

Group photo Foyer	All conference participants gather for a group photograph (voluntary).
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5:00 pm - 7 pm

Reception Foyer	Light refreshments and music.
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09.00 am – 10:30 am

Symposium 2A Stort møterom	Using classroom videos to improve teaching quality and professional learning in teacher education. Chair: Nadine Malich-Bohlig Discussant: Pam Grossman		
	Video-recordings in the field work of teacher candidates Birna María B. Svanbjörnsdóttir & Sólveig Zophoníasdóttir	Teacher candidates' noticing teaching quality through video-enhanced campus teaching Stefan Ting Graf & Hanne Fie Rasmussen	Interdisciplinary Collaboration in Videographic Teaching Observation (InCoViTO) Eva Dam-Christensen, Hildegunn Juulsgaard Johannesen, Nadine Malich-Bohlig & Lars Petersen.

Symposium 2B Auditorium 2	Teaching quality and the school experiences of multilingual learners: A critical perspective Chair: Mariana Castro Discussant: Courtney Bell			
	Examining International School Teachers' Language Ideologies Esther Bettney Heidt	Toward a Framework to Support Multilingual Learners through Core Teaching Practices Mariana Castro	The Access Paradox in Nordic L1 Classrooms: Accommodating Dominant Academic Language Learning yet Valuing Learners' Multilingualism? Camilla Gudmundsdatter Magnusson	Fluid multilingualism: Opportunities for student talk in language lessons in Norway, France and England Sarah M Eiene & Lisbeth M Brevik
	Enhancing Teaching Quality for Multilingual Learners through the Integration of Science and Language Teaching Practices Mark Olson & Mariana Castro			

Paper Session 2C Undervisningsrom 1	Digital technology in the classroom Chair: Marie Nilsberth		
	Effective assessment practices in emergency remote teaching Toni Mäkipää	Spatializing literacy and new techno-scholastic environments in Nordic lower secondary classrooms. Tina Høegh	Exploring the affective potential of access to writing technology in lower-secondary classrooms Jenny Högström

Paper session 2D Undervisningsrom 2	Analyzing teaching quality: divergent approaches		
	Measuring the relationship between student perceptions of teaching quality and learning achievement: a framework and a meta-analysis Sebastian Röhl	How does presentation order affect the reliability of classroom observations of teaching quality in Norwegian mathematics and science lessons? Armin Jentsch	Investigating the Quality of Teaching from within Georg Breidenstein & Tanya Tyagunova

10.30 am – 12:00 pm

Keynote Session Auditorium 1	Challenges and Opportunities of Observational Teaching Metrics to Assess and Improve Teaching Drew Gitomer & Felipe Martinez
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----- Lunch -----

1pm - 2:30 pm

Symposium 3A Auditorium 2	A mixed methods way of thinking in classroom research Chair: Nora Mathè, Discussant: Courtney Bell			
	A mixed methods way of thinking about education reform Lisbeth M Brevik & Nora E. H. Mathé	Unveiling and validating teacher perspectives: Insights through mixed methods in evaluating curriculum reform. Greta Björk Gudmundsdottir	Mixing methods using an observation protocol to investigate life skills teaching Ingrid Evertsen	Mixing methods in observing literature instruction across school subjects and over time. Katherina Dodou
Workshop 3B Stort Møterom	Establishing and trying out a video library for teachers' professional learning: Opportunities, obstacles, and suggestions for solutions Chair: Inga Staal Jensen Moderator: Knut S. Engelsen			
	"Glimpses of practice": Experiences from building up a video library for teacher education Karin Elisabeth Sørli Street, Henriette Kalsås Hansen & Linda Moen Rebni	Public good as legal basis for data processing – Does it change the requirements for ethical reflection? Håvard Evang and Torgeir Christiansen	Developing a Controlled Vocabulary in Education: experiences with developing a shared vocabulary for video tagging in teacher education Kirsti Klette and Simen Grung	
	Balancing attention to fine-grained teaching practices and the overall purpose of teaching when using a video library Gøril Brataas and Inga Staal Jensen	Teaching Quality in Mathematics and EFL/ESL: Pre-service Teachers' Video-Stimulated Recall Reflections After Video-Based Rehearsing Gry Anette Tuset & Michel Alexandre Cabot	The use of video library in supporting Upper Secondary Teachers Improvement in Teacher-Student Interactions Sigrun K. Ertesvåg & Grete S. Vaaland	
Paper session 3C Undervisningsrom 1	Linking school-knowledge and everyday knowledge across subjects Chair: Peter Aashamar			
	Connecting to the world beyond the classroom in lower-secondary mathematics and social science lessons in Norway and Sweden P. N. Aashamar, A J. V. Selling	Representations of economic content in social science education: connecting disciplinary and everyday knowledge for students' knowledge-building Michael Walkert & Martin Jakobsson	Differences and similarities in how Nordic literature instruction promote students' development into good and competent citizens Anna Nissen	News coverage in social science teaching – a Bakhtinian analysis Torben S. Christensen
Paper session 3D Undervisningsrom 2	"Classroom talk across subjects" Chair: Camilla Magnusson			
	Video-Based Rehearsing of Vocabulary Acquisition-Friendly Whole-Class Talk Instigated by Talk Moves (Foreign language learning) Michel Alexandre Cabot	Improving the quality of classroom discourse: Effects of a collaborative intervention to improve teacher-led text-based discussions in lower secondary Michael Tengberg	Managing guided openness in inquiry-based literature education Vibeke Christensen	

----- Coffee break -----

3:00 pm - 4:30 pm

<p>Symposium 4A Auditorium 2</p>	<p>Breaking out of silos: Using classroom videos for cross-disciplinary and cross-methodological examinations of teaching</p> <p>Chair: Mark White Discussant: Georg Breidenstein & Kirsti Klette</p>		
	<p>The PLATO observation system as a lens to teaching quality</p> <p>Jennifer Luoto & Kirsti Klette</p>	<p>Teaching Quality About and Beyond Subject Specificity. Perspectives from the JAD-MTQ Model.</p> <p>Yoann Buyck</p>	<p>The value of assessing generic teaching quality using International Comparative Analysis of Learning and Teaching (ICALT) as a measure of effective teaching behaviour</p> <p>Xiangyuan Feng</p>
	<p>Capturing generic and subject-specific aspects of teaching quality with the TEDS-Instruct observation system</p> <p>Armin Jentsch & Bas Senden</p>	<p>A Qualitative-Reconstructive Investigation of Teaching Quality through Documentary Video Analysis</p> <p>Patrick Schreyer</p>	<p>Same Same but Different - Comparing two Observation Manuals' Approaches to Measure Teaching Quality</p> <p>Tosca Daltoè & Alexander J. V. Selling</p>

<p>Workshop 4B Stort Møterom</p>	<p>Teacher- Researcher Collaboration: QUALE Literature Instruction</p> <p>Chair: Vibeke Christensen</p> <p>Presenters: Adnan Hadzialic Ida Gabrielsen Fia Sandberg Ann-Christin Randahl Liv Marit Hauge Peter Marquard Sejersen Marte Ulfnes Skar</p>		
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<p>Paper session 4C Undervisningsrom 1</p>	<p>The role of enactment in teacher education</p> <p>Chair: Inga Staal Jensen</p>			
	<p>Learning to notice for equity – a scoping review of the literature on equity-oriented teacher noticing</p> <p>Tracey Lavalette</p>	<p>'Natura, ars, exercitatio' in a new frame: Rehearsing Teaching Professionally</p> <p>Sissel Margrethe Høiscæter</p>	<p>Creating a space for boundary crossing conversations between school-based and university-based science teacher educators</p> <p>Silje Leifsen</p>	<p>The purposes and challenges when using modelling as a trigger of rehearsing in teacher education.</p> <p>Vigdís Vangsnæs</p>

<p>Paper session 4D Undervisningsrom 2</p>	<p>Supporting learning in the subjects</p> <p>Chair: Jennifer M. Luoto</p>			
	<p>Scaffolding inquiry in social science education</p> <p>Nora E. H. Mathé & Anders S. Christensen</p>	<p>Literacy learning in Icelandic lower secondary schools: Use of texts in language arts and social science lessons</p> <p>Rannveig Oddsdóttir, Rúnar Sigþórsson & Anna Kristín Sigurðardóttir</p>	<p>University preparation of mother tongue teachers - reflection, strengths and weaknesses, challenges</p> <p>Kateřina řormová</p>	

7:00 pm - 11:00 pm

<p>Conference Dinner</p>	<p>Torgterrassen Bar & Brasserie Nedre Slottsgate 24, 0159 Oslo</p>
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09.00 am – 10:30 am

Keynote Session Auditorium 1	Focusing on core practices and practice-based pedagogies to foster teacher development: Current and future research Pamela Grossman
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10:30 am – 12:00 pm

Symposium 5A Stort møterom	“Analyzing teaching quality: divergent approaches” Chair: Sarah Schneider Kavanagh Discussant: Pam Grossman		
	Theoretical Frameworks to Guide Teacher Education Research Karen Hammerness	Combining observation frameworks to reveal nuances in classroom discourse in Mathematics and Language arts Gøril Braatas & Alexander Jonas Viktor Selling	Towards Developmental Frameworks of Teacher Learning in Research on Core Teaching Practices Sarah Schneider Kavanagh & Katie Danielson
Paper session 5B Undervisningsrom 1	The role of tasks Chair: Armin Jentsch		
	Reflections on the role of task potential in relation to teacher competence and teaching quality Ann-Kristin Glegoła	Teaching-quality ratings of mathematics classrooms: Do subject-specific observation items matter? Linn Hansen	Automated Assessment of Multi-Modal-Data to Predict Teaching Quality Tim Fütterer
Paper session 5C Undervisningsrom 2	Life Skills Chair: Anna Kristín Sigurðardóttir		
	Life skills in science education – what do science teachers say and do in the classroom? Rebecca L. S. Barreng	Students' well-being in the Nordic Schools Hermína Gunnþórsdóttir	Childrens' competences for tomorrow – the work of the “Future Education Initiative” Ann-Kathrin Jaekel

----- Lunch -----

1:00 pm – 2:30 pm

Panel debate Auditorium 2	How to Work Systematically Around Teaching Quality? Teachers, school-owners and researchers in conversation Helgi Grímsson Director of Department of Education & Youth, City of Reykjavik. Marte Gerhardsen Director of the Department of Education, City of Oslo. Robin Smith First vice president of the Swedish Teachers' Union. Christer Holmlund Secretary-General for NLS, the Nordic Teachers' Union. Peter Marquard Sejersén Teacher from Odense Municipality, Denmark. Moderator: Marte Blikstad-Balas
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----- Coffee break -----

3:00 PM - 16:30

Session 6 All meeting rooms	Formal/Informal Meetings
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Symposium 1A (SES 1A) | Subject Specificity Matters Investigating teaching quality across subjects and countries

Room: Stort møterom

Chair: Kirsti Klette, University of Oslo

Discussant: Marte Blikstad-Balas University of Oslo |

Courtney Bell, University of Wisconsin-Madison

Symposium Abstract

Significant advancements have been made in conceptualizing, operationalizing, and measuring teaching quality over the last two decades. The development of observation systems has paved the way for a more targeted and systematic measurement of features of teaching quality across contexts, recognized at the level of different observation manuals be it subject-specific manuals or generic manuals. In addition, and often as a supplement, student perception surveys have been used to provide additional information about the quality of teaching and instruction (van der Scheer, et al., 2019). The goal of this symposium is to present the results of an effort to study instruction across the Nordic countries, drawing on observation- and student survey measures from lower secondary classrooms in the three subjects: mathematics, language arts, and social science education.

A key aspect to be discussed is the role subject specific versus generic aspects of teaching quality. In the current study, we used the Protocol for Language Art Teaching Observation (PLATO) manual (Grossman et al., (2013) and the Tripod student perception survey (Ferguson, 2015) as generic measures of teaching quality – applying both instruments to all three subjects and lessons. Our analyses indicate. subject specific differences across subjects but also generic features of teaching quality that cut across all countries.

The papers within this symposium show how systematic coding, and student survey scores, can serve to generate broad pictures of instructional practices across subjects and classrooms, thus serve as a starting point for quantitative and qualitative explorations of specific subjects and lessons. The symposium demonstrates how: (i) a common framework and conceptual language provided by the observation manual can serve as the starting point for supporting collaborations in the study of teaching quality, (ii) how we used the observation scores (i.e. high scores) as sampling criteria to dig more closely into specific instructional practices such as features of Classroom Discourse and Intellectual Challenge within and across subjects countries, and (iii) how student perceptions (as measure by the Tripod Survey) might feed into and expand our understanding of teaching quality. The four papers provide a new step for our comparative classroom ambition in the Nordic Center of Excellence "Quality in Nordic Teaching" (QUINT). The first paper provides an overview of key findings based on using a common observational measure (the PLATO manual) across Nordic lower-secondary classrooms (n= 144) in the three subject areas. The second paper report from student survey perceptions (n= 2501) on teaching quality across subjects and countries. The third and fourth paper dig into, respectively, features of high quality classroom discourses and characteristics of cognitively activating classrooms in all three subjects and countries.

Observation manuals as lenses into classroom teaching – towards a common language of instruction?

Kirsti Klette

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Affiliated authors: Astrid Roe | Marte Blikstad-Balas, University of Oslo | Mark White, University of Oslo | Michael Tengberg, Karlstad University

Classroom-based observational research with observation systems holds the potential to drive systematic and cumulative research that supports the comparison of instructional practices across studies and contexts (Bell et al., 2019). This paper presents the results of applying the Protocol for Language Arts Teaching Observation (PLATO) across Nordic lower secondary classrooms. Although initially developed for the purpose of measuring aspects of language arts classrooms, we also used PLATO to measure social science and mathematics instruction.

Theoretical framework: PLATO (Grossman et al., 2013) is tailored to assess instruction; encompassing 12 elements of instruction highlighted in existing literature on adolescent literacy as well as effective instruction in secondary language arts education. It is a systematic and validated protocol (Cohen & Grossman, 2016) that resonates well with key aspects of instructional quality (Kane & Staiger, 2012; Klieme et al., 2009; Nilsen & Gustafsson, 2016) as summarized in the research literature (e.g. instructional clarity, cognitive demand, discourse features and supportive climate).

Methods and Data sources: We report on video observations from respectively 52 language arts, 54 mathematics 8th grade classrooms and 38 Social Science classrooms, from which 470 lessons were observed. The classrooms were sampled to maximize the diversity across key criteria thought to impact school quality in the Nordic lower secondary context. The video recordings of lessons were coded using the PLATO observation tool. All raters underwent standard PLATO training and certification. Recorded lessons were divided into equal-interval 15-minute segments for coding (n=1380 segments). All segments were scored for all 12 elements, using a four-point scale where scores 1-2 are towards the low end

and 3-4 are at the high end, and with sufficient interrater reliability agreement consistent with previous studies.

Results: Three main findings were revealed: First, PLATO seem to be able to capture some key patterns of instruction across the Nordic classrooms, however with a certain tendency to privilege explicit instruction. Second, PLATO scores across the sampled classrooms suggest similar broad patterns across countries in the three subjects. The observed teachers score consistently high on the elements Behavioral Management and Time Management, mediocre (towards low) on the elements Intellectual Challenge, Classroom Discourse, and Representation of Content. They score systematically low on Strategy Instruction, Modelling, and Feedback. There are however interesting variations both within and across classrooms and countries. Third, although designed for language arts instruction, the PLATO scores in mathematics are systematically higher in all five countries, especially for elements related to explicit instruction such as Modelling and Strategy Instruction. This shed light on issues of generic versus subject specific instruments when measuring teaching quality.

Significance: These findings nurture multiple conclusions and interpretations: PLATO provides reliable and qualified information about instructional practices in Nordic classrooms; gives an overview of specific patterns and strengths; works as a 'diagnostic tool' for more systematic work on targeted instructional elements (e.g. Feedback, Strategy Instruction, Classroom Discourse). As such, coding manuals serve multiple functions – for empirical validation of conceptions of teaching, as a diagnostic tool, and as a language for analyzing and describing features of teaching quality.

Teaching quality in Nordic classrooms from the perception of students

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Berglind Gísladóttir, University of Iceland
Astrid Roe, University of Oslo
Anders Stig Christensen, University College UCL

Knowing what works is critical to improving instruction. To the individual teacher, however, or to a single school, a community, or even a national education system, knowing one's particular strengths and weaknesses are equally important. Therefore, beyond identifying features of teaching that are effective for student learning, appropriate improvement of teaching, in a given system, also requires site-specific knowledge of prevalent classroom practices. For this purpose, comparative examination across educational contexts is essential in order to generate in-depth understanding of both strengths and development areas (Suter, 2019; Xu & Clarke, 2019). As supplement to classroom observations, evidence of instructional patterns and qualities is often gathered through student surveys. Recent development and validation of survey instruments suggests that student perceptions can provide reliable estimates of teacher performance (van der Scheer et al., 2019), and predict both achievement and affective outcomes (Fauth et al., 2019; Wallace et al., 2016).

In order to contribute with extended knowledge about prevalent characteristics of teaching in Nordic lower secondary classrooms, this presentation will report findings from a survey of student perceptions of teaching practices in Denmark, Finland, Iceland, Norway, and Sweden. Data was gathered from lower secondary language arts, mathematics, and social science classrooms in order to compare aspects of perceived teaching quality across subjects and countries. The following research questions guided the study:

1) How do lower secondary students in the Nordic countries perceive the teaching they receive on aspects of teaching quality?

2) To what extent do student perceptions of teaching quality vary between different subjects (language arts, mathematics, and social science)?

3) To what extent do student perceptions of teaching quality vary between classrooms?

The study drew on 2.501 responses to the Tripod survey (Ferguson, 2015) by Nordic students in lower secondary school (13–15 yrs). After confirmation of measurement reliability, including model fit of dimensional structure, descriptive statistical analyses on subscale level, including t-testing for statistical significance, was used to answer the three research questions.

The study identifies a range of interesting patterns of perceived teaching quality across subjects and countries. Among these patterns we find for example that lower secondary students in the Nordic countries report generally high regard for their teachers' capacity of clarifying and explaining content, and comparatively lower appreciation for their teachers' ability to make learning interesting and enjoyable, and for inviting students to share their ideas and speak their minds of the work done in class. The latter is especially pronounced in language arts and mathematics. Comparison between subjects also indicates that Nordic students generally perceive more teacher care and less academic challenge in language arts than in both mathematics and social science. In addition to general patterns, however, the study shows large amount of variation between classrooms within both countries and subjects. These results will be discussed with reference to prior research, and in relation to possible implications for practice.

