



# NOFA7 ABSTRACTS

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# **An Affective Drama Educational Invitation to Meet Trees: Participatory Encounters with more than Human World**

**Aaltonen Heli**

The task of this presentation is to locate two drama educational projects with affective turn in drama educational discourse.

Environmental education has a goal to change human behaviour into more sustainable direction. The focus on purpose, effect or utility is also dominant in drama educational discourse. However, affective turn seeks to reanimate the drama educational practice through the terrain of sensation. Attention to affect asks to focus on “emotional, often automatic, embodied responses that occur in relation to something else – be it object of observation, recall of a memory or practical activity” (Thompson 2011, 119). This paper presents two drama educational projects, where relation with trees was on the focus.

I will discuss in this paper about participatory encounters with more-than-human-world, and how do these encounters affect the human participants.

The first case study presents a forest walking Voice of the Forest, performed in Hovedøya, Oslo 2014. During the forest-walking, eight-year-old children listened at tree stories, made sensual encounters with trees, and learnt to identify different types of trees. The second case study presents project accomplished in 2016 with 37 first year Bachelor students in drama and theatre studies. The course, Applied Theatre and Climate Change, addressed scientific knowledge about climate change combined with drama educational approaches, where affective, creative encounters with trees and students were at focus. The overall aim of both projects was to strengthen interconnection between humans and trees, and awake affective connections between human and non-human life.

In both cases, participants’ capacity to act, engage, and connect was vital and alive. Participatory encounters with more than human world awoke aliveness, vitality, joy, curiosity and happiness. Most importantly, the interest to learn more about forests was awoken among the participants.

## Holistic understanding of peace in Early Childhood Education

Ahlskog-Björkman Eva, Mårten Björkgren

The 2030 Agenda for Sustainable Development (United Nations) promote a culture of peace and non-violence as part of sustainable development within education. However, the Finnish pre-school policy documents of today show that peace education is not as visible as in earlier curriculums. In this

pilot study, we use a cross-subject didactic approach between visual arts and religious education. The theoretical framework refers to pedagogical perspectives on peace education, global citizenship (Davis & Elliott, 2014; Hägglund & Pramling Samuelsson, 2009; Alfonso, 2014) and different subject didactic perspectives (Lindström, 2008; Johansson, 2009; Niemi, 2010). The aim of the study is to discuss, from a holistic point of view, six-year-old children's understanding of peace. According to the aim, the research question is formulated: What characterizes preschool children's understanding of peace in their visual expressions and conversations about the subject? Our empirical material consists of dialogues and drawings where they express their thoughts on a peaceful life. The qualitative analysis showed that children understand peace as a condition, as interaction, as relations, and as negotiations.

Conversations around the children's drawings and the visual expressions support the interpretation. The findings emphasize the importance of children's dialogue on peace and the importance of verbalizing human shortcomings. Our conclusion is that through pedagogical and cross-subject didactic perspectives time, space and language are essential aspects of learning processes in early childhood education.

## Factors influencing Finnish teachers' linguistically responsive practices

Alisaari Jenni, Heikkola Leena Maria and Cummins Nancy

In today's linguistically diverse classrooms, teachers need to use effective strategies to provide students with knowledge without allowing language to be a barrier. Teachers need to be aware of the dimensions of language (Cummins, 2000), and they have to support students' understanding of spoken content with, for example, visual cues and graphic organizers (Lucas & Villegas, 2013). Moreover, linguistically responsive teaching takes students' whole linguistic repertoire into account (Lucas & Villegas, 2013).

This study examines the relationship between Finnish teachers' (N=820) awareness of language dimensions, and the practices they used with multilingual learners. It also investigates how various background factors were linked to these practices, and teachers' understanding of language acquisition. Results indicate that teachers with knowledge about the dimensions of language reported using more effective practices while teaching multilingual learners. The groups differed significantly in 7 of the 18 statements investigated: the group which was aware of language dimensions, used practices that support multilingual learners' school success more often. Newer teachers had stronger theoretical understandings of language acquisition than those with more experience. Experience in teaching students of migrant background was also related to teachers' higher understanding of language

acquisition. However, teachers' years of experience per se was not linked to reported practices. There were only a few correlations between items regarding teachers'

understanding of language acquisition and their reported practices with multilingual students. This might be explained by the findings of previous research indicating that teachers' beliefs or knowledge are not always in line with their practices (Borg, 2006).

Findings from this study support the need for increased training of teachers with regard to both second language acquisition, and an awareness of the dimensions of language as they relate to instruction. In addition, there is a need to help teachers move from awareness to the implementation of specific strategies and practices. This would enable teachers to apply linguistically responsive pedagogy in their classrooms more widely.

## **Subject-specific language and pupils' use of concepts in history as curriculum subject** Ämnesspråk och begreppsanvändning i historieämnet

**Ammert Niklas**

In recent decades, the importance of language in various subjects has gained more attention in research, however mainly in linguistic research. When it comes to studying the language as a tool for learning and communicating history, the research field is still fairly unexplored.

For history as a scientific discipline and for history as an educational subject, the language is central in several aspects, as an object and as a tool. The language is what you actually study in the form of source material and the tools you use to decode, interpret and describe.

The subject-specific language consists largely of concepts for the specific methodological aspects, concepts of specific epochs and different theoretical concepts for interpretation and analysis. In addition, there are a number of terms that are typical for the historical time you study. In order to analyze and understand the historical context, you must also master these time-related concepts.

In this article I investigate how a group of 9-grade pupils use subject-specific language in the form of the subject-specific concepts of change and continuity when describing historical development in the national test in history.

The study shows that the pupils use the concepts, but with different functions. The concepts structure to a certain extent the student's answers, but they rarely have an explanatory or contextualizing function. Some pupils present their answers to show that they use the prescribed concepts. They do not use the concept in order to describe or explain the historical context.

## **Social perspective taking and moral reflection [judgment] in lower secondary school students' responses to historical moral dilemmas: observations from a Swedish-Finnish survey study**

**Ammert Niklas, Löffström Jan, Edling Silvia and Sharp Heather**

One of the general learning objectives in school education is often development of students' abilities of empathy, as part of their ability to deal with moral questions in ethically commendable ways. In history teaching one of the main learning objectives is development of students' historical empathy, i.e. their ability of social perspective taking that involves putting oneself in the position of historical actors and understanding the cultural, social and psychological factors that probably were present in the historical situation. Our paper discusses the relation between development of historical empathy and development of moral sensitivity as learning objectives, and it presents the matrix that we have used in the

preliminary analysis of the complexity of students' responses in a questionnaire which involved historical dilemmas. The question discussed in the paper is part of a wider research project on intersections of historical and moral consciousness.

The empirical material discussed in the paper derives from a questionnaire study of c. 200 Swedish and Finnish lower secondary school students (9th grade). Students were asked to put themselves in the situation of particular historical actors and to answer questions that involved dealing with moral dilemmas. The students were asked to read an excerpt from

Christopher Browning's book *Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland* (orig. 1992) that describes the actions of men in the Police Battalion in the Holocaust during World War II. After reading the text the students were asked to answer open questions relating to the events in the excerpt. The material was analysed using a theory-

driven qualitative analysis and the students' answers were interpreted as expressions of their ability of social perspective taking and moral sensitivity. The analytic frame was built on theories of levels of historical empathy (Lee & Ashby 2001), social perspective taking (Hartmann & Hasselhorn 2008), and moral sensitivity (Rest 1986). The paper analyses the patterns that are visible in the students' responses, the focus being on potential connections between levels of

## **Code as a technical solution: how can teaching support primary school students in developing an ability to evaluate the functionality of a program?**

**Anderhag Per, Fahrman Birgit, Weiland Maria, Lundholm-Bergström Annika, Björn, Sophie Odén Madeleine, Wållberg Tove**

In this paper, we report tentative findings from a project exploring how teaching in programming can be designed within compulsory school technology education. The overarching aim was to examine how teaching can be planned to promote and visualize students' knowledge in programming within the Swedish technology education curriculum. The project was guided by previous research on student ability to evaluate the fitness of purpose of technical solutions, programming and code was thus approached as form of technical solution. A design study was used in which researchers and teachers jointly developed classroom interventions in year 1 (7 year old) and year 4 (10 year old). The design was implemented, analysed and revised in an iterative process. Student work sheets (for year 1 and 4) and audio- and video-recorded classroom talk and actions was analysed using Organizing purposes and Practical Epistemological Analyses (PEA). Organizing purposes and PEA are analytical tools grounded in a pragmatic framework and is used analysing classroom interactions in order to extract how and what student learn.

In the first intervention, we examined consequences of teaching for students' perceptions of what characterize a functional language for controlling a simple robot (Blue Bot). This first

intervention showed that the students primarily perceived a code's functionality as a question of readability, rather than how well it fit the purpose of controlling the object used. The findings suggest that tasks need to have a certain degree of complexity in order for the students to perceive the relationship between construction and function of the code as a meaningful aspect. In the second intervention, we therefore used the Blue Bot-app where the students could create code that is more advanced by using functions. A lesson was designed to encourage the students to use the newly introduced concept of loop in order to make the digital Blue Bot to perform a specific task. The following research questions were addressed in this intervention: (1) How do students use and understand the loop function, and (2) How is fitness of purpose of the code addressed when students use the function of loop? The preliminary findings suggest that loop was an unproblematic concept for the students. The study also showed that function (what the program is supposed to achieve) and construction (how the segments of the code interact) was intertwined in the student discussions when they were programming. Possible consequences of the findings for teaching are discussed.

## **Embodied explorations - change for sustainability, scope for subjectivity and teaching in a 'post-truth' era.**

**Andersson Pernilla**

Sustainability issues are often characterised by complexity and uncertainty which implies severe challenges when relying on science as a source for reliable knowledge when making decisions (either as a member of parliament, government official, judge, business owner or executive manager in a business). One example of such an issue concern the use of pesticides, the state of bees, biodiversity and food security. This 'wicked' character of sustainability issues points to the need for capability to make decisions also in the absence of previously established principles. Accordingly, education needs to make students prepared to make decisions also in the absence of formal regulations and legislation. For instance, students who in the future could be working in corporations making decisions about what products to sell or not to sell. This paper presents two teaching approaches drawing on educational drama that could offer students the opportunity to practice making decisions when encountering so called wicked sustainability problems. A didactic model drawing on the concept of 'dislocatory moments' and short empirical examples from business education in upper secondary education are provided to specifically illuminate (a) when different worldviews or perspectives on sustainable development comes to the fore in educational practice and, (b) emancipatory educational qualities in terms of subjectification. The (pluralist) teaching approaches are also further discussed in relation to implications connected to teaching in a 'post-truth era'.

## **Towards a dynamic picture of human nature in economics education – a methodological approach**

**Andersson Pernilla**

It has long been suggested that the 'homo economicus' assumption underpinning neo-classical theory is not limited to its theoretical function, but also has a 'productive' function by 'creating' individuals acting in accordance with the assumption. Nelson (2006) and Zaman (2013) offer some clues as to how this process can be understood. They describe that and how we have come to embrace the metaphorical understanding of economy as a machine, running on self-interest, as something real rather than a figure of speech. Along the way, the tools with which sustainability issues could be addressed have become limited to those that fit 'homo economicus'. In the wake of the financial crisis of 2008 and increased concerns about climate change, this critique of economics education has been re-actualised to the extent that economics students have organised themselves worldwide, calling for a curricular reform. In line with this critique, academic economists have also argued that to equip students for the challenges of the 21st century, economics education needs to embrace a more complex and dynamic picture of human nature. In view of this, it could be argued that researchers and teachers need tools to identify situations in educational practices where 'homo economicus' is reproduced or challenged. The purpose of this paper is to address this need by suggesting a methodological approach drawing on poststructuralist discourse theory and a methodological approach for analysis of meaning-making in classroom practice.



## **Establishing epistemic practices in students' formulation of scientifically researchable questions in upper secondary science education**

**Andersson Sebastian, Lavett Lagerström Malin, Wiblom Jonna, Andrée Maria, Freerks Per-Olof, Jahdadic Sofia, Lundström Johanna, da Luz Johanna, Nordling Johan, Puck Sara, Reimark Josefin, Wennerström Per and Westman Fredrik**

The development of students' capability to engage in scientific inquiry is part of the science curricula across the educational system. However, previous research shows that laboratory and practical work in science education do not necessarily develop the capability to engage in scientific inquiry or contribute to developing an understanding of the nature of inquiry. The purpose of this study is to explore how teaching activities can be designed with a specific focus to develop students' capability to formulate questions for scientific inquiry.

Some science education research points to that in order for students to develop an understanding of the nature of science inquiry, teaching has to include activities explicitly focusing aspects of inquiry such as asking questions, observing and making inferences. In this study we draw on the theoretical framework of epistemic practices to analyse and design teaching with the purpose of developing students' capabilities to formulate questions for scientific inquiry. Epistemic practices refer to the ways people in a specific community propose, justify, evaluate and legitimize knowledge claims within a disciplinary framework.

From this perspective, formulating scientifically researchable questions makes sense only as part of epistemic practice in relation to a motive of knowledge production. The research question is: How can epistemic practices be established in upper-secondary school science where students are invited to participate in activities of formulating researchable questions?

The study was carried out as a design-based research collaboration with a research team consisting of nine science teachers and four science education researchers. Data was collected in three cycles of design, intervention and analysis of research lessons with six classes in three different upper-secondary schools. The data consists of video-recordings of student interaction while engaging in tasks of formulating researchable scientific questions. The data is analysed using the didactical model of organizing purposes; distinguishing between overarching purposes and the student-orientated purposes emerging in interaction. The

results indicate that the development of students' capabilities to formulate researchable questions is situated in the processes of interaction with peers, and the conditions for situating the formulation of questions in a practice characterised by closeness to an epistemic object and gathering of observational data. Based on the results, we argue for a shift in science education from focusing students' views of a generic nature of science or nature of science inquiry to focusing student participation in epistemic practices of various kinds.

## **Students' capabilities to formulate scientifically researchable questions in upper secondary science education**

**Andersson Sebastian, Lavett Lagerström Malin, Wiblom Jonna, Andrée Maria, Freerks Per-Olof, Jahdadic Sofia, Lundström Johanna, da Luz Johanna, Nordling Johan, Puck Sara, Reimark Josefin, Wennerström Per and Westman Fredrik**

A goal for science education is to develop student capabilities to participate in scientific inquiry. This includes various aspects of inquiry; formulating scientifically researchable questions as well as planning, performing, analyzing and presenting science investigations. In science education practices, there is a tradition of using practical or laboratory work to illustrate science concepts; focussing correct answers and reproduction of ready-made scientific knowledge, rather than engaging students in inquiry. Previous research shows that inquiry teaching predominantly engage students in investigating science questions as formulated beforehand by the teacher or a textbook. Little attention has been paid to what might characterize the capability of formulating scientifically researchable questions in school. In this study we draw on a theoretical framework of epistemic practices. Epistemic practices refer to the ways people in a specific community propose, justify, evaluate and legitimize knowledge claims within a disciplinary framework. From this perspective, formulating and developing scientifically researchable questions makes sense only in relation to a motive of knowledge production. The aim of this study is to explore what might characterize students' capabilities to formulate and develop scientifically researchable questions in upper secondary science education.

The collected data consists of video-recordings of student interaction in group-work focussing formulating and developing scientifically researchable questions. Data was collected as part of a design-based study with six classes in three different schools. The video-recordings were transcribed in verbatim and analysed by the means of qualitative content analysis. The preliminary results suggest three themes: Formulation of scientifically researchable questions as:

Working with the specification of the epistemic object. The theme illustrates how the students elaborated on the meaning of related scientific concepts and discussed cause and effect.

Specifying researchability by focussing on how to operationalize the epistemic object. The theme illustrates how the students reformulate their questions as part of a process of discussing e.g. measurability and variables. Making value-judgements of epistemic objects. The theme illustrates how the students distinguish between scientific and non-scientific questions and make value-judgements about relevance.

The results contribute to an understanding of what the capability to engage in scientific inquiry as participation in collective epistemic work in an upper-secondary school science classroom might entail. The themes are related to the establishing of a specific scientific epistemic object. The results are discussed in relation to previous research in science education and the development of resources for teaching inquiry framing capabilities of inquiry as generic.

## **Norm critical sex education in upper secondary school**

**Arvola Orlander Auli**

In the Swedish educational system, developing norm critical awareness around relationships and sexuality are part of the Biology curriculum. However, little is known about the related classroom practices. I'll give an insight in an ongoing research process, conducted in an urban upper secondary school in collaboration with a Biology teacher, who welcomed me as a critical friend in her classroom. I got an opportunity to participate in the teaching of sex education in two classes - one in Natural Science Programme and the other in Arts Programme. The study includes 63 students in total who gave permission for me to engage in the data collection of observations, recordings, interviews and written exams. As part of the work the students posed norm critical questions, or claims related to the human sexuality, that they considered as interesting to investigate and critically examine from a scientific perspective. The written presentations of the investigations were the examination of the whole course. The focus in this study is on written exams. Following Barad's and Haraway's theorizations of diffractive reading, I pose a methodological question "What kind of

figurations of bodies are produced in an apparatus of written exams?" Through work with agential cuts, my expectation is to be able to discuss in what way figurations of bodies are involved in producing norm breaking work at school.

## Exploring contradictions as a didactical design principle

Bengtsson Henning

In this presentation learning activity (Davydov, 2008) has been applied as a learning framework for design and analyze teaching, regarding sustainability issues in social science. The focus on the analysis has been directed to in what way contradictions could be useful as a didactical design principle. The concept of contradictions should in these contexts be consider in the line of work of Engeström and Sannino (2011). These researchers stress that historically invoked contradictions could be manifested in different ways, as dilemmas, conflicts, critical conflicts and double-binds in the interaction between people in an activity. It is important to emphasize that these concepts should not been considered as synonyms to contradictions, instead they have a specific meaning related to contradictions. Contradictions are thereby explored in this study in a school-context regarding how they are manifested when used by teachers (and students) to explore and develop a problem out of a specific situation. And also how contradictions are manifested when students and teacher together explore conceptual relationships (e.g., economic, social and ecological aspects) regarding societal sustainable planning throw mediated tools. In other words, in this presentation contradictions are discussed as a potential mechanism to be used in a didactical situation, to create meaning or needs which drives students toward a learning activity.

Davydov, V. V. (2008). *Problems of developmental instruction. A theoretical and experimental psychological study*. New York: Nova Science.

Engeström, Y., & Sannino, A. (2011). Discursive manifestations of contradictions in organizational change efforts: A methodological framework. *Journal of Organizational Change Management*, (24)3, 368–387.

## **Animated chemistry in primary classroom**

**Berg Astrid, Danielsson Kristina, Eriksson Inger, Hultén Magnus**

A central aspect of learning chemistry is learning to relate observations of phenomena to models of the sub-microscopic level of matter, to explain the observable. However, research has shown that students have difficulties discerning and comprehending the meaning of the sub-micro level and its models, and that practical work in its traditional form fail in helping students discern the relation between observation and models. Consequently, there is a call for new teaching activities to address these issues. This project emerge from a growing number of studies showing that learning is supported when students cooperatively create their own multimodal representations of science phenomena.

In this project, students in primary school chemistry classrooms (grade 3 and 4) generated multimodal representations to create a particulate model as a means to explain observations of air, and of phase changes. Two teaching sequences were performed, covering different aspects of the content during spring and autumn of 2017. Our questions concerned identification of the ways in which the challenge of creating multimodal representations can afford reasoning and learning opportunities.

The results from the spring showed that working with student-generated representations was a useful tool for student reasoning as well as for the teachers. However, at times, the fact that there are two distinct levels (macro and sub-micro) was unclear. Therefore, during the autumn, a conceptual tool was introduced to handle this, which helped students clarify and coordinate verbal and visual explanations and descriptions at these levels.

## Peer review to clarify criteria and promote pupil agency

Berggren Jessica

Formative assessment practices are commonly associated with transparency. This transparency commonly intends to clarify learning aims, and criteria describing task fulfilment. However, the quest for clarity, and so-called shared understanding, can lead to simplifications and reductions of the object of knowledge. Check lists, and rubrics, for instance, can only capture part of the whole picture. It is therefore pertinent to consider how quality and task attainment are represented in teaching. This presentation suggests that engaging pupils in formative peer-review activities can foster a joint understanding of criteria, as well as promote pupils' agency and ownership of learning.

As part of a larger project exploring potential benefits of giving feedback, an intervention was carried out in a year-eight EFL classroom in Sweden. The study included a series of three teaching units in which the pupils wrote texts in different genres. Based on sample texts, the pupils formulated their own criteria lists with the teacher. They also engaged in peer-review in consensus groups. The groups were asked to discuss texts written by their peers; they also produced written feedback comments. The conversations were video-recorded, and the topics covered by the pupils were cross-referenced with the criteria. The peer interaction was also studied to find episodes relating to criteria and text quality. During the teaching units, the pupils wrote their own texts, which were revised after the group activity. With this design, the pupils had the opportunity to use insights from the peer review to improve their own texts.

The lesson activity which resulted in the criteria - a list of bullet points - implied that each point was linked to concrete examples, and formulated together with the pupils. Results show that the pupils' feedback comments were valid and relevant in relation to the written tasks and, thus, the criteria. This finding indicates that the pupils found the criteria useful, which was corroborated by self-reports. Interestingly, some of the consensus groups also agreed on some new criteria, which were applied to their tasks. These additions constitute examples of pupil agency; they continued to develop valid criteria also without the support by the teacher. In the conversations, the pupils also related strengths and weaknesses in their peers' texts to their own writing, which then resulted in revisions to their texts. This study shows how pupil participation in peer review can be a means to clarify criteria, and contribute to pupil agency.

## Foreign language task design for beginner-level pupils

**Berggren Jessica, Pålsson Gröndahl Karina, Kunitz Silvia, Jansson Resare Anette, Bermedo Lilian, Beslagic Deni and Rosa Sandra**

Teaching foreign languages can be demanding, and teachers often experience challenges connected to the organisation of classroom activities that support pupils' development of productive skills. One of these challenges is to design tasks for oral interaction. It is common that classroom pupil talk resembles parallel monologues rather than oral interaction. When teaching young beginners with limited prior knowledge of the target language, oral interaction tasks can be particularly challenging (Erlam, 2016). The present study pertains to a long-term project, aiming to explore the connection between tasks and task-oriented interaction in language classrooms in Sweden. The underlying assumption is that the lack of student interaction is due to the way language activities are designed. Consequently, the overarching purpose of this project is to explore how tasks can be designed to promote oral interaction between pupils in foreign language classrooms.

This project, now in its third year, includes several subprojects involving researchers as well as teachers from primary and secondary school. We employ an iterative research design in which tasks are designed (Ellis, 2003), tried in classrooms and revised in a cyclic process. Data consists of video-recordings of groups of pupils engaging with the tasks. Findings show that

the design of the tasks affect pupils' interaction. For example, comprehensive information and ample instructions preclude rather than promote pupils' interaction. The interaction is analysed using conversation analysis (Sidnell, 2010), and the EFL students' interaction can in many cases be described as co-constructed and collaborative. In second foreign language classrooms, e.g. French, German and Spanish, the results so far are less successful in terms of interaction. It seems difficult to design tasks aimed at beginner-level pupils, and to pinpoint what characterises "good" interaction at this level.

This presentation primarily highlights tasks for younger learners. More specifically, the project this year is carried out in three schools with learners of Spanish and German enrolled in year six of the Swedish compulsory school. This is the pupils' first year of studying these languages. To address the difficulties, the task input consists of pictures, based on vocabulary previously used in the classroom. We present our findings regarding task design for beginner-level

learners, and preliminary ideas regarding what constitutes "good" oral interaction for these young learners.

