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Quality in Nordic Teaching (QUINT) - A Nordic Centre of Excellence

QUINT at a glance

2022/23 Report





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Foreword

As the QUINT Centre enters its final year, we are seeing a flurry of activity on all fronts. Projects under each of our four thematic areas have been publishing at an impressive rate, and our researchers have been more active than ever in presenting their findings at conferences around the world.

In 2023 QUINT has paid particular attention to collaboration between researchers and teachers. Our annual conference in Helsinki focused on this theme, and we made a special effort to ensure that teachers' voices were given space to be heard during the event.

The response from both teachers and researchers to this effort has been positive, and we are seeing broad agreement in both professions that more collaboration between the research and school sectors is needed. What form this collaboration should take is an open question, but there are already a number of promising avenues we can point to:

The VISST project has demonstrated the benefits for teachers of engaging in professional development using video, and researchers have seen first-hand the importance of taking the professional demands on teachers into consideration when designing these programmes (page 14).

The QUALE project has a close cooperation with teachers, and is involving them in presentation of the study findings (page 16). Both researchers and teachers say that having practitioners in the room during conferences and workshops provides a valuable perspective.

We also see an eagerness from teachers' unions for closer cooperation with education researchers (page 10).

QUINT projects continue to produce a high standard of work, some of which you can read about in the following pages. We look forward to the final leg of our long and rewarding journey as a Centre of Excellence, and to continuing to sharing insights on teaching quality in the Nordic countries with you.



Kirsti Klette
QUINT Centre Director

What is the future of teacher-researcher collaboration?

In spring 2023 the QUINT Centre held its annual conference and PhD Summer Institute. The topic of the event was 'teacher-researcher collaboration.'

Among the speakers at the four-day summit were four international researchers who have worked extensively on developing different forms of collaboration between researchers and school practitioners.

We asked these researchers how they see the current state of teacher-researcher collaboration, and where they see the field developing into the future.

Rossella Santagata

Professor of Education and Director of the Center for Research on Teacher Development and Professional Practice in the School of Education at the University of California, Irvine.

"I think we're moving in the right direction. I think that we researchers are all realizing and trying to be more sensitive to the complexity of teachers' lives' and that they're not in charge of everything that happens in the classroom. But although we have that sensitivity, I think in the future we need to really think hard about how we do research, both in terms of the questions we may ask, but also the instruments that we use, the tools that we use to capture and measure effectiveness, or even the way that we study teachers' experiences.

"We need to be creative about capturing more nuances of as opposed to just; 'it works' or 'it doesn't.' And we need to look at the 'how,' because that helps us to continue to improve over time."

Robert Coe

Director of Research and Development at Evidence Based Education.

"I see the balance of power and the initiative moving more towards the teacher. I think there has traditionally been a lot of cooperation, but cooperation mostly led by researchers' agenda. I think the kind of work we're doing now, and increasingly in the future, is much more led by the schools' agenda.

"So that's the first criterion that we have to meet; to create something that schools want to use. That puts really different constraints on what you can do





as a researcher, because most of the things you'd want to do, you can't because schools don't see the value in it. So you have to look at it the other way.

But I think that's actually a really healthy dynamic, and I would predict that being much more the norm in the future. I think people are sort of frustrated with the disconnect between these two worlds, and this is one way to try and overcome that."

Sarah Kavanagh

Associate Professor of Teacher Education at the University of Pennsylvania's Graduate School of Education.

"I think one of the interesting places for us to potentially go next is to think about how researchers and teachers can collaborate inside of the decision-making about how to interact with kids in-the-moment. I think there's been a lot of researcher-teacher collaboration around planning and designing instruction and less around the actual facilitation of instruction, and I think that is a promising next horizon for work."

Hilde Borko

Charles E. Ducommun Professor of Education at the Stanford Graduate School of Education.

"I have been working at a different level in the system, not with teachers in classrooms, but with the people who provide professional development.

"One of the things I've been struck by is that when researchers collaborate with professional development people, usually they don't co-facilitate.

"What we're doing in the program I run at Stanford is a little different. The researcher would conduct professional development, then they would co-lead for a while, and then they would co-plan and the professional development leader would lead. That way, when the researcher leaves the system, for example because the funding for the project has ended, there's still something there that we have helped them create that works for them.

"To me, that's a richer kind of collaboration that has much more sustainability. That's the context in which we're working now, and that is where I would like to see more collaboration in the future; the sort of collaboration that has some sustainability, even after the people are no longer working with each other." ■

QUINT Conference 2023

The fourth annual QUINT Conference foregrounded the challenges and opportunities that arise when researchers and school professionals meet and collaborate with the aim of improving teaching quality.

In addition to international researchers in the field of education, this year's conference also invited Nordic teacher union leaders, education professionals and PhD students from across the Nordics and beyond, to share their perspectives on the main theme of the conference – namely how to strengthen and facilitate partnerships between teachers and researchers.

The four-day event comprised of ten parallel paper sessions, five symposiums, three keynote presentations and plenary discussions, an invited workshop, a panel debate with the Nordic Teacher union presidents, and a workshop with education professionals from the Nordic countries.

There was broad agreement amongst conference delegates on the need to continue to find productive ways to bridge the researcher-educator gap, particularly in professional development contexts.

Leading researchers share their insights

High-profile international keynote speakers discussed their work with teacher education and professional development as part of the PhD Summer Institute and the general part of the conference. Across the board, these speakers saw a need for making more space for teachers' needs and perspectives in education research and professional development.

Centring teachers' voices

As part of the PhD Summer Institute and her talk to PhD Fellows, Professor Rosella Santagata emphasised the importance of centring teachers' voices in teacher education and research. Santagata's work with research-practice partnerships in teacher education aims to take into account the structural contexts that teachers find themselves in, such as the norms and regulations of school districts, and different groups or

communities within the school.

"Our research-practice partnerships focus exclusively on connecting different forms of expertise in the system and on shifting power relationships. So it's really a different way of conducting research with teachers as opposed to on teachers," said Santagata during her talk.

Santagata and colleagues from continually adapt the design of their professional development program based on feedback from teachers. They have identified what they see as three key levers for supporting teacher learning and improvement in classrooms. These are

- 1) Disrupting hierarchies, where stakeholders are able to discuss on equal footing and learn from each other
- 2) Centring learning, not only for students but for adults too (teachers, administrators, researchers etc.) and
- 3) Building relationships and trust, taking the time listen to what practice partners have to say and learning from it.

Santagata also discussed the use of video to improve teaching quality, emphasising the importance of the social-cultural context in which videos are viewed. She argued for the need to bring different 'professional visions' to classroom videos in order to co-create a shared view of what is important to look for, and to agree on future goals for research.

Santagata also talked about teacher noticing in a professional development context, demonstrating several promising ways that video can be used for inquiry together with teachers, to help them notice relevant aspects of classroom activity. She argued that more research is needed about teacher noticing.

Measurement for improved feedback

Professor Robert Coe presented the work he has done as Director of Research for Evidence Based



Education in trying to improving the reliability of feedback given to teachers who undergo training programs.

Coe discussed how the difficulty of measuring teaching quality influences the work of improving teaching quality. Drawing on White et al (2021), Coe emphasised that measuring quality, and therefore tracking improvement in a teacher's practice, is very difficult to do reliably.

"If you know anything about measurement, you'll know that the difference between [two measurements] is far less reliable than either one on its own [...] It's like the child who wants to constantly measure their height and finds they've gone down. It's error of measurement, not genuine shrinkage."

Coe is using Comparative Judgement on classroom video clips to try to overcome some of the challenges associated with measurement reliability. Comparative Judgement is a technique where a rater compares two artefacts (in this case, two video clips) against each other and decides which one is better. As this is done enough times and with enough videos and enough raters, the reliability of each video's rating improves.

This method comprises part of Evidence Based Education's suite of tools that, which are designed to support teachers see their classroom practices more objectively.

Breaking the fourth wall

Dr. Sarah Kavanagh discussed her research on practice-based learning for teachers. She argued that there is a need for bringing teacher learners

(teachers in training) closer to practice during their training.

Kavanagh used the concept of the fourth wall from theatre and film to illustrate the gap that currently exists between the teacher learners and classroom practice.

"Even in the most collaborative, practice-centred teacher learning experiences, there remains a very strong cultural boundary between performers of teaching and observers of teaching."

Kavanagh has been conducting research that looks at ways to bring teaching learners closer to practice, and argued for the potential that lies in breaking the boundary between performer and observer in classroom practice contexts.

Though still in the early phases, Kavanagh cited indications from her research that 'breaking the 4th wall' during practice training can lead to promising outcomes. When teachers and teacher trainers allowed themselves to step out of the roles of 'practitioner' and 'observer', Kavanagh said, they were able to work collaboratively to solve challenges that had arisen during the course of the lesson.

Kavanagh hopes that this work can challenge entrenched assumptions about how to conduct teacher training.

"The assumption has been that being together in real time instruction will interfere with teacher learning. [...] My hope is that this work can help prompt some questions in the field about what it will take to adapt our infrastructures for teacher learning in ways that might more frequently bring teachers together to authentically and collaboratively participate in the practice of teaching for the purpose of learning about teaching."