Features of Discourse in Nordic Classrooms

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Classroom discourse plays an important role in student learning as it promotes critical thinking and deeper understanding by encouraging students to articulate their thoughts and engage with diverse perspectives. This interactive process not only enhances communication skills but also promotes active learning, as students are more deeply involved in the educational process through discussion and debate (Mercer et al., 2020, Resnick et al., 2015). Classroom discourse can transform passive learning into active exchange, allowing students to construct and refine their understanding through verbal expression of complex concepts. These interactions between students and teacher and among students promotes communication skills, as students are more actively involved in the educational process through discussion and debate (Howe & Abedin, 2013)

With the use of video data, the current study aims to provide some insight into the quality of classroom discourse in Nordic lower secondary classrooms. Video data was collected in Denmark, Finland, Iceland, Norway and Sweden in mathematics, language arts and social science. The analytical framework PLATO (Protocol for Language Arts Teaching Observation) was used to assess the quality of classroom discourse in the video data (Grossman, 2015). Recorded lessons were coded in 15-minute segments where both the opportunities given for student talk and the

teacher's uptake of student responses were evaluated on a four-point scale. In our analysis we focused on lessons with high levels of teacher uptake and student participation, focusing on (a) the types of questions posed by the teacher (b) the nature of teacher uptake and (c) what characterized students' utterances.

Findings reveal a universal pattern across countries where discourse was typically driven by teacher questions followed by student answers, reflecting the traditional Initiation-Response-Feedback (IRF) pattern. We also found that student utterances were mostly brief responses to teacher questions even though the brevity was somewhat dependent on the type of question posed. Furthermore, a notable gap in our study was how infrequently students built upon each other's ideas.

Distinct variations were observed in question types across subjects. Teachers of Social Science used more open questions, encouraging more diverse viewpoints, while teachers in Mathematics predominantly used closed questions for factual recall. In Language Arts teachers showed a more balanced approach using a mix of open and close question. This suggests that the subject matter influences the type of discourse, with open questions in Social Science and Language Arts encouraging broader discussions, unlike the focus on procedural knowledge in Mathematics.

Intellectual challenge in Nordic classrooms

Jóhann Örn Sigurjónsson

University of Akureyri

One central question for teaching observations is what the teacher expects students to do. Intellectual challenge concerns the selection and use of tasks and the richness and rigour of facilitated cognitive activity. From the perspective of the Three Basic Dimensions, it incorporates some key components of cognitive activation, which has been linked to both increased student achievement and enjoyment (Praetorius et al., 2018). The way teachers construct their lessons in this regard – i.e., to what extent assigned tasks require analysis and inferential thinking, and whether they are implemented to require students to justify and reason – impacts what opportunities are created for students to develop skills that are widely deemed critical for their education.

The current study aims to deliver insights into levels of intellectual challenge in Nordic lower secondary classrooms based on classroom video data from Denmark, Finland, Iceland, Norway and Sweden in three subjects: mathematics, language arts and social science. The Protocol for Language Arts Teaching Observations (PLATO) framework was used to score 425 lessons comprising the LISA Nordic video database (Grossman, 2015). In PLATO, each 15-minute segment is scored on a scale from 1 (low, weak evidence) to 4 (high, strong evidence). At the low-end of the intellectual challenge scale, students mostly engage in activities that require recall or rote thinking or are passive participants. At the high-end, students are mostly engaged in activities that require analytic or inferential thinking. An important component of intellectual

challenge is that the score can be advanced or degraded by one point based on the nature of teacher questions and comments in relation to the challenge of the task as initially presented. The analysis considers maximum segment scores at the lesson level to privilege the presence of high-level intellectual challenge, being mindful that different parts of lessons may target different dimension of teaching quality. Selected lessons with 4-level segment scores were coded minute-by-minute for instructional formats.

The findings show that across subjects, a similar proportion of lessons scored consistently at the low-end, between 40-45%. Conversely, this means that in each subject, between 55-60% of lessons had at least one segment scored at the high-end. The proportion of lessons containing a 4-level segment was quite low: 9% in mathematics, 13% in language arts and 13% in social science. Only two countries had lessons at the 4-level in social science, but overall, the distribution of maximum segment scores within lessons was relatively similar between countries.

These findings suggest that intellectual challenge is a dimension of teaching that may need increased attention in a Nordic context, with possible implications for teacher education and professional development. Example vignettes from high-level lessons and instructional format timelines will be presented to spur discussions on similarities and differences to common teaching repertoires in a Nordic context and a dialogue for conceivable pathways forward in theory and practice.

Symposium 1B (SES 1B) | Teaching and learning in Nordic schools from a multilingual perspective

Room: Auditorium 2

Chair: Hermína Gunnþórsdóttir — University of Akureyri

Discussant: Mariana Castro — University of Wisconsin-Madison

Symposium abstract

The Nordic countries' that today are a multilingual region, have a shared language policy that states:

Multilingualism provides the basis for skills, creativity, perspective, and international contacts to an extent that is impossible in monolingual societies. Developing it requires a unified, long-range, and effective language-policy effort (p.92).

The policy also stipulates that all Nordic residents who are of foreign origin have the right to acquire both spoken and written skills in a language essential to society so that they can participate in the society as well as preserve and develop their mother tongue or their national minority language (Nordiska ministerrådet, 2007).

The Nordic countries share many similar features, e.g. in terms of history, educational and welfare system but there are as well differences within the countries that affect policies and have consequences for developments in each country.

Björklund et al. (2013) state that as:

a societal and individual phenomenon, multilingualism and multiculturalism in the Nordic countries are by no means a recent development, but today we encounter a qualitatively different version of multilingualism. The numbers of immigrants are increasing, the languages and cultures present are no longer only indigenous and finally the new minority

languages are not found in geographically limited enclaves (p.2).

This changed situation has called for the importance for schools and teacher education to have well-planned language learning strategies. Though the trends are similar in the Nordic countries, language and integration policies, language learning practices and research on multilingualism and multilingual education have taken various routes and the focus might therefore not be the same.

In this symposium we will focus on how policies and actions on multilingual education have developed in the Nordic countries (paper 1). We then move on to explore (paper 2) Quality teaching for linguistically diverse students in Nordic lower secondary classrooms. In paper 3 the focus is on Plurilingual ducation – Language awareness across ducational levels. The presentation in paper 4 - Arabic L1 speaking pupils' argumentation skills in L2 Finnish on grades 4 to 6 - raises the classical question about the connection between L1 and L2, and the contribution of L1 to learning the language of instruction and learning in general. Finally, paper 5 - Teachers' views on multilingualism from the perspective of two national languages - explores teachers' perceptions of multilingualism within Finnish medium and Swedish medium schools in Finland from the perspective of the language use by teachers and students.

Second Language and Mother Tongue Education for Immigrant Children in Nordic Educational Policies: Search for a Common Nordic Dimension

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Hermína Gunnþórsdóttir

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Maria Ahlholm

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Nordic education leans on values of social justice, equity, and inclusion, and the treatment of second languages and mother tongues can be seen as a test of how well these Nordic values are implemented. While second language instruction is a tool to provide students with immigrant backgrounds with equal access to education, and mother tongue instruction is a recognized human right, local circumstances influence how the instruction is organized and provided. This presentation investigates if and how a common Nordic dimension underlies existing policies in L2 and L1 instruction in the five Nordic countries. Our research question is: What do policy documents in the five Nordic countries say about a) second language (L2) instruction and b) immigrant mother tongue (L1) instruction? The theoretical foundation of this paper presentation lies in the research fields of language policies (Spolsky, 2005) and social justice (Cleave, 2020; Piller, 2020).

The current Nordic Language Policy was approved in 2006 (Nordic Council of Ministers, 2007) and thus marked the beginning of a common vision of the Nordic countries as a multilingual region. We collected thus the most recent policy documents, all introduced after the year 2007, for the document analysis. The documents used to analyze the policies of each Nordic country included policy reports, legislation, curricula, and external evaluation reports related to schools. To analyze the documents and answer the research questions, we used document analysis (Bowen, 2009, p. 27).

Our results show that there is a common Nordic dimension regarding L2 and L1 instruction, demonstrated through an explicit ambition to provide opportunities for the education of immigrant students in L2 and L1. However, there are differences between the Nordic countries in their commitment to principles of social justice, and how the policies are implemented. Regarding L2 instruction, the major difference emerges as a continuum: from an autonomous subject to additional support to a mainstream language subject. At the other end of the continuum is Denmark, with a mandatory test in L1 Danish subject and unspecified policies in L2 Danish instruction, and Iceland with underdeveloped L2 instruction and support. The language policies in Denmark, Iceland, and Norway articulate L2 instruction as a temporary support for students who are not yet sufficiently proficient in the majority language. These three countries view L2 instruction as a bridge to the national language curricula, thus implicitly imposing the "monolingual ethos" (Ellis et al., 2010) paradigm and the mainstream language as a linguistic norm, although the concept of a "native-like speaker" as a prototype (Seidlhofer, 2022) is culturally marked (Pawley & Syder, 2014). Although the policies in Sweden and Finland grant L2 students the same access to further education, Kalalahti et al. (2017) argue that studying in the L2 syllabus in Finland may lead to lower expectations after compulsory school, a tendency that has been criticized as othering (Kurki et al., 2018). However, neither Sweden nor Finland restricts the switch between L2 and the mainstream language subject.

Quality teaching for linguistically diverse students in Nordic lower secondary classrooms

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This study, still ongoing at the time of the writing of this abstract, is conducted by a Nordic research group called QuiCC (Quality in Culturally Diverse Classrooms), which is a part of the Nordic research center QUINT (Quality in Nordic Teaching). This study aims to explore the quality in L1 teaching in lower secondary classrooms in the five Nordic countries, from the perspective of the needs of multilingual students. More specifically we investigate if and how the teaching offers explicit scaffolding (support structures), or language support for the students in L1 classes in all Nordic countries. Theoretical frameworks for the current study include Vygotsky's (1978) sociocultural perspective and the role of scaffolding in language instruction (Wood et al. 1976) as well as the theory about language awareness (Hélot et al., 2018) and powerful knowledge (Gericke et al., 2018)

The data is collected within the LISA Nordic project (Linking Instruction and Student Achievement). Observation data from ten lower secondary classrooms in the five Nordic countries were collected in the L1-subject and four consecutive lessons in each class were recorded in 2018-2022. The data were analyzed using the PLATO tool, which includes 12 elements of instruction based on research describing effective instruction in the Language Arts subject (Cohen & Grossman, 2016). To identify sequences of instruction that can be considered particularly important in

linguistically heterogeneous classrooms we analyze two of the PLATO elements more in depth: Modeling and Use of Models (MOD) and Accommodations for Language Learning (ALL), more precisely segments that got 3 and 3 on PLATO. Preliminary results show that some of the teachers use model texts to support the students in completing writing tasks (MOD), e.g. in the Swedish and Danish classrooms but modelling hardly appears in the Finnish and Icelandic data. There are also instances where teachers provide supportive materials for language learning and highlight academic and subject-related language in the instruction (ALL) and for that the lessons are coded on a higher level of PLATO (3 and 4). However, even though the elements coded 3 and 4 are considered to be at the higher end of the quality spectrum in PLATO, we don't necessarily find that all the teaching that occurs is conducive to language learning. Rather, we see a great range of different practices within these scores and while some of the forms of modeling documented may constitute quality for linguistically diverse students, others may not. In our paper, we aim to highlight the different aspects of teaching within these categories that in fact promote affordances for language learning and language awareness.

Plurilingual Education – Language Awareness Across Educational Levels

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This is a presentation of the overall findings of the research project Plurilingual Education – Language Awareness Across Educational Levels (PE-LAL, Daryai-Hansen et al., 2023). Based on a short introduction of the project, its qualitative design, methodology and context for the study, we present a model of learners' LA across educational levels in the context of plurilingual education, developed on the basis of an abductive approach (Dubois & Gadde, 2002; Timmermans & Tavory, 2012) combining previous research and empirical findings from the PE-LAL project. Drawing on Candelier et al. (2010), the model defines the context of plurilingual education as a continuum consisting of three pluralistic approaches to languages and a transversal dimension focusing on learners' language resources including first languages beyond the language(s) of schooling. Language Awareness is defined on the basis of van Lier (1998, 2004), as practical language awareness (PLA), metalinguistic awareness (MLA) and critical language awareness (CLA) that can be directed towards nine language levels.

The project included an extensive collection of empirical data, including 123 hours of classroom observations documented by fieldnotes and 82 hours of audio recordings of teaching and group work. This presentation zooms in specifically on classroom data from the secondary level, presenting a wide range of examples of the different forms of language awareness described in the abductively developed model. The findings indicate that PLA, MLA and CLA can be developed by students across educational levels and that the learners' LA with age reflects a complexification manifested through the LA articulation and the linguistic levels in focus. On the basis of these findings, the presentation reflects on the link between the forms of language awareness manifested by students and the characteristics of the teaching observed in terms of the plurilingual education, teaching activities, classroom discourse and learner engagement.

Finally, the presentation considers these aspects in the light of the QUINT conceptualisations of quality in Nordic teaching, especially with a focus on quality in linguistically diverse classrooms.

Arabic L1 speaking pupils' argumentation skills in L2 Finnish on grades 3 to 5

Maria Ahlholm

University of Helsinki

This presentation discusses the classical question about the connection between L1 and L2, and the contribution of L1 to learning the language of instruction and learning in general. I will show examples of an ongoing study about Arabic speaking pupils as L1 and L2 learners. Arabic has

become the fourth biggest mother tongue in Finnish comprehensive schools, with 9075 pupils registered as Arabic L1 speakers (Vipunen 2023). The percentage of Arabic speakers of all pupils is 1,5% speakers, and Russian 1,9% speakers. The division between the two main languages is Swedish 5,2% and Finnish 82,3% of all pupils.

The data consist of Arabic L1 classroom videos (<https://migdia.fi/en/>) and videos of L2 Finnish storytelling interviews. In this presentation, the main emphasis is on the interviews, and the classroom data serve as the background for the study - enabling observations about the pupils' L1 competencies and identification as Arabic speakers. The focus group pupils attend two schools in Helsinki district, and Arabic as a "student's own Mother Tongue" classroom in one of the schools. Ten students from grades 3–5 were selected to a storytelling interview in their

L2, Finnish. They were shown pictures describing safety risks in everyday situations in traffic, with fire, in outdoor games. The interviews followed a simple protocol: participants were first asked to describe what they saw, and second, explain what is risky in the picture, and third, give arguments why they thought so. The interviewer gave clues for argumentation only when necessary. The data gives access to the participants' argumentation skills in their L2, Finnish, particularly the use of connectors and causative verbs, and production of precise vocabulary. It is also possible to make comparisons between the participants' answers. The research question is what kind of variation exists in the pupils' L2 argumentation skills. In the analysis, some reasons for the variation are explained through background data.

The research question is what kind of variation exists in the pupils' L2 argumentation skills. In the analysis, the reasons for the variation are explained through background data. The preliminary findings are discussed leaning on the recent study on minoritized pupils' multilingualism (e.g. Cummins 2021). The presentation contributes to discussion and re-formulation of the expected connection between L1 and L2.

Teachers' views on multilingualism from the perspective of two national languages.

Anna Slotte

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This paper explores teachers' perceptions of multilingualism within Finnish medium and Swedish medium schools in Finland from the perspective of the language use by teachers and students.

Although multilingualism in a society is rather a universal norm than an exception (the Douglas Fir Group, 2016), the school institution has globally a persistent tradition for monolingualism (Gogolin, 1994; Piller, 2016). Thus, even for a multilingual society, the language of instruction has a significant symbolic value, and the schools stay formally monolingual, even though informally, a variety of languages is used side by side and overlapping. The case of the Finnish educational system with the two national languages, Finnish and Swedish, is an example of a bilingual structure based upon two parallel educational systems from pre-school through to university.

The linguistic diversity in Finnish schools is slowly growing, although the degree of multilingualism is still lower than in the other Nordic countries (see Emilsson Peskova et al., 2023). Particularly noteworthy are the disparities between Finnish medium and Swedish medium schools: 9.2% of students in Finnish medium schools come from families speaking a language other than Finnish or Swedish, in contrast to the 4% in Swedish medium schools.

This paper directs attention to the multilingual turn from the perspective of two official languages that have strong legal protection, even though one of the languages has a considerable majority position. The research questions guiding this investigation are:

1. How do teachers in Finnish medium and Swedish medium schools perceive multilingualism as reflected in the perspective of the teachers'

language use?

2. How do teachers in Finnish medium and Swedish medium schools perceive multilingualism from the perspective of teachers' guidance of the students' language use?

Adopting the framework of linguistically responsive teaching (Lucas et al., 2008; Lucas & Villegas, 2010, 2013) and the concept of sustainable translanguaging (Cenoz & Gorter, 2017), our sample comprises 2,865 teachers in 833 schools, employing both quantitative and qualitative methodologies.

The results reveal that the linguistic variety appears to be broader in Finnish medium schools, whereas in Swedish medium schools, the variability mainly concerns the two national languages. Given their minority status, Swedish language schools assume a dual role: safeguarding the use of students' school language, i.e., the minority language, and adapting to the growing linguistic diversity (see also From, 2020). The study underscores the significance of embracing sustainable translanguaging, that is, to support the use of minority language(s) as an essential part of linguistically responsive teaching. This means that the understanding in schools with a language in a minority position as the language of instruction in other words obviously clashes with both the fact that multilingualism has now attained a broader meaning than in the past and runs counter to the perspective on multilingualism in research and in policy documents. The study proposes a pressing need

to encourage further discussion about what it means to educate newcomers for integration through the smaller language.

Paper session 1C (SES 1C) | Policies for Teacher Education

Room: Undervisningsrom 1

Chair: Birna Svanbjörnsdóttir — University of Akureyri

SES 1C - Paper 1

The role of organization- and leadership structure for the work of teacher education program leaders

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This study explores the interplay between organization- and leadership structure, and study program leaders (SPL) efforts to create coherence in their teacher education programs (TE), by examining the research questions: How are primary school teacher education programs in Norway organized and led? And which role does organization and leadership structure play for SPLs' work to create coherence and integration in teacher education in two selected programs?

The study is inspired by institutional ethnography and short-term ethnographic fieldwork. Data collection includes a national screening of 13 TE institutions through a small survey, documents and website information and clarifying emails or phone calls. It includes data from two selected case institutions: (i) interviews with current and former SPLs, head of department and program coordinators, and (ii) logs from two SPLs. Short-term observations at both institutions over one academic year informed the interview data, but are not included in the analyses of this paper.