## **Disciplinary language – voices, content and structures in disciplinary texts**

**Bergh Nestlog Ewa**

The concept literacy is about participating in social practices and using the specific language and texts belonging to the practice – how people talk, read, write and interact and make meaning in texts (cf. Barton & Hamilton, 1998). Disciplinary literacy is related to language and other resources that qualified participants in a disciplinary culture use (cf. Shanahan & Shanahan, 2008). This study is an attempt to make a theoretical description of disciplinary language as a superior concept for the resources in use when interacting within disciplines. The aim is to further develop linguistic theories and analytical tools for investigating disciplinary language in relation to teaching and learning different school subjects and disciplines. The theoretical framework is based on systemic functional linguistics (Halliday 1978), discourse perspectives (Fairclough 2001) and dialogism (Bachtin 1981; Evensen 2004).

In the study a theory concerning the teaching and learning of curriculum subjects is developed. Disciplinary texts (oral and written), disciplinary language and the teaching practice are seen as central discourse dimensions. The conclusion is that the teachers who are aware of the disciplinary language can support students in developing disciplinary literacy by making explicit the specific way of communicating the disciplinary content (subject specific ideas) by the use of disciplinary voices (qualified voices representing the content from disciplinary perspectives) with disciplinary specific language structures and text structures. In this study these three aspects of disciplinary literacy will be further elaborated and discussed as dimensions of discipline specific teaching practice.



## **Global war on terror in the minds of Swedish Muslim pupils**

**Berglund Jenny**

This paper shows how the global “war on terror” silences voices and experiences of young Swedish Muslims in their mainstream. The study thereby confirms that school is an arena where much religious discrimination takes place, a finding recently presented in a report from the Swedish Agency for support to faith communities (2018). The study is based on interviews with 20 Muslim students in Sweden who reflect on their experiences of attending supplementary Islamic education in parallel to their secular schooling. By using an identity economics model (Akerlof & Kranton, 2000), I show that supplementary Islamic education classes, perceived as prestigious and rewarding in the Muslim context, risks being turned into a cost in the setting of a secular school when questions that surround the global war on terror are projected on the students if they mention their dual educational experience.

# Using a genre-based pedagogy to support university students' academic literacy

**Bertram Carol**

In South Africa, most university students are first-generation students, whose home language is not English. Their educational success and epistemological access are hampered by a range of factors, such as poor-quality schooling, financial struggles and low levels of literacy. Many lecturers assume that students come to university able to read, understand and synthesise academic texts, but most do not. Many universities have under-graduate 'bridging' courses to support academic literacy, however there is strong research evidence that the work of academic development should also be integrated into all teaching, at all levels.

Reading to Learn (RtL) is a genre-based reading and writing pedagogy that is designed to make explicit the structures of different genres of text, so that students can begin to read with comprehension and produce meaningful and coherent writing. It is based on the premise that the development of reading and writing needs to be a carefully scaffolded process and that this explicit teaching should occur across the curriculum within specific disciplines and at every educational level.

A group of six academics at the University of KwaZulu-Natal were trained in 2018 and have used the pedagogy in various ways over the past six months, in the disciplines of bio-chemistry, biology, theology and education. Adopting this approach has challenges, as it means that lecturers need a good knowledge of the structure and genre of the texts in their discipline and need to know how to explicitly teach these structures. It also takes time to prepare and requires cutting some content to focus on the processes of reading and writing. In this paper, I will describe the pedagogy and its theoretical underpinnings. I also reflect on

using the pedagogy with Education master's students in a research methodology course, present the experiences of other lecturers and provide some evidence from students on how they have experienced the pedagogy.

## **Läroarutbildning genom parallellprocesser kring samhällsfrågor med naturvetenskapligt innehåll. ”- När är det rätt att döda ett djur?”**

**Billing Charlotta and Lundegård Iann**

It is often emphasized that teacher training should be placed close to practice. Starting with socio scientific issues (SSI) is a way to make science teaching more interesting and relevant. This allows the students a greater opportunity to be involved in determining the content. In this study, we wanted to visualize different aspects appeared when teacher students discuss an socio scientific issue. Furthermore, the aim was develop a method that could help the students to reflect on how they can arrange similar activities in their future classrooms within a parallel process. The data collection was made when the students discussed an authentic question concerning the right to kill animals. To analyse the content and meaning emerged in the students' discussions, we used practical epistemological analysis (PEA). In the results we highlighted three aspects, which could be important to consider when organizing instructions around SSI in a pluralistic spirit. First, the student discussions lead to broadening and clarification of various choices and circumstances needed to make a moral decision. Secondly, on several occasions, scientific facts where required to advance the discussion. Finally, the students created ethical parameters in order to find out and decide on the questions at hand. These three didactical aspects could be helpful for the teacher students in relation to their own teaching. Consequently, this parallel process is a quite feasible way to create a continuity between practice and theory in teacher education.

## Theoretical thinking about our number system - a base system

Björk Marie

Reflection, analysis and mental planning could be seen as corresponding capacities to theoretical consciousness and thinking, which students can develop through teaching (Davydov, 2008). The interest in this presentation is theoretical thinking about our number system, a base system, especially regarding the positions to the right of the decimal point. The study drew on research, which pinpoint possibilities to build understanding of structures in the place-value system, through developing a learning activity where units are defined in a measurement context (cf.

Venenciano, Slovin, & Zenigami, 2015; Slovin & Dougherty, 2004). Data is based on grade 4 students' collectively work and reflections while they measured a bar in other bases than base ten. Analysis was carried out with inspiration from the didactical framework learning activity (cf. Davydov, 2008) with use of concepts as problem identification, generalization and reconstruction of learning models. The result indicate emerging theoretical thinking in three mathematical categories. One example of these categories, the infinite development of smaller units, will be discussed during the presentation.

Davydov, V. V. (2008). *Problems of developmental instruction. A theoretical and experimental psychological study*. New York: Nova Science.

Slovin, H., & Dougherty, B. J. (2004). Children's conceptual understanding of counting. In M. J. Høines, & A. B. Fuglestad (Eds.), *Proceedings of the 28th Conference of the International Group for the Psychology of Mathematics Education*, 4, 209–216. Norway: PME.

Venenciano, L., Slovin, H., & Zenigami, F. (2015). Learning place value through a measurement context. In X. Sun, B. Kaur, & J. Novotná (Eds.), *The Twenty-third ICMI Study: Primary Mathematics Study on Whole Numbers* (pp. 575–582). Macau: University of Macau.

## **Prepositional discourses in subject didactic fields**

**Björkgren Mårten, Ahlskog-Björkman Eva, Gullberg Tom och Enkvist Nina**

To an increasing extent, the national curricular guidelines for basic education and upper secondary school require class- and subject teachers to have a readiness to teach and cooperate in accordance with a holistic multidisciplinary (Sw. *helhetsskapande*) principle. The teacher education programmes in Finland are challenged to develop research-based knowledge about learning processes in holistic multidisciplinary teaching concerning both theory and practice. In this presentation, focus is put on comparisons between the subject didactic perspectives of visual arts, religion, history, and social studies. Similarities and differences in the descriptions of oneself and ones subject field are at the core of this process. The comparison particularly focusses on the use of prepositions within the subject-specific descriptions of the didactic emphases and ambitions. For example, the prepositions about, of, in, through, and for are all used in connection to learning. The aim of visualizing this comparison at the NOFA 7- symposium is to initiate peer discussion and critical evaluation of the prerequisites for and significance of different prepositional discourses. Also, we wish to discuss this form of emphasis regarding similarities and differences in the different subject didactic traditions in relation to further study of subject didactic cooperation within teacher education programmes.

## **A framework for analysing assessment in working life and vocational education**

**Björklund Boistrup Lisa and Lindberg Viveca**

In this paper we aim to discuss a research framework for analysing assessment in working life. We view assessment as a broad notion, taking place formally, through tests, coursework and the like, and informally through for example feedback during ongoing work. We argue that education, and significantly vocational education, has much to learn from taking knowledge about assessment as part of working life into account.

Assessment in working life is in this paper viewed as a teaching content in vocational education. For students in vocational programmes, part of Swedish upper secondary school, it is highly relevant to learn about how working competence may be evaluated in their future occupations. Moreover, teachers carrying out assessment within the vocational programmes have much to learn from the ways assessment may be 'done' in working life. To assess vocational competence, also within vocational education, is different from formal educational assessment, since it is about capturing contextual knowing in action. In these actions, there are different logics (see Ellström, 2010) to pay attention to. One logic is a logic of production, where conformity and regulations are essential, and one is a logic of development, where problem solving and creativity are essential. So far, not much research has focused on assessment in working life in a broad sense, with relevance for vocational education.

Assessment of vocational knowing is a field of research shared by disciplines like education, linguistics, economics and sociology. One theme in the literature addresses assessment for employment. This part of the research field is dominated by economists focusing on management issues, such as tests designed for selection of employees. Another theme is rather new in this field of research; assessment in skills competitions. A third theme is

assessment in workplaces. Apart from some studies on assessment of employees' performances and behaviour, there are few studies (eg. Kvale, 2007; Tanggaard & Elmholt, 2008) on assessment of vocational knowing at work.

When discussing a framework for analysing assessment in working life, we will draw on theoretical considerations and make critical connections to previous research. In our theoretical considerations we incorporate three levels of practice: personal, interpersonal, and community processes (Rogoff, 2008), all in relation to assessment. To further examine aspects of vocational content in assessment, we adopt a framework of praxeology by Chevallard (2006), where praxis corresponds to 'know-how' and logos to 'know-why'.

## Teaching financial literacy – investigating teachers' knowledge of context

**Björklund Mattias**

Financial literacy is defined by the OECD as a key competence for all, hence introduced in educational systems all around the world (OECD 2005). In Sweden, like in many other countries, teachers, though, have not received any formal financial education but are still compelled to teach. This study contributes to the understanding of how social studies teachers plan and implement financial literacy teaching without having financial content knowledge.

Data consists of 21 semi-structured interviews with and submitted lesson planning from Swedish social studies teachers in upper secondary school. By using the construct of PCK (Shulman 1986) and the elaborated sub-construct of knowledge of context experienced and novice teachers' strategies and perceptions regarding financial literacy teaching can be discerned. Results suggest that teachers' lack of financial literacy content knowledge is compensated and substituted by using their knowledge of context. Especially knowledge of students and curricular matters help teachers form financial literacy aims and instruction.

Experienced and novice teachers, however, use their knowledge of context in different ways thus presenting a variety of aims depending on how the different groups of teachers perceive syllabus, the diversity among students and future needs of young adults. This study also discusses the complexity between financial literacy ambitions, stipulated in curriculum and syllabus and financial literacy planning and teaching.

## **What's the value of water? Teaching for development of the ability to analyse economic and financial issues in Social Studies.**

**Björklund Mattias, Tväråna Malin, Jägerskog Ann-Sofie, Strandberg Max, Malmqvist, Jan Norevik Eva, Olin Lena & Karlander Linda**

The study addresses the questions of how different teaching designs relate to how students in year 1, 4, 5 and 8 (compulsory school) understand and learn the concept of economic value. Economics has been a growing focus areas within the Swedish Social Studies subject, creating new challenges for teachers when integrating this content area as citizenship education. This study investigates how a teaching design makes different economic and financial matters visible to learners in different age groups and was carried out through a learning study. Data consisted of recorded group discussions among students, as well as written student answers to open response pre- and post-test questions, which were analysed using phenomenography (Marton, 2015). Results show three structural aspects necessary for students to discern in learning about economic value; that economic value (1) is constructed rather than essential, (2) emerges in relation to a lack of resources, and (3) is a relation in a system of different kinds of resources. Age does not seem to be a pivotal factor for learning or understanding price and value. By shifting focus from supply to demand with the instructional examples, learners' life world came closer to the desired learning object - that value and price are constructed and emerge as a relationship between supply and demand in a wide system of resources.

Keywords: Social Studies, critical thinking, phenomenography, economics, financial literacy, price, value, teaching and learning.



## **Environmental and Sustainability Education (ESE): a comparative study between disciplinary and thematic perspectives in the Finnish and Swedish curricula**

**Bladh Gabriel, Gericke Niklas, Juuti Kalle, Salmenkivi Eero, Sund Per, Tani Sirpa**

This presentation investigates Environmental and Sustainability Education (ESE) in the context of Finnish and Swedish schools. When ESE is included in curricula, it can be related to different knowledge content or understood as a teaching approach. ESE has generally been included in a weak framing (Bernstein 2000), focusing on the general aims of ESE and the thematic integration of subject matter, while curricula of school subjects often focus on disciplinary core content with strong framing.

Using Biesta's (2009) classification of educational aims, ESE stresses socialisation and subjectification aims, while the qualification aspects are included more implicitly through integration of subject content. However, in their discussion of future educational scenarios, Young & Muller (2016) have emphasised the role of boundary maintenance and strong curriculum framing as conditions for enabling student's epistemic access to powerful knowledge.

We will explore the tensions between disciplinary and thematic perspectives in ESE through a content analysis of the national curriculum documents in Sweden and Finland. How is ESE framed in the general aims in curriculum compared to the curriculum of the school subjects? What differences can be found between curricula in Finland and Sweden? The analysis focuses on lower secondary curricula and a selection of science and social science school subjects. The differences will be discussed from the viewpoints of powerful knowledge, strong and weak framing, the futures scenarios and epistemic quality.

## The pupil's previous knowledge of migration as a starting point for the educational practice

Blanck Sara

At Karlstad University the project "To develop teaching on social issues: content selection and transformation in social studies education in upper elementary school, year 4-6." is in progress. The second part of my doctoral studies is in this project. The aim is to develop knowledge about societal relevant integrative educational practices around thematic issues, with a linkage between pupils' experiences and specialized knowledge. The focus in this

presentation is on pupils' previous knowledge of migration.

Migration is one example of an urgent social issue who might have potential as a teaching theme in upper elementary school, year 4-6. It could also be address as an epoch-typical key problem according to Wolfgang Klafki's ideas about central problems in the world that pupils need to get knowledge about and develop a will of solving (Klafki 2001).

This study explores how pupils' previous knowledge, their preconceptions and experiences of migration, can be used as a springboard making it possible for the pupils to connect to

significant specialized knowledge about migration. Ingrid Carlgren's concept of educational practice with a) knowledge practice, b) learning practice and c) didactic practice in relation to the French anthropological didactic is used as a conceptual frame to examine how content about migration reconstructs in the classroom practice (Bosch and Gascón 2014; Carlgren 2015; Chevallard 2007). Methods are observations of classroom practice, focus group

interviews with pupils' and teachers' reflections in a research circle. The empirical ground for the discussion is a classroom-project where pupils' previous knowledge of intern and/or extern migration is in focus. Connection can here be made to Jim Cummins and the idea of identity texts. According to Cummins working with identity texts is an effective teaching strategy especially for newly arrived pupils or pupils from marginalized groups (Cummins and Wadensjö 2017).

## The Role of Interest in Developing L2 Readers as Individuals

Brevik Lisbeth M

Across stages of acquisition, second language (L2) reading competencies develop within individuals and are therefore contingent on the variation among these individuals, including interest. As such, an interactive model of L2 reading emphasises the interplay between two separate meaning systems – the reader and the text (Bernhardt, 2011; Koda, 2005). This study concerns readers as individual learners. Treating learners as individuals has a long tradition in L2 studies, but to date there appears to be a dearth of research that specifically addresses the needs of readers as individuals, especially in relation to subject specific learning. This study investigates the outliers whose extreme scores serve as a foundation to examine the group as individuals, and the study specifically addresses the characteristics of the outliers as good L2 readers but poor L1 readers. The study utilises a new data set combining quantitative (reading test results, survey, reading logs) and qualitative (focus groups, interviews) data among 21 adolescents in Norway (aged 16-17), to identify and meet different dimensions of individual reader characteristics, aiming to identify why these readers read markedly better in L2 than in L1, and the role of interest in their L2 reading development. Findings show that the outliers explained their L2 reading proficiency by their use of L2 outside school. One view came across, namely the circumstance that they found it difficult to bring their identities as proficient L2 readers into school (discontinuity). Analysing the outliers in depth, three profiles were identified; the Gamer, who spends 3-8 hours each day playing online games; the Surfer, who spends hours on the internet, searching for authentic language situations; and the Social Media User, who consumes L2 information in social media and watches Netflix daily. This study offers challenges for teaching and learning in English subject studies, and discusses the tensions inherent in the lack of linking between learning in and outside school, as well as challenges for teaching English.

## Insecure student's motivation in project-oriented teaching

**Brodersen Peter**

Several studies indicate that high structuring of the content reinforces the motivation of the students and that lower structure of the content causes the motivation to fall (Andersen 2010, Hansen et al. 2016, Jang, Deci og Reeve 2010, Nielsen et al. 2017).

Project-oriented teaching is characterized by both having a relatively low teacher management of content and method - and a low teacher management of the students collaboration. Motivation of insecure students in projectoriented teaching could accordingly be assumed influenced by their experience of confirming opportunities and experiencing loss of opportunities. Likewise, the nature of the teacher's scaffolding opportunities can reinforce and promote the students' motivation.

This study focuses on how teachers scaffold students' needs for both structure and autonomy, and how it influences the motivation of the students. The purpose is to analyze the student's motivation related to specific phases of project and to provide some examples of opportunities for scaffolding of insecure students in project-oriented processes.

Theory: Pintrich (2003) highlights students' experience of mastering, control, interest, relevance as well as experience of goals and responsibilities as sources of motivation. This conceptual framework can be useful in analyzing student's statements about experiencing complications in the process, solutions in the process and experience of meaning and quality in the process. The student's statements are sorted through a structural, narrative analysis of

student interviews. The concept of scaffolding needs is substantiated and operationalized with

Wood et al.'s concept of scaffolding, b) Mercer and Mortimers on Interactive Dialogue (2003) and c) Alrø and Skovsmose concepts on explorative dialogue (Alrø og Skovsmose 2005). Method: The empirical material has been studied with focus on a group with one insecure student through two different analyzes: 1) A narrative analysis of the student's motivation based on interviews of students and teachers; 2) A didactically analysis of the group's scaffolding needs, as they can be deduced from their own statements , and as they can be identified through observation.

Results: The weight of inductive and abductive approaches strengthens the students' experience of interest and their experiences of goals and responsibilities. On the other hand, students' motivation (coping and control) decreases when inductive and abductive approaches are not supported through substantive and deductive structuring. This indicates the need for teachers to mark critical features of the study and to demonstrate how the content can be structured. In this perspective, the study suggests that insecure students in project-oriented processes need ongoing cognitive support to model the content.

## On undergraduate students' conceptions of association and regression

Bråtalien Marte

Digital tools take a significant workload when it comes to statistical calculations, but reasoning and interpretation are still subject to human-based methods. The ability to critically interpret statistical representations is essential with regards to “fake news”, meaning-making and decision-making, and in reading (and writing) research literature. Seeing as how some Norwegian study programs on university level only include one course in statistics, the students' understanding after this course makes the basis for their use of statistical concepts within research and professions, as well as in their daily lives.

Numerous studies on teaching and learning statistics point towards students' understanding of association and regression models including developing conceptions, even after formal instruction (e.g. Garfield & Ben-Zvi, 2007). The empirical study (in development) aims to investigate Norwegian undergraduate students' conceptions of correlation and regression after formal instruction in a statistical introductory course. Inspired by work of Estepa and Sánchez Cobo (2001), the study analyses responses to a multiple-choice assessment focusing on conceptual understanding and interpretations. Elements emphasized include the relationship and strength of relationship between variables, generalization and probabilistic reasoning, as well as elements emphasized when regression modelling. Discussion of the results will highlight conceptions and developing conceptions.

Estepa, A., & Sánchez Cobo, F. (2001). Empirical research on the understanding of association and implications for the training of researchers. *Training researchers in the use of statistics*, 37- 51.

Garfield, J., & Ben-Zvi, D. (2007). How Students Learn Statistics Revisited. *International Statistical Review*, 75(3), 372–396.

## Learning materials in Denmark

### Buch Bettina

Investigating the content of learning materials is important since the content and the actual teaching is shown to be closely related (Schmidt et al., 2001). Developing subject specific categories is challenging thus complicating this analysis (Presenter #3). In this presentation, I will discuss the iterative process of developing categories for analysing the content of the learning materials used by Danish L1 teachers indicated in a representative survey carried from 2015 (N=639). The content standards for Danish L1, "Fælles Mål" [Common Goals], are competence based having four competence areas: Reading, Writing, Communication and Interpretation. Each competence area is divided into four levels containing 5-6 content areas divided into over 200 knowledge- and skills descriptions. Using these as a starting point for content analysis would lead to either too broad (the four competencies) or too detailed (200 knowledge- and skills descriptions) categories. Instead, we used a data-driven method combining "Fælles Mål" with other researchers definitions (Gregersen m.fl., 2003) and our own knowledge of the subject to develop our 19 different content categories based on an iterative process of analysing and categorizing.

# **Student communication during collaborative writing of narratives in the second year of a Swedish compulsory school – A study in the context of the Swedish curriculum**

**Bybro Karin**

Collaborative learning methods are increasingly used in Swedish schools. Learning can stretch and reach beyond students expected potential when they get the opportunity to interact and work collaboratively (Williams & Sheridan, 2006). However, the quality of the peer interaction determines whether the collaborative learning session is effective or not. Also, the quality of teacher guidance is essential for effective student collaborative learning (Kaendler, Wiedmann, Rummel & Spada, 2015).

The current study takes its starting point in social constructivist theories, where learning is seen as an integral and inseparable aspect of social practice (Lave & Wenger, 1991), and where classroom language and literacy are understood as constructed in interaction (Larson & Maryrita, 2000). Social interaction among students needs to be framed by teaching as a cultural and social context in which the teacher has an important role (Liberg, 2006).

The aim is to closely explore student negotiations (cf. Bialostosky, 1989) about content as they work collaboratively in pairs in a narrative writing process framed by teacher instruction and support (cf. Dysthe 2003). The empirical part for this presentation concerns eight year old students who were jointly planning and writing a first version of a narrative. The results are related to what was communicated in those small group conversations and how this was verbalized in the drafts of three pairs of students during two lessons.

The research question is:

What is the focus of student negotiation about the content of a joint written narrative and how does the text evolve as a joint construction in small group learning?

In order to understand this phenomenon a case study was conducted (cf. Elliot, 2016; Yin, 2018). Two writing classes were planned collaboratively by two teachers and me and later conducted by the two teachers, one of them mainly responsible for instruction in the beginning of each class. To enable description and analysis of the writing context, the conversation during planning sessions was audio recorded and the two writing classes were video recorded. The communication of the three pairs of students during the two writing lessons was audio recorded. Student conversations were transcribed and analyzed using conversation analysis (CA) inspired by Inger Gröning (2006), complemented with Ingrid

Carlgren's (2009) notions of acknowledging content as well as social and individual aspects of the negotiations.

## Klassesamtalen – en danskidaktisk udfordring og opgave

Carlsen Dorthe, Christoffersen Denning Rikke and Ipsen Max

I skolen og i danskundervisningen fylder mundtlighed meget. I et almindeligt perspektiv er mundtligheden kernen i selve vores forståelse af undervisning som det "at vise til rette

gennem samtale" (von Oettingen, 2016: 73). Omvendt fylder mundtlighed ikke meget som indhold og genstandsfelt i danskundervisningen (Haugsted, 1999; Penne & Hertzberg, 2015). Ofte behandles klassesamtalen i et almindeligt perspektiv (Høegh, 2018: 189). Der efterlyses en "mundtlighedsdidaktik" (Aksnes, 2016; Høegh, 2017). Liv Aksnes påpeger, at man i Norge har et skrivecenter og et læsecenter, men ikke et mundtlighedscenter (Aksnes, 2016). Det samme gælder i Danmark.