Partnership Research in Education

On the second day of the summit, Stanford professor Hilda Borko held a combined keynote and workshop on partnership research.

Professor Borko began with an overview of her work on professional development and capacity building within mathematics and science at the school district level in the US. She also discussed what 'practice partnership' means in this context.

Borko underlined that practice partnerships include engagement with research, not just professional development activities, and that they “bring together diverse forms of expertise, attempt to shift power relations and to give all participants a voice in the work”.



The discussion then moved on to an examination of the challenges and benefits of partnership work. Workshop participants represented by researchers, research administrators and education practitioners were asked to discuss a number of questions about practice partnership, looking at both the challenges and benefits.

One theme that emerged from this discussion was the challenges associated with working across the different 'cultural worlds' that exist in academia and schools.

“We live in really different cultural worlds, different ways of working together, different incentive systems, different priorities. That just comes with the territory. One of the big things is that practitioners need to get things done tomorrow. And as researchers, we keep learning that it's all about in depth, it's all about quality, so take your time, make sure you know what you're learning and that you're ready to share it. Those [priorities] don't always mesh well.”

Professor Borko rounded off the nearly 2-hours of engaged discussions among the workshop participants of with some reflections on the “Building the Field” project. The project set out to develop a framework for

the knowledge, skills and dispositions needed to do partnership work in the school sector.

Through a long process the working group for the Building the Field project eventually moved away from the idea of centring knowledge, skills and dispositions to what Borko described as a broader and more inclusive framework.

“One of the realizations that led us to this [new] framework is that knowledge, skills and dispositions are all about the individual, while partnerships are inherently not about the individual. [...] The issue of context also kept coming up, and the importance of infrastructure in contexts, which is not part of knowledge, skills and dispositions either. So we just decided that our initial framing was wrong, and that this was a framework much more able to support partnership work.”

Nordic teacher union presidents call for more collaboration

The teacher union leaders from Norway, Iceland, Finland and Sweden joined each other for a panel discussion on the challenges and opportunities facing the school sector in the Nordics, with a particular focus on teacher-researcher collaboration. The discussion was led by QUINT Deputy Director Professor Marte Blikstad-Balas, University of Oslo.

The panellists shared many of the same concerns about the challenges facing schools in the Nordic countries, the first of which was lack of funding for education. They also discussed the challenges posed by current social and technological developments; AI, general challenges to democracy and a general and increasing teacher shortage

The panellists shared a positive view on teacher-researcher collaboration, but wanted to see more of it, as well as improvements to the effectiveness of these collaborations.

“We need the research to be closer to what teachers are talking about, what they are thinking about, what their problems are,” said Steffen Handal, leader of the Norwegian Teachers' Union.

It was clear from the discussion that Nordic teacher unions see the value in education research, but also feel that there is too much distance between the research sector and the school sector. They called for closer cooperation between practitioners and researchers, and challenged both sides of the divide to make greater efforts to reach out to the other.

Teachers and researchers meet inside “the fishbowl”

In keeping with the theme of this year’s conference, teachers and researchers from Nordic countries were invited to participate in a so-called ‘fishbowl’ conversation with each other.



The conference room was organised into two circles; the inner circle comprised of secondary teachers from Denmark, Norway, Finland, Sweden and Iceland as well as QUINT researchers from Iceland, Denmark, Norway and Sweden (full list below). This inner circle was tasked with discussing a video clip taken from the LISA Nordic project, which showed an example of instruction in Nordic classroom.

The floor was then opened to the outer circle, comprised of the rest of the conference delegates, mainly researchers, for a full-group discussion. This process was repeated for each of the three video clips from different countries and subjects.

PhD Fellow Gøril Brataas from University of Oslo facilitated the discussion, along with QUINT Centre Director and principle investigator of the LISA project Kirsti Klette, who filled in for Associate Professor Inga Staal Jensen of the University of Oslo and co-leader for Theme 4 at QUINT.

“One of the things I like about this method” said Brataas “is that those of you in the outer circle have time to actively listen. You have time to take notes, to reflect upon what they are saying [in the inner circle], how they are talking together, and to prepare what you want to add to the conversation afterwards.” Format of this workshop is inspired by a kind of dialogue - fishbowl conversation, which is often used by teachers.

An important component of the exercise was that participants could speak freely and ‘off the record,’ but sufficed to say there was a lively and

fruitful back-and-forth, both within the two circles and between them. During the discussion one teacher commented, “I think it’s important for a conference like this that the teachers’ voices get to be heard.”

PhD Summer Institute – Tomorrow’s researchers put their best foot forward

The four-day summit in Helsinki began with a two-day PhD Summer Institute. Over 30 Doctoral candidates from the Nordics, Germany, the Netherlands, Switzerland, UK, USA, and New Zealand, presented their research and engaged in discussions with each other, as well as with top researchers from the field.

26 papers were presented across the two days with topics ranging from analysis of teaching quality through classroom observations, subject specific research, enhancing quality in teacher education practices, and quality in professional development efforts. With example cases from different countries, contexts, settings and observations, there was a wide variety of perspectives on display.



“QUINT’s Summer Institutes show high standard of researchers, but this year’s conference has especially impressed with the quality of the papers and presentations. We in the centre’s leadership are encouraged by the upcoming generation of early career researchers in the field of education and teaching quality” said QUINT Director Kirsti Klette. ■

Innovating teacher education through the use of video

QUINT researchers presented their findings on innovative forms of teacher education at The Teacher Education Conference in Oslo.

The conference gathered teachers, researchers and school leaders. The conference is organised by Universities Norway and is a key national forum for those working with teacher education.

Norwegian Minister of Research and Higher Education, Ola Borten Moe opened the conference. The topic this year was how teacher education can be innovated and improved.

Three QUINT researchers were invited to share their findings from two projects whose work stems from QUINT Theme 4: Developing video-based teacher training.

Analytical practice on campus

Marte Blikstad-Balas presented results from a project she conducted with QUINT researcher Inga Staal Jensen. The project focused on innovating the University of Oslo's teacher education programme via an 'analytical practice' course.

"There is a consensus that teacher education needs to be more grounded in practice, and the assumption has been that this means more time spent in schools," says Blikstad-Balas "but this does not have to be the case. What we've done in the analytical practice course is let teacher students engage in a case example while on campus by giving them artefacts from a real classroom to analyse."

These artefacts include video footage of the lessons, interviews with the teacher and some students, documents from the lessons and a survey completed by students in the class. The teacher students are then

tasked with providing an analysis of the practices taking place in the case example classroom.

There are several benefits to this approach, says Blikstad-Balas.

"One advantage is that it lets us break down classroom practices into discrete parts for the teacher students to analyse. It allows us to spend more time on each situation and play it many times if necessary."

Added value for teacher students

The analytical practice course lasts one week and takes place during the teacher candidates' 9th and final semester, their most advanced practice period.

The course is designed to train teacher students' critical eye for teaching practices, and equip them with research literacy about how teaching is studied.

Jensen and Blikstad-Balas argue that if we want teachers who continue to learn and who are engaged with research on teaching, they need to be given insight into how this research is conducted, and to learn how they can decompose the complexity of the classroom.

Blikstad-Balas and Jensen conducted surveys and focus group interviews of the teaching students after they had completed the five-day course.

"A central question for us has been whether the students feel the analysis practice has made them better at reflecting on their own and others teaching, and our results indicate that they do," says Jensen.



Inga Staal Jensen was one of three QUINT researchers to present at The Teacher Education Conference.

Learning to notice

Jenset also co-presented results from the “Learning to notice in teacher education” (LTN) project, together with QUINT Doctoral Research Fellow Gøril Brataas.



The analytical practice course at UiO grounds theory about teaching practice in practical examples that teaching students can analyse, explains Professor Marte Blikstad-Balas.

Learning to notice investigates the use of video as tool in teacher education, combined with a specific attention to certain teaching practices.

The project follows two cohorts of student teachers, engaged in a video-based methods course in Norwegian language arts.

Like the ‘analytical practice’ course, LTN uses videos to illustrate complex teaching practices

during coursework at campus, and to relate theoretical concepts to actual classroom practice.

The course trains the student teachers’ ability to identify, analyse and reason around relevant classroom events. The project also examines how this ability is related to the student teachers’ teaching repertoire.

During the project period seven student teachers were followed into their teaching placements, where they videotaped their own teaching and discussed the recordings with their mentors.

“Student teachers find this use of video very helpful. It allows them to point out and analyse very specific things they did or didn’t do, or attend to, during a lesson,” says Brataas. “We see that this makes the mentoring conversations more targeted, and enables them to go deeper into details of very complex teaching practices.”

Nordic cooperation

In August 2023, Jensen and Blikstad-Balas invited colleagues from the University of Southern Denmark’s Centre for Teaching and Learning to observe the analytical practice course and talk with students at UiO’s teacher education program.

The guests, Lars Petersen, Eva Dam-Christensen, and Nadine Malich-Bohlig, left with an positive impression of the course and are exploring the possibilities for intergrating a similar module in SDU teacher education program. ■



Photo: Shane Colvin/UiO

Success in developing teachers' scaffolding repertoire

How can professional development programs be designed for the best chance of success? A new study provides insights.