The findings led us to develop four categories of organization models: unitary, full matrix, asymmetric matrix and hybrid models. Within these institutions, the leadership structure of (SPLs) varies from fully positioned pure leadership roles to combined roles involving both teaching and leadership responsibilities. However, the study also highlights that these models need adjustments as they lack specificity. Furthermore, the research indicates that the matrix organizations in the two case institutions give the SPLs similar challenges (e.g., fragmentation within faculty lead to conflicting interests and create barriers for SPLs in their efforts to create coherence). However, the SPLs also report significant differences in how they experience these challenges, partly due to organizational model maturity, degree of fragmentation in the model and implementations of supporting structures for the SPLs. Understanding the interplay between organization- and leadership structure and SPL roles is essential for enhancing coherence in teacher education programs.

Shaping Policy: Analyzing Stakeholder Perceptions of National Teacher Education Reforms in Norway

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Between 2014 to 2017, the Norwegian Ministry of Education and Research instituted a series of policy reforms to primary and lower secondary teacher education (GLU). These reforms included significant changes, such as shifting from a 4-year bachelor's program to a research-based 5-year integrated master's degree, and creating a framework for improved university-school partnerships.

Policy creates the conditions under which teaching quality can flourish or falter (Darling-Hammond, 1990), and when engaging in the process of policy implementation, stakeholder engagement is one of the key factors that hinders or facilitates the effectiveness of a policy (Viennet & Pont, 2017). This paper interrogates recent reforms to teacher education in Norway by interviewing stakeholders in teacher education about their perspectives of the reform's implementation and impact, and asks

the following research question: how do different stakeholders perceive the policy reforms to primary and lower secondary teacher education in Norway when it comes to recruitment, retention, and preparation of new teachers?

The participants interviewed for this research represent four different stakeholder groups from 18 institutions across the country: policymakers (n=6), teacher educators (n=5), school administrators (n=5), and scholars (n=5). Initial findings indicate agreement between all stakeholder groups that the reforms increase the attractiveness of enrolling in teacher education, but the working conditions of teachers are a significant barrier to teacher recruitment. We also find that there are discrepancies between stakeholder groups on their perceptions of the relevance and impact of a master's thesis for primary and lower secondary teacher education.

From Awareness to Action: Diversity Conceptions and Differentiated Instruction of Teachers in Chinese Teacher Education Programs

Xiangyuan Feng

University of Groningen

Affiliated authors: Ni Zhang, Glasgow University | Dingchen Yang, Yunnan Normal University | Wenyan Lin, Beijing Normal University | Ridwan Maulana, University of Groningen

In the context of global efforts to diversify the teaching profession and integrate diversity into education, particularly in response to the increasing diversity of student populations, this study investigates the relationship between pre-service teachers' diversity conceptions and their differentiated instruction practices in Chinese secondary education. Drawing from scholarly research highlighting gaps in teacher preparedness for diverse classrooms, the study aims to elucidate how pre-service teachers' conceptions, intentions, and practices align, and how teacher education programs can effectively nurture these factors. Using a comprehensive battery of instruments including the Munroe Multicultural Attitude Scale Questionnaire (MASQUE) and the Teacher as Social Context (TASC) questionnaire, along with student evaluations of teachers' differentiated instruction skills, data were collected from 257 pre-service

teachers and 1356 students. Confirmatory Factor Analysis validated the scales, revealing positive scores across diversity conceptions and a high-average level of differentiated instruction skills among participants. Notably, emotional engagement with diversity issues positively correlated with DI skills, while awareness and knowledge of diversity issues showed a negative association. Other results will be reported during the conference. The study's significance lies in its contribution to understanding how teacher education programs can better prepare teachers to create equitable teaching and learning environments, particularly for diverse and disadvantaged students. By identifying effective practices, the research aims to inform policy and practice in enhancing teaching quality and addressing educational inequities.

Quality features in Teacher Education Programs

Ida Katrine Riksaasen Hatlevik

University of Oslo

Affiliated author: Doris Jorde, University of Oslo

This paper is a presentation of the quality framework for teacher education programs outlined in the anthology "Transforming University-based Teacher Education through Innovation" (Hatlevik, Jakhelln, & Jorde, 2024), which presents research on a selection of ProTed's innovations including: the development of integrated teacher education, student teachers research literacy and professional Identity development, bridging the gap between campus and schools (theory and practice) and video as a means of connecting coursework to teaching practice. Conceptions of quality in teacher education are contextual and reflect current understandings of what high-quality teaching and learning in teacher education looks like. In this paper, we employ a transformative perspective on quality in Teacher Education (TE) and supplement it with research that focuses on other features

and prerequisites for quality in TE programs. The term quality is used as a positive description of necessary preconditions for and features of good, desirable, and transformative university-based teacher education programs. Based on high profile studies found in international and national literature, this paper provides a theoretical framework describing quality features with a particular focus on program coherence and integration; quality work; transformative partnerships with schools; professional knowledge base; continuing education of teacher educators; student teachers' agency and study engagement; learning opportunities on campus and in schools. Each of these quality features is described in more detail and sub features are identified.

Symposium 2A (SES 2A) | Using classroom videos to improve teaching quality and professional learning in teacher education.

Room: Stort møterom

Chair: Nadine Malich-Bohlig, UC SYD, Denmark

Discussant: Pam Grossman, Penn Graduate School of Education, National Academy of Education

Symposium abstract

In this symposium we approach teaching quality and professional learning from three different studies with the same overall focus on teacher candidates' observation and analysis of their own teaching.

The data presented is collected from studies from QUINT researchers and associates in Denmark and Iceland, all using classroom video and PLATO protocol for coming close to the classroom context for creating opportunity for teacher candidates to observe, analyze and discuss teaching.

With the aim of evaluating and to understand furthermore, the core features of classroom teaching and learning in the diverse situations, the studies also use different methods, such as discourse analyses, coding frames, thematic analysis, and semantic waves.

The background for this symposium is built on that it is widely accepted that students' learning is affected by multiple factors, such as student level, classroom level and school and system level. However, recent reviews have highlighted that teaching quality at the classroom level

is more important for student learning than several other factors. On that basis, nations are advised to focus directly on teacher candidates' professional learning and development to improve the quality of classroom practice and in doing so the overall quality of the education system. It has also been argued that a coherence between theory and practice in teacher education is a key factor for the quality of teaching. To link coursework and fieldwork, theory and practice, a close collaboration between teacher education and schools and between researchers and practitioners is needed. In this context, authentic artifacts of practice, such as videos, are beneficial. Classroom video-data is a powerful tool for observing the quality of teaching. It allows the analysis of instructional practices from multiple perspectives and viewpoints, and stimulates discussions about pedagogical choices within classrooms, thereby deepening both educators' and teacher candidates' understanding of the process. Protocol for Language Arts Teaching Observation (PLATO), a standardized observation instrument for quality teaching, has been developed for analyzing such data.

Video-recordings in the field work of teacher candidates

Birna María B. Svanbjörnsdóttir
University of Akureyri

Sólveig Zophoníasdóttir
University of Akureyri

Teacher education programs have been criticized for their lack of coherence between theory and practice. Critics argue for substantial practice, experience, and opportunities for reflection, to promote their professional growth both in faculties and field work in schools. The teacher candidates' mentors who represent the schools have a crucial role in linking schools with universities, thus significantly making an impact on professional learning, as shown in Icelandic studies.

This paper presents a study investigating the use of classroom videos in the field work of teacher candidates to improve the quality of their teaching. The goal of the study was to enhance the coherence between theoretical knowledge and practice and enable teacher candidates to envision their praxis as future teachers. Furthermore, the aim was to make a platform for meaningful discussions between the candidates and their mentors in schools, and to enrich their professional development and learning with an emphasis on utilizing classroom videos.

The study builds on 34 reports on a video recording assignment from two groups of teacher candidates in field work. The researchers (faculty teachers) ran a workshop for the teacher candidates and their in-school mentors, on

selected PLATO elements; then the candidates, video-recorded a lesson and reflected on it with their mentors and finally wrote a report on it. The reports were analysed with a thematic approach. The thematic analysis generated two main themes a) more consciousness of what happened in the lesson, b) video recordings as professional learning tool in field work.

The preliminary findings indicated opportunities for change, and the act of recording was seen as an effective method for reflection and enhancement of teachings skills. The candidates appreciated the opportunity to review recordings with their mentors and engaging in discussions anchored in PLATO's criteria. They recognized the potential of using video recordings for professional development and the mentors saw rich opportunities to use video recordings for improvement of their own practice.

The paper contributes to the overall purpose of the QUINT project. The study was built on the QUINT ambition (theme 4) to improve the coherence between theory and practice in teacher education by using classroom videos. It has a value for all stakeholders as it underscores the value of professional discussion to enhance the quality of practice.

Teacher candidates' noticing teaching quality through video-enhanced campus teaching

Stefan Ting Graf

UCL University College

Hanne Fie Rasmussen

UCL University College

In this paper we present results from a two-year development and research project Learning To Notice Quality (LTNQ) using authentic classroom video (Blomberg et al., 2014) in the Danish teacher education.

There is a respectable body of studies (Dindyal et al., 2021), but in Denmark, the teacher noticing approach (König et al., 2022) is still in its infancy. On one hand, the purpose of our study is to integrate teacher noticing into the regular campus teaching (Amador et al., 2021) and, besides mathematics, include the L1- (Danish) and L2-program (English). On the other hand, the purpose was to challenge the current conception of teaching quality in Danish teacher education by introducing criteria from PLATO (Grossman, 2015).

The five developed LTNQ-course designs are inspired by Seidel & Stürmer (2014) applying the phases of describe, explain and predict, while PLATO-elements are introduced in LTNQ course 2, 3 and 5.

Our research question is: *What characterizes the development of teacher candidates' noticing of teaching quality when exposed to video-enhanced course designs in the first two years of Danish teacher education?*

Our data consist of 30 teacher candidates' group discussions during the LTNQ course 1 (quasi baseline) and the final LTNQ course 5 (quasi endline) in the three subjects. The data is coded with a coding framework (Auerback & Silverstein, 2003) partly inspired by van Es (2011) and partly

by PLATO-elements. In a first step, we counted the frequencies of utterances that can be connected to PLATO-elements (Jacobs, 2017). In a second step, we analysed by functional weight and thematic condensing (Braun & Clarke, 2019) each group's discussion of videoclips in context to identify the teacher candidates' language of quality in teaching related to what is meant by the PLATO-elements.

Preliminary results show that novice teacher candidates, (Stahnke & Blömeke, 2021) with little professional knowledge, discuss highly relevant teaching situations, show a good intuition of what is meant by PLATO-elements, but mostly lack a differentiating and connecting professional language (Rotem & Ayalon, 2023). Classroom discourse and Representation of content are intensively discussed, Purpose, Connection to prior knowledge, Feedback, Behavioural and Time Management are discussed moderately, while Use of strategies and Modelling are almost ignored. Two years later, the teacher candidates not only discuss in general more quality criteria, and they discuss them more intensively also including Use of strategies and Modelling. Further, it appears that the teacher candidates stick to the professional language based on what theory and concepts that are taught in Danish teacher education, while the PLATO-language is still conceived as an add-on. Finally, we discuss in which ways the two languages used by teacher candidates are compatible, and what is the surplus of the Danish didactics languages on one side, and the PLATO-language on the other side.

Interdisciplinary Collaboration in Videographic Teaching Observation (InCoViTO)

Eva Dam-Christensen
UC SYD, Denmark.

Hildegunn Juulsgaard Johannesen
UC SYD, Denmark.

Nadine Malich-Bohlig
UC SYD, Denmark.

Lars Petersen
UC SYD, Denmark.

Research indicates that the use of scaffolded reflection through video recordings of teaching situations can develop teacher candidates' interpretation and professional understanding of the subject they teach in relation to the students' learning prerequisites (Blomberg, Stürmer & Seidel, 2011; Borko, Liston & Whitcomb, 2008; Santagata & Antelici, 2010). Several QUINT studies (Blikstad-Balas, Klette & Tengberg, 2019) have focused on how teacher candidates use video recording in teacher education to qualify their own studies.

This paper presents preliminary findings of analyzing video recordings and audio recordings from school and teacher education classes, looking for the use of academic language in four subjects.

The purpose of this study is to explore teacher candidates' understanding of subject academic language and concepts in their teaching practice and their reflective group dialogues when analyzing video. Furthermore, the question is if this focus contributes positively to academic awareness and quality of the teacher candidates' professional understanding of language and concepts in the subjects Danish (L1), natural sciences, social studies, and history.

Our data consist of 16 video recordings of teacher candidates' teaching in each of the four subjects in upper primary and lower secondary school; furthermore, 16 audio recordings

taken in teacher education classes of teacher candidates analyzing their own teaching in the video recordings; finally, posters produced by the teacher candidates showing their results and reflections.

The analytic framework utilizes Sociocultural Discourse Analysis (Mercer, 2004) and Semantic Waves (Maton, 2020) for analyzing field observations of teacher candidates' own video observations and group dialogues. The framework scaffolds collaborative meta dialogues, through a Learning To Notice frame (Es & Sherin, 2002), by using Jacobsen & Mulvad's theory of academic language (2022) and several PLATO elements (Grossmann, 2015) as mediating tools. Findings show that this framework qualifies the four subject academic languages.

The study opens for a larger complexity for the students' challenge of translating theories and academic language into actual teaching practice. Our results also indicate that teacher candidates' video analysis and collaborative reflections of their own teaching practice lead to increased awareness in relation to developing a reflected use of academic language in their teaching practice.

The study provides important insights to the QUINT project's theme four; development of video-based teacher training - in relation to subject specific academic linguistic and conceptual awareness in a teaching context.

Symposium 2B (SES 2B) | Teaching quality and the school experiences of multilingual learners: A critical perspective

Room: Auditorium 2

Chair: Mariana Castro — University of Wisconsin-Madison

Discussant: Courtney Bell — University of Wisconsin-Madison

Symposium abstract

Given the patterns of immigration over the last decade, the academic achievement of multilingual learners who are learning in a language different from their home languages has been a subject of significant interest across many nations. Helping multilingual learners succeed in schools requires both supporting their participation in curricular content and supporting their language development. The inextricable relation between language skills and learning of the content adds to the complexity of teaching and learning of multilingual learners. Research has consistently shown that teaching quality is a powerful predictor of student performance, with high-quality teaching being a critical determinant of student achievement (Rivkin, Hanushek, & Kain, 2005; Rockoff, 2004). Although teaching quality in general has been related to improved learning outcomes in schools, the connection between teaching quality and students' language resources and skills has been under-investigated.

The focus of this symposium is to critically analyze theories, policies, and empirical evidence regarding the relationship between teaching quality and language in the education of multilingual learners. Five papers from researchers in the United States, Colombia, and Norway document empirical findings from both preservice and in-service classrooms in national and international schools from more than five countries. The discussant will share insights that focus on the ways in which teaching quality is defined and enacted empirically across the papers' varied language contexts.

Examining International School Teachers' Language Ideologies

Esther Bettney Heidt

University of Wisconsin-Madison

Current research indicates that teachers' beliefs have an influence on their instructional decisions and in turn, the learning experiences and outcomes of students (Deveney, 2007; Libby-Ireland, 2015; Torff & Figueroa Murphy, 2020; Rafzar, 2012; Wilkins, 2008), including their beliefs about language (Pettit, 2011; Venegas-Weber & Martinez Negrette, 2023). Teachers' language ideologies, a set of their beliefs, judgements, opinions, and feelings about language and its use (Abernathy, 2022; Fitzsimmons-Doolan et al., 2015; Kroskrity, 2010; Piller, 2015; Wollard, 1998), inform how individuals view languages, how and why hierarchies of languages are constructed and enacted in certain social spaces and why certain languaging practices are considered more valuable than others.

When teachers' beliefs about language, or the language ideologies, are hegemonic in nature and consistent with practices that marginalize and devalue linguistic diversity, it is detrimental and problematic for students' learning and linguistic identity formation (Abernathy, 2020; Čeginskas, 2010). However, shifting teachers' language ideologies can be challenging, as Thompson (2022) notes "the biggest obstacle to engaging teachers in (multilingual teaching) practice tends to be changing teacher attitudes: particularly, English language purism ideologies of monolingual teachers." (p. 21)

Within the context of international schools, there is often rich linguistic diversity, however schools' policies and program models often promote proficiency in an accepted standard variety of English as the desired and favored outcome for students (Hayden & Thompson, 2016; Spiers, 2016). These hegemonic language ideologies often position English proficiency as more valuable than students', families' and teachers' multilingualism.

While some educators are challenging hegemonic ideologies, scarce research documents international school teachers' current beliefs. In this study, the authors re-examine data from two recent empirical studies, one quantitative and one qualitative, in which they individually each explored teachers' language ideologies within international school contexts. In the first study, Olson-Wyman (2023) conducted a quantitative, non-experimental, survey-based study to identify what English medium international school teachers believed about language, what the components of these language ideologies were, and what factors influenced these ideologies. In the second study, Bettney Heidt (2022) examined teachers' language ideologies through a case study of an international school in Colombia. Bringing these two studies together created an opportunity for a more robust analysis, embracing methodological pluralism (Moss & Haertel, 2016) and expanding the static notion that mixed methods studies should follow only one path of study.

Through a collaborative re-examination, they identified personal factors and professional experiences that influenced teachers' language ideologies and their classroom practices. They also expand the notion of a static, one-way relationship between ideologies and teaching practices to instead present a more symbiotic and dynamic relationship. Based on these findings, the authors identify key considerations about the role of language ideologies within international school contexts and how educators might shift toward more counter-hegemonic beliefs and teaching practices in support of multilingual students, families and communities.

Toward a Framework to Support Multilingual Learners through Core Teaching Practices

Mariana Castro

University of Wisconsin-Madison

Core teaching practices emphasize the significance of engaging students in active learning experiences, promoting critical thinking, deepening understanding and using precise language in classroom discussions (Grossman, 2021). Various lists of core teaching practices have been developed with common characteristics: they are research-based and have the potential to improve student achievement (Kane et al., 2011). However, while core teaching practices have shown promise in guiding educators toward effective instruction, they have traditionally excluded a focus on the teaching of multilingual learners, that is, those students who may speak multiple languages and are in the process of learning the language of instruction in addition to the curriculum content. For these students, attention to language is core to their learning.