I paperet argumenteres for, at klassesamtalen har nogle særlige kvaliteter set i en danskidaktisk dannelsesteoretisk optik. I klassesamtalen får eleven gennem lærerens vejledende undervisning mulighed for at udtrykke sig og indtage andre positioner - fortælle, argumentere, etc. fra andre perspektiver og dermed erfare perspektivskifte (Krogh, Elf, Høegh & Rørbech, 2017).

Klassesamtalen er ofte karakteriseret ved Intiering-Respons-Evaluering-struktur, hvilket også ses i vores observationer. IRE-strukturen kritiseres for ikke at fremme elevernes produktive deltagelse (Applebee et al., 2003; Wegerif, 2004; Gibbons, 2016). Howe & Abedin noterer, at meget vides om hvordan klasserumsdialog er organiseret, men lidt om hvad forskellige former bidrager med (Howe & Abedin, 2013).

I projektet udforskes klassesamtalen inden for forskning i mundtlighed i et dialogisk perspektiv og med vægt på lærerens undervisning (Bakhtin, 1981; Mercer, 1995; Dysthe, 1997; Alexander, 2012; Høegh, 2018) for at udvikle undervisning i mundtlighed i danskfaget, ud fra spørgsmålene:

- Hvad karakteriserer klassesamtalen i danskfaget?
- Hvad er klassesamtalens dannelsesdidaktiske potentiale?
- Hvordan kan klassesamtalen didaktiseres?

Projektet gennemføres i regi af Universitetsskoler, hvor teori, empiri og praksis integreres i undersøgelsesfællesskaber mellem lærere, lærerstuderende, læreruddannere og fagdidaktiske forskere (von Oettingen, Carlsen & Thorgaard, 2019).

Projektet er et kvalitativt, handlingsvejledende projekt, der sigter på at generere nye viden gennem processer, som samtidig udvikler, afprøver og forbedrer didaktiske design. Det empiriske arbejde baseres på en antropologisk tilgang (Hastrup, 2010) med brug af lærerdagbøger, videoobservation og interviews.



Vores foreløbige analyser indikerer, at selv om læreren giver udtryk for både forståelse for andre måder at arbejde med mundtlighed på og udviser villighed til at forsøge, viser efterfølgende observationer, at dette lykkes i glimt, men også at den eksisterende klasserumskultur er stærk. I præsentationen lægges op til diskussion af, hvordan klassesamtalen kan redidaktiseres i et dialogiskt perspektiv med vægt på lærerens undervisning. Projektet munder ud i teoretisk og empirisk funderede didaktiske greb til lærerens brug.

Drumming up support for radical and rapid curriculum change in Norway. A case study of two Official Norwegian Reports, a Government White Paper, and statements from experts and politicians.

## **Unearthing the Human – The knowledge production of early human evolution**

**Ceder Simon**

Currently, the knowledge of early human evolution is being reshaped. Genomic research has shown that early Homo sapiens interbred with few different archaic humans and archaeological explorations have discovered several new species. This paper explores the knowledge production on early human evolution as a question for subject matter didactics in biology and history. A common element in teaching evolution in schools involves a visit to a natural history museum. The aim of this paper is to map out the knowledge production of early human evolution in museums, with a focus on the content presented. The empirical material consists of documentation from the researcher's visits to ten natural history museums in Europe and Asia. The analysis draws on posthuman philosopher Donna Haraway's (2003) concept of natureculture and the idea of categories as 'boundary projects' in order to understand how the knowledge production on early humans relate to contemporary humanistic views on the human. One of the main arguments of this paper is that the topic of

early human evolution is produced on the border of nature and culture, but also at the border of the school subjects biology and history.

## Chapman Arthur

History, it has often been observed, is contested terrain mapped in competing and often contradictory ways by multiple narrators in continuously proliferating narrative proposals (Fulbrook, 2002). As with history, so with school history, and both are subject to dispute, not least, because contemporary political entities – nation states, parties, supranational entities – are defined and redefined by and through the stories that we tell about them (Carretero, 2011). Although analyses of policy discourse (Phillips, 1998), of teacher thinking (Chapman, Burn and Kitson, 2018) and of pupil thinking about history (Hadyn and Harris, 2010) are not uncommon, these three dimensions of history education are rarely considered together. Drawing on classroom research into pupil thinking (Chapman and Facey, 2004), on studies of student teacher thinking (Chapman, Burn and Kitson, 2018) and on studies of curriculum (Brant, Chapman and Isaacs, 2016), this paper points to and explores contrasts in the constructions of the past found in case studies of English pupils, teachers and curriculum makers and argues that misalignments between the thinking of these groups are both largely unnoticed and of critical importance to understanding the dynamics of history education and the ways in which history education might be enhanced and improved.

## Quality in Social Science Education

Christensen Anders Stig

In the Quiss project we aim to investigate quality in social science education in a Nordic perspective. In this paper I will present some of the considerations especially regarding the theoretical framework for discussing and thus conceptualizing quality in social science education. The aim of this paper is a) to present some aspects of quality in social science education and b) to discuss the preliminary design for the empirical study of quality in social science teaching.

In the Quint project the criteria for quality in teaching is linked to generic qualities of teaching. In this project we aim to supplement these with subject specific criteria. One set of criteria will be the kinds of knowledge applied, which relates to the “type” of social studies (students’ life-world, methodological knowledge, knowledge of specific issues, scientific knowledge (concepts) (Christensen, 2015). It is our hypothesis that the use of knowledge in these areas can be investigated as having high or low quality. Another set of criteria will look at the normative side of the subject; what kind of democracy is at stake in teaching, which values are at play, and are they being treated in a way that enables the students to form their own opinion? A third set of criteria regards the issues that are being treated – are they exemplary in the sense of Klafki (1996), and are controversial issues in society made the subject of teaching?

The paper will discuss these criteria and how they potentially could be operationalized for empirical study.

## Teaching current issues across subjects – a part of education for democracy?

Christensen Anders Stig and Ting Graf Stefan

According to legislation, the purpose of efterskole – a danish residential, free school form - is “enlightenment for life, general education and democratic citizenship (livsoplysning, folkelig oplysning og demokratisk dannelse) (undervisningsministeriet: 2018). This ambition is, by the association of the efterskoler, interpreted to entail “insight into and the ability to understand and work with ecological, economic and social issues – on a local, national and global level” (Efterskoleforeningen 2012). Within a larger empirical research project on the school form’s teaching and togetherness 2017-19, we focus on two distinct research questions:

Which current issues are dealt with in the teaching across subjects?

In what ways does the teaching qualify the students’ understanding of these issues, and their possibly to reflect on them?

Teaching current issues can be seen in the light of Klafki’s concept of “core problems” as an argument for the necessity of dealing with current problems in education (Klafki 1996). Our theoretical framework draws upon two complementary traditions: On one hand the theory of Bildung derived from critical-constructive Didaktik (Klafki 2001) and on the other hand the Kantian German tradition of politische Bildung as part of the subject Didaktik in social (science) study (Detjen et al., 2004; Kant, 1999).

From the empirical material – collected during six days on six schools – we have all in all 114 intact videotaped sequences of teaching. By three subsequent screening procedures, we identify relevant teaching sessions across subjects containing communication on current issues. While the two procedures take advantage of metadata, in the third step we screen the teaching transcript in order to identify whether there is substantial work with current issues in the sessions. The selected teaching sessions will be analyzed in detail using categories of a) content, b) qualifying perspectives (i.e. which disciplinary knowledge and methods are in use) and c) students’ possibilities of expressing their opinions.

Our initial analysis suggests that the way current issues are dealt with relies highly on the background of the teacher (her main teaching subjects) and there seems to be limited room for the students to develop their own opinions and hence democratic Bildung. Teaching current issues across subjects seems to be a difficult endeavor.

**“bara att göra VFU utan ämnesdidaktik, det hade varit helt värdelöst” [to do practicum without subject pedagogy had been completely worthless]**

**Christiansen Iben, Skog Kicki, Andersson Annica**

## Background

The TRACE project is a study of Swedish mathematics teachers from their last year of education into the first 2-3 years of their practice, in particular focusing on the transformation of content from teacher education during this time. The first part of the study has amongst others included interviewing students about their education. TRACE has a sister project in South Africa, which also includes interviews. In this presentation, we present some of the preliminary findings on selected aspects from both these sets of interviews.

## Research question

How do mathematics student teachers in the final year of teacher education perceive their education with respect to the theories they have encountered, possible changes in their view of teaching, deciding on a teaching approach, and working with heterogeneous classrooms?

## Theoretical approach and research methods

The semi-structured interviews with the Swedish students were conducted by one or two of the researchers working from a shared interview schedule. The South African interviews were conducted with recently graduated mathematics teacher following a similar interview schedule. This paper reports on aspects of interviews with 6 Swedish and 6 South African students which were similar across the two types of interviews. The analysis at this stage is a content analysis, but with elements of discourse analysis.

## Preliminary findings

These findings are based on analysis on a few interviews as well as impressions from the interview sessions. The students' view of theory varies greatly, from seeing it as relevant to understanding instructional situations, over focusing on drawing guidelines for practice from it, to seeing it as irrelevant. Some students feel they have developed an entirely different view of teaching, while others have not altered their views. A few students feel they have acquired a good sense of a range of teaching approaches and are beginning to engage how to choose between them, while most admit to feeling insecure about this aspect of teaching. The students generally feel their education has not provided them with sufficient skills and tools to work with heterogeneous classrooms.

## Powerful pedagogical knowledge: attending to the quality of teachers' knowledge

Crisan Cosette

The utilitarian view of mathematics (Ernest, 1991) as a 'tool' subject which equips pupils with the skills for solving problems, seems to have been better represented in the construction of the school curriculum for mathematics in England over the years. However, there is an imperative need of recognising mathematics as a school discipline in itself (Smith, 2004; Crisan, 2011).

To support the teaching mathematics for its disciplinary and intellectual value, researchers identified two key aspects of mathematics teachers' knowledge (Ball, 1991), namely knowledge about the discipline and its nature. The focus of research in this area has since been mainly on how a teacher should understand the content that they teach, that of school mathematics and so the domains of the Maths Knowledge for Teaching framework (Ball et al., 2008) have local features, relating primarily to the school mathematics curriculum.

However, recent research that has emphasised advanced mathematics knowledge (outside of the typical scope of a school mathematics curriculum) has also indicated that this body of knowledge is necessary to functioning effectively as a mathematics teacher at school level (Zaskis & Leikin, 2010).

In this paper we provide empirical evidence showing that the quality of teachers' knowledge (Winch, 2013) could be further supported through teacher education approaches that make explicit connections between these bodies of knowledge, namely academic maths and school mathematics. Such knowledge empowers teachers pedagogically in ways that allow for creating a solid foundation for development of further, more advanced ideas of the discipline of mathematics.

## **Embodied electronegativity: A design-based study on creative drama in chemistry education**

**Danckwardt-Lillieström Kerstin, Andrée Maria and Enghag Margareta**

A major challenge for chemistry education is to develop students' understanding of the particulate nature of matter. In upper-secondary school, the challenges of the particulate nature of matter is commonly expressed as difficulties for students to distinguish between intra and intermolecular bonding and to analyze chemical bonding in terms of electronegativity.

In this study, we explore how creative drama may be used in chemistry education to open up for student explorations of electronegativity and chemical bonding in Swedish upper- secondary chemistry education. Drama has previously been suggested to support science learning, but studies in science education are limited and the potential of using drama to afford student theoretical reasoning in chemistry needs further scrutiny and design development.

The theoretical framework of the study combines sociocultural theory of learning with multimodal social semiotic analysis. The study was conducted as a design-based study with interventions in three cycles in two schools. The interventions, including the drama activity and students group discussions before and after, were video-and audiotaped. The analytical approach was qualitative content analysis resulting in themes regarding how the design of creative drama afforded different kinds of semiotic work with electronegativity and chemical bonding.

Our main findings indicate that creative drama enabled the students in all cycles to link electronegativity and polarity of molecules to formations of molecular grid structures using their own bodies to represent how molecules were organized in different states of matter. The creative drama in all three cycles afforded the students to explore causes of electronegativity. To further afford the students' agency in the theoretical explorations of electronegativity changes of the instructional design were made in cycle 2 and 3. For example, the analysis of cycle 2 showed that interactions between the student groups became pivotal to enabling students to link electronegativity and polarity to intermolecular bonding. We found that when the students are afforded to use creative drama in chemistry education it opens up for

student's agency in the theoretical explorations of electronegativity, and to link electronegativity to intramolecular and intermolecular bonding. The design principles developed for designing creative drama to teach electronegativity in upper-secondary chemistry education are: creative drama in chemistry should open up for students to use bodily mode in combination with a variety of other modes, and that creative drama in chemistry should enable students to engage in collective semiotic work.



## **The language of science: elementary student's multimodal meaning-making in science classrooms**

**Danielsson Kristina**

Learning within, and becoming part of, the discourse of science (i.e. developing 'disciplinary literacy') comprises being able to make meaning through and with a variety of resources, such as speech, action, gestures, models, and diagrams, through 'multimodal orchestration' (Jewitt, 2016). The subject content often concerns nature phenomena invisible for the naked eye, e.g. atoms and molecules, light waves, or sound waves. Students perform investigations to experience these "invisible" phenomena in terms of, for instance, expanding air, shades and reflections, or different sound qualities, and they are supposed to describe and explain their experiments, connecting to established explanatory models (e.g. the particle model, and models of light and sound waves).

The aim of the study is to shed light on ways in which classroom activities can be designed to nurture both the student's development of science knowledge and their disciplinary literacy. Data (videofilms, audiorecordings and photographs) derive from two interdisciplinary projects in elementary science classrooms.

Theoretical and analytical frameworks used are social semiotics perspectives on multimodality (Jewitt, 2016; Kress, 2010; Lemke, 1990), and models describing different perspectives, of science content (e.g. the experiential, macroscopic, and submicroscopic levels, Taber, 2013).

Preliminary results indicate that a teaching and learning design focusing on the "same" content throughout a series of lessons where students repeatedly represent their understanding of the content through whole class and small group discussions, group activities and their own creation of texts to describe their current understanding, appear to enhance students' subject knowledge as well as their disciplinary literacy.

## Is there nothing new in the discussion about problem solving?

de Ron Anette

Problem solving has been a major issue in mathematics education, both regarding research and curricula. Although there is an agreement about the importance of problem solving, there are many different notions of problem solving and what it includes. It is described as an area of the curriculum, as a way of applying mathematical knowledge, as the use of different strategies, and sometimes it is linked to various educational ideas, such as emphasizing meaning making in mathematical situations. Although reviews have been published since 1969 and about every 10 years (Kilpatrick, 1969; Lester, 1994; Schoenfeld, 1992; Törner, Schoenfeld, & Reiss, 2007), the reviews took their beginning in the 1950's, indicating that this is the starting point of the interest in problem solving in mathematics education. However, problem solving has a much longer tradition and it would therefore be of interest to investigate texts written before 1950. The aim of the study presented here is to provide a picture of some of the notions of problem solving written from the mid 1800's to today.

By looking historically, different notions of problem solving, how these have developed over time and how this reflects historically imbedded assumptions about learning and teaching can be investigated (Valero, 2010). Different notions, and related discourses, about mathematical problem are constructed, regarding for example, what it is and includes, how it can be taught and what a student should learn as part of the "governance and ruling-governing" of the child in school (Popkewitz, 2004). Investigations of historical and cultural aspects can help us reveal processes that construct the desirable, modern, rational citizen. The study described here is an ongoing study where articles from mathematics education journals and state-of-the-art investigations gathered in Swedish mathematics education archives are investigated. The selection was determined by the keyword problem and a discourse analysis was conducted.

The starting point was to find similarities and differences in the discourses, and interrogate how the discourses have fluctuated during history.

The preliminary findings revealed that some discourses could be traced across the investigated time span, for example problem solving as distinct from or even contrary to performing calculations, as empowering, and as stimulating and interesting to students. Still, these discourses were more or less prevalent at different times, with different aspects being accentuated.

## **The in between: On Arendt's metaphor “go visiting” and historical film literacy in social science education**

**Deldén Maria**

Historical film literacy can be described as individuals' knowledge of and ability to analyze, interpret and evaluate historical feature films so that their historical understanding is strengthened (Marcus 2004). The concept reflects different disciplinary fields. The first part, history, holds historical didactic perspectives and links the concept to mediation and uses of history. The second part, film, connects the concept with perspectives on feature films with a particular focus on film narration and film reception. Literacy finally shows the concept's focus on human meaning making and links it to knowledge of the use and interpretation of different sign systems in a meaningful and appropriate manner. In this way, history didactics, film narration and meaning making are accommodated in one and the same concept (Deldén 2017).

Parting from the notion of historical film literacy, this conference presentation is a critical reflection on how students' historical meaning making through historical feature film can be understood when linked to Arendt's metaphor “go visiting”. To think one's own thoughts but from the place of somebody else, represents a position where individuals' historical understanding through feature film encompasses both an historical position as well as a position of personal reflection in the present. This oscillation between distance and nearness can enable enlarged thoughts, but this depends on how historical feature films' narration facilitates or obscures a conscious historical meaning making position of the viewer. And it is precisely here the space in between the past and the present becomes interesting.

# Developing students' dynamic systems thinking as powerful geographical knowledge through causal map exercises to understand complex climate change issues

Dessen Jankell Annalotta

Geography in school today aims to make students understand complex global challenges that deals with interactions between social and natural sciences on multiple spatial and time scales, (International Geographical Union, 2016) such as the alarming situation of climate change. IPCC state that even an increase of 1,5°C implies risks of unchanging consequences for ecosystems and society. How to handle that in a constructive way in education? Earlier research has proposed systems thinking as a promising approach to handle complex issues in education, since it provide students with understandings of systems as a whole and the interconnectedness between the elements in the system (Cox & Steegen, 2017, 2018; Verhoeff et al., 2018). Systems thinking is regarded as a key competence in education for sustainable development (ESD) and a fundamental competence and important aspect of powerful geographical knowledge (Maud, 2017). However, research about teaching and

learning that can support students' system thinking in geography is scarce. This have been highlighted by Cox et al. (2017; 2018) who made a test to understand students' systems

thinking ability in geography. Their conclusion reveal that students had difficulties recognizing relationships between variables when several elements of systems thinking come together using different information sources. Building on their findings, this study aim to design and investigate teaching that can support systems thinking from a dynamic and relational perspective by developing exercises with causal maps, adapted from Cox et al (2017; 2018).

The exercise includes several natural and human elements from different sources about climate change issues. Unlike the quasi experimental study by Cox et al, this article present the first step in a longitudinal qualitative and quantitative study, following five classes of students (16-18 years old) in two schools in Sweden. Quantitative data consists of written models (n=37) made by students (n=150) in groups before an exam and 150 written exams.

Qualitative data consists of recorded discussions while students (n=20) works with the models. Also, interviews are made. The preliminary results indicate that: 1) while modeling with causal maps students express that they made new connections between elements and felt safer about how they are linked together, 2) students advanced their dynamic understandings of what will happen to a system if one element is changing and it made it easier to discern how different actors where involved and 3) it seems that the modeling exercise support students understanding of interests of conflicts in climate change issues.

## **Powerful Geographical Knowledge and Geographical Thinking Concepts: Lessons from History Education**

**Dessen Jankell Lotta, Sandahl Johan, Örbring David**

For almost a decade there has been an ongoing discussion about the question of powerful knowledge in geography education (Lambert, 2011; Roberts, 2015; Maude, 2017; Taylor, 2018) and there are several conceptual models trying to describe what might be considered powerful knowledge in a school context. However, these models have mainly addressed philosophical, epistemological and pedagogical issues in its focus on (a) the characteristics of powerful knowledge, and (b) what kind of power does it give those who possess it. Building upon the extensive work made in history education (Lee, 2005; Seixas & Morton, 2013) this paper suggests a shift in focus towards a conceptual model describing knowledge as first and second order concepts. The argument is that powerful geographical knowledge as geocapabilities mainly can be understood from the second order level and that these can be useful for teachers in order to make tacit knowledge more explicit in learning activities. Departing from the discussions in geography education, a framework of six geographical thinking concepts are suggested.

## Dessingué Alexandre

Theoretical and empirical studies of historical consciousness and of cultural memory have dramatically increased in the last decades. The interplay between these two areas of research should have a huge potential but as Peter Seixas already wrote in 2005, there has been relatively little overlap between the two fields. In this presentation, I would like to better connect approaches to historical consciousness and cultural memory studies. One of the risk in articulating the past has been to put memory and history “in the service of the quest, the appeal, the demand for identity” (Ricoeur 2004: 81) and to consider the development of historical consciousness in relation to a static understanding of cultural heritage and more generally of the past. To avoid being faced with the risk of “assignation” (Ricoeur 2004: 81; 448) in the meeting with the past, I would argue for a more critical approach to notions of historical consciousness in a closer relation to studies of memory and the uses of the past. This includes a better understanding of the intertwined and dialogical relations between representations of the past and expectations for the future, or as Paul Ricoeur wrote between epistemology of history and phenomenology of memory.

## **Quality in Language arts/L1 teaching: A phenomenological inquiry-based approach to literature education**

**Elf Nikolaj, Illum Hansen Thomas**

In the KiDM project's focus on Danish Language arts/L1 teaching, the purpose is to improve the quality of literature teaching. This reflects requirements in the initial call from the Danish Ministry of Education (MBUL, 2015), which emphasized 1) that interventions should attempt to change the balance between teacher and student centering and 2) that interventions should produce an effect size that showed improvement for, ideally, all students.

In response, a multiple intervention research program was designed, which established an initial program theory for improving the quality of literature education based on a phenomenological framework (Elf & Hansen, 2017). The program theory argues partly critically and partly constructively (Hansen, Elf, Gissel, & Steffensen, submitted). The critical part problematizes that literature teaching is prototypically too analytical and intellectualizing. The assertion is that students' ability to experience aesthetic texts is limited in classrooms, guided by predominantly instructional goals and analytical tasks. The constructive part, informing the intervention, emphasizes that a task-based teaching approach, which scaffolds a rhythmic transaction and a balance between the aesthetically experiential and the analytically reflective dimensions leads to a deeper understanding of aesthetics texts and students' development of literary interpretative competencies.

In this presentation we focus on presenting the six basic characteristics of the program theory and preliminary findings from quantitative and qualitative work focusing on how particular inquiry-based strategies are enacted in a school selected for RCT and case studies. Also, we discuss how the Danish part of the KiDM design is adopted into a Nordic comparative perspective.

## Science teaching and learning - under the influence of OECD?

Elmose Steffen

This paper examines how the concept of science competence is described and defined through the Ministry of Education's text of goals for science learning in Danish public schools. The analysis of the text is based on a discourse analytical approach (Phillips, 2010) and argues that the text represents an administrative discourse on the concept of science competence by criteria for validity which do not include a didactical discourse (Elmose, 2018). Additionally, through the analysis the paper concludes that the ministerial presentation of science competence is challenged by the Ministry's own intention to use this concept as an explicit evaluation category.

The objective of this paper:

How is the concept of science competence described and defined in the common goals of the Ministry of Education in order to consider the Ministry's intention to make the concept operational in teaching practice?

In August 2014 the new law for the Danish Public School (Folkeskolen) was implemented in the primary and lower secondary school system in Denmark. The implementation also meant new goals for the school subjects, where the goals for each subject were formulated by a group of experts within the specific subject content. However, these groups were all expected to use identical categories of goals, and the categories were inspired by the European Qualification Framework (EQF) and the OECD plan for coordination of the educational systems in the member countries (Danish Educational and Research Ministry, 2014). The goal categories from the EQF consist of the terms knowledge, skills and competence.

The efforts can be seen as an attempt to ensure the free movement of students and employees and the increased competitiveness of the participating countries, which are some of the main objectives of the EU and the OECD in coordinating education and training systems (Illeris, 2012).