(L1) teachers in Norway, focusing on building specific scaffolding practices. The findings shed light on how this type of PD can be implemented, as well as the challenges that teachers face in participating in such programs.

There is a growing body of research that shows 'scaffolding' is highly valuable for supporting students' learning, but previous studies from QUINT have shown how difficult it can be for teachers to implement in their everyday practice.

A paper by researchers Camilla Gudmundsdatter Magnusson, Jennifer Maria Luoto and Marte Blikstad-Balas, presented findings from a professional development project focused on teachers' literacy scaffolding capabilities.

The project used video as a professional development tool with a group of Language Arts

What is 'scaffolding'?

The study focused on three dimensions of scaffolding that teachers can use to support students' learning. These are:

- 1) **Feedback:** Providing specific, targeted feedback to students on work they are doing.
- 2) **Modelling:** Demonstrating a desired practice for students to imitate in their own work.
- 3) **Strategy instruction:** Focusing on the use of flexible cognitive actions that can be applied in different learning situations.

Building better scaffolding

This study was part of a video-based professional development program called Video to Support Excellence in Teaching (VIST), conducted from 2018 to 2021 in a Norwegian urban school district.

Participating teachers had a series of their lessons video recorded and analysed by researchers who looked for areas where scaffolding practices could be discussed further with the teachers.

The teachers and VIST-mentors talked with each other about relevant clips in guided conversations, focusing on scaffolding practices.

Teachers then tried to implement those practices further into their next lessons, which were again recorded and discussed with the mentors.

Results

The study showed that teachers were in fact able to engage in teaching that involved significant scaffolding when they participated in the program.

“This was a critical finding for us,” says researcher Camilla Gudmundsdatter Magnusson, “especially because previous studies in Norway showed that these type of practices rarely occur naturally.”

Researchers observed that all teachers who took part in the program were able to change their practices to incorporate high levels of scaffolding techniques. There were differences between individual teachers in terms of the type and frequency of this scaffolding, but the program had a clear effect.

The aspects that proved most challenging for teachers were ‘modelling’ and ‘strategy instruction,’ a finding that has been reflected in other research.

Professional development in a demanding job

The study also illuminated a number of challenges teachers face when participating in this type of professional development program. Having the presence of mind to provide specific feedback in a sometimes hectic environment was one such challenge that teachers sighted.



Example of a classroom video discussion. Photo: Astrid Roe.

“I try to be more conscious about providing feedback that is substantial and concrete,” said one teacher “but it’s difficult to incorporate because it doesn’t come automatically. When it’s a hectic school day it’s not so easy to remember

and it can quickly become ‘yes, nice’—that type of feedback.”

Another teacher said of strategy instruction that “the map and the terrain don’t always match. I might have ideas about things that I want to implement, but when I show the students, they are not responsive to it. They just want facts. So, the challenge is to motivate them to listen to those strategies and use them.”

Perhaps unsurprisingly, all teachers who participated in the program pointed to time pressure and the extra workload as the main challenges, regardless of which school they worked at.

“We know teachers face a lot of hurdles in taking part in a PD program like this, particularly lack of time” says Magnusson. “We designed the program with this in mind in order to try and minimize the practical difficulties, but we see that there is a need for more flexibility in order to accommodate teachers’ individual needs.”

Helping teachers reflect

Teachers who participated in the project were unanimous in their assessment of video as a valuable tool for developing their practices.

Though some expressed feelings of vulnerability in being observed, or concerns about video’s inability to capture the complete picture of what happens in a classroom, they all saw value in the reflection on their own practice that video afforded them.

“Videos are useful as a prompt for a shared discussion of a lesson,” says Magnusson, but they can’t capture all of the dynamics of teaching. This project has demonstrated the benefit of using video in professional development, but future projects should also incorporate other types of evidence, like the students’ experience for example.” ■

Reference

Camilla Gudmundsdatter Magnusson, Jennifer Maria Luoto & Marte Blikstad-Balas, *Developing teachers’ literacy scaffolding practices—successes and challenges in a video-based longitudinal professional development intervention*, in *Teaching and Teacher Education*, Volume 133, 2023.

<https://doi.org/10.1016/j.tate.2023.104274>

Can an inquiry-based approach in the classroom inspire an interest in literature?

Researchers are working closely with teachers to test and evaluate an approach to literature education that they hope will increase students' engagement

The Quality Literature Education (QUALE) project is small-scale intervention study that implements an inquiry-based learning approach in lower-secondary Language Arts classrooms in the Nordic countries.

As part of the study design, nine Language Arts teachers in Sweden, Norway and Denmark were provided learning materials in their own languages to use during their instruction. The materials outline strategies for students to use for engaging with a text.

Teachers share their perspective

At the QUINT conference this past June, researchers from QUALE were joined by two of the teachers that participated in the project, who talked about using the materials in their classrooms, focusing on scaffolding practices.

Teachers then tried to implement those practices further into their next lessons, which were again recorded and discussed with the mentors.

One of the teachers, Liv Marit Hauge, gave several examples from her experience using what she referred to as 'the QUALE method.'

In one example, Hauge described reading the first lines of a poem to her students: 'Who is running in the dark? Three children are running in the dark.'

She then asked her pupils to write down what they pictured in their minds.

"The pupils imagined many different things; the children running in the forest, through fog, hazy, like in a dream. Some pictured the children running through a dark alley with graffiti. So already the pupils had made the text their own, everyone had their own mental images that they wanted to share with the class.

"Even the pupils with ADHD and dyslexia were raising their hands because finally they had something to say."

When asked if she believed this inquiry-based method helped inspire an interest in literature among her students Hauge answered;

"My experience is that the method has been inspiring for the pupils and created a positive common experience in the classroom.

"I think the two key factors are a) just a lowering the baseline, and b) the question that I really like to use; 'what mental images did you get?' Every pupil is able to answer this question, and there's enough time for everyone to invest in the text."

Entrenched norms present challenges

Professor Nikolaj Elf said of the method, "this is not the only way to teach literature, but we are trying to change the balance from a more transmission oriented approach to a more inquiry oriented approach."

The QUALE project is also investigating how the wider national educational systems that teachers



Secondary teacher, Liv Marit Hauge, presents at QUINT conference 2023.



Photo: Colourbox

work within effect their experience of using inquiry-based teaching methods.

While teachers reported positive results from using the method, they pointed out that it did not align with how examinations are designed.

Exams for L1 studies of literature in the Nordic countries take a more analytical approach, for example asking students to identify themes and literary techniques in a text.

Though teachers hold a generally positive attitude towards inquiry-based teaching, they have also expressed anxiety about the disconnect between what the method emphasizes and how students are assessed in their exams.

Despite challenges, enthusiasm is high

Teachers involved in the project are eager to continue working with the 'QUALE method,' and share it with their colleagues. They have even agreed to

participate in future workshops on how to apply inquiry-based teaching to new material that they believe would work in their classrooms.

The QUALE project also presented at the European Educational Research Association (ECER) conference as part of a QUINT symposium on August 23, where 'the audience was very curious about the project, and eager to hear more,' said Elf. ■



Nikolaj Elf is Principle Investigator of the QUALE project along with Vibeke Christensen, both of the University of Southern Denmark.

Participation in conferences and events

– Nordic Educational Research Association (NERA)

The Connected Classrooms and LISA-Nordic projects each held symposia during Nordic Educational Research Association (NERA) conference in Oslo.

NERA is the largest gathering of education researchers in the Nordic region.

QUINT Centre Director Kirsti Klette and colleagues discussed insights from the LISA-Nordic project, while members of the Connected Classrooms Nordic project presented preliminary findings from ongoing research.

The new normal of digitalized classrooms

The relationship between student and technology was a central theme in the Connected Classrooms Nordic (CCN) symposium.

“Technology has infiltrated Nordic students’ everyday schoolwork, and these new, digitally mediated environments have changed a wide range of classroom activities. This has consequences for learning and opportunities for participation,” says Anna Slotte. Slotte is one of two principle investigators for the CCN project, along with Marie Nilsberth.

The presentations at the CCN symposium mostly focused on what happens when student and technology meet in the classroom, and on how to conceptualise this meeting from a research perspective.

“Students and technology are entangled. It’s not a straight process, it’s very dynamic and changing all the time,” says associated QUINT researcher Marie Slot.

Blurred boundaries

QUINT PhD fellow, Jenny Högström, presented her work in progress on the use of digital writing technologies like spell-checking software in secondary schools in Finland.

“Usually the focus is on the student and how they use the technology, but the technology is an integral component in meaning-making and can be considered as an active co-actor in the classroom,” says Högström.

Högström gave examples of how spellcheck software helped shape the final text that was produced by a student, suggesting that the technology is neither neutral nor entirely separate from the student.

Problematizing the conceptual barrier between ‘student’ on the one hand and ‘technology’ on the other was a recurring theme at the symposium.

Slotte’s presentation focused on a study of digital translation tools and multilingualism. The early findings of the study indicate that students use a wide variety of strategies when encountering a language challenge, some of them unnecessarily complex.