Language education researchers have long studied the role of language in learning and understood the challenge multilingual learners have in performing “double the work” as their peers -learning the language and the content

of multiple subjects (Short & Fitzsimmons, 2007, p. 27). In response to this challenge, language researchers have proposed various frameworks to develop academic language and literacy (e.g., Baker et al., 2014). This paper argues there is a need to go beyond the development of academic language and literacy and include a language focus in core teaching practices to specifically address the needs of teaching multilingual learners and support their meaning-making. Attention to language in core practices would address the double work multilingual learners engage in. To this end, the paper puts forward a theoretical framework for integrating language into core teaching practices to facilitate the access of multilingual learners to challenging and meaningful school curricula. Additionally, the paper describes the empirical research that an integrated framework for language and core teaching practices would facilitate related to how to effectively support and enhance the teaching quality of multilingual learners.

The Access Paradox in Nordic L1 Classrooms: Accommodating Dominant Academic Language Learning yet Valuing Learners' Multilingualism?

Camilla Gudmundsdatter Magnusson

University of Oslo

In Nordic educational policy and curricula, students' linguistic development including multilingualism is highly valued, to preserve and develop students' mother tongue and indigenous and national minority languages (Alisaari et al., 2023), as well as to acknowledge an increasingly globalized and multicultural society. For example, in the curriculum for the subject Norwegian it is emphasized that "through the subject, the students will become confident language users and aware of their own linguistic and cultural identity within an inclusive community where multilingualism is valued as a resource" (Norwegian Ministry of Education and Research, 2020, p. 2). However, the teaching and learning of and through language in classrooms may involve an access paradox, as explained by Janks (2004). The perspective of access seeks to provide students access to dominant forms of language and ways of oral expression (Janks, 2010), while at the same time, teachers need to value students' own language resources, recognizing their existing linguistic repertoires as valuable assets, and thus promote the fluid and dynamic use of multiple languages in the classroom (cf. translanguaging pedagogies; Garcia & Wei, 2014). In this paper, the potential access paradox in Nordic L1 classrooms is investigated through this dual perspective: whether and how teachers a) accommodate students' language learning through access to dominant academic language while also b) encouraging students to draw on and develop their multilingual resources and finding ways to make these resources visible and valuable in the classroom space.

The present study relies on qualitative analysis of naturally occurring classroom instructional practices, based on classroom video

observations. The study is part of the Nordic large-scale video study Linking Instruction and Student Achievement (LISA) (see Klette et al., 2017), in which data was collected from 112 lower secondary L1 classrooms from 2015 to 2021. The classrooms were sampled based on criteria related to demographic and geographical distribution, and for including multilingual classrooms. To delineate the sample, the analysis was targeted towards a prevalent practice in L1 classrooms, namely reading and text-based activities, focusing on text talk situations in whole class settings that were available to all students. The sample for this study thus consists of video data from 68 Nordic L1 classrooms from the following countries: Norway (n=34), Sweden (n=12), Denmark (n=10), Finland (n=8), and Iceland (n=4), with a total of 288 lessons.

The analysis suggests that teachers pay attention to providing students with academic language (in Norwegian, Swedish, Danish, Finland Swedish, and Icelandic respectively), through providing multiple exposures to to-be-learned words and concepts. However, practices involving multilingualism as a resource are nearly nonexistent. It thus seems to exist a blindness to the access paradox in the language practices across these Nordic classrooms as access to dominant language forms is given attention while students' multilingualism is very seldom an integrated part of the LA text-based teaching. Taken together, the findings reveal what could be understood as a Nordic L1 normativity in the classroom practices. As implications, the Nordic L1 normativity is discussed in relation to monoglossic ideologies and McKinney's (2017) concept of Anglonormativity.

Fluid multilingualism: Opportunities for student talk in language lessons in Norway, France and England

Sarah M Eiene & Lisbeth M Brevik

University of Oslo

Embracing linguistic diversity in education is key to developing inclusive societies that respect diversity and difference (Council of Europe, 2008). Scholars have expressed concern about the lack of a multilingual pedagogy in the classroom that includes and draws on all students' existing language resources (Auger, 2007; Cenoz & Gorter, 2017).

This paper provides new knowledge by reporting from the LANGUAGES project, combining a student perspective and an observed perspective on language use in English and French lessons in Norway, France and England. LANGUAGES is a longitudinal project that examines the teaching and use of languages in three national contexts, where these languages have different statuses as first or additional languages, and where students' language resources vary extensively (European Commission, 2012). The project aims to spotlight the role that teaching plays in developing students' ability to communicate in more than one language. The classes in this project were strategically sampled to include language homogeneous and heterogeneous contexts in the three countries and include eight French classes and eight English classes in each country (N=48), among students aged 13–14 (N=1052).

The paper reports on a case study that captures opportunities for student talk in the language classroom. Adopting a mixed-methods approach (Greene, 2007), this study includes two strands of data: (1) a thoroughly validated student survey (Haukås et al., 2021), where we obtained a quantitative and systematic overview of all students' reported language resources, and (2) a well-proven video observation design in the classroom (Brevik & Rindal, 2020; Klette

et al., 2017), where we systematically recorded four consecutive lessons in each language class (N=192). Video recordings provide information about how much time make up student talk during lessons, as opposed to when students do not talk at all, such as when they are listening to the teacher or doing independent work. Student talk is typically captured during whole-class discussions, group conversations or student-teacher dialogue.

Findings focus on similarities and differences between students' reported language resources and the actual use of languages in the classroom. Our results showed more variation in language use within than across countries, depending on overall speaking time during lessons, the language in question and its status in education and society. While English and French respectively, were the target languages of these classes, students used both the language of schooling and the target language to communicate easily in the classroom, while other languages were used infrequently (less than 1 percent of the time). This finding is in sharp contrast to students' reported language resources, which comprised knowledge of 13–27 languages in each classroom. However, within most classrooms, we identified what we refer to as 'fluid multilingualism', where the target language and the language of schooling were used simultaneously or interchangeably. The contribution relates to trends across the three countries, exemplifying similarities and differences in practices for capitalising on students' language resources in the language classroom.

Enhancing Teaching Quality for Multilingual Learners through the Integration of Science and Language Teaching Practices

Mark Olson & Mariana Castro
University of Wisconsin-Madison

While the United States has seen a rise in multilingualism over the last decade, only approximately 22% of Americans speak two or more languages (US Census, 2022). Yet, multilingual learners (MLs) are the fastest growing student population in schools (NCES, 2022) where most instruction occurs in English. Despite the growth of this student population, few teachers report feeling prepared to teach them, especially in subjects like science (Banilower et al., 2013). This is understandable as one considers the dynamic and complex nature of teaching subjects like science, which require building disciplinary knowledge and access to practices, and which is exacerbated when it involves teaching students who are navigating school in multiple languages (National Academy of Sciences, 2017). Training teachers to simultaneously attend to science and language affords collaboration across disciplines to broaden equitable participation for MLs (Lee & Stephens, 2020).

In this study, science education faculty worked with a multilingual learning researcher to conceptualize and pilot the integration of science and language teaching practices (SLTP) in a secondary certification program where pre-

service teachers (PST) are prepared to teach science and English as a Second Language. To address the dynamic and complex nature of teaching science to MLs, PSTs engaged in mixed-reality simulations, where trained actors manipulated virtual avatar students. The simulations allowed PSTs to implement SLTP in controlled environments before they entered the more complex reality of science classrooms. The research questions were: (1) what are essential elements in teacher-student interactions that help elicit and interpret MLs' thinking? and (2) how do mixed-reality simulations impact PSTs' self-efficacy in teaching science to MLs?

Beyond its impact in empowering MLs to express their thoughts, make decisions and solve problems in daily life, the collaboration across science and language in the study advances the call for multidisciplinary collaboration framed by the National Academies of Science. The findings have significance for the university site where the study was conducted, inform the teacher education field, and provide innovative models for preparing teachers to work with diverse learners.

Paper session 2C (SES 2C) | Digital technology in the classroom

Room: Undervisningsrom 1

Chair: Marie Nilsberth, Karlstad University

SES 2C - Paper 1

Effective assessment practices in emergency remote teaching

Toni Mäkipää

University of Helsinki

Emergency remote teaching (ERT) refers to teaching that is conducted online due to unforeseeable changes in society. As a result of the massive increase of remote teaching during the last four years, the number of studies on ERT has grown. Consequently, scholars have introduced a new concept through which to discuss assessment in ERT: emergency remote assessment. To advance current frameworks of ERT and to develop existing teaching practices, it is essential to focus on assessment in ERT as remote teaching might become more popular in post-pandemic education. Thus, my aim with this presentation is to explore effective teaching in ERT from the viewpoint of emergency remote assessment. I will discuss (1) how students have perceived their language teachers' feedback and assessment practices in ERT, (2) how language teachers have perceived their feedback and assessment practices in ERT, and (3) which assessment practices are suitable for ERT. My presentation comprises two datasets. Dataset 1 consists of survey responses from 251 upper

secondary students, and Dataset 2 consists of survey responses from 176 language teachers (all levels of education). The surveys included both open-ended and closed-ended questions. The results indicate that students with low language proficiency were more dissatisfied than students with high proficiency. In terms of teachers, some of them felt that they were not able to provide feedback as much as in face-to-face teaching. Concerning assessment practices, the students pointed out that the most suitable assessment practices for ERT included an essay, written feedback, and a listening comprehension exam. The results will lay the groundwork for advancing current frameworks of assessment literacy so that scholars consider the competence required for emergency remote assessment. Concerning pedagogical implications, the results illustrate how language teachers can employ both summative and formative assessment practices successfully in ERT.

Spatializing literacy and new techno-scholastic environments in Nordic lower secondary classrooms

Tina Høegh

University of Southern Denmark

Affiliated authors: Marie Nilsberth, Karlstad University | Tina Høegh, University of Southern Denmark | Marie Slot, University College Copenhagen

With this paper presentation, we aim to contribute to the thinking of spatiality in literacy practices in the new techno-scholastic environments that digitalisation has brought with it. The analysis is based on the video-ethnographic material collected in the QUINT-project Connected Classroom Nordic, and selected examples from Danish and Swedish lower secondary classrooms. Using a socio-material perspective we depart from an understanding of today's classrooms as new *techno-scholastic environments* (Alirezabeigi et al., 2020) and also the concept of *literacy-as event* (Burnett & Merchant, 2020), and ask: *What spatial formations can be discerned in relations between students and technology in different literacy-as-events, and how can thinking with spatial imaginaries open for new understandings of qualities in classroom literacy in digitalised classrooms?*

For the purpose of this study, we have selected video recordings from L1-lessons in the Danish

and the Swedish school. In the analysis we think with Sørensen (2009) about technology and knowledge in educational practice, and in particular her thinking about representations of knowledge in relation to what she presents as four spatial imaginaries. In general we find that the spatial dimensions of literacy in these digitally rich classrooms differ from literacy in the non-digital classroom. One of the most striking aspects is how in these classrooms, fluidity is a constant state of literacy and how this is actually played out in relation to meaning making. The student is in an always moving relation to different social-material-textual arrangements, in a double-ness of fluidity that often is connected to the challenge of creating a resonance space. Without shared resonance spaces in classroom literacy practices, meaning making processes become personalised, diverse and difficult to bring into the communal knowledge that teaching intends to facilitate.

[cancelled] 'Sticky', 'slippery', and 'smooth' access – Exploring the affective potentials of access to writing technology in lower secondary classrooms

Jenny Högström

University of Helsinki, Finland

Affiliated authors: Marie Nilsberth, Karlstad University | Antti Paakkari, Tampere University | Anna Slotte, University of Helsinki

Student access to digital writing technology has become increasingly prominent across different school subjects and education levels. Influenced by the liberal-humanist education discourse, promoting a techno-optimist approach to solve pedagogical challenges, access has predominantly been foregrounded as something that students are 'provided', that is, access is to be 'uptaken' by human individuals. The present paper troubles this notion in rethinking access through its affective potentiality. Advocating relational thinking, access to writing technology is understood to hold multiple potentials in students' situated writing practices. The focus

is on students' task-related writing, on word processing software and its material properties, in the school subjects L1 (Language and Literature) and Social Studies in lower secondary classrooms in Finland and Sweden. Drawing on video-data, the analysis shows how access holds the potential of becoming 'sticky', 'slippery', and 'smooth' in students' writing practices, further engaging students and teachers in sociotechnical 'care work' in classrooms. The research contributes to a more nuanced understanding of how access to writing technology is enacted and affects students and teachers in classroom settings in the Nordics.



Paper session 2D (SES 2D) | Analyzing teaching quality: divergent approaches

Room: Undervisningsrom 2

Chair: Mark White, University of Oslo

SES 2D - Paper 1

Measuring the relationship between student perceptions of teaching quality and learning achievement: a framework and a meta-analysis

Sebastian Röhl

University of Tübingen, Germany

In K-12 education, student ratings are an inexpensive, effective, and low-threshold way to capture teaching quality (TQ) from the students' perspective. The validity and reliability of student ratings for assessing TQ has been demonstrated in previous research. Nevertheless, the question of explicitly the ratings of students are associated with student achievement measures from a meta-perspective has not been addressed in recent research in detail. In addition, both the measurement of TQ and the survey of learning achievement are subject to different theoretical assumptions and operationalizations. To discuss and investigate these possible influencing factors, we developed a theoretical model,

followed by a meta-analysis to investigate the overall relationship between student perceptions of TQ and the moderating effects of different measurement characteristics. Including 48 suitable studies with 536 effect sizes from our literature search, meta-regression revealed a mean weighted effect of $r = .17$. Moderator analyses pointed to significant differences between different dimensions of TQ, as well as tendentially significant differences in terms of learning achievement measures (one-point measures of learning states vs. longitudinal learning gains; standardized tests vs. grades) and the subject taught.

How does presentation order affect the reliability of classroom observations of teaching quality in Norwegian mathematics and science lessons?

Armin Jentsch, Nani Teig & Trude Nilsen

University of Oslo

Teaching quality has been researched extensively in the past years with a high number of empirical studies in educational sciences and psychology. To better understand how learning develops in the classroom, scholars are concerned with the reliable and valid measurement of teaching quality. The purpose of the present study is twofold: First, we aim at investigating the effect of presentation order on score reliability in two subjects. Second, we explore an optimal design for the implementation of our hybrid observation system in terms of score reliability. Towards this end, we assigned four trained raters to rate videotaped Norwegian mathematics and science lessons either in sequential 20-minute

segments, or two nonsequential 20-minute segments. We applied Generalizability theory to estimate measurement error and reliability in our study. Our results show that, presentation order had little impact on score reliability. In more detail, score reliability was high for science lessons in both conditions, and acceptable for two out of four teaching quality dimensions in mathematics with slightly better results for the static condition. Our results suggest that (1) teaching quality in science and mathematics lessons varies on different time scales, (2) the observation system functions differently in mathematics and science lessons, or similarly, (3) raters have applied the measure differently between subjects.

Investigating the Quality of Teaching from Within

Georg Breidenstein & Tanya Tyagunova

Martin-Luther-University Halle-Wittenberg, Germany

Research in education is interested in the quality of teaching. It wants to distinguish 'better' teaching from 'not so good' teaching – not at least to improve teaching and teacher education. But what does 'quality' mean in relation to teaching? And how can it be investigated? These two questions are interrelated: the instruments of research predefine the concept of 'quality' – and vice versa.

In our contribution, we briefly distinguish between three different ways to conceptualise and investigate the quality of teaching and we want to introduce a notion of 'quality' which is related to the practices of teaching themselves. We refer to the theory of social practices (Schatzki et al. 2001) and to the idea of Schatzki (1996) that practices are characterised by a "teleo-affective orientation". Following this heuristic, we can ask how the teaching practices in the classroom

situation itself are characterised by certain goals and normative orientations.

From this perspective, we can see that there is not one practice of teaching but that the observable teaching consists of several practices which have different orientations, e.g. the scaffolding of individual learning processes and the operating of the whole class teaching at the same time. We will make our considerations more concrete by examining two short fragments from our INTERFACH video study, which show a maths teacher giving advice to two students on how to handle the task. Discussing the different orientations, which interfere with each other in complex ways, leads to a more complex understanding of 'teaching quality'.



Paper session 3A (SES 3A) | A mixed methods way of thinking in classroom research

Room: Auditorium 2

Chair: Nora Mathé, University of Oslo

Discussant: Courtney Bell, University of Wisconsin–Madison

SES 3A - Paper 1

A mixed methods way of thinking about education reform

Lisbeth M Brevik & Nora E. H. Mathé

University of Oslo

This paper presents the mixed methods design of EDUCATE, a large-scale video-based project that evaluates of the Norwegian educational reform in force from 2020 (LK20). EDUCATE employs a mixed methods case design, collecting several types of data that enable a range of qualitative, quantitative and mixed analyses (Brevik & Mathé, 2021; Tashakkori et al., 2020).

This design is inspired by Greene's (2007) notion of capturing different voices and perspectives to gain a deeper understanding of complex social phenomena, such as classroom teaching. The data sources include video observations, teacher logs and interviews and student surveys. Collecting multiple types of data that capture diverse perspectives and can be integrated in various ways, contributes to complex knowledge about planning, teaching and experiences with the new education curriculum.

The core of the design is video-observations of naturally occurring teaching in seven subjects (Hassan et al., 2005; Nassaji, 2020). We observe four consecutive lessons in each subject, each school year. The observations are combined with a systematic collection of logs that teachers

complete directly prior to and after each video-recorded lesson: In Log 1, we ask teachers to report their plan for the upcoming lesson. In Log 2, teachers report on what actually happened in the lesson. When filming is completed, we interview teachers about their perceptions of and experiences with the new curriculum. Students' perspectives are captured by a Norwegian translation of the TriPod Student Perception Survey (Ferguson, 2012) about their experiences from the teaching more generally. We argue, however, that as both teachers' and students' actions and voices are the focus of the video observations, the design enables access not only to diverse voices and perspectives, but also diverse expressions of these.

In this paper, we argue that through a mixed methods integration of perspectives and rich descriptions (Geertz, 1983; Stake, 1995), we provide comprehensive and sophisticated analyses of the classroom practices we investigate. The fact that the case studies are conducted over a time span of four years, allows for analyses focusing on change over time, which is crucial in a comprehensive process such as the implementation of a new curricular reform.

Unveiling and validating teacher perspectives: Insights through mixed methods in evaluating curriculum reform

Greta Björk Gudmundsdóttir

University of Oslo

This study presents how a mixed methods design (Tashakkori et al., 2020) is used to investigate the perspectives and experiences of Norwegian teachers within the context of a recent curriculum reform (LK20) in seven school subjects in Norway.