It is the intention of this paper to establish the origin of the goal concepts in the current Danish public school system and show, that the concept of science competence is inspired by the EQF and not by the didactical discourse in the Danish science didactical culture, which was generated from a *bildung*-tradition (Elmose, 2007; Dolin, Krogh & Troelsen, 2003).

The official syllable for the subjects does not include definitions of the mandatory goal categories, which could result in problems in the operationalization of the goals.



## Teachers' subject didactical emphases when integrating social studies in primary education

Enkvist Nina

In Finland, an active debate on curriculum integration is taking place currently. This is due to the latest Finnish national core curriculum, which presents curriculum integration as a compulsory element of schoolwork in basic education (Niemelä & Tirri, 2018). Among other things, curriculum integration is claimed to potentially strengthen a subject's identity (Haue, 2018), and to accentuate the main purposes and knowledge areas of a subject (Beane, 1995; Hobel, 2012). Multidisciplinary educational contexts may further generate new subject aspects which do not necessarily emerge in subject-specific education (Kristiansson, 2014).

In this study, the aim is to examine what subject didactical emphases that can be identified in teachers' intentions and practice when integrating social studies (Sw. samhällslära in Finland) in a multidisciplinary study module in grade 6. Social studies in itself is a multidisciplinary school subject, with the common aims to develop students' understanding of the world and their ability to participate in society as responsible citizens (Barr, 1997). Previous studies have indicated that integrated contexts particularly seem to develop students' competences to act in society (e.g. Blanck, 2014).

Applying a qualitative case study design, data was collected in a Finnish primary school, where grade 6 worked for one week with a study module on the theme "Entrepreneurship". Subjects involved were social studies, Swedish and literature, visual arts, mathematics, and home economics. Data was collected by ethnographic observations and teacher interviews. The analysis draws on Odenstad's (2010) and Blanck's (2014) subject profile model for social studies, according to which social studies can emerge in education as a subject developing students' abilities to orientate, analyse, discuss and act in society (Sw. orienteringsämne, analysämne, diskussionsämne and handlingsämne).

The findings reveal that teachers balanced between factual knowledge and students' personal experiences of society. Within the study module, the teachers arranged many authentic situations to prepare students for active citizenship, mainly as entrepreneurial citizens in the economic society. The teachers further highlighted the multidisciplinary study module to make a good opportunity for fostering student's (inner) entrepreneurial competences. The paper discusses how a general aim of curriculum integration, which is to develop pragmatic knowledge, may accentuate the aim of social studies to prepare students for participating in society, and thus, curriculum integration can complement a more traditional subject-specific teaching of social studies by providing arenas where to practically practice citizenship in primary education.

## Taking learning activity into teaching

### Eriksson Helena

The aim of this presentation is to discuss teaching aimed to develop theoretical thinking in relation to different contents. Theoretical thinking can be described as mediated, reflected, and essential (Davydov, 1990). One way of mediation is through the development of learning models when students jointly reflect on theoretical concepts (Gorbov & Chudinova, 2000).

Reflections develop as results of the joint work on the models. Three different qualities have been identified of reflections: reflections on solving tasks, ability to distinguish and coordinate oneself and classmates' positions in a communication, and, ability to change and set boundaries for knowledge (Davydov, Slobodchikov, & Tsukerman, 2003). Data from intervention studies indicate possibilities to develop theoretical thinking through teaching. One example is when a model " $A = B + C$ " developed for whole numbers in Grade 1 was enhanced to " $A = B + \text{a little bit}$ " for rational numbers by the same students in Grade 3. To manage such development there are arguments that interventions should be organized in two dialectical processes - in a macro and a micro level (cf. Davydov, 1990; Zuckerman, 2012) - a macro level when focusing on possibilities during a long time development, a micro level focusing on what should be the difference between the child's actions today and tomorrow (Zuckerman, 2012).

Davydov, V. V. (1990). Types of generalization in instruction: Logical and psychological problems in the structuring of school curricula. In *Soviet Studies in Mathematics Education Volume 2* (Trans. Joan Teller). Reston, VA: National Council of Teachers of Mathematics.

Davydov, V. V., Slobodchikov, V. I., & Tsukerman, G. A. (2003). The elementary school student as an agent of learning activity. *Journal of Russian and East European Psychology*, 41(5), 63–76.

Gorbov, S. F., & Chudinova, E. V. (2000). The effect of modeling on the students' learning (Regarding problem formulation). *Psykologisk Vetenskap och Utbildning [Psychological Science and Education]*, 2, 96–110.

Zuckerman, G. (2012). Developmental education. *Journal of Russian and East European Psychology*, 49(6), 45–63.

## **Enabling students' participation in algebraic reasoning with 'learning models' as tools for theoretical work**

**Eriksson Inger, Fred Jenny, Nordin Anna-Karin, Nyman Martin and Wettergren Sanna**

The issue for this paper is to discuss conditions for students' participation in theoretical classrooms discussions.

In order to develop students' ability to reason and solve problems algebraically Kieran, Pang, Schifter and Ng (2016) argue that it is important to introduce algebra early in mathematics education. In line with this, researchers working within the sociocultural tradition argue that this may start as early as in first grade (Lins & Kaput, 2004). The so-called Davydov programme (e.g. Schmittau, 2005) is referred to as a promising alternative type of teaching, enhancing young students' capability to reason algebraically. Central to the Davydov programme is the concept of learning models (Davydov, 2008). Such models (not to be confused with

mathematical models) are used to enable students' elaboration of mathematical phenomena. The characteristics of a learning model is that it materialises central theoretical aspects of a content. Further, it creates specific conditions necessary for students to understand and elaborate each other's arguments. However, there are many demanding issues related to the design of such learning models that needs to be further developed.

In this paper we address following research question: What in students' classroom discussions can be taken as signs of emergent ability to reason algebraically?

In this paper we use data from two learning studies in grade 1 and 5 (age 7 and 11), that were conducted during 2017–2018. The data comprises of three iteratively designed and revised lessons in two schools respectively.

We focus especially on how students use learning models as tools to enforce and maintain collective reasoning in different communicative situations. To identify possible algebraic reasoning, we have analysed the communicative situations drawing upon Toulmin's (2003) model of argumentation with claim, data, warrant and backing.

The tentative results indicate that the ability to work with the learning models not only facilitated an individual student to clarify and substantiate his or her arguments, but also enabled other students to follow and elaborate on the reasoning. This paper also contributes with examples of tasks and especially how to set the tasks in motion to enable students' theoretical work.

## Constructing Resistance - Negotiations of Femininity, Race and Age in Swedish Visual Arts Education

Eriksson Maria

The following paper discusses two paradoxes in Swedish schools Visual Arts Education. The first one concerning that while a norm critical perspective more commonly is implemented in Swedish school settings by a growing number of teachers, many classrooms remain color mute. However, the active effort to keep the race issue silenced confirms its very importance (Castagno 2008). The second paradox concerning that even though gender equality is an important aspect of the Swedish National Curriculum, and my field studies was conducted in what the teachers and pupils commonly referred to as a feminist aware school, where girls where expected to have a strong voice and make resistance, gender equality still was overruled in the interaction between the male teacher in his forties and the female pupils.

Based on ethnographic fieldwork at an urban upper secondary school with a national Visual Arts program, I video recorded a group of pupils working with an art film assignment. The

theme for the task was “power and resistance”, and the pupils selected a non-white, feminine body in order to represent the position of the subordinate, the one, as the pupils put it, in need to learn how to resist oppression. My study show how femininity, race and age are enacted, for example by styling the casted pupil Vendela in a mixture of traditional female Asian clothing, and accessories to promote an East Asian look orienting her body as non-white. I examine how oppressed femininity is performed and encouraged to be negotiated and problematized in formal education, by teachers and pupils and how inequalities are both reproduced and challenged. But at the same time as the pupils perform these subject positions there is something more going on; a hint of something unspoken that participants still assign significance. There seems to be aspects of the visualization of bodies that may not be articulated in words, but still is employed as a resource when pupils uses their own bodies and appearance to create an aesthetic utterance about subordination. Thus, I analyze how gender, race and age interact as discursive and aesthetic practices, in some young people's visual arts assignment. The theories of use are gender theory with an intersectional approach, critical race theory and the perspective of visual culture theory.

## Student vs subject matter – a design theoretical perspective on learning in history teaching

**Eskelund Knudsen Heidi**

How to understand the relationship between student and subject matter is a key issue in subject oriented didactic research. Regarding history didactics, previous research projects have been studying questions such as why students over time tend to remember very little of what they have been taught during history lessons (i.e. Rosenzweig/Thelen, 1998), and why student knowledge about the past appear either fragmented (i.e. VanSledright, 1995) or as expressions of misremembrance (i.e. Wills, 2011). History didactic research has also been discussing the fact that students create and understand subject matter issues differently than their history teachers – due to specific pre-understandings (i.e. Shemilt, 1983, 2009).

When discussing issues concerning the student-subject matter relationship, the didactical analysis implicitly risks designating the student as a key problem to the (history) teaching situation (Knudsen, 2018). Consequently, the analysis disregard the fact that the subject matter too – including a differentiation between subject matter and teaching – can be of importance when it comes to understanding students' learning problems in history teaching.

This presentation focuses on history teaching, meaning teaching regarded as mediation processes between the student and subject matter. Based on ethnographic field studies in Danish upper secondary history teaching from 2016 (Ebbensgaard/Knudsen, 2017), I examine one history teaching case containing teacher-student dialogues and interactions during a lesson on the Danish Constitutional Act of 1849. The aim of the study is to describe and discuss history teaching as designed meaning making processes aiming at students' learning subject matter content.

By referring to design theoretical perspectives on communication and learning (Selander/Kress, 2010) the presentation answers two research questions. Firstly, the question of how to characterize history teaching as designed meaning making and communicative processes. Secondly, the question of how these communicative processes reflect signs of learning history as subject matter.

The presentation argues that teaching as a fundamental communicative matter has the ability to indicate signs of learning that reflect the students' participation and meaning making during the teaching situation. However, these signs of learning do not necessarily concern mediations between the students' and history as subject matter. The discussion relies on didactics systems theory (Keiding/Qvortrup, 2014).

## Becoming a Teacher of RE

Eskilsson Cecilia

In this presentation I present my forthcoming PhD- project. The aim of my study is to gain a greater understanding of the transitional processes from being a teacher student to becoming a teacher of Religious Education (RE). The study is concerned with changes and development in the teacher students' perceived sense of identity over time, in relation to the development of their competence as teachers of RE. Here globally discussed questions

will be visible in the local seminary rooms with teacher students. The main research question is; how can we understand and explain the transitions that students describe, in moving from being a teacher student to being teacher of religious education in upper secondary schools. Teacher students from two universities, in Sweden and Finland, will be interviewed three times during their teacher education. Methodologically, the ambition is to utilise life history (Löfgren, Karlsson, Pérez Prieto 2015) and performance maps (Scherp 2012).

Theoretically, the results will be interpreted by using Shulman's Pedagogical Content Knowledge (Shulman 2004), and threshold concepts theory (Meyer & Land 2005) will be used as an analytical tool in order to elicit the process of subject identity formation in the RE-teacher students' descriptions. The results of this study should be of considerable value to teacher education. Gaining an understanding of the identity formation process that takes place in a student will facilitate teacher educators' work in planning their curricula and seminars.

## Learning materials and generic vs subject specific coding categories

### Falkesgaard Slot Marie

In my presentation, I highlight a perspective on generic versus subject specific coding categories with focus on L1 and learning materials. In large-scale research projects on classroom teaching and learning it is a common practice to develop generic categories across school subjects, e.g. PLATO- coding manual [Protocol for Language Arts Teaching Observations] (Klette & Blikstad, 2017). On one hand generic categories can be crucial for learning more about classroom complexity across subjects and classroom contexts. On the other hand there is a risk of losing the subject specific insight and understanding of context sensitives, when categories are primarily generic categories.

The results that underlie my discussion come from two Danish large-scale school projects, which the author is working with: 1) Learning platforms and digital learning materials in school disciplines 2)

Task design and student production in L1, math and science. In the first mentioned project, results showed that in 42% of the coded Danish courses a digital, didactic learning material is involved and that in 50% digital semantic learning is used. In the second project, we made a cross-disciplinary research question on the use of learning materials, task design and student production. Results pointed out that there is not a particularly varied use of different types of learning materials cross subjects. Both corpuses of results addresses issues on generic coding categories vs subject specific categories, which I will discuss in my presentation.

## **Global conflicts with local consequences in the classroom practice. The Middle Eastern conflicts in Religious Education and Civics**

**Flensner Karin K**

The Middle Eastern conflicts have become global conflicts through the actors of the conflicts operating and recruiting worldwide, through the use of social media, but not least through international migration. Religion is often presented as an explanatory factor in relation to these conflicts. In the local classroom practice students and teachers, with different personal experiences, knowledge and opinions, discuss and negotiate ways to describe the causes and consequences of these conflicts. The aim here is to analyse how the conflicts in the Middle East (widely defined) are framed, described and explained in classroom-practice in Religious Education and Civics. What different positions are articulated? What explanations are given to the conflicts? How are the consequences described? The study is based on participatory classroom-observations of Religious Education and Civics at six Swedish upper secondary schools. 12 interviews with 8 teachers and 15 focus-group interviews with 51 students have been conducted during 2017-2018. The preliminary results indicates that current events such as the terror-attack in Stockholm 2017, the terror-attack at the school Kronan in Trollhättan 2015, the "migration crisis" culminating in 2015, IS' attacks in Syria and European cities, hate crimes against Jews and Muslims, and growing right-wing extremism simultaneously were local and global phenomena raised in teaching related to the conflicts in the Middle East. Terrorists or terror-attacks with ideological explanations could be complemented with psychological and socio-economic explanations. However, if a perpetrator or attack primarily was described as religiously motivated, it was more provocative to complement with psychological and socio- economic explanations.



## **The same conflicts but different framing: The Middle Eastern conflicts in Religious Education and Civics**

**Flensner Karin K**

The conflicts in the Middle East are not confined to a geographical area but have both a global and a local dimension. International conflicts, crises and acts of terrorism have consequences in the classroom practice, partly because current events are part of the content in social studies subjects, but partly because an increasing number of pupils have personal experiences and/or personal views on different aspects of these conflicts, also in relation to nationalist, xenophobic and islamophobic discourses. The overall aim in this paper is to investigate and compare how the Middle Eastern conflicts and related topics are raised within Religious Education and Civics. Are there differences in content and ways of talking in Religious Education compared to Civics and, if so, how? What implications have different subject framings for discourses and perspectives and hence, what becomes possible to learn? The study is based on participatory classroom observations of Religious Education and Civics at six Swedish upper secondary schools. Interviews with 8 teachers and 15 focus group interviews with 51 pupils have been conducted. The preliminary analyses indicate that migration, terrorism, antisemitism, islamophobia and swedishness were major themes raised in relation to the conflicts in both subjects. Experiences of pupils largely affected the classroom discourse. However, there were differences between how the conflicts were framed and discussed, but also the role of religion as an explanatory factor. In Civics, the conflict perspective was central but remained unproblematised. In the Religious

# The Assessment of Knowledge in Biology in Higher Education

Flodin Veronica and Slove Davidson Jessica

Assessment of knowledge is a key part of all programs. In higher education, the assessment process since 2006 also has had an ambition to be equivalent in Europe through a joint agreement in Bologna. Course objectives should be formulated in terms of more student-centered learning outcomes with grade criteria to be formulated that make the assessment more transparent. At some Swedish universities, the reform was completed in 2007. A question is thus, how learning outcomes and grading criteria are expressed in biology courses as of today. Further, how teachers experience working with them. All course plans and course descriptions from the academic year 2015/2016 in biology at one university in Sweden have been collected and categorized according to type of grading criteria (Sadler, 2005). We have conducted semi-structured interviews with five course leaders in order to develop understandings of how they have done the assessments. Upon characterization we find that in almost 50% of the course syllabuses, course criteria are based on non-qualitative differences. Grading criteria are formulated as a percentage. The study also shows that courses, where grading criteria are formulated based on qualitative differences of knowledge, are assessed in relation to different forms of taxonomies of learning. An additional result was that instead of qualitative differences, different student activities are assessed and graded separately and the final grade is a result of combination of these grades. The teachers expressed fear of creating "checklist" and that students learn for grades, not for the knowledge itself. Some teachers found it difficult and time-consuming to formulate in writing how to assess. In addition, the

teachers lifted the absence of coherence between departments on what for example an "A" means. One purpose with Bologna was that grades would be comparable between countries, but in our study, it is not comparable even between courses at the same institution.

Therefore, it is particularly important for the biology teacher to realize what may be involved in understanding the different qualities of biological knowledge. However, it is also clear that there are problems in being explicit with all kinds of knowledge (Carlgren, 2015).

# Bridging Curricular Disconnects in English Language Teaching in Danish primary school

Fogh Jensen Benthe

Against inconclusive results from national and international research about early learning of foreign languages (Enever 2011, Nikolov 2009 and 2016), the purpose of this study has been exploring and developing practices in English language teaching and learning in Danish primary school, uncovering which elements facilitate learners' linguistic, cultural, cognitive and personal development. The study positions itself in the field between foreign language and bilingual education and pedagogy, focusing on sociolinguistics, functional linguistics and sociocultural theories of language and literacy development. The research question of the study is: How can a critical participatory action research project contribute to a better understanding of important factors for qualifying English language teaching and learning in Danish primary school and serve as a vehicle for the reconceptualizing and transforming of current methods. The study is grounded in a critical participatory action research methodology (Kemnis, McTaggart, Nixon 2014). Two teachers' perceptions and practices as well as the perceptions and engagements of the students in their two classes (grades 4 and 5) from two different schools in South Denmark, having learned English from grade 1, were explored throughout the year 2018 in a reconnaissance phase, an action initiative phase and a post- reflection phase. The empirical data consist of mainly classroom observations, student interviews, and reflection meetings and reconceptualization seminar with the teachers. The

reconnaissance phase revealed several examples of disconnects (Lin 2016) in 'practices' as well as 'practice architectures', e.g. available teaching resources. Intracurricular disconnects

were observed between language input and students' expected language output. Pedagogical disconnects were observed in, among other things, lack of scaffolded contextual construction of newly learned language (Gibbons 2015), leading to a limited development of students' language proficiency. Finally, intercurricular disconnects were observed such as lack of connection between English and other subjects and between classroom practices and

students' own use of English in everyday life. Hence, focus of the action initiative, carried out

in September 2018, became: scaffolding students' language output using model texts, working with a theme of relevance to students' life worlds and working with multimodal texts.

Preliminary findings of the study are focused around the following: to what extent the

scaffolding of learners' expected language output and working with multimodal texts have served as a way of bridging intercultural and pedagogical disconnects and facilitated a positive development in students' self-perceptions, attitudes and motivation towards learning English and thus succeeded in, to a certain extent, bridging intercurricular disconnects.

## The political role of the sustainability (drama)teacher?

Fopp David

I start my reflections with my experience in teaching sustainable development to students which will become teachers for 8-year olds. Traditional teaching is related to teaching knowledge (about science; about transformational possibilities; about sustainability abilities) and values (of sensitivity, care etc.). The more specific drama-dimension in teaching opens up to integrate not only cognitive abilities, but the emotional, imaginary and social aspects of our being in the world.

But is this mainstream-framework of “teaching sustainability” coherent with its subject? Is the most important question really: what and how do we teach our children to become competent citizens in relation to sustainability? Shouldn’t we change the basic question: What is exactly the inter-generational role of the teachers and of all involved in the school (and university-

)system considering that they represent a generation which has failed to stop climate change, to cite Greta Thunberg, the 15 year old student who is on climate-school-strike every Friday. Even if one considers it as meaningful to use drama to teach children how to be or become engaged citizens which take care of the environment, take actions towards a better world: the very framework of the schools and universities rests within a competitive logic of educating market-agents; the competence, and ability-concepts are good signals for this. In the very centre of the concept of sustainability, if one follows Kate Raworth model of the Donught, stands the question how we can change not at least the financial and broader economic system so that it corresponds to the ecological frame of an intact planet and the social frame of human life in dignity. To teach about this transformed society, so the hypothesis here, means to question the very role of the teaching-situation.

## Learning model as a tool for materializing theoretical work

Fred Jenny

This presentation addresses students, in third grade (nine to ten years old), exploring algebraic structures through visual number patterns. Researchers in the field of early algebra (e.g., Cai & Knuth, 2011) argue that students need to be introduced into algebraic work already in the early grades; work which goes beyond the mastery of arithmetical procedures and which engages the students in exploring deeper underlying structures of mathematics. Regarding enabling younger students' emergence of algebraic thinking, mathematical patterns with their inherent structure is suggested (e.g., Radford, 2010). The data used in this presentation is from a learning study comprising three research lessons. Learning activity (Davydov, 2008) has worked as a design principle in the teaching as well as in the analysis. Findings indicate how learning models made it possible for the students to explore algebraic structures of patterns. This together with using hooks/contradictions (Davydov, 2008) and inviting students to reflect on other students' or the teachers' suggestions for solutions and arguments.

Cai, J., & Knuth, E. (Eds.), (2011). Early algebraization: A global dialogue from multiple perspectives. Springer Science & Business Media.

Radford, L. (2010). Signs, gestures, meanings: Algebraic thinking from a cultural semiotic perspective. Proceedings of CERME 6, January 28 - February 1st 2009. Lyon: France.

Davydov, V. V. (2008). Problems of developmental instruction. A theoretical and experimental psychological study. New York: Nova Science.

## **Drama in teaching for sustainability in higher education - practice, potentials and possibilities**

**Fries Julia**

Drama has been described as a powerful method in teaching difficult, multifaceted, contradictory issues loaded with values and emotions, such as those concerning sustainability. Learning through drama is holistic and easily integrates multiple perspectives as well as emotional dimensions. As a partial answer to recent requests for higher education (HE) to be renewed in order to meet the sustainability challenges of our times this paper will give an overview of the literature surrounding the use of drama in sustainability education in HE. Reviewing this literature reveals that current research on drama teaching for sustainability in HE is very limited, therefore drama in sustainability teaching in broader settings than HE will be included in this presentation. Pointing out the potentials and possibilities of drama in teaching for sustainability, the paper argues that what is discussed as vital qualities in education for sustainable development and transformative learning are well met by the qualities drama work brings. However, creativity and imagination has not yet been elaborated in the research on drama in teaching for sustainability. This may seem surprising as these are aspects where one might find drama to have some of its most important contributions. This paper will present the concept of 'environmental imaginaries' and an outline for a PhD project where drama will be used to explore creativity in imagining sustainable futures.

## Compacting and patterning the school subject in RE (Religions Education)

Fuglseth Kåre

A central pedagogical content knowledge is to compact and pattern different forms of knowledge in order to act in relevant ways in schools. Relevant here means in accordance with the purposes of the subject. In religious education in a secular setting this is not connected to knowledge about religious or secular groups per se, but to the ability of the teacher to handle the plural situation and eventually to help children's need for orientation as well as for establishing attitudes based on accepted liberal values such as equality, democracy and tolerance.

The hypothesis that will be discussed in connection with the teaching of RE is that there is a patterned content knowledge related to these fields developed through experience: 1) Defining and understanding the field of religion in general, 2) the knowing of how secularization and pluralism play a background knowledge for teaching RE, 3) the ability to define a plural perspective in the classroom, 4) the understanding of to making translation of religions to a secular language, 5) to understand patterns of reaction to modernity, 6) understanding internal vs. external perspectives of knowledge

of religious and secular world-views, 7) understand the difference between analysis and narrative in general, 8) developing critical thinking in the class- room, and 8) learn to handle religiously legitimized conflicts in a classroom.