Marie Nilsberth presented findings on a study of digital learning platforms that are used in many secondary schools. The study tracked in detail what digital resources students were spending time on during a lesson and shows how students create their own individual learning paths as they navigate on learning platforms, Google and other web-based sites.

The CCN project uses video recordings made with multiple cameras, focusing on both the teachers’ instructions and the students’ activities on computers and other digital resources.

More details about the Connected Classrooms project will be presented in a forthcoming article on this webpage later in the year.



Jenny Högström at NERA conference in Oslo.



Kirsti Klette at NERA conference in Oslo.

Towards a common language for teaching quality?

At a symposium on Thursday QUINT researchers presented findings that draw on the video data gathered during the LISA-Nordic study.

LISA-Nordic examines teaching practices in lower secondary mathematics and language arts by applying the Protocol for Language Art Observation (PLATO) framework to video footage of those classrooms.

In her introductory remarks, Kirsti Klette argued that the use observation frameworks like PLATO can form the basis for building a common language amongst researchers for describing aspects of quality in teaching.

“The framework we’ve used across the LISA-Nordic studies and the conceptual language it provides gives us a starting point for supporting deeper collaborations in the study of teaching quality,” says Klette.

Discourse in language arts classrooms

QUINT Postdoctoral Fellow Camilla Magnusson presented findings of study looking at what characterises language arts classrooms with high-level discourse (as defined by the PLATO manual).

“Classrooms that score high on classroom discourse had open questions, information seeking questions and a mix of the types of questions the teacher asks,” says Magnusson. “These characteristics applied regardless of the national context.”

Cognitive activation in mathematics classrooms

Though PLATO was initially developed for use in language arts classrooms, the LISA-Nordic project has found success applying the framework to mathematics lessons as well.

In their presentation, Jóhann Sigurjónsson and Alexander Selling showed how PLATO was used to study cognitive activation in secondary level mathematics classrooms.

“There were very few classes with high levels of cognitive activation. That was the same across all countries,” says Selling.

“The lessons that did score highly had nothing in common in terms of instructional formats and stated purpose, but we did see that how the teachers implemented the tasks (i.e. reducing versus strengthening the intellectual challenge) was more important than the selection of tasks,” says Sigurjónsson.

Sigurjónsson has recently completed a PhD under the QUINT Centre, focusing on cognitive activation in Nordic and Icelandic mathematics classrooms. Check this website for an upcoming interview with Sigurjónsson about his project.



– Norway’s national political festival “Arendalsuka”

Centre Director Professor Kirsti Klette and Deputy Director Professor Marte Blikstad-Balas presented findings from the Norwegian and Nordic classrooms at the largest political gathering in Norway. The presentation was part of a panel discussion on quality in education.

The panel discussed the quality of teaching and students’ learning based on recent research findings from QUINT. Representatives of both students, politicians, teachers, school owners and researchers, grappled with big questions about what characterizes the Norwegian school today.

Questions included:

How much academic support do students receive in the classroom - and why are there such large differences between classrooms?

Student engagement and student participation - what do we see in Norwegian and Nordic classrooms?

What about noise and disruption in the classroom - is it as bad as the media reports?

Panelists:

- Kirsti Klette, professor and head of QUINT, University of Oslo
- Marte Blikstad-Balas, professor and deputy chair at QUINT, University of Oslo
- Madelen Kloster, deputy chairperson, the Student Organization

- Kristin Holm Jensen, department director for upbringing, culture and education, KS
- Steffen Handal, head, Education Association
- Kristin Clemet, general manager, Civita

[Read online about the discussion of education at Arendalsuka \(Norwegian\)](#)

– American Educational Research Association annual meeting (AERA)

QUINT Director Kirsti Klette discussed the Centre’s extensive work on data sharing across countries at an AERA symposium in Chicago, titled “Data Sharing Across Multiple Languages and Multiple Global Perspectives,” on April 16, 2023.

The AERA annual meeting is the world’s largest gathering of education researchers.

Klette was joined by researchers from the US and Germany, and will be representing the Nordic perspective on data sharing in education research.

Abstract from Symposium

With attention to data sharing as a key component of open science with high potential value for replication research and secondary analysis of work across the globe, this symposium will serve as a launching point for discussions of linguistic diversity in the process of data sharing. Participants representing a diversity of perspectives will consider current research on multilingualism and

its potential application for sharing data across global regions. Topics for discussion will include the role of repositories; legal and ethical concerns; equivalences and complexities; and methods for fostering equity to encourage access, sharing, and use of data across multiple languages.

– European Association for Research on Learning and Instruction (EARLI) 2023 “Education as a Hope in Uncertain Times”

The European Association for Research on Learning and Instruction (EARLI) is an international scientific association for junior and senior researchers in education. It is the largest educational association in Europe.

Researchers from QUINT contributed at five symposia during EARLI, one of which focused specifically on QUINT research. The symposium “Understanding Teaching Quality in the Nordic Context Using a Shared Observation System” was chaired by Kirsti Klette and featured presentations from four QUINT projects.

– The 9th Nordic Conference on Subject Education (NoFa9)

- The theme for NoFa9 was “Education, knowledge and Bildung in a global world.”
- QUINT researchers and PhD candidates presented papers and led symposia over the course of the three-day conference, including:
 - Observing and interpreting quality in social science teaching. Torben Spanget Christensen, University of Southern Denmark.
 - Student’s abilities to engage in dialogue about sustainability. Cæcilie Ketil Hejl & Ane Qvortrup, University of Southern Denmark.
 - The use and function of questions in whole-class conversations with a high degree of student engagement and uptake across different subject areas in Nordic lower secondary schools. Cæcilie Damgaard Ketil Hejl, University of Southern Denmark
 - The role of disciplinary knowledge in student discussions: results from an intervention study in a Danish 8th grade Social Studies classroom. Jonas Henau Teglbjærg, University of Southern Denmark.
 - Analyzing teaching quality. Capturing subject-

generic, subject-specific, format-specific, and learning goal-specific features simultaneously. Michael Tengberg, Karlstad University, Sweden.

- Inquiry-based literature education (QUALE) in a Nordic perspective. Vibeke Christensen, University of Southern Denmark.

– European Conference on Educational Research (ECER) 2023, Glasgow

ECER is the annual conference organised by the European Educational Research Association (EERA)

In 2023 QUINT researchers from presented findings during a symposium dedicated to the Centre’s research.



Nikolaj Elf, Principle Investigator of the QUALE project along with Vibeke Christensen, presents the QUALE project at a QUINT symposium during ECER.

The QUALE project in particular generated interested amongst the attendees at the symposium. “The audience was very curious about the project, and eager to hear more,” said Nikolaj Elf. ■

Teachers in the Nordics struggle with providing support for student learning

While Nordic teachers are good at creating a supportive classroom climate, they struggle with providing instructional strategies that support students' independent skills and learning.

Teachers know that learning is not about memorising facts, it is about providing students with the support and skills they need to independently problem-solve and comprehend different subject matter. But findings from the QUINT Centre have illuminated two areas where teachers are struggling in their instruction of students: the quality of feedback on students' work, and providing strategies for learning. Researchers argue that there should be a focus on improving these two aspects of teaching in teacher-training programs.

Missed opportunities for reading comprehension in Language Arts

A recent QUINT Centre study found that Language Arts teachers often miss opportunities to advance students' comprehension of texts – even in lessons devoted to reading texts and solving complex tasks. The study looked at 237 lessons from 62 lower-secondary classrooms in Norway and Sweden, using video observation.

Researchers Michael Tengberg (Karlstad University), Marte Blikstad-Balas (University of Oslo) and Astrid Roe (University of Oslo) wanted to know what happened in classrooms where teachers were prompting students to work with textual comprehension. They found evidence that explicit strategy instruction and cognitively challenging tasks were rare, even in lessons that focused on deep comprehension of texts.

Reading comprehension is vital for educational advancement and provides a cornerstone for life-long learning, and helping students advance in

reading comprehension requires strategies that students can use to make sense of a text, such as making predictions, identifying central ideas and questioning the text.

But as Professor Michael Tengberg explains, “what we saw in many classrooms were patterns of in-the-moment decision making by teachers, where activities that held opportunities for interpreting and drawing meaning from a text were missed. For example, we saw how the procedural aspects of completing an assignment often took precedence over more intellectually challenging tasks. Teachers would focus on things like comprehension of difficult words, plot summaries or personal associations with the text, rather than helping students construct their own interpretation of the text.”

This focus on assignment procedures and the surface-level aspects of comprehension limits the opportunities for what researchers call ‘higher-order thinking’ by students. As Research Professor Astrid Roe explains, “these types of reading comprehension assignments should equip students with questions and strategies that help them derive meaning and significance from a text. But we saw that a lot of opportunities to do this were missed because teachers became preoccupied with helping students get to the end of the assignment, sometimes even by providing the answers to students.”

Not an isolated problem

The problems observed were not associated with misbehaviour in the classroom or with assignments that were not designed to prompt comprehension. Rather, teachers seemed to lack the appropriate strategies to support students who asked for help without degrading the intellectual challenge of an assignment. For example, students who had a hard time forming an interpretation of a text were often asked to write a summary of the plot instead. Similarly, when students struggled to make sense of a specific aspect of a story they had read, teachers often provided a potential interpretation for them.