Methodologically, we combined (1) video-recorded classroom instruction, (2) two sets of teacher logs from the recorded teachers, and (3) in-depth retrospective teacher interviews. While the videos and logs were analysed both quantitatively and qualitatively, the teacher interviews were analysed qualitatively. The log data corroborate the interview reports and complete the video recordings of what actually goes on in the classroom.

In this study we examine how qualitative interviews allows for an in-depth exploration of teachers' perspectives and experiences, providing rich and nuanced insights into their attitudes regarding the curriculum reform. The interviews were conducted within two weeks after the video-recorded lessons, and in the interviews, we referred to the logs as a stimulated recall prompt asking teachers to elaborate on the lesson.

The use of set of logs complements the interviews by offering a structured and systematic documentation of planned lesson (pre-recordings) and the actual implemented lesson (post-recordings) (cf. Arnold-Berkovits et al., 2019; Kurz et al., 2014). The logs document patterns and intentions of teachers in a natural classroom setting. They enable data to be described in such a way that their accuracy can be confirmed not only by researchers, but also by teachers themselves, representing their perspectives through an audit trail available for further evaluation and confirmation (Klette, 2020; Nassaji, 2020).

The incorporation of observation protocols for analyzing video recordings provides a comprehensive and context-specific understanding of classroom practices and the actual implementation of the reform. This method facilitates the observation of real-time interactions, instructional strategies, and teaching practices.

By integrating the three different data sources, we provide a holistic view of a reform's unfolding in classroom settings. Furthermore, we enhance the validity of the study and provide a comprehensive understanding of the complex dynamics at play. Thus, the use of mixed methods has the potential to capture both the depth and breadth of teachers' perspectives through interviews and video observations, as well as the broader contextual factors influencing the reform's implementation based on the log data.

The findings indicate three main patterns. First, the teachers submitted logs before and after two-thirds of the recorded lessons; indicating the willingness to provide systematic evidence of their planned and actual implementation of the reform in the classroom. Second, the interviews provided teachers' views on the implementation of the reform. Third, we found both divergence and convergence between the teachers' self-reports and the video-recorded lessons, which posed complex and demanding methodological choices. These complexities of utilizing mixed data (Creswell & Plano Clark, 2011), the need for methodological rigor (Morse 2010), and challenges related to conflicting findings will be discussed in the presentation. The study displays how the use of mixed methods can unveil and validate teachers' perspectives, contributing to the overall validity and robustness of the research findings.

Mixing methods using an observation protocol to investigate life skills teaching

Ingrid Evertsen

University of Oslo

The national curricular reform in Norwegian schools (LK20) brought a new concept into the Norwegian classroom – life skills (Norwegian Directorate for Education and Training, 2020). However, life skills as an educational concept is not new in an international context. World Health Organisation created guidelines on “Life skills education for children and adolescents in schools” in 1993 where they emphasized 10 core life skills which they argued should be implemented in education (WHO, 1994). While previous research has studied life skills as a generic concept both internationally and in Norway (Danielsen, 2021; Khera, 2012; Kumar, 2017; Ogden, 2021; Prajapati et al., 2017), there is a call for more knowledge on how to implement life skills in language arts lessons (Antonsen et al., 2021).

This paper provides new knowledge by reporting from the EDUCATE project. We used a well-proven video observation design in the classroom (Brevik et al., 2023; Klette et al., 2017), where we systematically recorded four consecutive lessons in each class (N=38). This research aims to identify examples of good quality life skills teaching in Norwegian language arts in year 8 (age 12-13).

Using the descriptions of life skills from the national curriculum, the EDUCATE project developed a life skills observation protocol in order to identify life skills teaching. This protocol enabled a mixed methods research approach, where I combined qualitative and quantitative video analyses (Brevik & Mathé, 2021; Creamer, 2016), to identify the number of life skills lessons (quantity)

and characteristics of good life skills teaching (quality). The language arts lessons were divided into 15-minute segments and each segment was coded with the life skills protocol on a scale from 1–4. All segments that portrayed life skills teaching were scored 2-4, whereas segments with no identified life skills teaching were scored 1. The quantitative scores were used to sample segments with good quality life skills teaching. These segments were then analysed qualitatively using the WHO’s (1994) 10 core life skills as a lens, to identify common characteristics of good quality life skills teaching.

Integrating quantitative and qualitative analysis using the observation protocol, I identified life skills teaching in all 38 lessons, and in 109 out of 111 segments. While all 38 Norwegian language arts lessons portrayed life skills instruction (scores 2-4), only 10 of the lessons portrayed good quality life skills instruction (scores 3-4), where the teachers connected core life skills to students’ or someone else’s lives. All lessons that were scored 2 or higher involved the development of students’ communication skills, either oral or written. Moreover, lessons that were scored 3 or 4 also portrayed empathy (8 lessons), interpersonal skills (3 lessons), decision making (2 lessons), problem solving (2 lessons), coping with emotions (2 lessons), and/or coping with stress (2 lessons). Based on the mixed methods design, this study contributes new knowledge on the amount and quality of life skills teaching in Norwegian language arts lessons.

SES 3A - Paper 4

Mixing methods in observing literature instruction across school subjects and over time.

Katherina Dodou

University of Oslo

Adopting a mixed-methods approach (Brevik, 2024; Greene, 2007), this presentation is based on a large-scale longitudinal study of literature instruction in first language (L1) Norwegian language arts teaching and second language (L2) English language teaching in Norwegian lower secondary classrooms. This study includes, (1) a well-proven video observation design in the classroom (Brevik et al., 2023; Klette et al., 2017), where we systematically recorded four consecutive lessons in each language class, and (2) the validated EDUCATE protocol for the observation of exploration in instruction (Brevik et al., 2024). It extrapolates on the classroom use of literature, for the quantitative and qualitative analysis of 137 video-recorded literature lessons in the two subjects. The study used this protocol for the structured observation of teacher practices, with special focus on the opportunities teachers in the two subjects created for their students to explore literary texts.

In particular, the presentation discusses how a mixed methods approach to the observation protocol was used to identify the frequency of exploratory literature teaching and its qualitative

characteristics across the two school subjects and over a ten-year period (2015–2024). It accounts for the coding process and how it enabled the systematic and detailed analysis of literature teaching that is complex and situated, methodologically diverse, and thematically disparate. It shows how the use of the protocol generated descriptive statistics about the extent to which teachers made room for students to unpack one or more aspects of literary texts, considering the demands they made on students' cognitive engagement with literary texts and the degree of freedom granted students to decide how to approach literature. These statistics, which provided an overview of a large body of literature lessons, were used to sample lessons for more in-depth study in which exploratory activities required students to engage in literary analysis, interpretation, or reasoning. By thus using the protocol for mixed analysis, the study was able to examine literature instruction that fostered the development of literary competences in the two subjects and to consider changes in literature instruction over time.

Workshop 3B (SES 3B) | Establishing and trying out a video library for teachers' professional learning: Opportunities, obstacles, and suggestions for

Room: Stort møterom

Chair: Inga Staal Jensen, University of Oslo

Moderator: Knut S. Engelsen, Western Norway University of Applied Sciences

Workshop abstract

The complex nature of teaching makes it essential to provide opportunities for (student) teachers to decompose and approximate specific teaching practices. While no method or approach can eliminate the complexity of teaching, a well-documented benefit of using video for teachers' professional learning is that teachers become better at noticing relevant events in the classroom (König et al., 2022; Santagata et al., 2021), and there is also evidence suggesting that videos can be used to improve teachers' teaching quality (Baecher, 2020; Kavanagh et al., 2022; Kohen & Borko, 2019).

While we argue that videos can play a key role for pre-and inservice teacher learning, we acknowledge that video-based learning opportunities are both time-consuming and expensive. *In order to make use of the potential opportunities that video-use offers, this symposium/workshop therefore addresses obstacles and solutions when setting out to establish and try out a video library for teachers' professional learning.*

The first condition for establishing a video library and securing its successful use, is to obtain videos. The variety and availability of technological equipment increases day by day and makes that part easier, but the technical quality is still an

issue (Sherin et al., 2009). Second, one also needs to be aware of the ethical aspects of recording teachers and students, as issues related to receiving informed consent are time-consuming and require great effort. Third, choosing video clips that capture the complexity of teaching, with clarity and depth, is demanding - and there are choices to be made around using authentic classroom videos versus scripted videos and videos representing exemplary practices versus teaching dilemmas (Sherin et al., 2009). Fourth, selected videos need to be made available to users of the library. Technical solutions for choosing a platform for display, as well as meta-tagging systems for searchability is decisive for successful use and implementation (Klette, 2022). Fifth, videos can be used for a variety of purposes, and scholars are increasingly emphasizing the pedagogies of teacher education as a field of its own (Grossman, Compton, et al., 2009; Kavanagh et al., 2020), and specifically related to the use of video (van Es et al., 2014).

This symposium consists of 6 papers/presentations, addressing each of the five conditions for establishing a video library and securing its successful use.

SES 3B - Paper 1

“Glimpses of practice”: Experiences from building up a video library for teacher education

Karin Elisabeth Sørli Street et al.

Western Norway University for Applied Sciences (HVL)

Affiliated authors: Henriette Kalsås Hansen, HVL | Linda Moen Rebni, HVL

The use of video in teacher education enables the investigation of teaching actions as observable objects, and several reviews have indicated positive effects of the use of video on, e.g., motivation, selective focusing, and preparedness for practice (Gaudin & Chaliès, 2015; Major & Watson, 2018; Marsh & Mitchell, 2014). Despite the potential of videos to enhance the quality of teacher education, it seems there is large variation in the degree to which it is used. This is likely related to the fact that developing video examples that are both relevant and authentic can be challenging in terms of ethical, judicial, practical, and didactical factors, and the (un)availability of relevant, high quality videos can be a barrier to their use among teacher educators (Christ et al., 2017).

In this talk, we present experiences from building up a video library “from scratch” at HVL, the

largest teacher educator institution in Norway. We highlight key challenges met and decisions made, with their related implications for practice. In our talk, we will provide practical examples and “glimpses” of our experiences, spanning from the process to collect and edit videos, building a platform to make them available to colleagues while upholding legal and ethical considerations, and trying to support change of practice in teacher education. Our talk is closely related to and build on other contributions in this symposium, in that we exemplify how we have addressed key factors such as the categorization of features of teaching quality in classrooms, the granularity of video examples, and ethical considerations when videotaping children in schools and kindergartens.

Evang & Christiansen: Public good as legal basis for data processing – Does it change the requirements for ethical reflection?

Håvard Evang & Torgeir Christiansen

University of Oslo

In research ethics, key principles in obtaining consent include that it should be informed, explicit, voluntary, and possible to document (NESH, 2022). In research involving human participants, the use of consent as a basis for data processing has therefore historically been regarded as the “gold standard” (Fossheim & Ingjerd, 2015, s. 11) and as a norm for including individuals in research (Bakkevold & Somby, 2022). Implicit in this widespread practice is an assumption that this basis for data processing largely safeguards the rights of participants and the ethical obligations of the researcher. Lately, however, this assumption has been criticized and there has been a movement towards using public interest as a basis for data processing within the Norwegian research community. This shift has moved the researchers' obligations from the legal domain to the field of research ethics and highlights the role of the ethical consent, or the ethical contract between researchers and participants.

In my paper I will build on prior research on participants within the educational field to reflect upon what this ethical consent entails, and if, and how this shift in the basis for data processing also change our ethical responsibilities as researchers. I will especially highlight challenges with imbalance of power when collecting data of students or student teachers as they are placed in a role where they to a certain extent are expected to do as they are told (Skoglund, 2022). The movement away from legal consent to ethical consent gives the researchers a greater autonomy in deciding whether their ethical obligations are fulfilled. This autonomy also means that the local research community gains increased importance as an ethical advisory community which in turn can stimulate a more professional and institutionalized ethical reflection regarding the different research fields.

Developing a Controlled Vocabulary in Education: experiences with developing a shared vocabulary for video tagging in teacher education

Kirsti Klette & Simen Grung

University of Oslo

The focus of this presentation is to summarize our efforts to review and systematize existing video libraries and tagging system of authentic classroom teaching that they can be used in teacher education for the purpose of developing teacher candidates' reflection and continuous learning. As argued (Bacher, 2020; Sherin et al, 2009) videos from authentic classroom settings have proven to be powerful tool for developing teacher candidates capacities to 'learn to notice' (van Es et al. 2014), reflect (Konig et al., 2022) and critical examine key aspect of teaching. However, in order to be used at scale, and in a systematic way, we need to agree on a shared vocabulary (hereafter termed controlled vocabulary (Getty Museum, 2024)) when tagging and providing labels to the different videos (i.e., 'what is the video-clip an example of') and thus directions for how the video clip(s) might be used. We report from a current project where we got funding to: (i) provide an overview of existing video data-sets and libraries in education/ teacher education; (ii) develop a possible controlled vocabulary/meta tagging system to be used for the classification of didactical classroom situations; (iii) test this out in four different teacher education institutions; (iv) for

the purpose of (iv) scaling these meta-tagging solutions to be used at scale and across teacher training institutions. The current presentation reports primarily from ambition (i) and (ii).

Review of existing video data sets/ libraries point to around 30 available data sets (mainly from the US and Germany). They differ in the sense of (a) being authentic versus produced and (b) also how open available (total open versus open upon request). The existing data sets further differ at the level of meta tagging applied to the different data sets and for most data sets exiting metadata are rather rough and superficial. In order to develop a useful and detailed controlled vocabulary (and meta-tagging system), we identified five main areas (Technical information, Information about the school setting (levels and grades, subjects etc.), Organizational Format; Instructional Format, Socio emotional aspects). We especially identified key challenges linked to (a) the level of grain size (how detailed and subject specific), (b) ethical issues and (c) what are sufficient contextual information. The current presentation report on all these issues and identify ways for further developments.

Balancing attention to fine-grained teaching practices and the overall purpose of teaching when using a video library

Gøril Brataas & Inga Staal Jensen

University of Oslo

Using video as a pedagogical and instructional tool in teacher education has significant advantages. Video representations of teaching provide a window into authentic classrooms, enabling representation and decomposition of the complexity of classroom interactions and attention to fine-grained teacher and student moves (Gaudin & Chaliès, 2015). This attention to the constituent parts of teaching provides decisive conceptual support and a common language for teacher candidates observing, talking about, and trying out distinct teaching practices during their fieldwork and beyond.

However, focusing on specific aspects of teaching when working with videos comes with the inherent danger of complexity reduction and loss of attention to the overall purpose of teaching, creating dilemmas that teacher educators must learn to navigate (Gotwalt, 2023). Equitable learning opportunities for all students rely on teachers' responsiveness to student needs and contextual factors, implying that video and practice-based pedagogies should not only support teachers in enacting specific teaching practices but also in developing the pedagogical reasoning and the adaptive expertise needed to align purpose and teaching practice (Kavanagh et al., 2020).

This paper aims to explore the balance between attention to fine-grained teaching practices and the overall purpose of teaching when using a video-based teacher education pedagogy.

Drawing on our experiences from a study on the use of video across coursework and fieldwork in teacher education, this paper illustrates and discusses possible ways of navigating this dilemma of video usage in teacher education.

Our experiences illustrate that while video usage can represent prominent teaching practices, link theory and practice, and foster targeted and in-depth discussions, maintaining a complex vision of practice while working with video poses a greater challenge in coursework than during fieldwork. As videos cannot capture teacher intentions nor contain information about contextual factors and students, many of the core components of teaching may go unnoticed unless teacher educators draw attention to purpose, problems of practice, and teacher decision-making. While candidates often framed their discussions of own videos around problems of practice and critical moments, such discussions in coursework require a rich repertoire of teacher-educator pedagogies, including how to deliberately choose and frame videos around not only best practice but also problems of practice.

The paper discusses teacher education pedagogies that have the potential to center purpose alongside teaching practice and have implications for teacher educator pedagogies and the use of video libraries.

Teaching Quality in Mathematics and EFL/ESL: Pre-service Teachers' Video-Stimulated Recall Reflections After Video-Based Rehearsing

Gry Anette Tuset and Michel Alexandre Cabot

Western Norway University for Applied Sciences (HVL)

Video recordings in the research project 'Rehearsing Teaching Professionally' (ReTPro), funded by the Norwegian Research Council, were used as analytic reflection tools in Norwegian primary and lower secondary teacher education. Indeed, the research project draws on four different student engagement phases, both at university and during practicum: (1) studying and modelling; (2) repetitive try-outs and simulations; (3) enactments in the classroom and (4) analysis and reflections on the enactments (McDonald et al., 2013). ReTPro's two qualitative small-scale case studies examine pre-service teachers' (PSTs') noticing in reflective conversations after rehearsed activities on campus and at the practicum schools in the subjects Mathematics and EFL/ESL.

Regarding Mathematics, the contribution is linked to an analysis of two reflective conversations between three PSTs, campus teachers and practicum teachers. The PSTs had to analyse their enactment of an instructional mathematical activity in their practicum class and choose what they perceived as golden moments used or lost. We defined golden moments as classroom situations with a potential of developing mathematical thinking, if pursued by the PSTs. In the conversations, they presented videoclips of their chosen golden moments and reflected with the practicum and campus teachers on the whats and whys of golden moments used or lost. The conversations took place in the 2nd and 3rd semesters. We study what PSTs notice (van Es et al., 2017) and how the conversations turned into conversational routines (Horn & Little, 2010). We ask the following questions: What characterises the conversation routines in conversations 1 and 2? What traces of development can we see in their noticing? Our findings suggest that the

development is most visible in the PSTs' willingness and ability to specify and discuss the students' mathematical thinking and that noticing is at a higher level in conversation 2. The teacher educators play an important part in modelling generalisations in both conversations.

Regarding EFL/ESL, the study's purpose is to analyse six PSTs' reflections on how teacher-in-role (TiR) can promote their own critical intercultural citizenship in their first semester. Our questions are: What did the PSTs do to develop their own intercultural citizenship? Why did they think TiR elicited their own intercultural citizenship? This study is based on video observations, obligatory assignments, video-stimulated recall dialogues and term papers. To analyse the data, we integrated diverse definitions of citizenship (Bellamy, 2008), intercultural competence (Deardorff, 2006) and Byram's (2008) "savoir" concepts into a new model. The video-recorded rehearsing of TiR suggests two interesting findings. First, a clear focus on prescribed (e.g. well-planned authentic dilemmas) and open-designed dimensions (e.g. improvisations) and the formation of a multitude of golden teaching moments (used or lost) may develop the PSTs' own intercultural citizenship. Second, the PSTs thought they succeeded in eliciting their own intercultural citizenship because they questioned attitudes and beliefs, noticed knowledge and comprehension gaps, decentred and adapted communication and behaviour.