## **Word magic? Working with words and word construction in school**

**Golden Anne and Tonne Ingebjørg**

In our project we study various aspects of how a competence enhancement program for teachers is received at three different primary and secondary schools in a region in Norway where the proportion of minority students is high. The program, called Systematic work with words and concepts, was developed by the Education authority (Utdanningsetaten, UDE) of the region. It started with a kick-off seminar for 230 teachers, followed by two sessions for teachers at each of the participating schools with UDE instructors. Between the sessions, the teachers had four collaborative meetings grouped according to grade. There they discussed how to apply the insights from the program into the pedagogy of their own classes. They participated in plenary sessions with the UDE instructors, where they shared their classroom experiences related to vocabulary and word construction.

In this presentation we focus on the content of the program. We discuss what types of words and concepts the UDE instructors focused on and their rationale for this. We also discuss the type of morphological knowledge, i.e. knowledge of how words are constructed, introduced in these lectures. The content in the program related to vocabulary types and word construction are compared to the teachers' perception of the content, as expressed in teachers'

presentations of their own classroom work in the 'shared-experience' sections. We have analyzed observations from various sessions, interviews with the instructors, teachers and the school leaders as well as the material from the program. In our presentation we focus on work and activities aimed at the intermediate stage, i.e. in the grades 4-7 where the students are between the ages of 10 and 13.

The research question is threefold. We want to find out which aspects of vocabulary and morphology the instructors focus on and the reasons for their choices. We further investigate to what extent the UDE-instructors' explanation and argumentation about systematic work with vocabulary and word construction seem to have an impact on the teachers' practices as seen in their presentations. We also seek to find whether some parts of the program are better suited than others for such programs. The results are discussed in light of recent Norwegian and Swedish insights from text and vocabulary research. Theoretically we link the discussion with user-based approaches to the learning of words and the understanding of texts.



# CLIMATE SCIENCE CURRICULUM DESIGN IN COOPERATION WITH BUSINESS AND ENGINEERING EDUCATION – AN EXAMPLE FROM DANISH LOWER SECONDARY SCHOOL

Grunwald Annette

Making STEM education (Science, Technology, Engineering, Mathematics) in lower secondary school more meaningful by cooperating with private and public companies and universities is important to get students interested in Engineering Education (EE) and in environmental subjects. Meanwhile, science teachers face challenges when they try to organize integration of non-formal learning environments (Eshach, 2007) into school curriculum because they have to facilitate the learning process between actors involved.

The aim is to further the understanding of how to design practice-oriented STEM education in a PBL perspective by including actors outside of school. Focus in this investigation is to find out which key factors are needed in a successful curriculum design-process that make use of and bridge to other learning environments. This article presents a project entitled "Learning in

Reality" (2014-2017), a collaboration between primary schools, a municipality, companies and university- EE in Northern Jutland, Denmark.

The investigation is based on and expand a conceptual framework, for a teacher design process (Binkhorst et al, 2015), with the involvement of partners outside school. The conceptual framework is adapted with input - process – outcome: Input as 'experience and motivation to participate', process as 'activities' in the common learning process, and

outcome as 'which benefit did the organizing actors achieve from the program carried out'. Data has been collected by interviews and observations. This article analyses one concrete example, out of 14, in which the science teacher designed a cross-curricular technical program (chemistry, physics, biology, geography involved) in cooperation with a local company and a university engineering student. The teaching program has been carried out in two 8th grade classes, and has addressed global environmental problems in a local context, giving scope for action.

The results indicate that the teacher had an important role in the developing process and made changes along the way. All participants, including the company, benefit from the cooperation. For 8th graders to motivate in education and climate subjects, the involvement of company and engineering student, had an important role. Finally, the paper presents recommendations, both for such an inter-organizational STEM design process, as well as for further research.

## Teaching about minorities in Finland

Gullberg Tom and Björkgren Mårten

The curriculum for the Finnish basic education points out that a multicultural society has many advantages. Cultural competence is one of the main educational goals in the primary school.

However, almost everything that is mentioned in relation to the teaching about multiculturalism is discussed on a quite general level. The fact that the Finnish society is bilingual is quickly mentioned, but the cultural entity of Swedish-speaking Finns is not visible in the Finnish-speaking variant of the curriculum. The smaller so-called autochthone minorities, as the Sami and Romani people, are mentioned only in relation to language education: They should have the right to learn their language and strengthen their cultural identity from their own minority perspective. For Samis the curriculum also stresses that their international rights as an indigenous people should be considered in education.

But even if the curriculum mentions the advantages of multiculturalism and the need for cultural competence, almost nothing is said about what kind of knowledge about i.e. ethnic and language minority groups the majority – the Finnish-speaking pupils – should master. We do not actually know if there are any kind of teaching about the Finnish autochthone minorities in Finnish-speaking schools. We do not neither know what the Finnish-speaking majority learn about the Swedish-speaking minority group in school.

In this paper, I try to find answers on the questions mentioned above by analysing textbooks for the curriculum subject's history and social science education in Finnish-speaking primary schools. The take-off for the study is leaning on the theoretical development in the field of minority education (minoritetspedagogik).

## **Hot Stuff and Safe space: Unfolding Social Studies teaching with Affective-material Choreographies**

**Gunnarsson Karin**

Social studies curricula comprise sociological notions of equality, power, categorization and exclusion. However, questions of equality are often perceived as sensitive, and are seldom stressed in social studies teaching. Within research on social studies as well as other school subjects, there are comprehensive recognition of the affective conditions of learning and the importance of connecting knowledge content with personal experience. Herein, there are two lines of arguments concerning the atmosphere or classroom climate. One arguing that the teaching must provide a safe space and another arguing that it must involve 'crisis' to be beneficial for the students learning. Taking these tensions as point of departure, this presentation aims to elaborate on affective dimensions of teaching and learning in social studies education. Two questions are raised: How do collective forms of affective choreographies inflect teaching and learning? And, How to disrupt 'safe space' and 'crisis' in the teaching practice with a feminist posthumanist approach? For this elaboration, I turn to affect theory and feminist posthumanism in order to unfold educational arrangements in the direction of the affective, critical and careful. Rather than to stay safe, I ask how to stay with the trouble concerning questions of equality and norms.

## How do we teach critical thinking in a changing society?

Haglund Runa R.

How do we teach the next generation critical thinking and understanding? The international project Education 2030 points to the importance of learning critical thinking when growing up in a society undergoing major changes. The ability to think critically relies heavily on understanding different subjects, which is emphasized both in the curriculum for Norwegian compulsory school, and in guidelines for higher education. In the mathematics curriculum for grades 1 to 11, critical thinking

and understanding of statistical concepts is pointed out as important educational goals for preparing young citizens for future changes in society. The same goes for higher education institutions; they have a responsibility to educate the people when society is changing in unknown directions. Teaching critical thinking and understanding related to how society changes could be done through the subject of statistics, and many seem to think this is a good direction to move towards.

In this study participated 5 students from a higher education institution in Norway. They had followed a statistics course where understanding concepts was emphasized and they were asked to graphically fit a linear model to a plot. The study, though somewhat inconclusive concerning the students understanding of statistical concepts, revealed that all 5 students used statistical methods traceable down to mathematics in compulsory school. Although not a problem per se, this may create tensions between the students' actual knowledge in critical thinking and their readiness for critical thinking in a changing society.

## **Disciplinary reading literacies for subject learning in vocational upper secondary education**

**Hallesson Yvonne and Visén Pia**

This paper concerns students' disciplinary reading literacies in vocational upper secondary programmes. In all school subjects, reading texts is a means for subject learning. However, there are differences between subjects with regard to what kinds of texts are used, and what disciplinary literacies are sustained, i.e. subject-specific ways of reading, writing and communicating. Gaining access to the specific literacies of a subject is thus a crucial aspect of subject learning, necessary for developing knowledge. This entails didactic challenges, not the least in upper secondary school, where students come across many new subjects, especially in the program-oriented subjects. As regards vocational programmes specifically, further challenges emerge from the fact that many newly arrived students and students who speak Swedish as a second language choose these programmes.

The paper presents findings from two studies focusing on disciplinary reading in vocational subjects in altogether seven programmes. The programmes are Business and Administration, Child and Recreation, Electricity and Energy, Handicraft, Industrial Technology, Restaurant Management and Food, as well as Vehicle and Transport. Both studies are theoretically anchored within New Literacy Studies (Barton, 2007; Barton, Hamilton & Ivanic, 2000), where texts and text use are considered socially situated. Moreover, the studies are based on classroom observations of literacy events, interviews and informal conversations with teachers and students.

The aim of the presentation is to exemplify how disciplinary literacies are part of developing knowledge in vocational education. Research questions regard how disciplinary reading is acted out in literacy events, and the relationship between subject-specific reading and learning. Preliminary findings show that disciplinary reading is often closely linked to vocational practice. For example, a pendulum reading is sometimes acted out in events where the text is a base for practical performance. Furthermore, the relationship between reading and learning may be enhanced by intermediality, where reading is intertwined with the use of other artefacts and in-class demonstrations. This didactic approach may prove particularly useful in multilingual classrooms.

## Mind the Gap! Geography as a discipline, pre-university subject and part of everyday life

Hammond Lauren

This paper critically considers the relationship(s) between geography as an academic discipline, geography as a pre-university subject and geography as a human instinct and part of everyday life. These relationships are worthy of examination as they facilitate the sharing of research insights and stimulate academic discourse about the evolution of Geography in spaces of formal learning as 'geographers made and continue to remake geography' (Johnston & Sidaway 2016). This importance of the discourse is amplified in a context where 'borders' (see Castree et al. 2007) have been identified between these spaces. To illuminate these discussions the paper draws upon the emerging conclusions of an ongoing doctorate which explores young people's geographies in London.

The research was conducted in a small storytelling and geography group with young people in London, with the methodology being informed by Goodson's (2013) work on life histories and narratives. Harvey's (1987) 'grid of spatial practices' which builds upon Henri Lefebvre's (1991) work on the 'production of space' was used to analyse the data. The paper examines the tentative conclusions of the doctorate in considering:

The relationship(s) between young people(s) geographies and the place, space and time they exist within;

How, and why, young people's geographies are of value to geography educators in pre- university settings;

If, and how, 'borders' between the three spaces of geography might be softened, and the value of this to different people(s)

## Practice-interpretations of Learning Materials

### Hansen Rune

The PaL-project (Practice-interpretations of Learning Materials) aims to map and contribute to an understanding of the use of learning materials by teachers and students. More specifically, the research field focuses the use and orchestration of didactic, semantic and functional learning materials in three subjects, respectively Danish, Mathematics and History. With respect to mathematics, textbooks have an immense impact for selecting the content taught, where teachers interpret the textbook and other learning materials in their specific teaching practices (Pepin, 2018). In the PaL-project there is focus on answering the following research questions:

How are the learning materials used by mathematics teachers and students (teaching patterns, activities, combined with other learning materials) and what do the users think about them?

The focus in this presentation is the idea in the PaL-project of developing a common methodological design for a database that can be used for future research in various projects. In the presentation I will discuss the development of general and subject specific coding categories and the tension between serving both a generic and a subject specific research purpose.

## Undervisning om Sveriges nationella minoriteter

### Hansson Johan

I de nu gällande kursplanerna för skolämnen svenska, historia och samhällskunskap nämns Sveriges nationella minoriteter bland de centrala innehållen och i samhällskunskapsämnet finns dessutom kunskapskrav. Dessa kunskapskrav säger att eleverna ska ha kunskaper om de nationella minoriteterna och deras rättigheter, men skiljer sig från de övriga eftersom det inte är någon skillnad för betygen E eller A.

Då lärarna på Hörnefors centralskola, Umeå kommun, började använda kursplanerna från 2011 i undervisningen kom lärarna i So-ämnena att diskutera de utmaningar som fanns med förändringarna i styrdokumentet, däribland lärostoffet om minoriteterna. Utifrån sina samtal försökte de finna möjliga vägar till en undervisning om minoritetsfrågor på sin grundskola.

Trots att de hade få elever fanns det många faktorer att hantera, exempelvis en upplevelse av stoffträngsel och de egna kunskapsluckorna, men också elevernas uppfattningar och skolans geografiska belägenhet.

Samtidigt med planeringsarbetet söktes medel från Lärarhögskolan vid Umeå universitet för ett skolutvecklings- och forskningsprojekt. Det beviljades. Detta innebar att en av skolans lärare fick möjlighet att leda arbetet med att skapa ett undervisningsupplägg som skulle kunna nyttjas av kollegor på den egna skolan och på andras, men också att undersöka lärarnas didaktiska praktik.

Undersökningen genomfördes enligt Uljens teoretiska modell för didaktisk utveckling och med aktionsforskning som forskningsmetod. Studien har alltså genomförts av en forskare som också varit aktiv som lärare i det lärarlag som bedrivit den undervisning som studerats.

Källmaterialet utgörs främst av lärarnas planeringar och deras skriftliga instruktioner samt lärarnas diskussioner om sin undervisning.

Resultatet av projektet har varit delvis tillfredsställande. Det upplägg som framarbetats är genomförbart, men under de år som studien pågått har det uppstått många bekymmer på grund av personalomsättning och förändringar i organisationen. I korthet kan upplägget beskrivas på följande sätt: I årskurs sju studeras de nationella minoriteterna i samhällskunskapsundervisningen. Eleverna får lära sig faktakunskaper om minoriteterna, men även begrepp som identitet, etnicitet och kultur samt hur ungdomar i sina möten med människor formar sin identitet. I årskurs åtta fokuseras en del av undervisningen i svenska på minoritetsspråken och de rättigheter som skyddar dem. I årskurs nio ägnas en del av historieundervisningen till studier av samers och romers situation under 1900-talet ur ett Svenskt och Europeiskt perspektiv.



## Epistemic Quality in the Classroom

### Hardman Mark

'Powerful' disciplinary knowledge has the potential to enrich students' lives through access to understanding beyond everyday experience. Learning science, history, geography or any other school subject, requires understanding the epistemic basis of the relevant academic discipline. The term epistemic quality moves us towards conceptualising how classroom activities have differing qualities in conveying epistemology. However, contemporary discussion of disciplinary knowledge remains at the sociological level, offering little clarity around how such knowledge manifests in the complex and unique contexts in which people learn. Drawing on a theoretical discussion (Hardman, in press), this paper reports on an empirical study to investigate how powerful knowledge and epistemic quality are situated within the unique circumstances of a classroom. We coded video data from a naturalistic setting in which an experienced science teacher taught a group of 13-14-year olds (n=27), over three lessons. We also recorded verbal protocols, in which the teacher and a sample of six students commented on the video data, and then engaged in debrief interviews. This allowed the epistemic and pedagogical beliefs of the teacher and pupils to be analyzed. We found that the teacher exploited emergent episodes in the classroom, whereby pupils' ideas were reinforced or challenged through the use of humour, narrative and selective attention to pupil work. The teacher and pupils gained related epistemic views around the use models in science and in learning. We tentatively suggest that epistemic quality is emergent from the interplay of teacher planning, expertise and the unique contexts in which learning happens.

## **Inquiry-based teaching with historical primary sources**

### **Harnes Helga**

The aim of this action research study is to explore inquiry-based teaching with primary microhistorical sources in one Norwegian middle or lower secondary school.

The overall research question for my PhD thesis is:

What opportunities and challenges do teachers in one Norwegian school experience when planning and implementing an inquiry-based teaching session constructed around microhistorical primary sources?

Researchers of history education across the literature advocate teaching with historical primary sources in order to foster historical thinking and understanding. Microhistory is a methodology that involves a focused and deep observation and analysis of sources related to one family, one village, one event, one individual etc. It may add detail, complexity, and awareness of, to us, invisible aspects of historical social and cultural systems. Thus, it becomes a good foundation for inquiry-based teaching, which, in history, can be characterised by the analysis of disciplinary sources through open-ended questions and varied and discipline authentic activities.

Qualitative data will be systematically collected throughout the process of planning and implementing the teaching intervention, in close cooperation with two or three teachers. In line with action research methodology, the teachers will be active participants in defining the problem the teaching intervention seeks to solve, as well as planning and implementing it.

Expected outcomes are (1) insight into teachers' contextualised reflections about history education; (2) analysis of the process of planning inquiry teaching practices, particularly considerations about content, sources, and assessment; (3) contextualised knowledge about inquiry-based teaching with microhistorical sources in one Norwegian educational context.

I plan to collect data during the spring of 2019 and will present a first reading of the material at the conference.

## Environmental education in early childhood education settings

Henriksson Ann-Catherine

Early childhood is an important period for the child's development. The child's experiences during this period can affect the child into adulthood. The implications for the child's environmental learning are obvious. Positive and significant experiences in the natural environment as well as the child's experience of participation and the sense of competence to act are factors that influence the development of individuals to environmental awareness and responsibility. The educators act as role models. The teacher's content knowledge, attitudes and practical action in environmental issues affect the children. In the tree model (Palmer, 1998) environmental education is divided into three areas: learning in the environment, learning about the environment and learning and acting for the environment. Research shows that even very young children are competent to discuss and engage in environmental issues. However, research on sustainability and environmental education for young children is still being conducted to a limited extent.

The overall aim of this study is to investigate the personal perceptions of the participating educators on environmental education and to analyze these perceptions in relation to the tree model. The research questions are: 1. What different perceptions do the educators have of the concept of environmental education?, 2. How do educators describe different activities in the area of environmental education? and 3. How are the activities described by the educators distributed in the tree model?

The informants are educators (N = 55) working within early childhood education. The study is qualitative and it is based on the respondents' perceptions. The empirical material was collected partly by means of an electronic questionnaire and partly in the form of group discussions during in-service training and the participants' notes from these discussions. The transcribed texts are analyzed and coded thematically on three levels from a person- or group- specific level to a final general level.

Preliminary results from the study show that the participants primarily associate environmental education with concrete activities that the children and the day care staff make for the environment. Sustainability science is solution-oriented and aims at social change. The results of the research can be implemented in the education and training of teachers in early childhood education. The activities and the children's discussions can also provide signals to the parents. The long-term goal is that the children create environmental skills and a willingness to make good decisions now and in the future.

## På besök i SO-undervisning på mellanstadiet

Henriksson Persson Anna

Denna presentation bygger på en prövande reflektion över hur spänningen mellan demokratiärande som kunskapsuppdrag och fostransuppdrag (inom SO-undervisningens kontext) kan förstås i belysning utifrån Arendts besöksmetafor "go visiting". Utifrån resultatet av en tidigare genomförd licentiatuppsats (Henriksson Persson, 2018) har jag identifierat några spänningar knutna till skolans demokratiuppdrag i mellanstadiets SO-undervisning. Jag har här valt att rikta fokus på det som i lärares tal om och gestaltande av demokratiuppdraget framstår som spänningar mellan olika värden, som är svåra att förena eller se som kompatibla med varandra. Dessa spänningar väljer jag att förstå som komplexa värdeambitioner, där lärare behöver förhålla sig till motstridiga ambitioner, krav och skyldigheter utifrån hänsyn till olika värden. Arendts besöksmetafor, så som den skrivs fram av Disch (1997), får här fungera som en referensram i syfte att prova en teoretiskt medveten hållning för att utmana föreställningen om dikotomin mellan kunskapsstoff och fostran.

## Att kunna överväga tillsammans. Analys av en deliberativ gruppdiskussion i samhällskunskap

Hudner Sidén Kerstin

Studien är ett pågående doktorandprojekt (licentatnivå) med syftet är att beskriva och analysera deliberativa förmågor som elever visar i en iscensatt deliberativ gruppdiskussion och vad som här framstår som hindrande respektive främjande av deliberation, d.v.s. ett ömsesidigt övervägande. En grupp gymnasieelever har filmats när de diskuterar om hur en motion om en samhällsfråga ska formuleras. Videomaterialet har analyserats utgående från Englund's beskrivning av deliberativa samtal (Englund 2000, 2003, 2007).

Det preliminära resultatet visar att deliberativa förmågor som att kunna lyssna, reflektera och värdera med en kollektiv strävan efter att nå konsensus är komplexa och implicerar var och en inte bara ett slags kunnande utan flera. Förmågan att exempelvis kunna lyssna handlar om att visa lyssnande, att lyssna respektfullt, att lyssna efter argumentet, att lyssna färdigt och att lyssna kritiskt. Deliberation främjas av ett respektfullt lyssnande och kunskap om argument och hindras av det motsatta (d.v.s. utan lyssnande och utan argument kan inget övervägande ske). Emellertid visar studien att designen av den iscensatta samtalssituationen har en helt avgörande roll i vilken mån en deliberativ samtalssituation blir möjlig, exempelvis gruppstorlek, fråga och uppgiften.

Sett i ett ämnesdidaktiskt perspektiv kan emellertid strävan efter att komma överens verka kontraproduktiv eftersom denna samtidigt tenderar att hålla tillbaka kritik pga. den diskurs som skapas om en fråga och pga elevers oförmåga att överväga kritiskt om en fråga, framför allt vad gäller förgivettaganden om världen. Att utveckla elevers förmåga att i en gemensam diskussion kunna ställa kritiska frågor - men på ett respektfullt sätt - är något som undervisningen i samhällskunskap därför bör främja utvecklandet av.

# How can teaching be designed to develop pupils' ability to reasoning in writing in the subject of history in grade 5? A phenomenographic study of Social study teachers' conceptions

Hugo Heléne

In the social study subjects (geography, history, religion and civics) the ability to reasoning is a skill that Swedish pupils should master by the end of grade 6 (Skolverket 2011, p.169-179).

Subject-specific languages were introduced as a specific skill in the different school subjects (Skolverket 2011) when the present curriculum for the compulsory school (Lgr-11) was adopted.

The results of a pilot study showed that social study teachers in the middle years (grades 4-6) experienced that this knowledge requirement is a major change since the previous curriculum, and something that they devote time and effort to in teaching. Furthermore, they mean that this is something many pupils struggle or have difficulties with, especially when it comes to

reason in writing. Simultaneously, the ability to reason is seen as part of pupils' language development and something that all teachers have to take responsibility for (Axelsson 2010; Bunar 2015; Gibbons 2002; Hyltenstam & Lindberg, 2013; Liberg et al. 2010).

Swedish research about literacies in different school subjects has mainly focused Swedish or science (Liberg et al. 2011; Tang & Danielsson 2018). There are few studies related to social studies (Sellgren 2011; Staf & Nord 2018; Stymne 2017; Tväråna 2014), and most of them are related to older pupils. Therefore there is a need for research in content and language integrated learning in these subjects, especially in the middle years.

The aim of this paper is to contribute with knowledge about teachers' conceptions about possibilities and obstacles in designing teaching in history, where the goal is to develop pupils' ability to written reasoning. The research question is: How do social study teachers in middle years perceive how teaching can be designed to support the development of the pupils' ability to written reasoning?

The material for this paper consists of participant observation combined with audio recording during seven planning occasions, the initial part of a study based on principles for a design experiment (Plomp & Nieveen 2013). The conversations were analysed phenomenographically (Marton & Booth, 1997). Expected outcomes: teachers' conceptions about how teaching can be designed to support pupils' ability to written reasoning in history.

## **The political dimension in citizenship education: the construction of a political moment model for analyzing bodily anchored political emotions in teaching and learning of the political dimension**

**Håkansson Michael and Östman Leif**

The aim of the paper is to understand how affection, i.e. bodily sensations, transform into political emotions in teaching and learning settings. This paper offers a philosophical and empirically based model called the 'political moment model' (PMM) for analyzing bodily anchored political emotions in teaching and learning of the political dimension. The paper

departure from the understanding of citizenship education as a political project that consists of dissonant and conflicting voices (Hess 2009). Experience and handling conflictual situations inevitably contains acts of exclusion, where a "we" and a "them" is construed and therefore also an ever latent possibility that antagonism will emerge.