The study also found that teachers very seldom questioned the students' original interpretation or asked them to justify their interpretation with evidence from the text.



Photo: Colourbox

“It’s pretty clear that providing this kind of instruction is challenging for teachers, it’s not an isolated problem. We think teacher training and professional development programs need to be addressing this issue. Teachers need support and time to develop a repertoire for teaching relevant strategies, and they need good role models for how this kind of instruction can be done” says Tengberg.

students at once, and how tempting it sometimes is to just solve the task for a student so you can move on to other students and help them. What we wanted to do in this study was to systematically map what happens in lessons that start out with a focus on comprehension of texts, but then end up with low cognitive challenge and no strategy instruction. We found some important patterns that are described in detail in the article. We think this knowledge is

really valuable, because it exemplifies how the in-the-moment decision making – which all teachers have to do – impacts the quality of instruction.”

Patterns across Nordic classrooms

The study is one of many recent and forthcoming studies from the QUINT Centre, which is conducting classroom research in all five Nordic countries using video observation as a primary

data source. Ordinary lessons in Social Science, Mathematics and Language Arts have been video-recorded, each over four consecutive days. The data covers more than 150 different lower-secondary classrooms and 600 lessons across all five Nordic countries, and is being used in a number of studies focusing on different aspects of teaching quality.

The researchers underscore that the study is not trying to critique how teachers teach, or focus on what they should be doing differently. Professor Marte Blikstad-Balas elaborates:

“We know how difficult it can be to teach many



Research Professor Astrid Roe, University of Oslo

“We’re seeing some patters emerge in our analyses of these classrooms, and one of them is that good feedback and so-called ‘scaffolding techniques’ for students are generally lacking. There are differences between countries and subjects but it’s definitely a common theme,” says QUINT Centre Director, Kirsti Klette.

Earlier this year Klette, along with Roar Bakken Stovner, published a study on feedback in Norwegian mathematics classrooms.

“There was on average more concrete feedback given to students in the Mathematics classrooms than in the Language Arts classrooms in our sample. We suspect this has to do with the nature of the two subjects; in Mathematics you have one answer to a problem, and usually a very specific way of reaching that answer, where this is not the case when interpreting a literary text” says Klette.

However, the type of feedback in Mathematics classes tended to be more procedural than conceptual. “There was less focus on the conceptual underpinnings of problems than on the procedure for solving them. There are a number of possible reasons for this, one is that this is how mathematics teachers themselves have learned how to solve such problems. But there seems to be room for training mathematics teachers on how to communicate mathematical concepts when they give feedback to students” says Klette.

Using video to assist in teacher training

One area that QUINT researchers are exploring is the use of video footage from classrooms as a tool for teachers’ professional development:

“In both Sweden and Norway we work systematically with teachers over time. We’re

seeing a lot of good results from studies where teachers are shown footage from classrooms and are able to analyse it together with an instructor. It’s much easier to understand what ‘good instruction’ consists of when you can see real examples of it”, says Roe.

The QUINT Centre has several projects underway that look at the use of classroom video recordings as a tool for assisting in

teachers pre- and in service training. These teachers and teaching students are also being given the opportunity to analyse their own practices.

“Teachers often find it a little daunting at first” says Blikstad-Balas, “seeing yourself on camera and going over things you could have done differently in the classroom can be uncomfortable. But the feedback we’re getting is that teachers find it incredibly valuable in the end, because they get the opportunity to reflect on what they’re doing, which they don’t have time for there in the moment.” ■

References

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Roar Bakken Stovner & Kirsti Klette (2022). “Teacher feedback on procedural skills, conceptual understanding, and mathematical practices: A video study in lower secondary mathematics classrooms” in *Teaching and Teacher Education*, Volume 110.

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Teaching quality in the digitalised classroom

Nordic classrooms today are rich with digital technology, but we still know too little about its significance for the quality of teaching, says QUINT researcher Marie Nilsberth.



Marie Nilsberth, Associate Professor at Karlstad University, is the Principal Investigator for the Connected Classrooms Nordic (CCN) project,

along with Associate Professor Anna Slotte of the University of Helsinki. Nilsberth discusses the CCN project’s work so far and how it contributes to our understanding of technology-rich classrooms.

Technology in classrooms is a complex picture

Research points to both possibilities and problems with the digitalisation of education. In the Connected Classrooms Nordic (CCN) project, we believe that it is important not to see digitalisation as one process but several, which also means that we need to talk about different qualities in relation to different aspects of teaching and learning.

In CCN, we start from the perspective of students and teachers and try to understand what digital technology means in the actual teaching situation, with all the complexity it entails.

We have used video recordings that follow focus students from three different camera angles in different school subjects, and have invited teachers and students to participate in our analytic work in order to better understand what they see as the most significant aspects of teaching quality.

We also do empirical analyses of the video recordings, focusing on social and material aspects of technology when teachers and students interact in connected and digitalised classrooms.

We work with several sub-studies that highlight the students' perspective on teaching. Through this analysis, we have seen how digital technologies are constantly present in students' schoolwork, and how the students often become each other's resources for managing technology in school assignments.

A collaboration between teachers and researchers

Different teachers involve digital technology in their teaching to varying degrees, but we see few examples of explicit instruction on how students can benefit from technology in the best way in relation to different subject content and texts.

As one strand of the project, we have also analysed if – and if so, how – the CCN research activities contributed to the teachers' professional development, and recently published an article based on our work in Swedish schools. In this article we show how the recurring conversations between researchers and teachers contributed to creating physical, semantic and social learning spaces that could support the development

process that the school itself had initiated around digitalisation.

Schools today are under pressure to work with a large variety of development processes, and in order for the collaboration between research and practice to make an impact, it is important that the collaboration is based on, and relates to, the work that is already taking place in the schools.

Implications

When we look at the CCN project's findings so far, they have implications on many levels. First is that it is important to give more nuanced and multi-faceted descriptions of the role of digital technology from the students' perspective. It is not simply a question of whether to use screens or use printed books in schoolwork, as it sometimes can sound like in the public debate. We need to develop our thinking about how different technologies interplay in new media ecologies, and what that means in relation to students' diverse needs.

Second, we want to contribute to the thinking about how researchers and teachers can work together and inform each other, while also recognizing that they are in different professional contexts with different missions and time scales.

Third, it is important to further the discussion about digitalisation in education beyond questions of digital competence as separate from other classroom practices. The digital society is already a reality, and if education is going to prepare young people for active citizenship in an uncertain future, it should teach them how to use and understand digital technology for learning purposes, based on critical thinking and research-based knowledge. ■

References

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Tackling the challenge of sharing qualitative data

Sharing and re-using the types of data often collected in the social science and humanities is difficult. These data are usually contextual – here-and-now specific – and often identify individuals. This raises a number of legal and ethical constraints, and creates barriers to openness in qualitative research.

To begin tackling the technical, ethical and legal challenges associated with data sharing, a group of academics, research administrators and technical staff, led by Professor Kirsti Klette, have established the QualiFAIR hub-node at the University of Oslo in Norway.

QualiFAIR grew out of the need that Klette and her colleagues saw for better routines and infrastructure for sharing personal identifying (but not necessarily sensitive) video data collected through the Teaching and Learning Video Lab at the University of Oslo.

“The Teaching and Learning Video Lab has been the hub for video data at the University



Research in the humanities and social sciences often draws on sensitive or data, like the classroom videos used in research at the QUINT Centre. QUINT Director Kirsti Klette wants to make this data easier to share and reuse.

Research in the humanities and social sciences often draws on qualitative and context-sensitive data. Classroom videos, such as those used in research at the QUINT Centre.

of Oslo for the last five years, so we knew about people who had the same type of data we had, but in other disciplines but this time also include other types of not anonymised data like interviews, field notes etc.



The QualiFAIR Hub's breakfast seminar series consistently attracted engaged audiences.

Cooperation across disciplines

Klette describes bringing together different types of academics to start solving some of the challenges linked to sharing and reusing qualitative data.

“We collected a bunch of researchers from seven different faculties, disciplines like psychology, medicine, social anthropology, political science, music, education, and so on. All these researchers became a part of this hub because of their own experiences with ‘problematic’ data.”

The Hub has held a series meetings and open seminars to work on issues pertaining to data sharing. The group have set themselves a formidable task. In addition to the technical and legal issues that need to be navigated, Klette says that there are cultural also barriers to data sharing.

“In humanities and social science there's there hasn't been a strong culture for sharing data, because people often argue that their data is very unique and special, and that one has to have an intimate understanding of the context it comes from in order to analyse it. To some degree that is true, but also I think we are underestimating how we could use these data much more productively.”
The response to QualiFAIRs work has

nevertheless been overwhelmingly positive. “We were a little bit surprised, because it's a bit of niche subject, but we consistently had 60 or more people at these breakfast seminars. I think we were smart in trying to get a group of not only researchers but also the technical and administrative staff, because this is of course linked to data curation and management, so we need the administrative side on board, not only the researchers.”