The two studies emphasise the importance of video-stimulated recall reflections after video-based rehearsing on campus and at the practicum schools as a method to strengthen teaching quality in Mathematics and EFL/ESL teacher education.

The use of video library in supporting Upper Secondary Teachers Improvement in Teacher-Student Interactions

Sigrun K. Ertesvåg & Grete S. Vaaland

University of Stavanger

The current study explores teacher use and experience of a video library as part of teachers' professional development in Teacher-Student Interactions (TSI). Teaching quality in terms of high-quality TSI can be organized into three domains: teachers' emotional support, classroom organization, and instructional support (Pianta et al. 2012). Coaching teachers about TSI practices through video analyses has the potential to help them more effectively develop their noticing skills (König et al. 2022) and conduct TSIs as they learn to observe, analyze, and decide how to interact with students through intentional pedagogical choices. The INTERACT video-based and web-mediated teacher coaching intervention (Ertesvåg et al. 2022) developed and used a comprehensive video-library to support teachers' improvement of TSI skills.

The sample consists of 99 teachers (49 intervention group teachers) and 10 coaches participating in a cluster randomized control trial (cRCT). During the academic year 2022-2023, the teachers focus on emotional support, classroom organization, instructional support, and student engagement in seven coaching cycles using a strength-based approach. The intervention group teachers participated in the coaching cycles with an assigned coach about every 3rd week throughout one academic year.

Each cycle consists of six steps. The coaching cycles are based on video recordings from the teacher's own teaching and have a strength-based approach. Additionally, extensive web-resources, including a video-library supported the teachers development. The video clips visualize the conceptual principals and theoretical knowledge presented in texts, lectures etc. in the web-resources. Teachers reported on their use of the video-library at each coaching cycle, and the usefulness of the library in a survey after the intervention was completed.

Preliminary results indicate that the majority of the intervention group teachers used the video-library, however, their experience of the usefulness of the library varied. Interestingly, the use increased after two coaching cycles, raising questions about when to introduce the library to obtain optimal learning. Further analysis investigating the association between frequency of use and perceived usefulness of the library will be done before the conference. Further, we will investigate the associations between use, perceived usefulness, and teacher characteristics such as study track, work experience and teacher stress.

Paper session 3C (SES 3C) | Linking school-knowledge and everyday knowledge across subjects solutions

Room: Undrevisningsrom 1

Chair: Peter N. Aashamar — University of Oslo

SES 3C - Paper 1

Connecting to the world beyond the classroom in lower-secondary mathematics and social science lessons in Norway and Sweden

Peter N. Aashamar & Alexander J. V. Selling

University of Oslo

In this presentation we aim to utilize video observation to investigate how teachers and students in Nordic lower secondary social studies and mathematics lessons (N = 55 and N = 66 respectively) made connections between subject knowledge and contexts outside the classroom. Making connections between disciplinary and everyday knowledge is not only important for making the subject more tangible and comprehensible to students, but also to highlight the relevance of the subject for students as individuals and citizens.

We utilized the standardized observational manual Authentic Intellectual Work (Newmann et al., 2015) to map the prevalence of connectedness in the video recordings. We also drew on Bernsteinian sociology of knowledge and didactical theory related to knowledge transformation.

Our results revealed that the observed mathematics lessons had few and vague connections between subject and everyday

knowledge. In the observed social studies lessons, such connections more often occurred. However, across both subjects, teachers seldom provided students with opportunities to explore such connections.

These findings indicate that teacher education and professional development could benefit from attending more to exploring the implications of connections between everyday and subject knowledge in both mathematics and social studies, as a key facet of teaching quality across subject disciplines. We argue that mathematics teachers and teacher educators can benefit from adapting models of teaching practices observed in social studies, regarding explorations of connections between subject and everyday knowledge. Vice versa, social studies teachers and teacher educators can benefit from the focus on intra-disciplinary connections observed in mathematics lessons.

Representations of economic content in social science education: connecting disciplinary and everyday knowledge for students' knowledge-building

Michael Walkert & Martin Jakobsson

Karlstad University

The paper presents preliminary results from analyzing the quality of economics-teaching in social science education (SSE) classrooms, grade nine. By combining two elements from the Protocol of Language Arts Teaching Observation (PLATO) – Representation of Content (ROC) and Use of Academic Language (ALL) (Bell, et al. 2018) – we have analyzed how interconnected concepts are represented by teachers when they teach about economic systems and the economic circular flow, finding variations in sequencing and transforming the content. A more comprehensive understanding of this variation was found using tools from Legitimation Code Theory (LCT) for a semantic analysis of shifts between disciplinary and everyday language (Maton, 2014) in the representations of content.

More specifically, we found evidence of good conditions for students to build knowledge about complex economic concepts in the way teachers un-packed and re-packed the content taught. These findings have significance for social science education teacher when planning, conducting and evaluating lessons about economics. The findings also make room for a theoretical discussion of combining elements within PLATO for analyzing different aspects of teaching quality as well as discussing the usefulness of bringing in analytic tools from other theoretical frameworks for capturing more comprehensive and nuanced aspects of the complex task of teaching students in different school subjects.

Differences and similarities in how Nordic literature instruction promote students' development into good and competent citizens

Anna Nissen

Karlstad University

Affiliated authors: Thomas Illum Hansen, UCL University College Denmark | Heidi Höglund, Åbo Akademi University | Camilla G. Magnusson, University of Oslo | Birna Svanbjörnsdóttir, University of Akureyri.

Participation and democracy are key areas of Nordic schooling. In language arts, the use of literary texts makes it possible to address core value issues, and to develop students' literacy. When analysing Nordic language arts curricula, Gourvennec et al. (2020) identified four cultural models assuming that literature instruction can 1) promote the individual's growth 2) enhance literacy skills and disciplinary knowledge 3) develop empathy, and 4) provide knowledge about cultures. These cultural models can be linked to an overarching cultural model assuming that literature can "maintain and improve democratic society through the moulding and development of good citizens" (p. 27). The cultural models make up the theoretical framing of the present study.

This quantitative study relies on questionnaire data and aims to reveal what lower secondary language arts teachers (N = 701) across the Nordic countries think about their own literature instruction. It discusses how these teachers'

didactic choices regarding why, what and how to use literature can be expected to have an impact on students' development into competent citizens in a democratic society.

Teachers were asked to provide answers on a Likert scale, and SPSS Amos 27 was used to carry out analyses. The analyses revealed both similarities and differences in how teachers from the five Nordic countries reported using literature in their instruction. For example, using literature as a means to enhance students' literacy skills was a prominent pattern in the teachers' answers, regardless of their nationality. Even though the teachers found reading and working with literary texts important for several different reasons, this was not always reflected the way they reported using literature in their instruction. Furthermore, there were differences in what literary texts and teaching methods teachers from different countries favoured. The number of texts students read would also vary, both between and within countries.

News coverage in social science teaching – a Bakhtinian analysis

Torben S. Christensen

University of Southern Denmark

The presentation will empirically focus on a theoretical analysis of videos of news coverage. The theoretical approach is developed in connection to Videos of Swedish social science teaching at the eighth grade. The approach is developed on an analysis of the processing of news as the teachers' and students' utterances in a Bakhtinian sense, including what forms of knowledge and conceptual understandings are at play in the teachers' and students' presentation and reception of the news being worked with in the classroom. This approach is developed in general in Christensen (2022). Also, a model for working with news and students' curiosity (wondering) in teaching (Christensen, 2021 a and b), will be included.

Paper session 3D (SES 3D) | Classroom talk across subjects

Room: Undrevisningsrom 2

Chair: Camilla G. Magnusson, University of Oslo

SES 3D - Paper 1

Video-Based Rehearsing of Vocabulary Acquisition-Friendly Whole-Class Talk Instigated by Talk Moves (Foreign language learning)

Michel Alexandre Cabot

Western Norway University of Applied Sciences, Høgskulen på Vestlandet

There is still little research on rehearsing dialogic whole-class talk that can help prospective English as a foreign or second language (EFL/ESL) teachers foster a vocabulary acquisition-friendly environment. This qualitative small-scale case study analyses student teachers' perceptions of video-based rehearsing of vocabulary acquisition-friendly classroom discussions instigated by talk moves in primary (grades 1–7) and lower secondary (grades 5–10) teacher education. It was conducted as part of the research project 'Rehearsing Teaching Professionally' (ReTPro), funded by the Norwegian Research Council. We examine the following research questions: Which talk moves did the student teachers use or not use and why? Which golden moments of vocabulary acquisition did the student teachers use or lose? The study is

based on term papers, video observations and video-stimulated recall interviews with student teachers. To analyse the data, we used Swain's (1995) three functions of output, Hardman's (2020) descriptions of talk moves and Alexander's (2020) six principles of dialogic teaching. Findings suggest that the use of basic talk moves may lead to noticing the gap, whilst higher order talk moves lead to more critical thinking such as hypothesis-testing and metalinguistic reflection. The study therefore emphasises the importance of video-based rehearsing of whole-class talk as a method to strengthen teaching quality in terms of dialogic teaching (e.g. improvisational skills) and vocabulary acquisition (e.g. metalinguistic thinking) in EFL/ESL teacher education.

Improving the quality of classroom discourse: Effects of a collaborative intervention to improve teacher-led text-based discussions in lower secondary

Michael Tengberg
Karlstad University

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The quality of teacher-led text-based discussions is essential to students' reading engagement and comprehension. Qualified implementation of discussion can foster an explorative and cooperative attitude in students that promotes interpretation and analysis of more complex texts. However, studies show that such discussions are largely absent from today's classrooms, partly because many teachers experience that to lead open-ended, probing discussions about complex texts is a challenging task, they distrust their ability to do it, and ask for support in terms of useful discussion models.

This study assesses the effects of a year-long intervention designed to improve the quality of teacher-led discussions about complex literary texts in lower secondary school. Through repeated sessions of criteria-based observation and feedback to teachers, the intervention aimed to promote the enactment of a specific type of talk called "Inquiry Dialogue" (ID). In ID, teachers facilitate students' explorations of text-based problems by encouraging peer-

cooperation and critical examination of alternative understandings. ID was implemented in 25 eighth grade classroom from Oct through May. Pre- and posttesting of discussion quality, reading ability (comprehension and literary interpretation), and reader self-efficacy was conducted to estimate intervention effects.

Preliminary findings indicate overall positive effects of the intervention. There was a statistically significant and medium-sized increase of quality of discussions at both teacher and student level. Students' reading ability increased significantly, but not relative to controls. Neither students' reading-related self-efficacy nor their self-efficacy related to participation in discussion changed. Detailed qualitative and quantitative analyses showed that both teachers' and students' ability to formulate and explore open-ended problems in the stories improved. Many of the teachers adapted and improved their strategies for sharing responsibility for talk, engaging additional students in the dialogue, linking their ideas together, and exploring the complexity of

SES 3D - Paper 3

Managing guided openness in inquiry-based literature education

Vibeke Christensen

University of Southern Denmark

Affiliated authors: Malin Blix, University of Gothenburg | Jimmi Michelsen, UCL Erhvervsakademi og Professionshøjskole | Ann-Christin Randahl, University of Gothenburg

This presentation is based on an intervention project on inquiry-based literature teaching called QUALE. The intervention comprises teacher and students' use of a teaching material including texts and questions supporting investigative work. Inquiry-based literature teaching is characterized by the teacher and students' joint exploration of aesthetic texts and combines a reader and text-oriented approach. The students' experience of the text as well as the text patterns contributes to the interpretation. The simultaneous open and closed nature of the text calls for a similarly balance in the joint investigation of the text's meaning. This balance which we term guided openness might be a challenge in teaching. In this presentation we investigate the students' possibilities for experiencing and interpreting the text within the teachers' management of guided openness.

To understand the didactic conditions and the teacher's organization of teaching, we draw on concepts from research on interaction and conversation in classroom to describe the pedagogic discourse and interactional patterns

in the classroom to describe the teacher's guidance of and students' participation in the conversation.

Data consists of video observations of classroom conversations in two Danish and two Swedish lower secondary school classes. The students have read the same short story and the participating teachers have received the same introduction to the inquiry-based literature pedagogy and the teaching material.

The analyses proceed in several phases. Initially, sequences with variation of control and openness in investigation of the text are identified. Next, the realization of control and openness in the teacher's questions and the influence on the interpretation process is analyzed.

Preliminary results show that openness, both in the text and in the conversation, is particularly challenging for teachers. As example, some teachers are reluctant to close the text at the end, while others close it too early.



Symposium 4A (SES 4A) | Breaking out of silos: Using classroom videos for cross-disciplinary and cross-methodological examinations of teaching

Room: Auditorium 2

Chair: Mark White, University of Oslo

Discussant: Georg Breidenstein, Martin-Luther-University Halle-Wittenberg & Kirsti Klette, University of Oslo

Symposium Abstract

Great advances have been made in how we conceptualize, operationalize and measure aspects of teaching quality (Charalambous et al., 2021). However, this field of research is fragmented. Scholars work in silos, drawing on their own specific framework despite what are often strong commonalities in ambition, terminology, and structural features across frameworks.

This symposium uses classroom videos as a common ground to break out of our silos through analyzing the same videos with a broad range of frameworks. This double symposium consists of 6 papers that use unique frameworks to investigate teaching quality.

In this symposium, we examine the Protocol for Language Arts Teaching Observation

(PLATO; Grossman, 2015) and the Joint Action framework in Didactics (JAD; Sensevy, 2014), International Comparative Analysis of Learning and Teaching (ICALT; van de Grift et al., 2007), the Teacher Education and Development Study-Instruct framework (TEDS-Instruct; Schlesinger & Jentsch, 2016), and the qualitatively-oriented praxeological Documentary Method (DM; Martens & Asbrand, 2022).

The last paper uses a modified lens model to make fine-grained comparisons of these frameworks. This symposium's ambition is to have participants reflect on how one's framework shapes how one constructs an understanding of teaching through comparing the decompositions of the focal lessons across frameworks. Through this, we hope to build common understandings across frameworks and break out of our silos.

The PLATO observation system as a lens to teaching quality

Jennifer Luoto & Kirsti Klette

University of Oslo

Affiliated authors: Mark White & Camilla Magnusson, University of Oslo.

In this paper we use the observation system Protocol for Language Arts Teaching Observation (PLATO; Grossman, 2015) as a lens into teaching quality in Norwegian lessons from two different subjects, mathematics and language arts. PLATO was developed at Stanford University in the USA and was originally a tool for studies aiming to link English Language Arts (ELA) instruction to student learning outcomes. Since then, it has been used for different research purposes and in different subjects (e.g., Cohen, 2018) and has been the main tool to describe teaching quality in several publications from the Nordic context (Klette et al., 2017; Tengberg et al., 2022). In this paper we demonstrate PLATO's way of constructing patterns of teaching quality by focusing on aspects such as theoretical grounding, grain size, and discuss what type of information regarding teaching quality that PLATO may offer and for what purposes that might be useful.

PLATO conceptualizes teaching quality in four domains (Instructional Scaffolding, Disciplinary Demand, Representation and Use of Content, and Classroom environment) that together consist of an ensemble of specific teacher practices (e.g., elements), all considered

relevant for student learning. These practices are reflected in PLATO's 12 elements and sub-elements, which are all independently rated on a 1-4 scale for every 15 minutes of a lesson. Together, the 12 elements provide a detailed and rich view of teaching patterns by pointing to whether the specific practices are present as well as the degree of quality of these practices.

The findings reveal that the mathematics lessons receive consistently high scores on all PLATO while the patterns in the language arts lessons are more mixed of high and low scores fluctuating across different parts of the lessons. Grounded in this analysis of key patterns using PLATO's lens of teaching quality, we present benefits and challenges with PLATO. Benefits include a detailed view of how different practices have different foci within and across lessons, while challenges include the way PLATO privileges some instructional formats above others and how to deal with arbitrary cut-off points. Finally, we discuss provoking questions such as whether everything we observe is equally important, and whether we can really determine normatively what patterns of high-quality teaching looks like across different lessons and tasks.

SES 4A - Paper 2

Teaching Quality About and Beyond Subject Specificity. Perspectives from the JAD-MTQ Model

Yoann Buyck

University of Geneva

Affiliated authors: Florence Ligozat, University of Geneva

This paper presents a model (JAD-MTQ) for observing and analyzing classroom practices based on the Joint Action framework in Didactics (JAD; Sensevy, 2014; Sensevy & Mercier, 2007). This model aims at contributing to international debates on the conceptualization of teaching quality. In the French-speaking research, classroom qualitative studies carried out with the JAD framework typically investigate what and how knowledge contents develop in the teacher and students' classroom interactions. Over the years, JAD has proved its capacity to analyze classroom practices in various subjects (mathematics, sciences, physical education, French language, etc.; e.g., Amade-Escot & Venturini, 2015; Ligozat et al., 2018). However the use of concepts from JAD is still open to different interpretations, depending on the research objectives pursued.

The Model for analysing Teaching Quality based on JAD (JAD-MTQ) presented in this paper systematizes classroom observations according to three dimensions: selection of knowledge contents and tasks, structuration of learning situations and organisation of teacher and students' interactions (Ligozat & Buyck, accepted). Each dimension is explored at a specific level of analysis, featured by a grain-size and a timescale of teaching unit (Tiberghien &

Sensevy, 2012) and decomposed into a set of criteria, allowing to reduce the level of inference to be made from classroom video and transcripts.

Similarly with findings from other frameworks presented in this symposium, JAD-MTQ rates the three dimensions of the mathematics lessons as high while the dimensions of the language arts lessons range from medium to very low. However these findings may be grounded in different rationales. In this paper, we highlight JAD-MTQ's way of constructing patterns of teaching quality as relying upon the dual generic/specific nature of its criteria: they reflect certain aspects of teaching that are found in most classrooms (goals, instructional tasks, group works, classroom discussions, uptakes, etc.) but these criteria are also content-specific because to say something about them it is necessary to analyse the epistemic characteristics of instructional tasks. We argue that JAD-MTQ provides a content-based analysis of teaching quality with a set of dimensions and criteria that are not subject-specific. From this perspective, JAD-MTQ offers a didactic approach to teaching quality, in exploring systemically (according to the relations featuring the didactic system; Chevallard, 1985/1991; also see Schoenfeld, 2012) the power to learn certain specific knowledge contents afforded to the students in the classroom.