The theoretical departure from Mouffe's theory of the political (2005), scholars' writings about political emotions (Gould 2012, Ruitenberg 2010) and Dewey's (2016) philosophy of embodiment and education (Dewey 1922; 1934; 1938). Analysing the empirical data with this combined theory led to the development of a model suitable for analyses of moments where students' deal with affection, i.e. bodily sensations, and how bodily sensations can transform into political emotions in students' meaning making of a political dimension. We call the model 'political moment model' (PMM). A 'political moment' consists of three interrelated phases: an immediate experience followed by a deliberation – an inquiry – that ends in meaning-making of an immediate experience of the political dimension. In the paper we define an immediate experience (Overgaard 2008) as a non-intentional and a non-calculable bodily experience.

The findings contributes to a more nuanced understanding of how the political dimension emerge in educational practices. By looking at the multiple ways in which students experience and represent conflict, we take the analysis beyond the cognitive: living through a political moment consist of both affection, cognition and emotions. The pragmatic postulate is that humans have the capacity of being bodily affected and thereby to have, what James refers to as 'a pure experience' and Dewey to as 'immediate experience'. Methodologically speaking this means that when people try to communicate bodily sensations, they can only do so indirectly, by pointing with words. Depending on the context, expressions that communicate emotions, are often used to point to bodily felt qualities, i.e. immediate experiences (see further Anderson, Garrison, and Östman in press). Therefore, our interpretation when the students' above were using the words 'worries' and 'upset' is that they have had a bodily sensation, i. e a poignant experience of the political dimension in terms of conflict, antagonism and process of inclusion and exclusion. This results in a specific way in which the political dimension in environmental and sustainability education can be experienced in practice, we call it a 'political moment' (for other ways, see Håkansson, Östman, and Van Poeck 2017). The findings contributes with knowledge on meaning-making processes when the political becomes embodied and handled through deliberation.

## Breaking its hold: On the Possibility of Emotions

Hållander Marie

What do emotions do? Are emotions possible and desirable starting points when teaching about historical narratives from different parts of the world depicting people's experiences of oppression, such as through colonialism, racism or totalitarian dictatorships? Hållander's presentation discusses the relations between emotions and historical narratives (testimonies) when teaching about oppression and genocide within the school subject history (Lgr11, 2011). By primarily following Ahmed (2004), Todd (2003) and Gubkin (2015) the presentation argues that emotions are cultural practices, not psychological states, and thus, are relational.

There are both ethical as well as epistemological reasons why there is a risk when teaching strives for eliciting emotions. On this point, the argument is developed into different movements grounded on the thoughts of listening. The aspects of listening yield an ambivalent state in which emotions play a role (regardless of whether or not that role is desired) in an individual's encounter with historical narratives and may, in turn, imply educational possibilities within teaching historical wounds.



## The use of examples within teaching in Religious Education: On religious diversity and singularity

### Hållander Marie

Marie Hållander will in her presentation explore the example as an educational practise in relation to the teaching about religious diversity within Religious education in lower secondary school. Religious diversity is one of the core contents that Religious education deals with in compulsory school (Lgr11, 2011). The emphasis on diversity as a knowledge goal of the subject aims towards that the pupils shall become aware of different religious traditions, as well as that the ways in which people practice and understand their religion in everyday life can differ significantly from priests, theologians and spiritual leaders. To accomplish this subject teaching task, the use of examples, has a function in order to show and exemplify diversity.

But what does the example do within this subject teaching context? Hållander will develop

this question philosophically by drawing on Giorgio Agamben's understanding of the example and argue for how the example stands for itself, which also in its specificity moves towards what is visible next to it. The example, and its knowability, has a movement between two singularities – and not as a movement between one part (one example) and the general.

Choosing an example to analyse, highlight and argue for that one thing in RE teaching does something with the teachers' teaching on religious diversity. It creates something (with Agamben's words, a new ontological context of a "besides being"). And through that something, it enables the teacher to concretize, clarify and provide explicatory power to a diversity of religious practises to the students. Taken together, it is shown how the example has the potential to serve as a vital didactical strategy in RE teaching on religious diversity in lower secondary school.

## Participation Processes in Social Studies

### Högberg Sören

We live in a time when members of the generation growing up is increasingly spoken of in terms of exclusion, both in school and in their future social lives. Knowledge of how we can promote participation in school activities, and, in the long run, in society as a whole, may be one of today's most important assignments. However, although the situation is widely acknowledged, we know very little about *how* education in social studies in practice contributes to and/or complicates student participation in activities. The presentation will contribute with some initial results from a pilot study focused on how social science teachers and students encounter course material in the subject matter in educational settings (grade 6). What motives for subject content learning are communicated in the material? How do the students articulate their responses? What kind of attitudes towards the material do the students express? How does the subject teaching process change as a result of student participation?

Changes in educational situations are analysed by the concept of pedagogical rhythm, developed by the presenter within a pragmatic Deweyan tradition. The unit of analysis is the *pedagogical interaction* interpreted as a number of *pedagogical intentions* emerging and shifting in pedagogical settings. As a pedagogical rhythm is defined as a rhythm consisting of different and reoccurring intentions, characterised of both subject-related as well as ethically related intentions – the analysis will contribute with an understanding on how subject-related matters interrelate with ethical concerns on students' including as well as excluding responses in pedagogical settings. The result will be discussed in terms of how interactive processes in social studies both can support and obstruct students to become a participating member in the classroom.

## **Economic students' beliefs of scientific knowledge and norms for action regarding climate change**

**Ignell Caroline, Lundholm Cecilia, Davies Peter**

This study focuses on epistemic beliefs in relation to actions to mitigate climate change, and we investigate students' beliefs and their support for societal actions and personal norms that direct individuals' pro-environmental behaviour. Students' conceptions of science - epistemic beliefs - concerns the way they regard scientific knowledge as fixed and certain, or evolving and uncertain. The study used a pen and pencil measurement distributed to the same students at two occasions, the first year's (T1) measurement included 212 students in business and economics education, aged 17, and this was repeated a year later, in their final year. Changes are analysed through paired sample t-test, and partial correlation analyses were used to explore relations.

Results show a weak and positive relation between the belief in certainty of knowledge and a norm of supporting taxes for solving climate change. At T2, a weak and negative relation was shown between recognising 'science as having one clear-cut answer' and ascribing solutions to climate change to both business and government.

The results could suggest that a view of science as certain can influence the willingness to pay and contribute to solutions, and not ascribing government a responsibility. This however seems contradictory, as government are the initiators of policies such as CO2 taxes. Further research is needed to explain how epistemic beliefs can impact on norms for actions.

## Lyttekompetence – en vej til faglig læring i danskfaget i udskolingen

### Illum Skov Lene

Formålet med projektet er at bidrage til fagdidaktisk forståelse af mundtlighed i danskfaget (L1) med lytning og lytteforståelse som privilegeret perspektiv, dels ved at undersøge lytning og lyttekompetence som fænomen i skolen, dels ved at udvikle konkrete didaktiske greb, der kan vejlede lærere og fremme eksplicit undervisning i lytning og lytteforståelse. Antagelsen er, at et lyttedidaktisk fokus i undervisningen kan være med til at nedbryde barrierer for læring, som særligt elever med svag sprogforståelse/lytteforståelse møder i undervisningen.

Dette leder frem til følgende forsknings spørgsmål:

Hvad karakteriserer lytning, lytteforståelse og lyttekompetence som fagligt genstandsfelt i L1?

Hvordan kan lærere i L1 stilladsere og udvikle lytteforståelseskompetencer særligt hos elever med svag sprogforståelse?

Lytning er den handling, der forekommer mest, men som får mindst opmærksomhed i undervisningen (Wolvin et al. 1995; Adelman 2002). Samtidig har det vist sig, at elever ikke er gode til at lytte, og at dette ikke problematiseres i særlig grad i skolen (Swanson 1996).

Projektets udgangspunkt er, at lyttekompetence i undervisningen i folkeskolen er underbelyst og er ifølge forskere en ung forskningsgren (Adelman 2002/2009, Janusik 2010, Otnes 2016). Især er der mangel på studier af lytning i en klasserumskontekst i L1-faget generelt i grundskolen (Otnes 1997).

Projektet er et delprojekt inden for projektet Mundtlighed i dansk i universitetsskoleregiet ([www.universitetsskole.dk](http://www.universitetsskole.dk)) og skriver sig ind i den internationale forskning, der foregår inden for forskningsfeltet: "mundtlighed" og "dialogisk undervisning" (Dysthe 1995/2003; Wegerif 2016; Mercer & Littleton 2007; Alexander 2017, Thinking together 2018). Projektet lægger et literacy-perspektiv på mundtlighedsområdet i tråd med Gibbons (2016), hvor literacy dækker over den samlede sproglige kompetence (læse, lytte, tale, skrive) som ligeværdige komponenter i udviklingen af literacykompetence. Projektet baserer sig på en kombination af et sociokulturelt og et kognitivt syn på literacy som to sider af samme sag (Bremholm 2013).

Projektet er karakteriseret ved at være et kvalitativt, handlingsvejledende projekt med udgangspunkt i Design Based Research (Brown 1992, Amiel & Reeves 2008 m.fl.) som metode. Der anvendes kvalitative, eksplorative undersøgelsesmetoder i form af semistrukturerede interviews, læreres dagbøger samt videoobservation. Didaktiske løsningsforslag som designeksperimenter (Christensen, Gynther & Petersen 2012) danner grundlag for videre anbefalinger til lærerne.

Det antages at projektet vil give indsigt i, hvordan mundtlighed gøres og kan gøres i danskfaget og bidrage til en mundtlighedsdidaktik, der også har fokus på lytning som en aktiv del af den kommunikative kompetence.

## **Critical features of how to visualize digestive processes based on students' drawings and explanations of transformation of food to nutrients**

**Jahic Pettersson Alma, Rundgren Carl-Johan, and A.E. Tibell Lena**

When teaching food degradation and nutrient uptake images and animations are important as communication and conceptual tools. Animations as a conceptual tool may contribute by developing the way we think of digestion. Food and digestion are common topics of conversation and connected to familiar sensations like stomach gurgling, but also connected to abstract chemical processes. Therefore, a good starting point to teach the digestive system may be by using animations. Besides animations connecting familiar topics and sensations to scientific terms they could also connect the chemical processes to different organizational levels and different scales. This study examines how students in grade 5 and 6 interpret an animation of food degradation and nutrient uptake. We have collected data, consisting of student-generated drawings, made after having watched the animation. A model, based on variation theory will be used as a tool for distinguishing between what is expected to be learned, what is present in the animation, and what is actually learned by the students. We plan to collect data in form of interviews with those who have designed the animation during spring term 2019. Our aim is to identify critical features of how to visualize digestive processes from the students' interpretations of the animation.

## Global questions in Swedish RE-classrooms

Jahnke Fredrik

Today the Swedish RE-classroom is not as homogeneous as it perhaps once was. The teacher cannot for instance on beforehand predict the traditional backgrounds or the religious experiences amongst her or his pupils. It is, however, more or less a few things that could be taken for granted. One such thing is that the global world in one way or the other is present in the pupil's lives. In my study of religion and pupils in the Swedish school, events on the global arena is present. This is most apparent on two issues. Firstly, this is seen when pupils with a migration background talks about how religion is visible in the Swedish society compares to their countries of origin. Secondly, religion and conflict on the international level is often thought of as something that will be mirrored in the school environment. However not always on the same ground, but as a prediction of what would happened if religion is talked about or is made visibly in their everyday life. As a result, these pupils seldom talk about religion in school, with the 'learning about' perspective in the classroom as the one exception. Rather, they seem to think: conflict there, conflict here. Bringing about a religious dialogue in school sees, then, to be a major challenge for teachers in school.

## **Global Muslim Issues in the Local PE classroom**

**Jansson Karl**

In recent years, religion has gained increased attention in educational settings. This paper is a part of a larger ongoing research project that aims to deepen our understanding about religion and intersections of religion, ethnicity and gender in one such setting, namely physical education (PE). The particular focus of this paper is Muslim ethnic-minority girls. The aim is to illustrate how 'Muslim friendly' PE environments (e.g. gender-segregated facilities) and 'Muslim friendly' pedagogies (e.g. the avoidance of couple dances and other contact activities) make some Muslim girls feel like being in a 'safe place' while others feel like being 'out of place'.

Empirical data has been gathered through lesson observations and qualitative interviews with teachers and students at four different schools in Sweden. By using intersectionality as a multi-level methodological approach, as suggested by sociologist Floya Anthias, the paper demonstrates a wide range of religious beliefs and practices on the individual level. However, it also illuminates how discourses on the structural level as well as local traditions and practices on the institutional level (i.e. school level) dictate the conditions for subject formation.

# The cultural museum as a resource for history teaching An explorative study in class 6

Jensen Margit Eva

Teaching history as an oral subject in primary and lower secondary schools has been a long standing tradition in Denmark. Smaller written assignments and group work may occur, however, history is primarily and oral subject with an oral examination after grade 9 (Nielsen, 2010; Poulsen & Eskelund Knudsen, 2016). The objective of my research has been to explore talk about history in class and follow 'my class' on guided museum tours. My focus has been on dialogues between students and their teacher or between students and museum guides. Knowledge in history classes in the Scandinavian countries have three dimensions: first dimension is knowledge about a past, second dimension is procedural knowledge and the

third dimension is uses of history (Körber, 2015; Kvande, 2014; Nordgren, 2016; Seixas, 2015). In order to teach the three dimensions of history the history teacher must be able to facilitate advanced classroom talks with a dynamic sense of time. Knowledge of history in classrooms is about the past, and the present uses of the past with perspectives to the future (Jensen, 2012; Ohman Nielsen, 2011; J. Rüsen, 2005).

My research question is: How can a cultural museum be used as a resource for teaching and learning uses of history? How does knowledge building and pedagogical link-making happen? Relevant research besides what has already been referred to..

A sociocultural understanding of language as a tool for teaching cognitive skills (Havekes, van Boxtel, Coppen, & Luttenberg, 2017; Mercer, 2000, 2008; Øzker Z., 2006).

A socio-cultural understanding of pedagogical link-making and knowledge building across time and place ((Gilje & Erstad, 2017; Pierides, 2010; Rasmussen & Damsa, 2016; Scott, Mortimer, & Ametller, 2011).

Teaching and learning in Museums (Boritz, 2018; Falk & Dierking 2000; Falk, 2013; Hooper-Greenhill, 2007; Thorhauge, 2014) and Heritage education research (Aronsson, 2012, 2018; Grever, 2018; Marcus, Stoddard, & Woodward, 2017; van Boxtel, Carla; Grever, Maria; Klein, 2016; Van Boxtel, Grever, & Klein, 2015)

Research methods

My research is an example of a qualitative case study. Data were collected through the use of an ethnographic field study. I followed a class 6 for a year observing teaching in class and in museums.

Findings Due to the time I spent in class 6 significant potentials of using a cultural museum as a resource in teaching uses of history did appear.



# Intercultural historical learning through inquiry-based teaching with archaeological artefacts in primary school

Johansson Patrik

A current challenge in history education is to counteract the construction of strong ethnocentric master-narratives which may limit pupils' understandings of the dynamics of history in terms of migration and cultural encounters (Rüsen, 2004). One approach is to develop pupils' intercultural competencies, i.e. their abilities to interact appropriately in

intercultural situations, using intercultural knowledge, skills and attitudes to orient themselves in the world (Deardorff, 2006). History education has a role to play in enabling the development of these competencies through intercultural historical learning (Nordgren and Johansson, 2015). The paper tests the relevance and effectiveness of four design principles through their operationalisations as teaching in enabling the learning of intercultural perspectives on the Viking age in historical inquiry with archaeological artefacts in primary school, years 4 and 5. The design principles connect archaeological artefacts to historical inquiry, contextual facts and evidence. Two research questions are addressed: how do the operationalisations of the design principles enable learning and how may operationalisations impede learning? The research project was designed and carried out by a group consisting of one researcher (the presenter) and three experienced teachers from three schools (56 pupils from three classes) in Stockholm, Sweden. The study is framed as educational design research and data was analysed qualitatively with content-focused conversation analysis and variation theory. Hence, learning is understood as changed co-participation in the practice of historical inquiry (Rogoff, 2003) and as discernment of aspects of the learning object (Marton, 2015).

During the research lessons, the pupils investigated the past by seeking answers to a historical inquiry question through the interpretation of archaeological artefacts. Based on previous research (Levstik, Henderson, and Lee, 2014) the research group assumed that starting from material culture in the form of archaeological artefacts would be beneficial in teaching intercultural perspectives to young learners. An intervention in the form of research lessons and associated tools were designed and implemented. The findings indicate that three design principles are relevant in enabling learning (connecting intercultural archaeological artefacts to inquiry, connecting artefacts to context and exploring multiple artefacts), while it is suggested that the fourth principle (formulate inferences with archaeological artefacts as evidence) is revised to put focus on historical reasoning rather than on historical evidence. The study points to possibilities in teaching intercultural historical perspectives through historical inquiry in primary school and archaeological artefacts can be powerful in initiating historical reasoning.

## Monologic, dialogic and trialogic conversations in teacher education practicum

Jons Lotta

In this session I present findings from a study of nine triadic conferences undertaken at a special training school associated to one of the largest Teacher education programs in Sweden (Jons 2017). The conversations between the university teacher, practicum mentor and student were audiotaped during practicum placement in a upper secondary school.

Conversations were coded in TRANSANA software, in a first step approached inductively by means of three questions; 1) who leads the conversation, and how?; 2) who or what determines the content of the conversation?; and 3) in what way do the three parties interact when conveying formative response?. In a second step, categories for coding the material was created and refined in an iterative process employing an abductive approach (Tavory & Timmermans 2014). Aspects of Martin Buber's philosophy of dialogue (see Buber 1994; 1995a; 1995b; see also Jons 2008) was chosen for categorization, allowing for the suggestion of three different types of interlocutions;

Monologic ones, where the university teacher leads the conversation and decides the content of it Dialogic ones, where the university teacher allows the student to lead the conversation and also to decide its content; and Trialogic ones, where the university supervisor leads the conversation, assuring the intended learning outcomes to be covered.

Furthermore, findings show six of the nine conversations to be characterized by trialogic interlocution, one and a third to be of a dialogic nature and one and two third as having a monologic character. While the trialogic and dialogic conferences came forth as joint problem solving, the monologic ones rather appeared as a kind of examination. The implications for student learning as well as teacher education practice remains to be discussed and studied further.

## The supportive character of teacher education triadic conferences: detailing the formative feedback conveyed

Jons Lotta

The poster will display a study that explored feedback conveyed during placement in a training school associated with one of the largest teacher education programs in Sweden (Jons 2017; 2018). The study aimed at detailing the formative feedback conveyed in the conversations, i.e. the university supervisor, the practicum mentor and the student. To that end, nine triadic conferences in a secondary upper school setting was audiotaped and analysed. Two research questions were in focus; 1) To what extent is different kind of formative feedback employed in the conversations? and; 2) Which aspects of such different kind of formative feedback can be identified in the feedback conveyed? In order to

The character of formative feedback was explored in detail by employing a framework that combined Hattie and Timperley's (2007) conceptualisation of feedback with that of Nicol's (2009). The study thus depicted feedback directed backwards, upwards or forward and focusing performance, strategies, self-regulation or personal characteristics inside a framework of self-regulated learning.

Findings show the most common foci of feedback in the study to be performance (36%), and strategy to ameliorate performance (19%), both of which have a relatively significant bearing on student learning, as argued by Hattie and Timperley (2007). Feedback focusing on the student as a person, the focus with the least influence upon future skills development according to Hattie and Timperley (2007), occurred to a very small extent in the material.

Likewise, feedback focusing on self-regulation was barely evident in the conferences studied, albeit that such focus, according to Hattie and Timperley (*ibid*), has the greatest effect on skills development. Thus, while the findings indicate a feedback practice characterised by "sustainable" feedback (cf Hounsell 2007; cf Boyd 2007) that scaffolds students' self-assessing competence while fostering student self-reflexivity and self-regulation, it also indicates that there is room for improvement in promoting student self-regulation.

## Creating Physics Teachers: The Figured World of Finnish Physics Teacher Education

Jons Lotta, Airey John and Braskén Mats

In this session we present preliminary findings from an interview study with eleven educators from a Finnish physics teacher training programme. The educators represent the four environments where the education takes place: the Department of Physics, the Department of Mathematics and Science Education, the Department of General Pedagogy, and the Training School. The study is part of a larger Swedish Research Council project comparing the different disciplinary values that are communicated to future physics teachers across four countries (Sweden, England, Singapore and Finland) .

Interviews were coded in TRANSANA software, and analysed using Gee's (2014, p. 95) theory of figured worlds which he describes as "taken-for-granted" theories that are shaped and normed through social and cultural interactions. In our study we apply Gee's concept to

descriptions of a 'good' physics teacher. Preliminary analysis shows that the educators across the four training environments largely communicate the same figured world. Although working in different settings, the eleven educators appear to be working in concert, each contributing to a shared vision of what is needed to develop the professional physics teacher identities of their trainees.

The figured world we identify characterizes a 'good' physics teacher in terms of a range of competencies, such as: student centredness, inclusive teaching, knowledge of PCK, physics for society, assessment skills, relationships and leadership and teacher professionalism.

Taken together, the four departments appear to cover all the desired competencies of a

'good' physics teacher and there is mutual trust across the four environments. The training school was seen as the place where all of the desired competencies are brought together, applied and evaluated.

These findings are in stark contrast to findings for Sweden where four competing models of the goals of the educational programme were identified (Larsson, Airey, Danielsson & Lundqvist, 2018).

## Teaching controversial issues in history

Juulsgaard Johannesen Hildegunn

In recent years there has been an increase in literature, which advocates teaching controversial issues as part of democratic and general education. Controversial issues are defined by the Council of Europe as "Issues that arouse strong feelings and divide opinion in communities and society" (Council of Europe, 2015). Teaching subjects of political, religious or emotionally sensitive nature plays an important role in preparing young citizens for participation in society, since it forces them to participate in a democratic dialogue with those whose views deviate from one's own.

At the same time, the major dilemmas faced by teachers are emphasized when introducing controversial topics in the classroom. The context is always influenced by the attitudes and opinions which teachers and students bring into the classroom. Taking side in the discussion or the opposite can lead to a sense of marginalization among students both in relation to peers and to the teacher. (Philpott et al. 2011; Hess 2009; Reinhardt 2016).

The purpose of this paper is to discuss the didactic approaches to enhance and incorporate controversial issues in history lessons in Danish public schools:

How do teachers practice teaching in controversial topics?

What didactic reflections may occur in historical narratives when controversial topics are included in history class?

The paper introduces empirical data from a qualitative study carried out with four teachers. Focus will be on the didactical reflections on how to develop critical thinking and what strategies to teach by.

## **Using visual representations to qualify students' understanding of causal relationships in price**

**Jägerskog Ann-Sofie, Davies Peter and Lundholm Cecilia**

The aim of the study was to contribute to the understanding of how two different visual representations of price facilitate learning of the concept. The study focuses on students in upper secondary social science education and takes its outset in a multimodality perspective (Kress, 2010). Three introductory lessons on pricing were conducted with four classes (in all 92 students), of which two had lessons based on graphs and two on a causal loop diagram (Wheat, 2007). Written responses to pre- and post-test questions were analysed phenomenographically and in relation to the visual representation used in teaching. Results suggest that students' understanding of the relationships between supply, price and demand was affected by the visual representations used in teaching. The intervention based on a causal loop diagram facilitated a more qualified way of understanding the causal relationships in pricing than the graph-based intervention. The traditional way of introducing price to upper secondary students, through the use of supply/demand graphs, is thereby problematised. The results have important implications for teaching and learning through visual representations in general and for economics teaching in particular and point to the importance of reflecting on visual representations in teaching in order to facilitate a qualified conceptual understanding. The study thereby contributes to practice as well as to theory in terms of practical implications for teaching about price to upper secondary students and in terms of expanding theory on how learning is affected by the structural composition of a visual representation.