The future of data sharing

In the coming months the QualiFAIR hub will produce a number of short reports, focusing on topics such as infrastructure for data sharing, metadata practices, and issues of ethics and privacy, as well as guidelines for best practices for making data FAIR (Findable, Accessible, Interoperable, Reusable).

Work is also underway on a tagging and metadata project for video data. This work, supervised by Klette, aims to develop a system for tagging classroom videos with keywords that can be used across different data and over time, especially videos relevant for professional training and teacher education. The keywords will help guide researchers and teacher educators to videos that have the kind of content they are looking for. ■

Large-scale study looks at teaching practices in Swedish

In a recent study QUINT researchers examined the quality of instruction in Swedish lower secondary schools.

The study and resulting book *Undervisningskvalitet i svenska klassrum* (Teaching Quality in Swedish Classrooms) presents a descriptive analysis of prevalent teaching practices in language arts, mathematics and social science in Sweden.

The book's editor, Michael Tengberg, discusses the insights gained from the research.

What was the purpose of this study?

The initial purpose was to try to link specific features of instruction to students' achievement over time. The study was a replication of the LISA Norway study, and it's designed in the same way, using the same instruments and measures. We studied 38 classrooms in language arts, 35 in mathematics and eight in social science.

It turned out that linking instruction to achievement was rather difficult, but the descriptive analyses of classroom practices are interesting enough in their own right.

If you want to develop the quality of instruction, you first need to know something about its current status, its strengths and weaknesses. And the truth is we have limited knowledge about the everyday practices of teaching in Nordic classrooms.

In Sweden, as far as we know, there have been very few, if any, large-scale studies based on observations of ordinary teaching practices in the last couple of decades. We wanted to demonstrate that it is possible to do this, that it is possible to use a different type of research methodology in order to gain a more systematic understanding of the patterns of teaching and learning in Swedish classrooms.

Did you see any differences between the Norwegian and Swedish school systems?

The general impression at a system level is that Norway and Sweden are very similar in terms of predominant teaching practices. In specific areas,



however, you can spot minor differences.

In literature instruction, for example, we know that Norwegian students often read shorter texts while we found that Swedish students would more often read novels in whole-class readings. Norwegian teachers also seem to focus more on literary style and often treat literature as a prelude to their students' future writing assignments. Swedish teachers on the other hand would focus their analysis on the themes of stories or on story comprehension more generally.

However, the big picture is still the extent to which teachers in both Norway and Sweden use scaffolding practices, or the extent to which they challenge their students intellectually etc. And this is quite similar in the two countries.

What did you find out the practices taking place in classrooms?

One rather striking pattern from our analysis is that teachers are generally very good at organizing the lesson. They instruct their students on what to do, what kind of tasks they're supposed to solve, how much time they get to do it, who to work with and so on. They provide clear directives to organize lessons, and they do this very well.

But when it comes to the pedagogical scaffolding

– for example providing students with content-related strategies to solve a particular task effectively, or connecting new lesson content to previous lessons or students' prior knowledge – that type of instruction is much less structured, and less explicit. So what we observe is a rather distinct contrast between those two aspects of pedagogical leadership in the classroom.

Another interesting finding of the study was that there were quite large differences in teaching quality between classrooms, even between neighbouring classrooms at the same school. Since the study included multiple classrooms from all schools in the sample, we were able to examine both between-schools and between-classrooms differences on all variables.

It turned out that the differences in terms of quality of teaching could vary significantly between two classrooms at the same school, even when the teachers had been doing the lesson planning together.

Any ideas on what to attribute that variation to?

The short answer is no. We don't really have the data to explain these differences. In fact, large classroom variation was also found in terms of average achievements and in students' perception of their teachers' teaching.

We did examine whether variation of teachers' practice related to age, education, or length of teaching experience. It turned out that in language arts, older teachers scored significantly higher on PLATO. In mathematics, the results were a bit difficult to interpret. Teachers in their 40s (aged 40-49) scored significantly higher than both younger and older colleagues in mathematics. Length of education had some effect in language arts whereas length of experience had no effect in either language arts or mathematics.

Was there anything that stood out about classrooms in Sweden?

One thing that perhaps stood out a bit was the results from the student survey, where students reported that they thought their teachers were good at explaining content which they found difficult to understand. Teachers were good at helping students understand difficult content.

This is not surprising from a research perspective

– actually it is something that student surveys have reported about Swedish teachers for several decades – but if you listen to the public debate about teachers' competence, this aspect is very rarely mentioned. In this case, Sweden also stands out a bit in comparison with the other Nordic countries; Swedish students were actually more likely to report this than students in the other Nordic countries were.

Another thing that stood out was that the Swedish students seem to feel that they're not allowed to contribute to deciding on methods and content during lessons. I think a common assumption about teaching in the Nordic countries is that students have a lot of say in how things are done in the classroom, but apparently the students don't see it that way themselves. ■



***Undervisningskvalitet i svenska klassrum* is published by Studentlitteratur and is available for purchase at studentlitteratur.se.**



Higher order thinking in social science classrooms

Social science education in lower secondary schools is an integral part of the Danish and Norwegian national policies for fostering democratically engaged citizens, but the actual work involved in this task is complex and not well enough understood.

Social science is a subject that emphasises knowledge, skills and values that contribute to equipping students to take an active part in society.

Researchers Nora E. H. Mathé and Anders Stig Christensen have been studying lower secondary social science classrooms in Norway and Denmark to examine what kinds of ‘higher order thinking’ is encouraged. Their recent paper is published in *Sammenlignende Fagdidaktik*.

What is ‘higher order thinking?’

Higher order thinking is the cognitive process of applying knowledge in the analysis and evaluation of complex problems, as opposed to simply recalling knowledge and applying it in rote or routine tasks. It is considered an important element in learning.

For this study, the researchers selected cases where cognitively demanding tasks were carried out in

the classroom in order to examine the potential relationships between knowledge and cognitive processes.

They argue that there is a meaningful difference between ‘knowledge’ and ‘process’ that is often unaccounted for in research on social science teaching.

A new model for understanding cognition and knowledge

“For this study we developed a two-dimensional model to capture both the knowledge that students are utilizing and the cognitive process they are engaging in,” says Mathé.

Previous models that have been used to study social science education have not made this distinction, but Christensen and Mathé argue that it is helpful when analysing social science teaching.

“We have seen that even if the task presented is on a high level — for example, open-ended and giving the students room for evaluating an issue — the teacher may not follow this up by challenging the ideas of the students or requiring them to justify their stances or arguments,” says Christensen.

Simple tasks can be performed on complex knowledge, and cognitively demanding tasks can be performed without complex knowledge.

It seems to be challenging to combine a focus on complex knowledge and intellectually challenging thinking processes.

Christensen & Mathé found examples of cognitively demanding tasks related to a variety of topics. Examples include sociological knowledge, economic issues, politics on the local, national and European levels, as well as global security policy, the welfare state and demographic development.

Difficult trade-offs for social science teaching

The findings suggest that a trade-off often occurs between students forming and defending an opinion – ‘taking a stand’ – and engaging with higher order knowledge.



“Obviously we want students to be capable of forming stand points on the basis on a sound knowledge and understanding of the subjects they are dealing with” says Mathé “but it’s not easy to strike the right balance when you try to teach this.”

The role of teacher education

Christensen and Mathé’s paper concludes with an argument that can be seen in a number of other QUINT studies;

“For teaching and teacher education, an enhanced and more targeted focus on teaching strategies that foster higher order thinking is

necessary, as well as an understanding of when to engage in lower order thinking and rote and recall activities in social science.”

The paper, available here, is part of the Quality in Social Science Teaching (QUISST) project, which examines the quality of social science teaching in the Nordic countries. The study draws on video data gathered as part of the LISA-Nordic project. ■

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<https://tidsskrift.dk/sammenlignendefagdidaktik>

Activating students' cognition in mathematics classrooms

In the Nordic countries, mathematics classrooms are often characterised by individual work and procedural instruction, but research shows that this is not the most effective way to teach the subject.

Jóhann Örn Sigurjónsson's PhD study looked at cognitive activation in mathematics classrooms in the Nordic countries, with a particular focus on Iceland.

We asked Sigurjónsson what his research can tell us about how mathematics is taught, and where there are opportunities for improvement.

Can you say a bit about the background for your study?

Following the educational discourse in my home country of Iceland, it is clear that mathematics teaching has been under some criticism in the past years.

A lot of the discussion is related to these international measures like PISA, where Iceland's average has been the lowest among the Nordic countries in mathematics.

But PISA is just one measure of student achievement, there are other studies that look at the instruction itself, 'what does mathematics teaching in Iceland actually look like?' and these studies show it's not too different from what we see in the other Nordic countries. It's mostly individual work lessons, where students have a plan with a number of exercises to work on.

So part of what I set out to do with my study was provide some examples of more dynamic mathematics instruction that balances the procedural focus with a focus on conceptual understanding and justification. I wanted to give concrete examples of 'this type of instruction does exist in the Nordic countries, and this is what it looks like.'

You're looking specifically at 'cognitive activation' in mathematics classrooms. Can you explain that concept?