The value of assessing generic teaching quality using International Comparative Analysis of Learning and Teaching (ICALT) as a measure of effective teaching behaviour

Xiangyuan Feng

University of Groningen

Affiliated authors: Ridwan Maulana & Michelle Helms-Lorenz, University of Groningen

Internationally, research on teacher education reveals a divide between coursework and the reality of practice in schools, sometimes referred to as the “practice shock” (Caspersen & Raaen, 2014; Meijer et al., 2011). This challenge is by no means new (Schuck et al., 2018), and research in the past decades indicate that a key feature in good teacher preparation is to provide candidates with the opportunities to learn and practice things that are grounded in the actual work of teaching (Grossman et al., 2009).

In this paper we explore to what extent teacher candidates perceive they have opportunities to study and enact practice in their teacher education programs in Norway and in Iceland and whether these experiences differ between countries. Participants in the study were teacher candidates at the University of Iceland (N = 139) and at the University of Oslo (N = 112). Data was collected with a candidate survey designed to evaluate their perceptions of their opportunity to study and enact actual teaching practices,

for example opportunities to examine actual teaching materials or watch or analyse videos of classroom teaching. This construct was assessed with 10 statements ($\alpha = .79$), answered on a four-point ordinal scale (1 = “no opportunities” – 4 = “many opportunities”).

Preliminary findings indicate that candidates in both programs had some opportunities to practice teaching methods and examine samples of K-12 students work in their programs. The Icelandic teacher candidates reported greater opportunities to discuss their experience from student teaching and plan for teaching, but the Icelandic candidates reported fewer opportunities to see and work with real examples from lessons, like watch or analyse videos of classroom teaching. Such opportunities can make a difference in teacher preparation because it gives teacher candidates the opportunity to envision good teaching and to adopt such practices (Jenset et al., 2018).

SES 4A - Paper 4

Capturing generic and subject-specific aspects of teaching quality with the TEDS-Instruct observation system

Armin Jentsch & Bas Senden

University of Oslo

Effective teaching has been extensively researched for decades. Studies have demonstrated the significant influence of teachers' performance on student achievement in various school subjects. Theoretical frameworks and observational systems have been developed to conceptualize and measure teaching quality, often taking either generic or subject-specific perspectives. In this study, we discuss a hybrid observation system that draws on the established generic framework of Three Basic Dimensions but aims to address also subject-specific aspects of teaching quality to better explain student achievement in mathematics classrooms.

The observation system was developed in the context of the Teacher Education and Development Study-Instruct (TEDS-Instruct). It captures four dimensions of teaching quality, two of which are considered generic (classroom management, student support), and two of which are considered subject-specific (cognitive activation, and educational structuring). This means that their operationalization is informed by the norms and concepts of the subject, and teachers need substantial (pedagogical) content knowledge to perform teaching behavior that reflects high levels of cognitive activation or educational structuring (e.g., posing challenging mathematical problems, changes of representations, being precise regarding mathematical language, providing adequate explanations). In this paper, we analyze generic and subject-specific dimensions

across two Norwegian double lessons employing high-inference observer ratings. This means that videotaped lessons are presented to trained observers, and after a certain amount of time (i.e., a segment of a lesson), they provide an informed judgement on teaching behaviors and teacher-student interactions on 4-6 items per dimension.

The results show that important aspects of teaching quality are captured by the observation system. For example, in the mathematics lesson, the items "teachers' correctness" and "dealing with error" within educational structuring were assigned substantively higher scores than any other items in that dimension. Moreover, we argue that there was much variability in scores across the items assessing educational structuring. In contrast, for classroom management, all the items were assigned high scores. In the language arts lesson, different patterns emerge. There is more variability across items measuring cognitive activation. In addition, the teacher provides a lot of individual support to students but does little to support collaborative learning.

However, further adaptations are necessary to capture subject-specific teaching practices in more detail. A goal for future research on our observation system (and potentially others) could be to explore for which contexts and purposes valid conclusions can be drawn from classroom observation.

A Qualitative-Reconstructive Investigation of Teaching Quality through Documentary Video Analysis

Patrick Schreyer

University of Kassel

Affiliated authors: Marte Blikstad-Balas, University of Oslo

This paper examines the role of Documentary Video Analysis (DVA; Martens & Asbrand, 2022) in research on teaching quality. It applies DVA to two different lessons from the Nordic LISA study – one in mathematics and the other in Norwegian language arts (L1). By integrating these cases into an existing typology that emphasizes cognitive activation in classroom interactions (Schreyer, 2024), the study utilizes the qualitative reconstructive capabilities of DVA to examine the intricate dynamics of subject-specific teaching and learning processes.

DVA is characterized by its ability to capture the complexity of classroom interactions and allows for uncovering the multifaceted relationships between the development of knowledge, embodied practices and the deeply rooted habitus of both teachers and students (Bohnsack, 2021; Martens & Asbrand, 2022). This methodological approach highlights the interconnected relationships between different aspects of teaching and contrasts with the more deductive methods used in previous research on teaching quality, which relied heavily on standardized observation manuals (e.g. Bell et al., 2019). This descriptive method aims to assess the quality of teaching following the empirical analysis. For this purpose, opportunity-use models (Vieluf & Klieme, 2023) are used to assess whether and how teaching stimuli are understood and used in a subject-specific context.

Analyzing classroom situations in mathematics and Norwegian language arts through the lens of DVA reveals contrasting aspects of cognitive activation. In mathematics classrooms, the focus is on the teacher's central role in creating an environment that fosters cooperative learning, metacognition, and problem solving through the presentation of challenging tasks. This practice fits seamlessly with the theoretical constructs of cognitive activation (Praetorius et al., 2018). In contrast, the language arts classroom shows a notable divergence from the teacher's pedagogical standards and objectives, especially in student presentations where important literary devices are insufficiently identified and discussed, underscoring a discrepancy between the targeted instructional goals and actual knowledge development.

The study discusses the potential of DVA as a tool for assessing teaching quality and critically examines its limitations in evaluating this. It emphasizes the strength of DVA in providing a descriptive rather than an evaluative analysis and questions the usefulness of the method for a comprehensive understanding of teaching quality through the comparative analysis of two subject-specific lessons.

SES 4A - Paper 6

Same Same but Different - Comparing two Observation Manuals' Approaches to Measure Teaching Quality

Tosca Daltoè

University of Tübingen

Alexander J. V. Selling

University of Oslo

Affiliated authors: Kirsti Klette, University of Oslo

Research on teacher education acknowledges that first-year teacher candidates' prior educational experiences form their conceptions of teaching and learning and that they consecutively develop their attitudes and values (Amundsen et al, 2021). The use of classroom videos has shown a range of advantages for candidates' (Blomberg et al. 2014) and noticing is emphasized as a crucial part of teachers' classroom practice (Dindyal 2021). UCL University College has launched a research and development project on the use of classroom videos and the Learning to notice framework (van Es & Sherin 2002).

Our study explores what first-year teacher candidates identify as important and how they describe and reason on classroom events by pursuing this research question: Which quality criteria can be identified in first-year teacher candidates' descriptions of classroom events, and what signifies the practical theories they draw on when reasoning? With practical theory (Lauvås & Handal, 2015) we distinguish between experience, knowledge and values as significant

factors when reasoning in group dialogues. The four elements in PLATO (Grossman et al. 2015) are used to designate quality criteria.

The empirical data consists of: Individual descriptions (n=69), group descriptions (n=19), group dialogues (n=19) and interviews (n=13). Initially the descriptions are analyzed by focusing on quality criteria then group dialogues are analyzed for reasoning by distinguishing between experience, knowledge and values, i.e., practical theories.

The study concludes that candidates primarily focus on classroom environment and instructional scaffolding while disciplinary demand and content is indistinct. When it comes to their reasoning, they tend to relate to their experiences and values prior to knowledge. This contributes to existing understandings on the importance of teacher candidates' practical theories as a point of departure for teacher education.

Workshop 4B (SES 4B) | Inquiry-based literature education in Nordic classroom solutions

Room: Stort møterom

Chair: Vibeke Christensen
Presenters: Ida Gabrielsen
Ann-Christin Randahl
Peter Marquard Sejersen
Adnan Hadzialic
Fia Sandberg
Liv Marit Hauge
Marte Ulfnes Skar

Workshop description

Teachers and researchers present and discuss collaboration and didactic implication of the QUALE project.

We invite participants to join us in the engine room of the QUALE project: in the Nordic classrooms where teachers are practicing inquiry-based literature teaching, and in the conference rooms where teachers and researchers together learn more about inquiry-based literature teaching. The workshop will combine presentations, practice, and discussion, and comprises the following content:

A: Starting in the research room framing quality literature education (QUALE)

Eight didactic principles and seven strategies at the core of inquiry-based literature didactics are presented and theoretically grounded. The principles and the strategies are operationalized in specific teaching materials that teachers and students use in the classroom.

B: In the classroom: Introducing "Plastic heart", the first aesthetic text in the teaching materials

The inquiry-based literature education in practice is introduced by experienced teachers in the project. Based on the participants' experiences,

we discuss the materials with respect to potentials and barriers.

C: In the research room: describing and discussing the teacher-researcher collaboration

Meetings between teachers and researchers has taken place nationally and Nordic, that is, in meetings with all participants. We present structure and content of these communicative spaces including the benefits for both researchers and teachers and discuss conditions for such meetings to take place.

D: In the classroom after the project: How to continue?

Participating teachers share their thoughts of and experiences with conducting inquiry-based literature education after the teaching materials are used. We discuss what is needed to keep the approach alive beyond the end of the project.

At the workshop we use Nordic languages in line with how we have chosen to communicate within the project and in line with educational policy to support neighboring languages in the Nordic countries. English language will be used only to clear possible misunderstandings up.

Paper session 4C (SES 4C) | The role of enactment in teacher education

Room: Undrevisningsrom 1

Chair: Inga S. Jensen, University of Oslo

SES 4C - Paper 1

Learning to notice for equity – a scoping review of the literature on equity-oriented teacher noticing

Tracey Lavalette

University of Oslo

Affiliated authors: Katrine Nesje, University of Oslo | Inga Staal Jensen, University of Oslo

Globally, societies are experiencing a trend towards increasingly diverse populations due to migration. At the same time, economical inequalities have been on the rise in many countries. Educational systems are ideally seen as having an equitable function, in the sense that they are expected to provide equal opportunities to succeed for children of all backgrounds. This presents a challenge for teachers, facing the task of enacting equitable teaching practices in classrooms characterized of pupils coming to school with different resources in the broad sense – culturally, economically and linguistically. Scholars in the educational field have called for teacher education to make equity a more

integrated and explicit goal when preparing teachers for working in this multi-faceted reality. Related to this request for enhanced teacher competency, is the field of “teacher noticing”, which has expanded over the last two decades. In this scoping review, we aim to display an emerging body of literature connected to the socio-cultural perspective of teacher noticing, namely literature explicitly connecting and centring equity with teachers’ noticing. Our overarching goal is to contribute to the discussion about how teachers, both prospective and in-service, can be educated and prepared to teach for equity.

'Natura, ars, exercitatio' in a new frame: Rehearsing Teaching Professionally

Sissel Margrethe Høiscæter

Høgskulen på Vestlandet

The purpose of the paper is to examine the two concepts 'modelling' and 'rehearsal' and the relation between them. The concepts are a part of a learning cycle in teacher education in the research project Rehearsing Teaching Professionally (ReTPro), a four-year research project funded by the Norwegian Research Council. Modelling and rehearsal are concepts that also have their place in the ancient rhetorical understanding of education. Together with the term *natura*, *ars* and *exercitatio* form the basis for the program the speaker must go through to become a professional practitioner. In ancient theory, the connection between knowledge of techniques, *ars*, and practice or rehearsal, *exercitatio*, occurs by studying good models, expressed as *imitatio*. *Imitatio* is both placed as part of *ars* (Quintilian) or as part of *exercitatio* (Cicero). Inspired by the distinctions in the antique theory the research question in this paper is: What characterises the relationship between the use of models and rehearsal in teacher education?

The paper presents a study of the connection between examples of modelling that the student has encountered in their studies, viewed in context of their rehearsal tasks. The data for the study also includes statements about modelling and rehearsal in two focus group interviews with student teachers. The results show that the ancient distinction between the two ways to carry out *imitatio* is still relevant. There is a smooth transition from an observer position to a participant position. The discussion in the paper revolves around how one can understand these positions, especially regarding the development of a metalanguage about teaching and to the development of repertoire. James Wertsch's dichotomy between learning and acquisition and Anna Sfard's concept thoughtful individualization linked to the development of teaching routines are used to understand these processes.

SES 4C - Paper 3

Creating a space for boundary crossing conversations between school-based and university-based science teacher educators

Silje Leifsen

University of Oslo

Affiliated author: Torunn Aanesland Strømme, University of Oslo

The aim of the study is to explore how guided conversations can incite to boundary crossing between science teacher educators. The participants of the study are school-based (n=2) and university-based (n=4) teacher educators who took part in a workshop to discuss various claims about classroom practices and mentoring of pre-service teachers. The video data from the workshop was transcribed and qualitatively analyzed in three stages: (1) identifying the participants' positioning in the conversations, (2) identifying factors contributing to boundary crossing conversations and (3) an interaction analysis of segments where boundary crossing appears. Preliminary findings indicate that

boundary crossing takes place when there is a shift in the participants' position towards the claims discussed in the workshop, and when participants engage in discussions regarding specific terminology belonging to disciplines outside their own.

The purposes and challenges when using modelling as a trigger of rehearsing in teacher education

Vigdis Vangsnes

Høgskulen på Vestlandet

Introduction

This study examines examples where teacher educators (TEs) model specific teaching strategies and discusses what implications modelling can have when carving out a new signature pedagogy in teacher education (TE).

Theory

Lunenberg et al. (2007) distinguish between implicit and explicit modelling. Implicit modelling means that the TEs walk the talk which means that they demonstrate strategies and ways of teaching and thus act as examples for their PSTs. Explicit modelling teaching include any instance of meta-commentary or comments wherein educators make explicit the choices they make while teaching and why.

Aims

The purpose is to explore modelling as part of TE didactics and to find out how TEs and the PSTs reflect in and on education (Schön, 1983) when they participate in modelling teaching.

Research questions

What is the purpose of modelling teaching in TE?
What challenges occur when modelling is used?

Methods

This is a case study and placed within an educational design research framework.

Data is collected following campus teachers modelling process drama including teacher-in-role in teaching English as Foreign Language. Data included classroom videoobservation, field notes, two videostimulated recallinterviews with TEs and PSTs.

Preliminary findings

The findings can be divided into three; i) the purpose of the modelling connected to the theme and discipline, ii) the purpose of the modelling that prepares the PSTs to become professional teachers and iii) the challenges that occur when modelling is used. Highlighted examples include the risk of instrumentality, the risk of destroying the magic of the moment, and how improvisation and the art of teaching is taken care of.

They say modelling gives them opportunities to unfold, rehearse, decompose and theorize about teaching, in taking part in modelling they rehearse on and expand their teaching repertoire. The PSTs stress that when TEs facilitated translation to the PSTs` own practice and when they connected exemplary modelling with theory this was vital for their understanding of the purpose of the modelling.

Paper session 4D (SES 4D) | Supporting learning in the subjects

Room: Undrevisningsrom 2

Chair: Jennifer M. Luoto, University of Oslo

SES 4D - Paper 1

Scaffolding inquiry in social science education

Nora E. H. Mathé

University of Oslo

Affiliated authors: Anders Stig Christensen, UCL University College

Inquiry and teaching with high levels of student activity are central to social science education, and research has shown the importance of scaffolding and other expressions of supportive structures in teaching (Mathé, 2020; Christensen, 2021). Nevertheless, there have been few studies documenting how actual teaching takes place and whether a teacher's activities support the work of their students (Klette et al., 2017). This presentation, draws on video observations from 16 lower secondary social science classrooms in Denmark and Norway. We began by using the Protocol for Language Arts Teaching Observation (PLATO; Grossman, 2019) to identify

the extent of teacher scaffolding practices. From this, we analysed the scaffolding to understand what kinds can be observed in social science education, with a specific focus on inquiry-based teaching. Although we identified scaffolding in a minority of lesson segments, what we did observe was related to a number of skills and strategies, both generic and specific to social science education. We conclude by identifying the strong potential in developing scaffolding practices related to social science inquiry further, before discussing implications and opportunities based on our findings.

Literacy learning in Icelandic lower secondary schools: Use of texts in language arts and social science lessons

Rannveig Oddsdóttir
University of Akureyri

Anna Kristín Sigurðardóttir
University of Iceland

Rúnar Sigþórsson
University of Akureyri

Currently, there is an international emphasis on literacy which international organisations such as UNESCO claim to be at the heart of basic education. Consequently, many national governments, including Iceland, have made literacy initiatives at the heart of their education policy and curriculum development. The Icelandic national curriculum defines literacy as a multifaceted competence of reading, writing, and understanding, and a social endeavor of communication, participation, and the creation of meaning. According to this definition, literacy involves far more than decoding and encoding of text.

The aim of the current study was to examine how well teaching in Language Arts (LA) and Social Sciences (SO) in ten Icelandic lower secondary schools reflects these ideas about literacy education. The research question was threefold: What kind of texts do 8th graders read and write in LA and SO, what is the nature of their text-based work and how likely is it to enhance their literacy competence?

The study was conducted in association with the QUINT centre of excellence, and the analyses is based on video recordings from a total of 40 lessons in LA and 36 in SO in Icelandic 8th grade classrooms, and involved both categorisation of the genre of the texts used, and teaching and learning arrangements applied in the lessons.

Results indicate that in LA students most often worked with literary texts but information text in SO. Most often the teaching and learning arrangements did not require students to engage deeply in the comprehension of the texts. There were, however, interesting exceptions from that, introduced in the presentation. This study is relevant for teachers in all Nordic countries as the results will draw their attention to this aspect of their practice.

SES 4D - Paper 3

University preparation of mother tongue teachers - reflection, strengths and weaknesses, challenges

Kateřina Šormová

Charles University

In 2023, the Ministry of Education of the Czech Republic published the document Competency Framework for Teacher Graduates (CFTG), which presents a vision for the university preparation of prospective teachers. The CFTG describes the competences to be acquired by all graduates of teacher education programmes and is currently being implemented in the curriculum. The CFTG has two functions: the first is to improve the quality of the education of future teachers; the second is formative, the CFTG can help them to structure their own experience and become aware of their strengths and weaknesses.