## **The migration crisis as a multidimensional movement – qualitative differences in the ability to analyse complex societal issues**

**Jägerskog Ann-Sofie, Tväråna Malin, Strandberg Max, Björklund Mattias, Kåks Bodil & Dalman Anita**

The aim of this presentation is to present a proposal of what it means to be able to analyse societal issues in Social Studies education. This ability is considered central in both compulsory and upper secondary Social Studies education, and it has been suggested as one of several ways of thinking, that may be significant for Social Studies as a subject (Sandahl 2015). However, we still do not know much about what analysing in the Social Sciences means in general and for students in different age groups (Barton & Avery, 2016). Identifying this is crucial in order to design teaching that effectively enables students in different age groups to develop this ability. The study addresses the question of what it means to be able to analyse societal issues, with a focus on the 2015 migration crisis, and was carried out as a learning study with iteratively conducted research lessons with students in year 1, 6 and 8 in compulsory school and year 2 in upper secondary school. The data, consisting of written student responses to open-ended questions (pre- and post-tests), as well as recorded group discussions, were analysed using phenomenographic methods (Marton, 2014) in order to identify qualitatively different ways of analysing the societal issue in focus. Results suggest that the most qualified way of analysing the migration situation was characterised by (i) seeing the migration crisis as a dynamic process, where (ii) a consequence can also be a cause and where (iii) different dimensions are related.

Keywords: Social Studies, critical thinking, phenomenography, teaching and learning

## Student work and student production in mathematics: Quantitative analysis

Jørgensen Lars Henrik, Nedergaard Jepsen Kaj and Hansen Rune

In 2016 University College South Denmark (UC SYD) started the project University School. University School is a new format in teacher education and research at UC SYD. It involves a close cooperation between schools, teacher education and educational research seeking to develop students, teachers, and teacher educators didactical and research competencies.

Against this background, our project has been developed across three university schools and in this presentation, we will discuss what a task-didactical practice in mathematics education is, should be, why and how?

We focus on how the cooperation between teachers, teacher students, teacher educators, and researchers have established a framework to identify to what degree does the productive work in mathematics support the students developing mathematical competencies. Within the last decade, the development and accessibility of digital technologies have greatly

expanded the possibilities and potential diversity of students' productive work in mathematics. But the first results of our survey show a low proportion of student works applying digital technologies.

The paper is based on an ongoing mixed method study related to UC SYD. The presentation will focus on the quantitative part of the mixed method study. This part of the study consists of a systematic collection of student work (and the related task) at three university schools. A total of about 200 student works has been collected.

The student works (and the tasks) are being categorized and characterized using a coding instrument developed during the project. The categories used in the coding instrument relate to a specific selection of mathematics didactics theories (Andersen, 2008; Stein et al., 2009), semiotic theory of IT use and multimodality (Ongstad, 2006; Selander & Kress, 2012), learning resources research (Bremholm et al., 2016; Remillard, 2005) and didactic categories such as frame setting and organization.

In the presentation, we will present the coding instrument and the main findings from the quantitative analysis. Student productions are largely based on tasks from textbooks and the student products are often skill oriented. The findings also indicate on the one hand that the three schools have not yet fully entered the digital era in the sense that the traditional forms of student work still hold quite a strong position in mathematics. On the other hand, there is room for developing a new approach supporting the mathematical competencies.



## Developing integrative RE practices in a separative system – Finnish perspectives

**Kallioniemi Arto**

The presentation explores perspectives for developing the Finnish model of religious education (RE) that can enhance dialogue in a society that is ever more pluralised and secular. While the Finnish model of RE is a separative one with pupils studying according to their religious denomination, many schools across the nation have started to implement integrative or partially integrative practices in RE. By integrative RE we refer to RE classrooms where pupils from different religious denominations and non-religious backgrounds study together topics such as religions, non-religious worldviews and ethics. The integrative model of RE, where pupils study together regardless of their religious or non-religious background, can be seen to foster encounter and dialogue between worldviews.

The Finnish model of RE is non-confessional but separate according to the denomination of the pupil. While the RE curricula contain information about various worldviews, the starting point is the denomination of the pupil and the teaching of one's "own religion", which encompasses the majority of the curriculum. In contrast to many other countries, the school subjects in Finland in both public and private schools are implemented according to the same National Core Curriculum (NCCBE 2014). Thus, the model of RE is similar no matter where in Finland the pupil studies. The RE in Finland can also be described as adhering to a membership principle, which means that the type of RE the pupils receive is defined by belonging to a certain religious community. The exception is the teaching of secular ethics, which approaches issues of ethics and worldviews from more philosophical and existential perspectives. Secular ethics (elämäkatsomustieto in Finnish) is an alternative school subject to RE. Pupils with no membership in a religious denomination or pupils from minority religious backgrounds can attend classes of secular ethics.

The presentation examines integrative practices in the following ways. First, the presentation examines various different viewpoints from international and the Finnish perspective concerning dialogue and integrative RE along with the debates and concerns relating to integrative RE in Finland. Second, the presentation examines data from different research projects about integrative RE in Finland. Finally, the presentation presents concepts based on this research for examining dialogue in integrative RE with conclusions and reflections on how to possibly develop the Finnish model of RE in a plural, multireligious society.

## **Equipping Schools and Teachers to Provide Worldview Dialog in Education**

**Kallioniemi Arto**

Questions and issues concerning mutual understanding and respect have become key questions in current societies. The religious and spiritual landscape of countries has changed remarkable around the world; increasing migration, asylum seekers, increasing pluralism and secularization have brought questions of interfaith dialogue to the focus of discussions concerning school and education in many societies. The fear of increasing radicalism, hate speech and unacceptance of diversity has become in the focus of societal debates in many societies. The structural characteristics of the school as societal relationship determine the nature of proposed worldview dialogue to be conducted in schools. Schools are very different bodies and institutions than religious communities. Teachers are responsible for imparting interreligious and intercultural values and give skills to pupils are the foundation of worldview education. With or without education tools such as curricula and textbooks, it is the teachers who give knowledge in the classroom. If teachers do not value and accept cultural differences and display this in their behavior, the best worldview education curriculum will prove ineffective. Teachers are asked to give such education as a normal and vital part of school education. All teacher should make it, it is not for these teachers who wish, although all teachers. Teacher education and the opportunity for updating their own skills is a necessary component of intercultural and interreligious education. In my paper, the idea is to look at Finnish curriculum (2014) from worldview dialogue perspective and investigate what kinds of element it has for this issue. The methods is content-based thematic analysis.

## **Empowering Children and Educators: International Pedagogies as Provocation**

**Karlsson Häikiö Tarja**

Preschools and schools are today parts of a local and global knowledge economy where knowledge in itself has an economic value. In the Nordic countries, as well as internationally, a trend of utilitarian evaluation of pedagogy and quality issues has emerged as a consequence (Alexandersson, 2011; Dahlberg, Moss & Pence, 1999; Moss, 2014; Olsson, 2012). A growing measurability practice in the Nordic countries is also linked to a shift towards an Anglo-Saxon knowledge tradition (Åsén, 2015), focusing on preservation and evaluation of individual knowledge and skills. Such a shift is strongly affected by neoliberal politics and linked to increased demands for market adaptation of early childhood and primary education (Moss, 2017).

As collaboration between researchers and educators in Anglo-Saxon and Nordic countries an international publication has been produced that investigates the empowerment of children and educators in early childhood education and primary education. The theoretical stance is starting in radical and progressive pedagogical ideas, or seeing and appreciating different perspectives and exploring different critically reflective frameworks for early childhood and primary education (Freire, 1972; Pascal & Bertram, 2009, 2018). The aim of the collaborative project was to start in the daily practice of educators in England, Finland and Sweden, and to examine the prerequisites for professional activity in early education for the benefit of participation for children (Hilppö et al, 2016). Further the aim was to advocate the importance of participatory, practice-led (bottom-up) and reflective (McLeod, 2015) research as a way of empowering educators in their knowledge base of early childhood and early education.

The presentation consists of case studies and examples on professional practice starting in a critically reflective approach to tackle the pressures of outcome driven curricula aiming at empowering educators and children and promoting children's participation. The result of the project consists of examples from educational practice from the different countries and comparisons between educational methods. The result is based on challenging thinking and understanding around the purpose of education to promote participatory and democratic practice for children and educators in different kinds of educational settings. In the presentation the prerequisites for participatory and democratic practice is problematized as well as the possibility of promoting respectful learning as part of a socially just and ethical practice.

## Folkmord, film och historieundervisning

### Karlsson Martin

Föreliggande text presenterar ett utkast till ett tänkt forskningsprojekt kring lärares användande av film och media i högstadie- och gymnasieskolans historieundervisning. Vilka typer av media lärare använder och hur lärarna brukar och förhåller olika typer av media utgör centrala frågeställningar. Projektet kommer specifikt att fokusera på medieanvändande i historieundervisning, med ett särskilt fokus på folkmord och i synnerhet förintelsen.

Den svenska skolan kan ses som en arena där en vidare samhällslig audiovisuell historieförmedling möter en skolspecifik, där den inriktning som den svenska skolans styrdokument pekar ut bryts mot det till stor del internationellt präglade utbud av film och media som finns tillgängligt för undervisande lärare i dagens uppkopplade samhälle. Alltifrån påkostade amerikanska spelfilmer vars speltid överstiger två timmar till korta svenskproducerade utbildningsfilmer kan ingå i lärarens repertoar, liksom korta klipp eller audiovisuellt material av olika slag som hämtats från svenska eller internationella nätresurser.

Utifrån ett sådant perspektiv framstår det som särskilt intressant att undersöka om det exempelvis finns någon skillnad mellan hur kommersiella/populärkulturella filmer används jämfört med filmer som producerats specifikt för användning i undervisningssyfte – och vad eventuella sådana skillnader i sin tur säger om lärarnas förhållningssätt till olika mediekategorier.

Presentationen utgår framförallt från två utgångspunkter, dels kapitlet "Förintelsen och skolfilmen 1970–2000" från avhandlingen Att projicera det förflutna, dels utifrån en sammanställning av studenters erfarenheter av lärares filmanvändande i historieundervisning under VFU-perioder vid Mittuniversitetets lärarutbildning under perioden 2004–2011.

Aktuella frågeställningar:

Vilka typer av medier använder lärare i historieundervisning och i vilken utsträckning?

Hur kan man undersöka lärares användande av media och attityd till olika medietyper i ett bredare perspektiv, d.v.s. med ett visst mått av representativitet, i en samtida skolkontext?

Hur påverkar lärarnas attityder och uppfattningar om olika mediers lämplighet respektive pålitlighet det sätt på vilket dessa används i historieundervisning?

## **Learning Trajectory Based Instruction – Plea for a Visible Progression in Teaching and Assessment of Historical Thinking**

**Karlsson Per-Arne**

Progress in research into Teaching and Learning History has produced a paradox and a challenge for history teachers and teacher candidates: the traditional image of a history curriculum overloaded with first order concepts has been supplemented with a large number of second order concepts and expected learning outcomes in terms of procedural knowledge. The USA federal standards describe 468 abilities in US History and 611 abilities in world history and this pattern is reflected in curricula internationally. Will the teacher candidates be able to master all these new concepts, or will they produce an overloaded and fragmented education?

To address this challenge in the education of student teachers from 2013-18 I have used a learning trajectory as a framework and guidance for teaching. I suggest the concept of a learning trajectory for building connections between content knowledge and procedural knowledge, with the ultimate aim being a qualified historical thinking. Hypothetically, this concept offers a cognitive tool for teaching and learning history with progression.

In the paper I discuss the general concept, it's application to teaching history and some preliminary results of investigating the learning processes of teacher candidates in history.

## **Is there a message between the lines? A design-based research approach to literary reading instruction**

**Kindenberg Björn, Norberg Anna-Maija, Dervisic Lana, Fidani Kemmler Jessica, Kans Jesper, Alfredsson Jesper, Nyman Mika, Löow Annika, Norlin Anna, Sörensson Linda and Halmkrona Nina**

Interpretive and reflective reading of fiction is an important element of the school subjects of Swedish and Swedish as a second language, pivotal for fostering free-spirited, democratic citizens (Svedner, 2012), in turn making the pedagogical process of literature instruction an important object of study. This pedagogical process has been widely examined from different theoretical standpoints (Hultin, 2006; Bergman, 2007; Langer, 2011). While many of these studies are grounded in observation of classroom practice, few have, however, involved teachers in the systematic process of designing and developing pedagogical interventions.

Our small-scale study uses a design-based research approach (Cobb et al., 2003), involving 9 teachers from elementary and lower secondary school in the process of developing a pedagogical design for interpretive and reflective fictional reading of potential meanings, or “messages”, in literary texts. The aim of the study is to explore powerful pedagogical design principles (Cobb et al., 2003), grounded in teachers’ knowledge of reading instruction.

Although the notion of “message” in texts has been questioned (Lundström et al., 2011), the term is stated in the content description of the Swedish curriculum, and thus a part of the reality of teachers’ pedagogical planning. The present study frames the, arguably problematic, term “message” in a theoretical framework informed by Langer (2011), and the adjunct concept of envisionment.

The study poses the research question: what pedagogical design principles need to be foregrounded, when teaching with the aim of developing students’ fictional reading of texts’ messages?

Empirical material consists of students’ texts, recorded lessons and talks with teachers, and texts documenting teachers’ instructional design documents. Preliminary findings include design principles for using multi-media when exploring texts’ messages, and principles for “safeguarding” students against teachers’ own message-reading, as this privileged reading may, unintentionally, limit the interpretive range of classroom discourse.

## **The role of disciplinary knowledge in specialist subject teaching in secondary schools**

**Kitson Alison**

This paper introduces some key themes emerging from an analysis of expert secondary school teachers across history, geography and physics. The themes reflect an attempt to respond to the following interconnected questions and debates. First, what do expert teachers know, understand and value about their subject and how does this influence their practice as curriculum makers in the classroom? Second, how far and in what ways do teachers attempt to make the epistemology of their subject visible to learners and thus make progress towards a 'Futures 3' scenario (Young & Muller, 2010)? And third, what is nature of the interaction between the knowledge teachers set out to teach, the knowers to whom they will teach it and the means they have of bringing this 'knowing' about through pedagogy? The paper is based on three individual teacher case studies in London across history, geography and physics and draws particularly on the distinctive theoretical lenses of Bernstein (2000), Young and Muller (2010), and Shulman (1986).

## Literature teaching and extended professionalism

### Kjelen Hallvard

The discourse about the professional teacher is complex (Elstad, Helstad & Mausethagen, 2014). The term profession is vague and are used in different ways by different participants in the discourse. Linda Evans (2008) uses the concepts extended and restricted professionalism. A teacher with restricted professionalism bases his actions on experience, stomach sensation or intuition. She is «(...) essentially reliant upon experience and intuition and is guided by a narrow, classroom-based perspective which values that which is related to the day-to-day practicalities of teaching» (Evans, 2008, s. 10). The more the teacher approaching an extended professionalism, the more often she integrates experience knowledge with theoretical perspectives.

Jerome Bruner points out that to fully understand educational practices in schools one must understand "(...) the folk theories that those engaged in teaching and learning already have" (Bruner, 1996, p. 46). Both teachers and students have theories about what teaching and learning are, but such theories or models are usually unconscious or at least not always articulated (Gee, 2005; Penne, 2012). James Paul Gee uses the concept "Discourse models": "Discourse models" are "theories" (storylines, images, explanatory frameworks) that people hold, often unconsciously, and use to make sense of the world and their experiences in it.

They are always oversimplified, an attempt to capture some main elements and background subtleties, in order to allow us to act in the world without having to think overtly about everything all at once (Gee, 2005, p. 59 ff.).

A goal for literature teaching in teacher education must then be to enable teacher students to challenge such discourse models and expand the professionalism of the literary teacher. At the same time, one should not underestimate the understanding of the relationship between the subject matter and teaching that the teacher develops through practice, i.e. "the wisdom of practice" or the pedagogical content knowledge (Shulman, 1987, s. 11).

John Brumo, Thomas Dahl og Lars August Fodstad (2017) ask if it is possible to talk about a Norwegian teacher profession, since teachers «virker som lærere forskjellig ut fra hvilke fag de underviser i» and if it is possible to find «(...) spesifikke kjennetegn på profesjonalitet innenfor én og same yrkesgruppe». (p. 74) The authors argue that the mother tongue subjects in the West have been through major changes in recent times, which have led to different academic paradigms, an academic paradigm, a development-oriented and a communicative paradigm. The teachers must therefore handle a

«(...) kompleks situasjon, hvor både fagets innhold og formål synes uavklart (...)» (p. 75).



The complexity is particularly evident in literature teaching:

Den profesjonelle identiteten er for mange lærere knyttet til skjønnlitteraturen, samtidig som de i møte med nye elevgrupper og nye paradigmer (særlig det kommunikative og det utilitaristiske) mangler den fagdidaktiske refleksjonen som bør ligge til grunn for den litteraturfaglige profesjonsutøvelsen (p. 78)

It is likely that too few Norwegian teachers will have the expanded professionalism (Evans, 2008) that is necessary to handle this complexity. The paper therefore asks how the literature teaching and the teaching of pedagogical content knowledge in the teacher education better can address this increased complexity in the field.

## Transcultural Perspective on Esthetic Education

Kraus Anja

In recent decades, the ICT revolution, together with waves of migration and transnational communities, have led to the rise of multiple and hybrid identities and practices (cp.

Kontopodis et al. 2017). Cultures are not any more only static structures, but they steadily develop as networks, thus, by the principles of intersection and similarity. The relationships between the cultures show in motifs, symbols and styles, art objects and everyday design. They develop in the interrelations between human activity and environment. Culture becomes increasingly fractured and contested leading to new forms of heterogeneity and othering (Bhabha 1983; Eisenstadt 2000; Waldenfels 2011).

From a transcultural perspective, cultures are approached not as ethnically closed, linguistically homogeneous and territorially limited; they are instead seen as constituted through transformations and interweaving of different cultural groups, actors and symbolic tools (Welsch 1999). This cultural dynamics is nonlinear and creates both possibilities and hindrances for personal and social development.

“Person should be a construct from the middle of the analysis, not a given boundary

condition.” (White 1992: 196f.) As a set of normative practices, pedagogy and its theories find themselves challenged by the global changes. The modes of communicating norms and values, the experience of familiarity and unfamiliarity, and of social belonging are all undergoing crucial transformation. In this context, the need for a transcultural approaches in education is more urgent than ever (Wulf 2010 and 2017).

The purpose of this paper is to contribute to the further elaboration of the transcultural perspective on esthetic education. Departing from othering as a pedagogical concept, as well as from didactical concepts that implicitly or explicitly deal with the problem of cultural limits, an agenda of transcultural education will be derived. Agency and communication, cultural heterogeneity in its manifold manifestations, multicultural, intercultural, and comparative approaches in pedagogical praxis are the points of reference being in a selective way ciphered out in terms of esthetic education. The theoretical paper will result in a multilevel analysis of esthetic education’s normative bases. - How to inscribe esthetic practices, like irony, persiflage, distance-taking, into the normative pattern of transcultural education? How to didactically grasp transcultural esthetics?

## Literacy development in all subjects

Krenzen Anette and Illum Skov Lene

Multilingual students' linguistic and professional skills in school are a political priority. Students meet greater challenges than their Danish friends, both in school and in higher education (Ringvid 2016). PISA measurements from 2009, 2012 and 2015 show that teachers do not move 15-20% of the students challenged in their literacy development. Didactic research shows the need for explicit, deconstructed teaching to support the students understanding of school-languages, but it also shows that it is challenging for the teachers (Shanahan 2010). Multilingual parents' socioeconomic background also has an effect to their children's performance at school (Egelund 2013). The purpose of the project is therefore to develop teaching at the intermediate stage in the Danish public schools in order to provide teachers with knowledge and skills to support students' language development as well as qualifying the parental cooperation.

Research question:

Which didactic approaches can the teacher use to elevate the multilingual student's literacy development?

How can the parental cooperation support students' language development in the subjects? The project has a dynamic approach to literacy (Kress 2003), where written language competencies are acquired through active participation in meaningful, social and cultural communities (Gee 2008, Barton and Hamilton 2000, Halliday 2004). Literacy include all the linguistic competencies (listening, reading, speaking, writing) as equal components (Gibbons 2016). The starting point is the linguistic context in which professional texts are included, i.e. the oral language in the classroom and the students' own production of academic texts - a language-based teaching and learning discourse (Mulvad 2009).

This inter-institutional cooperation between Bramdrup Skole in Kolding, The Department of Research and Development and The Teacher Training Education, is built on Design Based Research (Brown 1992, Amiel & Reeves 2008 et al.) as a method. Qualitative, exploratory research methods are used in the form of semi-structured interviews and video observation. Didactic solutions, such as design experiments (Christensen et al. 2012) provide the basis for further recommendations for the teachers.

Data shows that teachers are more aware of the challenge of cultural aspects of multilingual children and their parents than how to support the language prerequisites and the opportunity to participate actively in class. Teachers find it hard to point out what they specifically do in the class to support the multilingual students in their language development. Also, in the involvement of the parents, it is necessary to explicitly work with structures that support parents to support their children's literacy development.

## Language Awareness Across the Language Curriculum – An Action Research Study Line

### Krogager Andersen

This paper is based on a PhD study. Within an ecological linguistics-based approach to language, language awareness and language learning and teaching (van Lier 2004), the study explores the affordances for language awareness and language learning achieved by enhanced teacher cooperation and coordination across the language curriculum (a cross-linguistic approach to language teaching) – in this case L1 (Danish), L2 (English) and L3 (German).

The study builds on theory and research pointing to the language awareness benefits of plurilingual programmes, focus on form and L2-teaching approaches encouraging metalinguistic reflection (Daryai-Hansen et al 2015, Gunning et al. 2016, Jessner & Allgäuer- Hackl 2016), and aims to explore how these theoretically and empirically based insights can be applied and integrated into everyday teaching practices by the 3 participating language teachers by introducing a cross-linguistic perspective, and how this work affects the language awareness and subject conceptualizations of students and of the teachers themselves.

The teachers and the researcher collaborate throughout the 10 month-long action research process to identify meaningful ways of transforming the abstract notions of cross-linguistic language awareness and metalinguistic reflection and awareness into teaching practice within each of the participating language subjects.

The study involves a plethora of qualitative data sources collected before, throughout and after the action research process: interviews with teachers and students, field notes from classroom observation, audio recordings of reflection meetings held by teachers and researcher and video recordings of select classes. Data are coded in Nvivo and analysed using a combination of lesson analysis for the classroom data and ethnolinguistic discourse analysis for the interviews and reflection meetings, based on the assumption that the combined study of teachers' discourse and teaching practice may provide a deeper understanding of the potentials and challenges related to the integration of the cross-linguistic perspective in language teaching.

Preliminary analyses point to teachers' beliefs on language learning and teachers' conceptualizations of language subjects as relevant categories for understanding the links between discourse and practice both in situations with clear connections and with apparent discrepancies. Analyses of the classroom data furthermore illustrate students' evolving language awareness across the four dimensions studied.

## Talented children in grade 5 and 6 math - developing teachers' perspective on Mathematical Mindsets

Krøjgaard Frede

The project involves math teachers and selected talented grade 5 students from seven schools, teacher students in math and one researcher. The group is conducting talent-meetings 5-6 times a year during a two-year period. At the meetings, the teacher students are teaching the talented schoolchildren while the teachers and the researcher are developing material and approaches fit for challenging also the math talented children in the normal classroom.

For some years and for very good reasons attention has been on supporting children with difficulties in math leaving the needs of the talented children unmet (Welling 2014, Mogensen 2008 ). The current project supported by the Danish Ministry of Education is an attempt to rebalance that point in terms of developing knowledge and experience on how to teach talented schoolchildren math involving teachers as well as the coming teachers in that

development. How can the schoolchildren's Mathematical Mindsets (Boaler, 2016) be developed? How can (these) children learn to approach mathematics wanting to understand it and at the same time having the confidence that it is meaningful? What can be the outcome of focusing the talented children in the classroom?