Cognitive activation is a dimension of teaching quality that has to do with the extent to which the teacher engages with the educational goal of student understanding. So for example, how well the teacher creates opportunities for students to engage with the concepts being taught in mathematics lessons, through their selection and implementation of challenging tasks.

How did you go about studying this?

I drew on the LISA-Nordic data, and in order to study cognitive activation I looked at three things:

First of all I looked at the teaching itself, which could be observed through the video-recorded lessons.

Secondly, I identified the tasks in the lessons that the teacher set for the students.

And third I looked at the student surveys – what the students said on a survey about the teaching.

Your thesis consists of three papers, can you give an overview of those?

In the first paper I looked at 10 lower secondary mathematics classrooms in Iceland, three to four lessons from each.

The main finding was that in the majority of the lessons that we observed there was limited evidence of 'intellectual challenge', which is one of the metrics I've used to study cognitive activation.

So across one school week of mathematics teaching, half of the classrooms we observed scored constantly at the 1 or 2 level (out of a possible 4) on the PLATO* measure for intellectual challenge. Now, a question that arises here is; how often would you expect to see high levels of intellectual challenge in a lower secondary mathematics classroom?

There was one teacher who consistently scored at a 3 or 4 level, but that's not something we would expect to see every teacher do. But I do think it's reasonable to expect that at least one lesson segment during a week's worth of lessons scores higher than a 2. As we did not see that in half of the classrooms, there seem to be clear opportunities for improvement.

In the second paper you looked at the students' perspective. What did you find?

Yes, for the second paper I connected the observation of the teaching to the student surveys.

An interesting finding from this paper is that the instances of intellectual challenge and classroom discourse have a weak connection to what the students' report in their surveys about the lesson. The correlation is virtually zero.



It's kind of a paradox, the students don't perceive the quality of the lesson the way that the researchers do.

Which is a problem, because the first thought is 'oh, one of these measures must be wrong. Either our measurement tools are wrong or the students are wrong.'

A more probable answer is; maybe it's some combination of the two.

As researchers, we observe just one week – three to four lessons – but the students are there for the whole school year, so they know much more about what goes on in these classrooms.

On the other hand, you can also ask; to what extent are the students – who are 13 or 14 years old – capable of grasping and reporting on the aspects of teaching that we're trying to measure?

I'll actually be talking more about this in an Observation System Seminar in April.

What did you find out in the third paper?

In the third paper, I selected some specific lessons that had high PLATO scores in the 'intellectual challenge' element. This was across Iceland, Denmark, Sweden and Norway. I wanted look closely at what actually goes on in those lessons.

One of my findings from this paper is that there's no recipe for a cognitively activating lesson, but even though there's no recipe, there are some common factors.

The lessons all tended to focus on whole class discussions and group work. None of them were dominated by individual work, though individual

work was also present in some of them.

Looking at the interactions that happened in these lessons we see that the teachers seemed to shift frequently between types of interactions. So they provide feedback and then they prompt the students for an explanation, for example.

The teachers also focus on connection-making in mathematics; both connecting concepts to a real world context and also making connections within the world of mathematics, so to speak.

What has it been like to be part of the QUINT Centre?

I think it has helped a lot to be part of QUINT. In particular, being part of a bigger project (LISA-Nordic) means that the data collection is a collaboration between many people, and in this case collaboration between eight universities and five countries.

Just the data from mathematics in Iceland is 34 lessons, more than 20 hours of video, so it was very helpful to already have a baseline analysis of the lessons from the other countries in the LISA-Nordic study in the form of the PLATO scores. It let me know which lessons to focus on for a closer analysis.

Also, having the opportunity to work with the LISA-Nordic data and the PLATO training – it give me a lot of insights that I probably would otherwise not have had. ■

Reference:

Sigurjónsson, J.Ö. (2023). Quality in Icelandic mathematics teaching: Cognitive activation in mathematics lessons in a Nordic context [Doktorsritgerð]. Háskóli Íslands.

<https://hdl.handle.net/20.500.11815/3843>.

Select Publications 2022-2023

Undervisningskvalitet i svenska klassrum (2022)

Book edited by Michael Tengberg, with chapters by Anna Lindholm, Marie Nilsberth, Jorryt van Bommel, Michael Walkert, Martin Jakobsson, Anna Nissen & Gustaf Skar.

Beskrivning

Kvaliteten på lärares undervisning är en avgörande faktor för vad och hur mycket elever lär sig i skolan. Men vad kännetecknar egentligen undervisningen i svenska klassrum? Och i vilken mån går det att koppla särskilda undervisningssätt och strategier till elevernas kunskapsutveckling? I den här boken utforskas grundligt begrepp som god och kvalitativ undervisning. Boken bygger på en omfattande forskningsstudie som genomförts i drygt 80 högstadielklassrum på olika skolor och i olika kommuner. Genom videoobservationer, enkäter och kunskapstester har forskarna bakom studien försökt klarlägga både hur undervisningen bedrivs och hur undervisningskvalitet hänger ihop med elevers lärande. Undervisningskvalitet i svenska klassrum vänder sig i första hand till lärarstudenter, verksamma lärare, lärarutbildare och forskare på utbildningsområdet, men också till en bredare allmänhet som intresserar sig för frågor om kvalitet i skolans undervisning.

Quality of the stated purpose and the use of feedback in Icelandic lower-secondary classrooms (2022)

Journal article by Birna Svanbjörnsdóttir, Solveig Zophoníasdóttir & Berglind Gísladóttir in Teaching and Teacher Education.

Abstract

The aim of the study was to provide insight into the quality of teaching in Icelandic lower-secondary schools, specifically how teachers use feedback in their teaching and whether the purpose of lessons is stated and clear. The data comprise 75 language arts and mathematics lessons that were video recorded in 10 schools. The data were analysed according to the PLATO protocol, a standardized observation instrument for quality teaching, and representative examples of clear purpose and constructive feedback from the data are presented for context. The study's findings indicate limited evidence of clear purpose and quality feedback to students.

Bringing the conceptualization and measurement of teaching into alignment (2022)

Journal article by Mark White, Jennifer Luto, Kirsti Klette & Marte Blikstad-Balas in Studies in Educational Evaluation.

Abstract

There is a growing use of standardized observation systems to directly measure teaching quality in classrooms. These systems are based on conceptual understandings of teaching that lead to carefully operationalized rubrics that decompose teaching quality into a number of distinct dimensions. In this paper, we argue that measurement and analysis choices used by observation systems may not fully align with the conceptual understandings of teaching upon which observation systems are based. We discuss three key assumptions that undergird many views of teaching quality and highlight how common analytical approaches violate these assumptions, proposing alternative analytical approaches that would better conform to the conceptual understandings of teaching quality. We end with a discussion of the importance of carefully aligning conceptual understandings with measurement approaches.

Literature review of video studies in educational research (2022)

Journal article by Leif Lahn & Kirsti Klette in International Journal of Research & Method in Education.

Abstract

The growing interest in video research and new technologies for recording human interaction has stirred debates about intrusiveness and 'reactivity' understood as researcher-derived changes in subjects. In addition to a plethora of concepts referring to such effects in extant literature, different ontological and epistemological positions provide contrasting frameworks for interpreting and deciding on methodological guidelines. In this article we discuss these elements, that we have called 'meta-methodological', from the standpoints of experimental research, social-constructivism and scientific realism. We combine conceptual analysis and a literature review of video-studies in teaching in order to identify both possible traces of contesting beliefs and to provide a glance at different aspects of 'reactivity' that needs to be systematized in the ongoing debates. Whereas the methodological literature underline the importance of such effects, these are rarely reported in the reviewed video studies. Moreover, reactivity is seen as a minor problem in the latter, and we found few instances that validated the effects on the field and on the empirical conclusions. Our article ask for more transparency in field researchers' judgment about reactivity and mitigating measures.

Missed opportunities of text-based instruction (2022)

Research paper by Michael Tengberg, Marte Blikstad-Balas & Astrid Roe in Teaching and Teacher Education.

Abstract

Despite robust evidence of effectiveness, many teachers struggle to implement research-based recommendations of reading instruction into everyday practice. This study examined naturally occurring text-based instruction in 237 lower secondary language arts lessons in 62 different classrooms from Norway and Sweden. Using both quantitative and qualitative approaches, we found evidence that explicit strategy instruction and cognitively challenging tasks were rare even in lessons that did focus on deep comprehension of text. We also identified some of the distinct challenges (or missed opportunities) that characterize comprehension-oriented instruction. These findings provide critical insight into relevant areas of future professional development for teachers.

Feedback in Mathematics Classrooms (2022)

Journal article in Teaching and Teacher Education, February 2022. Roar Bakken Stovner, Kirsti Klette.

Abstract

Feedback is a prevalent teaching practice in mathematics classrooms, but few studies have documented how mathematics teachers enact feedback in classrooms. We investigated how 47 teachers provided feedback in 172 mathematics lessons in Norwegian lower secondary schools. We analyzed the quality of feedback, the quantity of feedback, and whether the feedback addressed students' procedural skills, conceptual understanding, or engagement in mathematical practices. Teachers spent large amounts of time providing concrete and specific feedback, most of it addressing procedural skills while conceptual feedback was less common. The study highlights details of feedback relevant for both pre- and inservice mathematics teacher training.