The aim of this paper is to reflect on students' attitudes towards the competences that the CFTG suggests an intending teacher should have. The empirical data were collected from students of the Master's degree programme in Teaching Czech as a Mother Tongue.

The paper uses a combination of qualitative and quantitative data. The first (qualitative) type of data are the students' diaries, which they start writing at the beginning of their teacher training

and which reflect the students' ideas about what qualities and competences a good teacher should have. They also focus on didactic issues.

The second type of data is quantitative, collected through questionnaires. The questionnaire was divided into six areas (1. subject area, 2. planning, leading and reflecting on teaching, 3. learning environment, 4. feedback and assessment, 5. professional collaboration, 6. professional self-concept, development, ethics and mental health) and measures the importance of these areas.

Based on the data analysis, we found the areas that students consider important and crucial for their professional development and that are actually developed during their studies. This shows the important influence of students' preconceptions about teaching and their previous teaching role models. The findings will be used to revise university curricula.



Symposium 5 A (SES 5A) | The Possibilities of Layering Frameworks: Examining the Promise of Using Multiple Frameworks in Research on Teaching

Room: Stort møterom

Chair: Sarah S. Kavanagh, University of Pennsylvania

Discussant: Pamela Grossman, University of Pennsylvania

Symposium Abstract

There are significant advantages of using shared frameworks to shape field-level research agendas for understanding teaching quality. Shared frameworks allow researchers and practitioners alike to aggregate knowledge and build shared technical vocabularies with which to describe and discuss the practice of teaching in greater nuance and detail. These advantages, however, carry hidden pitfalls as well. Frameworks, whether observational or theoretical, are lenses through which we see the world. Just like physical lenses, frameworks sharpen focus on particular things while blurring focus on others. Therefore, all frameworks offer both shared ways of seeing and shared ways of not seeing. As frameworks develop field-level prominence, an important task for researchers is to combat the development of field-level blind spots. One approach to tackling this task is to layer frameworks.

This symposium brings together researchers from Norway and the United States to discuss a variety of approaches to layering frameworks in research on teaching practice, teacher learning, and teaching quality. Including presentations of findings from three research projects and an overarching discussion by Dr. Pam Grossman,

the symposium will examine how researchers are layering frameworks in ways that add nuance to some of the most prominent frameworks used to study teaching quality.

The first presentation will investigate how layering sociocultural theories of learning, critical theories, and complexity theory allowed researchers to illuminate and account for complexities in teacher learning processes. The second presentation will discuss how layering two observational frameworks, PLATO and the IQA allowed researchers to reveal nuances in classroom video data that one framework alone would not have uncovered. The final presentation illustrates how developmental frameworks for teacher learning can be partnered with frameworks that decompose the practice of teaching to help guide both research and designs for professional learning. Taken together, the included research argues that in order to tackle the blind spots that are baked into research communities that share common frameworks, researchers may benefit from layering multiple frameworks in strategic and systematic ways that allow us to address omitted perspectives without abandoning the progress we have made as a field.

Theoretical Frameworks to Guide Teacher Education Research

Karen Hammerness

American Museum of Natural History

Affiliated author: Kavita Matsko, Northwestern University

Research around the globe has documented a set of perennial problems of learning teaching (Korthagan, Kessels, Koster, Lagerwerf & Wubbels, 2001; Moon, 2016; Norwegian Ministry for Education and Research, 2018; Toom & Husu, 2021). By “problems” we mean perennial challenges to learning to think and act like a teacher, to enact practices that are equitable, and to impact student learning. We call them ‘perennial’ because they relate to foundational features of learning, are not easily addressed, and are persistent tensions in designing for new teacher learning. For instance, learning to teach requires that new teachers come to think about and understand teaching quite differently than as students. Daniel Lortie (1975) called this problem “the apprenticeship of observation,” referring to the learning that takes place by virtue of being a student for twelve or more years in classroom settings. This presentation begins with an overview of six perennial problems of learning teaching: enactment, observation, vision, equity, complexity and fragmentation. The presenters argue that naming these problems is critical for comparative teacher education research, and in turn, for advancing the field. Shared terminology (and problem spaces) enables researchers across international contexts to compare and contrast findings, within a common or shared understanding about the framing of the research. In addition, it supports more likely implementation across contexts due to deep understanding of fundamental challenges in teacher education.

Next the presenters will offer three theoretical frameworks that can be especially helpful in puzzling through these “problems of learning teaching.” Theoretical frameworks push teacher

educators to ask foundational questions about their work, such as: How do different explanatory concepts support our thinking about how PSTs learn? What features of pedagogical opportunities do frameworks reveal that can guide program design to support PST learning and equitable teaching? This presentation offers three theoretical frameworks that could be used to guide research on teacher education: sociocultural learning theories; critical theory and complexity theory. Each lens helps reveal relationships, tensions, ideas, and interactions that are important for understanding and theorizing new teacher learning and equitable teaching due to their focus upon different levels of social systems. Often, researchers treat theoretical frameworks as separate entities that compete with each other for the most complete explanations of phenomena. We argue that positioning theoretical frameworks about learning to teach as separate hinders our understanding of PST learning given the complexity and scale of the phenomenon. Bringing together theoretical frameworks to understand learning reveals different characteristics of the experience and when taken together, can usefully account for and illuminate the complexity of teacher learning. The three complementary theoretical frameworks can be helpful for those engaged in comparative research, and by helping support program design and planning for new teachers learning to teach in equitable ways. The presentation concludes with examples drawn from their international research that illustrate what these principles look like in teacher education programs; and how one might study them and in turn, teacher learning with a comparative lens.

Combining observation frameworks to reveal nuances in classroom discourse in Mathematics and Language arts

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Professional development (PD) is essential for improving classroom discourse (Kavanagh et al., 2022). Successful PD initiatives are anchored in teachers' classroom practice, disciplinary content, and teacher communities (Darling-Hammond et al., 2017), creating a need for a shared professional language that enables teachers to analyze and learn from their teaching together. Observation frameworks have the potential to provide a common ground from which teachers can inquire into and improve their teaching – both within and across subject areas. Specifically, distinguishing specific facets of discourse can be advantageous in providing feedback to assist teachers in improving classroom discourse.

This paper aims to investigate in what ways a targeted framework for academic rigor and accountable talk can complement and nuance our understanding of classroom discourse as measured by a broader teaching quality framework. To explore this aim, we applied a framework with a comprehensive view of teaching quality, The Protocol of Language Arts Teaching Observation (PLATO) (Grossman, 2015), and a targeted framework for classroom discourse, the Instructional Quality Assessment (IQA) in Mathematics (Boston, 2012) and Language arts (Matsumura et al., 2008).

The study draws on video data from 93 Norwegian lower secondary classrooms, comprising 47 mathematics lessons and 46 language

arts lessons. As the first step of our analytical approach, we used the PLATO framework to map mathematics and language arts lessons with extended opportunities for students to engage in classroom discourse, providing us with a subsample of lessons. In the second step, we used the IQA framework to further decompose, explore, and compare these opportunities across subjects.

Our initial analysis showed that both frameworks highlight many of the same quality features of classroom discourse. Whereas PLATO measured classroom discourse at an overarching level, the IQA revealed additional nuances in the data, particularly by decomposing discourse in facets such as teacher press, student reasoning, and teacher and student linking. Our preliminary findings indicated lower and higher levels of student reasoning, teacher pressing, and teacher and student linking in both subjects. In addition, findings suggested that even in high-quality discourse, certain practices, such as teacher linking, remain rare. These findings indicate that accountable talk moves represent a fruitful focus in PD across subject areas, while subject-specific aspects of classroom discourse, such as the importance of the choice of texts in Language Arts and tasks in Mathematics, should also be considered. The study contributes to the QUINT ambition of connecting ways of conceptualizing and measuring teaching quality to professional development initiatives.

Towards Developmental Frameworks of Teacher Learning in Research on Core Teaching Practices

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Research on practice-based teacher education (PBTE) now rests atop a multitude of decompositions of core teaching practices (Alston et al., 2018; Fogo, 2014; Grossman et al., 2009; Grossman, 2021) and many of these decompositions have now been used as design frameworks for professional development (PD) programs (Gibbons et al., 2017; Kavanagh et al., 2022; Kazemi et al., 2021). When decompositions of practice are used as anchoring frameworks in the design of PD, designers are forced to make decisions about which components of a given practice should be introduced to teacher learners first and which might come later in a teacher learner's development. While many experienced teacher educators and PD providers have strong case knowledge that they use to make these decisions, there is limited empirical research on core teaching practices that takes a developmental lens.

This cross-case study aims to address this gap in the research by mapping and comparing the developmental trajectories of four teacher learners over the course of two years as they engaged in a PD program focused on discussion facilitation. The aim of our work is to propose an initial developmental framework of teacher learning about discussion facilitation. Our hope is that such a framework might go on to inform larger scale research and ultimately be used in program design by teacher educators and PD providers alongside decompositions of high-quality discussions.

The study draws on 17 video-stimulated recall interviews conducted over the course of two years with a group of four teachers all of whom taught at the same K-8 school in a major city in the United

States. During data collection, the teachers met as a group with PD providers eleven times for full-day professional learning experiences all of which were focused on discussion facilitation. In between these sessions, researchers captured video of teachers facilitating discussions in their own classrooms and then led teachers through video-stimulated recall interviews (VSRIs) in which the teachers narrated what they were trying to accomplish at different moments during the filmed discussions. Researchers coded the VSRIs using a decomposition of the core practice of facilitating discussion (Gotwalt, 2023). This coding scheme allowed researchers to identify when teachers were working on particular elements of discussion facilitation, including when they were experiencing feelings of success and frustration with each element.

Initial analyses reveal that teachers worked on significantly fewer elements of discussion facilitation in year one than in year two. Their early attempts at discussion facilitation focused mostly on trying to position students as competent sense makers by adjusting how they elicited their thinking. Later they began orienting students to one another's' ideas. It was only after they had begun to find success eliciting in ways that positioned competently and orienting students to one another's' ideas that they began to reflect on moves that they could make to disrupt power dynamics in the classroom between students, between the teacher and students, and between students and society. This research suggests that researchers and practitioners may benefit from supplementing frameworks that decompose high quality discussion facilitation with developmental frameworks of teacher learning about discussion.

Paper session 5B (SES 5B) | The role of tasks

Room: Undrevisningsrom 1

Chair: Armin Jentsch, University of Oslo

SES 5B - Paper 1

Reflections on the role of task potential in relation to teacher competence and teaching quality

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The potential of instructional tasks to promote learning and understanding is an important aspect of teaching mathematics, and their implementation in the classroom is therefore often seen as positively related to teaching quality. Both the choice of tasks and the way they are enacted in the classroom depend on many factors, with teachers' knowledge and skills being among the most important. Within the scope of the study presented here, we analyzed the relationships between different aspects of task potential, teaching quality and teachers' competencies. Based on these analyses, we then attempted to determine the extent to which task potential can be considered as an indicator of teaching quality, of teachers' competencies or as a concept in its own right in models of teaching effectiveness. To this end, we draw on data from the TEDS Validate study, i.e., competency tests of mathematics teachers (n=31), observations

in their classrooms at the lower secondary level (n=60), and a thorough analysis of all tasks used in the respective lessons (n=2490). The multiple regression analysis suggests that although some facets of task potential are related to teaching quality or teacher competence, task potential appears to be a concept in its own right, some features of which may predict lesson quality. Both the process of data collection and evaluation as well as the results obtained show the challenges that can arise when teaching quality is assessed indirectly, for example via tasks or other classroom artifacts. Implications of these findings for the role of tasks in relation to educational effectiveness research, particularly concerning the investigation of teaching quality, will be discussed in the presentation.

Teaching-quality ratings of mathematics classrooms: Do subject-specific observation items matter?

Linn Hansen

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As education systems struggle to maintain adequate education quality, observer ratings are widely applied in teaching-quality research. However, such ratings deal with measurement challenges as they are influenced by various factors. One challenge concerns the subject-specificity of teaching quality: Are generic observation items sufficient for valid ratings of teaching quality? Consequently, the presented study investigates how a systematic variation of the subject-specificity of items affects observer ratings of different aspects of teaching-quality in mathematics classrooms.

Subject-specific versions of six generic observation aspects of teaching quality used in a generic classroom observation instrument applied in Germany were formulated. We developed scripted videos of typical mathematics classroom situations, each situation deliberately designed to violate one of the six aspects under the lens of mathematics education. To investigate the variation of the item specificity, raters with a

mathematics education background were randomly assigned an online survey version (generic or subject-specific items), asked to rate the respective item, and explain their rating. The quantitative and qualitative comparison of the respective data allows investigating whether varying the subject-specificity of the items affects the validity of the ratings regarding the focused quality aspects.

First data (N=24 mathematics student teachers) indicates that in certain cases subject-specific items increased the quality of the ratings, while in others subject-specific raters assessed the instructional quality also adequately with generic items. This research may contribute to a better understanding of the specific conditions under which generic items appear not to be sufficient for ratings of teaching quality. The empirical evidence arising from this research will improve insights into the effective use of observer ratings and - on a larger scale - elevate the analysis of teaching quality.

Teaching-quality ratings of mathematics classrooms: Do subject-specific observation items matter?

Tim Fütterer

University of Tübingen

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Classroom observation protocols like the Global Teaching Insights (GTI) or the Classroom Assessment Scoring System (CLASS) standardize the assessment of teaching effectiveness and facilitate profound comprehension of classroom interactions. Different from these protocols that offer teachers specific feedback on their teaching practices, the manual coding by human raters is resource-intensive and often unreliable. This has sparked interest in developing artificial intelligence (AI)-driven, cost-effective methods for automating such holistic coding. However, there are numerous unanswered questions, for example, regarding the quality of the automated evaluation of teaching data or ethical aspects. We will present two studies focusing on the automated assessment of multimodal data to predict teaching quality aspects using AI. First, we present a systematic review of the application of AI in classrooms with a focus on classroom management. We examined 104 studies from 2000 to 2022 to understand AI's educational purposes, technical implementations, and

ethical implications in classroom management. Our findings reveal that to-date AI technologies are primarily used to track attendance, monitor behavior, and assess student engagement, thus streamlining classroom management. Second, we present a study that explores a multimodal approach to automatically estimating encouragement and warmth in classrooms, a key component of the GTI study's observation protocol. We employed facial and speech emotion recognition with sentiment analysis and ChatGPT's zero-shot performance on this scoring task based on transcripts using 92 classroom videos. Our findings reveal that we could predict human ratings as satisfactory, especially when analyzing transcripts of the lessons. Our studies provide insight into the potential and limitations of AI applications for teaching quality research and highlight specific fields of application for AI applications in practice.

Paper session 5C (SES 5C) | Life Skills

Room: Undrevisningsrom 2

Chair: Anna Kristín Sigurðardóttir

SES 5C - Paper 1

Life skills in science education – what do science teachers say and do in the classroom?

Rebecca L. S. Barreng

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In science education, life skills have been associated with subject-specific topics such as sexuality, nutrition, body functions and mental health. In this study we investigated how science teachers define and include life skills in the classroom, using an observation protocol developed for life skills related teaching. We included 14 teachers and 22 science classrooms in our study. All teachers were asked to log their lessons both before and after instruction, reporting if they planned to include life skills in their lessons and whether they did teach life skills. Additionally, all lessons were videotaped, and the teachers were interviewed in retrospect, when all the lesson sequences were performed

and videotaped. Results showed that the teachers included life skills in almost half of the videotaped lessons, and that the lessons included not only subject-specific topics, but also to competencies such as critical thinking, problem-solving, communication and collaboration, important for the development of life skills. The findings also indicate that the teachers have a wide definition of life skills, going beyond the science related topics. This study represents an insight into the operationalization of the science curriculum related to life skills, and may increase the understanding of life skills in science education and how to identify and measure life skills in relation to science education.

SES 5C - Paper 2

Students' well-being in the Nordic Schools

Hermína Gunnþórsdóttir

University of Akureyri

Affiliated authors: Jonas Teglbjærg, University of Southern Denmark |
Eyrún María Rúnarsdóttir, University of Iceland | Astrid Roe, University of Oslo

Student's learning is affected by multiple factors and recent reviews have highlighted that teaching quality is more important for student learning than several other factors. As schools have an essential role in supporting students to develop their social and emotional skills, knowledge and behaviours, academic well-being should be a focus point in students' education. According to Qvortrup (2021) "academic well-being refers to students' mindsets and attitudes to their learning environments (meaning, engagement) and students' experience of having agency, a voice etc" (p. 254). The aim of this study is to identify observable characteristics of classroom practice that might enhance students' perception of academic well-being and to understand what characterises classrooms where students report caring teachers and good captivating teachers. Data was collected in ten Icelandic, Danish, Norwegian, Swedish and Finnish lower secondary schools (grade 8) by video recording lessons in

Language Art, Social Science and Mathematics and student perception surveys (i.e., the Tripod Survey, Ferguson 2012) from the same classrooms. We use students answers in the Tripod survey - the factors care and captivate - as a measure of students' academic well-being and explore the bivariate associations between well-being and observed aspects of teaching as captured by PLATO. Preliminary findings suggest that students' sense of academic well-being depends, to some extent, on their teacher's ability to ensure an orderly classroom where time is spent on relevant learning activities, and to some extent, on their teacher's propensity to engage in actions that directly help them understand "difficult stuff" thus students are given clear and accurate examples, analogies, or explanations. We hope to be able to contribute to the discourse of quality of teaching that includes academic well-being as pedagogical approaches.

Childrens' competences for tomorrow – the work of the “Future Education Initiative”

Dr. Ann-Kathrin Jaekel
University of Tübingen

A comprehensive and successful education is not just about learning languages, math or biology, but also includes overarching skills. However, educational institutions in Germany often focus on subject-specific content, which is less oriented towards the necessary skills of tomorrow. This is where the “Future Education Initiative” comes in: Its aim is to work together with educational practitioners and national and international experts to develop ideas that will strengthen children for future challenges – without neglecting basic skills such as reading, writing and mathematics. Such future-oriented skills can be of a very different nature such as the competent handling of information from the

Internet, the adoption of perspectives, handling uncertainties, the defense of fundamental values or the democratic participation within our society. The “Future Education Initiative” focuses on the educational levels of early childhood and primary school in order to reach children as early as possible in their educational biography. This contribution will present the work of the “Future Education Initiative”, which will begin its work on April 1, 2024. Against the background of the German education system, the relevance of such an educational initiative will be presented. Potential experiences from other countries will be discussed.

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