Developing teachers' literacy scaffolding practices—successes and challenges in a video-based longitudinal professional development intervention (2023)

Journal article by Camilla Gudmundsdatter Magnusson, Jennifer Maria Luto & Marte Blikstad-Balas

Abstract

This study reports on a longitudinal video-based literacy coaching professional development intervention involving 38 teachers at nine Norwegian schools, targeting the use of three scaffolding practices that teachers struggle to implement in daily practices: modeling, feedback, and strategy instruction. By measuring the quality of teachers' scaffolding instruction through an observation protocol, we document how teachers were able to engage in high-level scaffolding practices, exhibiting development through the support of video-based coaching. However, challenges to implementation were raised, such as putting scaffolding theory into practice and receiving balanced support. The study indicates that PDs require flexibility to accommodate teachers' individual needs.

Higher order thinking in social science education – an empirical study with classroom observations from Denmark and Norway (2023)

Journal article by Anders Stig Christensen & Nora E. H. Mathé

Abstract

The aim of this article is to discuss what kinds of higher order thinking are encouraged in social science lessons in lower secondary school. The study used a research design employed by Klette et al. (2017) with video-taped lessons from social science education in Denmark and Norway. We identified teaching segments that included activities promoting higher order thinking and analysed them to produce an overview of the characteristics of cognitively demanding teaching. We found several examples of teaching that encouraged students' higher order thinking, either by facilitating student's interaction with complex knowledge or engaging them in demanding cognitive processes. By analysing selected examples, we found that the relationship between knowledge and processes was not linear: it seems possible to have a cognitively demanding task with little knowledge, and simple tasks performed on complex knowledge. We argue for using a two-dimensional model that captures cognitive processes as well as different types of knowledge required.

Cognitive Activation as an Aspect of Literature Instruction (2023)

Journal Article by Anna Nissen in Educational Studies in Language and Literature.

Abstract

In this study, the concept cognitive activation is used to assess and discuss teaching quality in Swedish and Norwegian lower secondary literature instruction. Drawing on video data from 54 classrooms, it investigates the cognitive activation potential (CAP) of tasks and reading activities. It also investigates how and to what extent teachers, through their instructional support, increase or decrease the CAP of these tasks. The objective CAP of 280 tasks was estimated, ranging from low to high on a four-point scale. As tasks are not always carried out in the way teachers initially intended, the realised CAP of all the tasks was also estimated. In one third of all the sampled tasks, literary texts were read. During more active work with texts, the objective CAP was mostly of a medium-high level. However, students were seldom required to analyse, compare, and interpret literary texts. The realised CAP often remained unchanged by teachers' instructional support. This suggests that there is room for teachers to improve and increase their interaction with students in ways that may enhance the latter's literary competence. Implications for students' learning and development of literary understanding are discussed.

Exploratory conversations between teachers and researchers about

connected classroom practices (2023) Journal article by Marie Nilsberth, Christina Olin-Scheller, Eva Tarander & Annelie K Johansson in *Forskning om undervisning och lärande*.

Abstract

This article focuses on the conversations between teachers and researchers about challenges connected to the digitalisation of teaching at a school that invested in introducing digital technology in all subjects. The aim is to shed light on transformation processes in various school subjects in digitalised and connected classrooms by analysing how learning about these issues takes shape in the conversations between the participants. Eight group discussions were conducted over four school years and have been analysed with conversation analysis to make visible the physical, semantic and social dimensions of the learning spaces that are formed. The analysis makes visible how the conversation arrangement supports learning processes both during and between the conversations, and that they can bridge disruptions in continuity that can be related to organizational changes at the school. Furthermore, the analysis shows that the group composition with teachers from different subjects did not favour the deepening of subject didactic aspects of the digitalisation of teaching. Instead more general pedagogical aspects became developed.

Quality in Icelandic mathematics teaching (2023)

PhD thesis by Jóhann Örn Sigurjónsson. Full title Quality in Icelandic mathematics teaching: Cognitive activation in mathematics lessons in a Nordic context. Publish in *Opin vísindi*.

Abstract

The doctoral research project underpinning this dissertation was aimed at developing a deeper understanding of cognitive activation in mathematics teaching in Iceland and in a Nordic context through classroom video observations and student perceptions. Ten mathematics teachers in Iceland participated. Three to four consecutive lessons in grade 8 were video-recorded. In total, 34 lessons in Iceland were analysed using the observation system PLATO. Mathematical tasks were identified and analysed using the Task Analysis Guide. The students, aged 13–14 ($N = 217$), responded to the Tripod student perception survey and their responses were compared to the PLATO observation scores. Specific lessons where cognitive activation scored high were selected for further analysis, two from each country: Iceland, Denmark, Norway, and Sweden. These eight lessons were analysed qualitatively in terms of teacher-student interactions and instructional format. The findings show limited evidence of cognitive activation in a majority of mathematics lessons in Iceland. Lesson time was primarily used for students' individual work and the way teachers implemented tasks commonly resulted in low observation scores. The task analysis showed that most tasks were aimed at procedural fluency with limited connections to understanding mathematical concepts. The connection between the observation scores and student perceptions as indicators of cognitive activation was weak. Variance in student ratings was generally greater within classrooms than between them. The qualitative analysis of the outstanding Nordic mathematics lessons showed a variety of topics and instructional formats. Group-work and whole-class discussions were dominant, but all lessons included brief intervals of whole-class direct instruction. Many of these lessons had short sprints of "traditional" individual work. The teaching in these lessons was exemplified by an emphasis on student understanding through mathematical connection-making, frequent shifts between types of interactions, use of explicit student roles in the classroom to facilitate student engagement, and formative feedback.

Teachers' Perceptions of Their Schools' Democratic Character (2023)

Journal article by Eivind Larsen & Nora Elise Hesby Mathé in Scandinavian Journal of Educational Research.

Abstract

This study investigates teachers' perceptions of school democracy within a low-stakes accountability context. While previous studies have focused on teachers' perceptions of school climate and citizenship norms, we know less about factors associated with their perceptions of democracy in their schools. Through a multiple regression analysis of survey data, we investigated possible predictors of teachers' perceptions regarding their schools' democratic character within Norway's low-stakes accountability system. In this study, theories on professionalism and educational and democratic leadership serve as an overarching framework. Results suggest a positive relationship between teachers' experience of trust, support, and an inclusive relationship with their principal/leadership team and perceptions of democratic features in their school. Moreover, the higher the importance teachers place on teaching skills and values related to democracy, the more democratic they perceive their schools to be. Finally, findings indicate that education for democracy is embedded in collaboration structures at the school level.

Comparative education and comparative classroom observation systems (2023)

Journal article by Jennifer Maria Luoto in Comparative Education.

Abstract

Comparative education scholars are often sceptical of teaching effectiveness research that compares 'teaching quality' using systematic classroom observation systems across nations. This article investigates how three international observation systems designed for comparative use, and studies that apply them, attend to three concerns intrinsic to the field of academic comparative education—conceptualisations of teaching quality, attention to context, and implications of results. The analysis indicates similar conceptualisations of teaching quality yet divergent assumptions about the teaching-learning relationship across systems, and little focus on the comparability-validity trade-offs. The studies had limited attention to levels of context (classroom, school, and national), and context is seldom used to interpret the results of teaching quality. The implications of all of the studies for research, policy, and practice, especially for policy, are vague. The article concludes with a discussion of how classroom observation research can build on both teaching effectiveness and comparative education perspectives.

What's in a score? Problematizing interpretations of observation scores (2023)

Journal article by Mark White & Kirsti Klette in Studies in Educational Evaluation.

Abstract

Several recent, large-scale observations of naturally occurring classroom instruction have found consistent patterns in how teaching quality systematically varies across domains of instruction, patterns not found in student survey measures. Teaching quality is highest when examining aspects of classroom management; moderately high when examining aspects of student support; and low when focusing on the quality of the instructional support provided to students. This paper problematizes this interpretation, arguing that observed data patterns could result from dilemmas inherent in measuring teaching quality through observation. In problematizing these conclusions, we highlight the complexity of trying to measure instruction at scale, arguing for the need for caution and consideration of the complexity of measurement when interpreting scores from observation systems.

Connecting student perceptions and classroom observations as measures of cognitive activation (2023)

Journal article by Jóhann Örn Sigurjónsson, Anna Kristín Sigurðardóttir, Berglind Gísladóttir & Jorryt van Bommel in *Nordic Studies in Education*.

Abstract

Which dimensions of instruction can be reliably captured using student perception surveys, is subject for debate. The aim of this study is to empirically explore the validity and limitations of two different measures of cognitive activation: systematic classroom observations and student perceptions. 34 video-recorded lessons from ten lower secondary mathematics teachers in Iceland were analysed using an observation system and compared to 217 responses to the Tripod student perception survey. The results indicate that for the cognitive activation dimension, the connection between observer ratings and student perceptions is weak, raising questions about the validity of different measures of instructional quality.



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