Data will consist of meeting notes, re-didacticized teaching material, semi structured interviews with participating schoolchildren, some of their classmates and participating teachers.

Presenters: A student teacher, a teacher and a researcher.

In our presentation, we will focus on answering the above-mentioned research questions and furthermore through cases describe how the participating schoolchildren are taking the activities back to the classroom, acting as assistant teachers.

## **'Powerful knowledge' of language and migration in Norwegian and Swedish middle school textbooks**

**Kulbrandstad Lise Iversen and Ljung Egeland Birgitta**

The question addressed in this study is how knowledge created in the academic disciplines of Norwegian/Swedish as a second language is treated in the compulsory school subjects Norwegian/Swedish. As language diversity in society increases, these school subjects can no longer be regarded first-language subjects. The monolingual school subject tradition is challenged by knowledge on multilingualism and second-language learning. This study uses the concept of 'powerful knowledge' (Young & Muller 2013) in investigating how different knowledge enables pupils to discover new ways of thinking, and to cross the boundary of personal experience. Insights from cross-lingual perspectives become important knowledge to all pupils through opening ways of understanding linguistic phenomena and their own language.

The first step was to identify powerful knowledge on the themes of language and migration in the academic disciplines. The next step was to conduct a concept-focused content analysis of middle school curricula and textbooks. One of the main results is that themes from the academic disciplines: second-language acquisition, multilingualism and comparisons between languages, can be found to a very limited extent in textbooks. Even if changed migration flows, our results match the results of Kulbrandstad's (2001) investigation of textbooks used in Norwegian after the L97 curriculum.

## Task-oriented interaction in the EFL classroom

**Kunitz Silvia, Berggren Jessica, Pålsson Gröndahl Karina, Resare Jansson Anette, Haglind Malin and Löfquist Anna**

This study focuses on the design and implementation of oral tasks in year 4–9 EFL classes in Sweden and, through the use of a conversation analytic approach to data analysis, explores how students interact with each other as they accomplish problem-based tasks.

Many language teachers experience difficulties in organising classroom tasks for oral interaction. As they complete these activities, in fact, students often engage in parallel interaction (Galaczi, 2008) through a series of question-response sequences that resemble a series of prompted monologues. The present study is part of a three-year project that addresses the issue through the collaboration between primary and secondary school teachers and researchers who aid in the exploration of task design and in the analysis of the task interaction accomplished by the students. The project is grounded on the assumption that the way oral tasks are designed and set-up might be problematic and that it should be possible to design meaningful tasks which promote oral interaction in the language classroom. Over the years, tasks have been designed, tried out in the classroom and revised (Ellis, 2003) through an iterative process of three cycles. So far, findings show that task design affects pupil interaction. Specifically, results indicate that “less is more”, in that comprehensive instructions and the use of many instructional materials may hinder the pupils’ interaction. While the

project has concluded that the tasks designed more recently promote “good” interaction, in the third year of the project we are now exploring what “good” task-oriented interaction

means through the analytical affordances of conversation analysis (Sidnell, 2010). Preliminary findings indicate that, in the revised tasks, students engage in collaborative and co-

constructed interaction by attending to each other’s turns-at-talk and formulating fitting turns that foster the progressivity of the activity. At the same time, the problem-based tasks that have been designed lately seem to provide affordances for students to display academic skills such as formulating hypotheses, agreeing, disagreeing, and reaching consensus in a goal-oriented setting. Overall, the study contributes to the literature on task-based instruction and speaks to the need of bridging the gap between practice and theory by promoting the collaboration of teachers and researchers.

## Do centralised upper secondary school exit examinations offer added value?

Kupiainen Sirku and Ouakrim-Soivio Najat

Finland and Iceland stand alone among the Nordic countries with upper secondary education ending in centrally organised matriculation examinations. In Denmark, Norway, and Sweden, completion of upper secondary studies and qualification for tertiary education is based on school-based grades. The Finnish matriculation examination has a long history (Kaarninen & Kaarninen, 2002) but has also been the focus of major reforms to better meet the needs of a differentiating student body (Kupiainen, Marjanen & Ouakrim-Soivio, 2018). The ensuing

increase in exam choice has led to the derogation of the exam's compliance to John Bishop's construct of Curriculum-Based External Exit Exam System or CBEEES, promoted as the most germane for advancing student achievement (Bishop, 1998).

In the present study, we approach the Finnish matriculation examination through two

questions. RQ1: How well do the different subject specific exams capture students' general readiness for tertiary education? RQ2: How well do the different exams capture students' success in the courses of that subject through their upper secondary studies?

The data is drawn from a longitudinal study of the approximately 14 000 students in the Helsinki metropolitan area who entered lower secondary education in autumn 2011. Of them, the present study regards the 6 172 students who passed their matriculation examination in spring 2017 after three years of academic track upper secondary studies.

For RQ 1, the results show that the grades students receive in the subject-specific exams of their choice (mean 5,6 exams per student, scale 0=fail – 7=excellent) differentiate well also their general achievement, i.e., their mean grade in the other exams they have chosen.

However, there are clear differences in this mean achievement of students who get the same grade in different subjects. For example, students receiving the highest grade (7) in Physics have an average grade of 6,2 in their other exams while students receiving the same grade 7 in Health Education have an average of 5,3 in the other exams they have chosen.

For RQ2, the results show that in each subject, the grades students receive for their matriculation exam reflect linearly their success in the different courses the exam covers. The difference in course grades for students with differing exam grades was statistically significant in all subjects from the first to the last course, indicating that the one-time exam succeeds well in reflecting students' learning through the three years of studies but revealing considerable between-school differences in grading, supporting centralised examination.



## **'Cultural heritage' in Finnish and Swedish ECEC curricula: Is there space for 'old' and 'new' religious diversity?**

**Kuusisto Arniika**

Early Childhood Education and Care (ECEC) setting is often the first public societal arena for families and children, also those with migrant backgrounds, to enter and negotiate their values and identities. The transmitting of 'cultural heritage' is included in the National Curriculum for ECEC in both countries, however, what exactly does this contain has been interpreted in the educational settings in a multitude of ways. The question is closely intertwined with societal values and nation-construction and the inclusion or exclusion of 'new' heritage and traditions, such as those upheld by minorities, in the educational contents. When looking into the ways in which matters of value in the host society are in tension with those nurtured in children's home cultures, such as those related to religion versus a largely secular hegemony as an exclusive norm in many setting of these host societies (Poulter et al 2016), this is a critical matter of equality and social justice (Kuusisto 2017) and human rights (UN Convention on the Rights of the Child; Poulter et al 2017). It is hence important to examine curriculum documents from the perspective of how they take into account 'old' and 'new' (Vertovec 2015) religions and religious diversity and the superdiversity as the diversity within traditions (Vertovec 2007). This paper first presents an overview on the religious/ worldview landscape in Finland and Sweden and the position of religious/ worldview education in their societal education; and then introduces an analysis on the ECEC curriculum documents from the perspective of the current examination.

## Code-switching in two multilingual secondary-school English classrooms in Sweden: Teacher practices and student beliefs

Källkvist Marie, Gyllstad Henrik, Sandlund Erica and Sundqvist Pia

Currently, there is no research-based evidence to guide teachers of English in Sweden as to whether and how to use students' background languages to facilitate learning, participation and engagement (Author & Others 2017). Existing research shows beneficial effects of providing L1 (mother-tongue) translation equivalents of English vocabulary (Lee & Macaro 2013; Prince 1996), of teacher code-switches into students' L1 for learning English grammar (Kupferberg & Olshtain 1996; Rolin-lanziti & Brownlie 2002), and of translanguaging pedagogy (Cummins 2017; Paulsrud et al. 2017). This research also reveals a lack of studies in English classrooms in Scandinavia. The prior research in English classrooms was carried out in other parts of the world, and in all cases students shared the same L1. The present study breaks new ground by focusing on classrooms with diversity in students' L1 backgrounds, reflecting growing multilingualism in Scandinavia (Dahl et al. 2018; Paulsrud et al. 2018). Based in theory of teachers as policy makers (Menken & García 2010) and in bilingualism research (Baker & Wright 2017), our project focuses on the teaching and learning of English in multilingual Swedish schools (students aged 13-16). In this paper, we report results of a case study (Duff 2008) conducted within a larger project (Author & Others 2017). Participants are one English

'excellent' teacher (förstelärare) and two student groups: a mainstream (23 students) and a fast-track (21 students) English year-8 class. Using ethnographic methods of classroom observation (14 lessons), photography, questionnaire and interviews (the teacher and 18 students of different L1 backgrounds), we address the following questions: 1) To what extent and for what purposes does the teacher draw on students' background languages when

teaching English?, and 2) What are students' beliefs about their teacher's use of English and other languages in English lessons?. Data analysis reveals that the teacher used mainly English (the target language), but also Swedish (the majority language in Sweden and school language), although sparingly, to translate vocabulary, explain grammar, communicate task requirements and grading criteria. The interviews drew on the shared experiences of the observed lessons (where researchers and students were co-present) and revealed that

students were highly aware of their teacher's code-switches, and that students with a lower proficiency level in English stated that they benefited from receiving information in both English and Swedish. An important implication is that the students believed that their

teacher's code-switches served to facilitate their literacy development in English and in Swedish.

## **Teaching statistics in Sweden, a history through the curricula 1878 – Lgr11. Description of statistics as a school subject in Sweden through the years and a comparison to Australia, New Zealand, the UK and the US.**

**Landtblom Karin**

Teaching statistics in school is now a day's part of mathematics in Sweden, but it has not always been that way. One way to understand the development of statistics as a school subject is to explain the subjects' appearance out of a historical perspective (Goodson, 2016). This text will slice history in four different parts that could be of interest for telling this story. The first part describes changes in the Swedish curriculum from 1878 until today, with arguments from a historical perspective. One strong argument for teaching statistics today is knowledge out of a citizen-perspective; which is elaborated further in the second part. The third part is a comparison of statistical content in the different curricula. In the fourth part the development of some underlying overarching ideas, statistical literacy, statistical thinking and data literacy, in research on teaching statistics are reviewed. Finally, these four parts are compared and discussed and some conclusions are drawn out of a Swedish perspective. The development in Sweden is not very different from the development in some other countries at the same time; the question is what underpins the Swedish choices in the curricula.

Goodson, I. (2016). Formation of school subjects. In M. A. Peters (Ed.), *Encyclopedia of Educational Philosophy and Theory* (pp. 1-5). Singapore: Springer Singapore.

## Kvinnliga och manliga aktörer i historieundervisningen

### Lanå Kristina

Inom det historiedidaktiska forskningsfältet finns få studier om genus i historieundervisningen. Jag har tillsammans med en lärare under det senaste året utfört en pilotstudie i årskurs 9 där syftet var att undersöka hur elever värderar kvinnors och mäns betydelse som aktörer.

Metoden utgjordes av en eliciteringsövning där designen för denna har inspirerats av Barton (2015), Barton & McCully (2005). Eleverna fick i mindre könsblandade grupper 12 bilder (på 6 kvinnor/6 män) med uppgiften att rangordna dem utifrån dess historiska och samtida betydelse som aktörer. Bilderna valdes inom områdena politik, vetenskap, religion och musik, från tiden för världskrigen till nutid. Till detta gavs ett antal frågor som individuellt skulle besvaras skriftligt. På det följde ett grupparbete där eleverna själva fick ta med sig bilder på temat Kvinnliga och manliga aktörer - kontinuitet och förändring.

Några av studiens resultat är följande: När grupperna rangordnar bilderna utifrån aktörernas betydelse, allmänt historiskt sett, toppar män listan. Variationen blir något större när eleverna individuellt rangordnar bilderna utifrån mer personliga referenser. I viss mån rangordnas då kvinnor högst. Över lag är det fler kvinnor på bilderna som eleverna inte känner till. De för fram att det är svårt att rangordna kvinnorna då de ej stött på dem i läroböckerna eller i undervisningen. Ytterligare visar studien på att närhet i tid, geografisk placering, religion och ålder hos aktörerna har betydelse för rangordningen. Jag är lite osäker på teoretisk ingång, kanske landar det i begreppet signifikans med inriktning mot genus. Med största sannolikhet kommer också analysen av aktörer brytas mot strukturer.

Som novis inom forskningsfältet (efter min disputation bytte jag forskningsinriktning från pedagogik till historiedidaktik) tar jag tacksamt emot synpunkter på studien.

## **Topical controversial issues in Swedish curriculum 1962-2011: the social studies subjects in comparison**

**Larsson Anna**

Issues that appear as debated and controversial in a society change over time with social changes and topical events. Schoolteachers, particularly in social studies subjects, need to in their teaching address enduring as well as suddenly appearing controversial issues. But how has this kind of questions been dealt with in the curriculum history? In this paper, curriculum guidelines for the Swedish social studies subjects for the seventh to ninth schoolyears from 1962 onwards, are analyzed from a subject comparative perspective. What is presented as controversial issues? How shall these issues be taught? What implications are noticed and what difficulties are foreseen connected to teaching about controversial issues? What similarities and differences between the subjects can be found? Based on these research

questions, and with a theoretically starting point in the assumption that subjects (disciplines as well as school subjects) are partly different cultures (Kreber 2009; Goodson 1993), the paper will comparatively discuss how the curriculum changes over time with regard to the subjects geography, history, religious education and civics. Thereby it strives to contribute with deepened knowledge of the role of controversial societal issues in the social studies subjects.

## Controversial issues in social studies education. The case of Sweden

### Larsson Lars

What controversial issues occur in classroom teaching in social studies? How do teachers approach and teach these issues? In an ongoing research study at Umeå University on controversial issues in social studies education (geography, history, religion and civics), we answer the two questions. Our case is Swedish teachers in social studies education, grades 7 to 9.

Controverses are at the core of democratic education through its reliance on and promotion of skills for debate, discussion and persuasion (Dewey 1916, Misco 2014). Hence, controversial issues are topics that can trigger and/or nurture those skills. In contrast to settled issues, which can be resolved or have a solution controversial issues cannot and potentially have not. It is possible to present opposing views on such an issue. An epistemic criterion holds that opposing views can be held based in equally valid reasoning, a political criterion identifies morally unsolved issues whereas a behavioural criterion focus on groups of people and how they act in relation to a particular issue (Hand 2007).

In searching for subject specific didactical approaches we have asked social studies teachers to respond to a web-based survey on what topics they consider to be controversial in their teaching, what approaches they use when teaching on these matters and if/which functions controversial issues can have in education. The web-survey closed only recently. The first findings from the web-survey will be shared at this presentation.

## **Social studies teachers' conceptions of criticality in civics, geography, history and religion**

**Ledman Kristina**

Critical thinking is a general ideal and normative goal in many curricula in national educational systems of Europe and is one of four competence areas for citizenship education defined in Eurydice (2017). In Sweden, social studies subjects are ascribed importance in citizenship education. However, according to Skolinspektionen (2015), criticality does not have a strong position in teaching practice. Disciplines can be conceptualized as different cultures where epistemological structures and concepts constitutes a context in which critical knowledge is situated. The aim of the paper is to illuminate how social studies teachers' conceptualise criticality in the description of their teaching practice and to explore similarities and differences in-between the four subjects. The subject comparative methodology provides an opportunity to further an understanding of what is common as well as unique regarding criticality in the practices of the different school subjects. Theoretically, the inquiry rests on 'recontextualisation' and considerations of different forms of knowledge (Bernstein 2000).

The study is based on data gathered through semi-structured interviews conducted with 15 informants teaching grade 7-9 social studies. Preliminary empirical observations suggest that History and Civics are ascribed importance for critical source literacy, Religion is deemed important for perspective taking and critical self-reflection, whereas Geography is considered as less important for criticality. Generally, the local school context and the characteristics of their pupils seems important for the teachers' focus their subject didactical considerations of teaching towards criticality.

## Encounterings with climate change and eco-anxiety through drama

Lehtonen Anna and Pihkala Panu

Climate change is a complex, immense sustainability problem which is difficult to deal with in society and in education. Maladaptive behaviour and certain psycho-social responses make it difficult to find effective approaches for climate change education. Common responses to climate change are eco-anxiety, socially constructed silence and denial. Instead of not caring, people might in fact care too much, and resort to psychological defenses. Thus arts-based methods which enable people to move beyond ordinary states of silence and fears are much needed.

In this presentation we bring together drama education, climate change education, and interdisciplinary perspectives on the psychological and social dimensions of climate change. We illustrate the potentiality of drama through two different kind of approaches to eco-anxiety: indirect and direct. We draw on the material of drama workshops conducted 2015-2018 for groups, which are most vulnerable related to climate change: environmental activists and teenagers. The aim of these workshops was to enable critical awareness of prevailing psycho-social responses and promote transformations of eco-anxiety to hope through collective creation.

According to our experience of these workshops, drama can provide safe, caring and creative spaces that enable participants to think and feel collectively about issues which are generally unspoken or unconscious. When given space and support, facing challenging dilemmas and emotions related to them can result in empowerment. Drama as an arts-based approach can give means for embodied and emotional reflection, both personal and collective meaning making, critical awareness and empowering experiences.



## Conceptions of ethical competence – showed in students' texts

Lilja Annika

The aim of this presentation is to present findings from the EthiCo project: “What may be learnt in ethics? Varieties of conceptions of ethical competence to be taught in compulsory school”. The focus of this paper presentation is varieties of conceptions of ethical competence displayed in students' texts. .

The overarching aim with the text analysis is to learn about what ethical competences the students express and if their answers bring forward other conceptions of ethical competence than the one measured in the national tests.

A qualitative content analysis on altogether four tasks answered by 100 students each in grade six and nine have been carried out. The tasks are from of the Swedish national tests in Religious Education 2013. The analysis is performed by using a constructive grounded theory (Thornberg & Charmaz, 2013). In order to interpret, understand and characterize the expressed perspectives on ethical competences, theoretical lenses can be used beneficially. In this study a variety of ethical lenses, or voices, have been selected and used in order to

interpret, understand and characterize the students' texts and their varieties. Inspired by Mark Tappan (2006) we have interpreted the ethical theories as different “voices” of ethics. The four ethicists – Seyla Benhabib, Knud Eiler Løgstrup, Martha C. Nussbaum and Peter Singer

– have been chosen since they represent various ethical frames of reference.

A preliminary analysis shows that in particular, abilities to weigh values in relation to each other and argue for collective and societal values are shown – although not given credit. In the texts the students show both a will and a capacity to take a responsibility that goes beyond what the national tests inquires for.

## History in primary school: both canonical and dependent of context

Lilliestam Anna-Lena

There is no previous Swedish study on social studies teaching in primary schools, year 1-3. In order to start building knowledge, we asked thirteen experienced teachers to reason about the four subjects constituting Social studies in primary school. The teachers work in schools with different characteristics regarding ethnic background and parents' education, ensuring that the study catches a wide range of experience. This presentation focuses on the teachers reflections of history teaching.

The research questions are:

How do experienced teachers reason about the learning objectives and content of history teaching in primary school?

How can the patterns of their descriptions be understood?

We discuss the results in relation to the curriculum and to the history didactical concepts frame of reference, historical consciousness, use of history, substantial concepts, and key concepts.

The interviews started with the question: What do you want your pupils to have learned in the social sciences after the first three years in school? The teachers got paper, pencil, ample time to think, and steered the interview. The interviewer asked clarifying questions.

The prehistoric age takes a major place in the teachers' descriptions. Both the content of teaching and the work form show canonic features. The teachers narrate about the prehistoric age, the pupils build models of prehistoric houses, visit a prehistoric village and write their own textbook with pictures, building on reference books for children. This differs from the work with local history, which shows considerable differences that can be related to the social context. Teachers in schools where the students have a Swedish background describe visits to local historic sites and museums, while teachers in schools where the majority of students have a foreign background hardly mention local history at all. Is local history only worthwhile if your forefathers lived here?

The teaching appears to focus on creating a frame of reference and on making the pupils thankful for living today. In some aspects canonic features are seen, while other aspects of teaching seems to depend on the group of students. The key concept to take a historic perspective, and the lineage living conditions, prescribed in the curriculum are highly present, as is fostering aims. However, there are no signs of work with primary sources or uses of history. The historic tool timeline is used, but unanimously considered to be too abstract for the children's age.

## Social studies in primary school: Communicating values or teaching substantive knowledge?

Lilliestam Anna-Lena

In the Social studies in Swedish primary school, the pupils are supposed to develop basic knowledge and abilities in Geography, History, Religion and Civics. The Social studies also includes work with fundamental democratic and ethical values in school and society. No earlier Swedish study focuses on this subject in the early years of schooling. We investigated how experienced teachers reason about the objectives and the content of Social studies, and how the similarities and differences between their reasoning can be understood. Our results are discussed in relation to 'selective traditions' (Englund 2007).

To catch a wide variety of experience, the teachers' schools have either a majority of pupils with Swedish background or a majority with foreign background and different levels of parental education. The interviews started with the question: What do you want your pupils to have learned in the Social studies after year three? The teachers got pencil and paper to make notes on, ample time to think, and steered the interview, while the interviewer asked clarifying questions.

All teachers stress the importance of building on the pupils' previous experiences and to work with values. They also describe work with the prehistoric age, the ability to read maps, religious symbols, and the central functions of society. However, the differences are striking, the thirteen teachers actually describe thirteen different subjects, and they also differ in their view of what time and effort should be given to the different contents. Some teachers focus strongly on substantive knowledge. Most of them work in schools where the pupils have a Swedish background. Some teachers claim that Social science is values, and that there isn't any substantive content. Other teachers prioritize the fostering aspects of the Social studies curriculum over the substantive aspects. The teachers in schools where the pupils have a foreign background describe a pervasive work with Swedish values of equality, autonomy, acceptance for people from other backgrounds and religions. They also try to strengthen the children's pride of their background and of their local area.

The teachers analyze their pupils' needs and tries to form teaching that meets these needs, which we see as an influence from Dewey and the progressive tradition. The old elementary school (folkskola) in Sweden aimed at fostering nation-loving citizens that upheld the values of society. These values have changed, but the tradition is still prevalent.

## Vocational literacy as part of carpentry knowing

Lindberg Viveca

When it comes to upper secondary vocational education there still is a societal understanding of vocational knowing as related to manual work that has nothing to do with literacy work.

However, New Literacy Studies, as introduced by e.g. Street (1982) Barton (2001) and others, has shown that there are different kinds of literacies - what people read and write, how they do it, and for what purposes - that are socially constituted. Within this research tradition, several literacy practices related to work have been explored and analysed. Also various school subjects have been subject for research. However, less attention has been paid to the literacy practices in vocational education. Although there are some studies this is still a field of research that needs further attention. The issue of this paper is firstly to describe the different literacy options present in a school workshop within the Swedish Upper secondary Craft programme specialising on carpentry, and secondly to exemplify the kinds of discussions about vocational text that are part of didactic situations in students' problem solving. For this paper, a visit guided by the vocational teachers through the carpentry workshop reveals the kind of literacy that the students encounter on daily basis. The teacher-student-conversations are examples from classroom study of the carpentry programme. Together these materials illuminate what kind of vocational literacy a future carpenter must be able to manage as part of the vocational knowing.

## **Insights from a small scale Swedish language support intervention in a complementary nursing programme**

**Lubińska Dorota**

This paper reports some insights from a joint action research project between a language education department and a nursing science department in Sweden. The project has been developed within a complementary nursing programme for immigrant nurses from countries outside EU/EES. Frequently, nurse educators in these programmes feel inadequate trying to help their students to achieve their educational goals. In previous studies on English as a second language it was claimed that these type of students face mainly two types of challenge. Firstly, while the students demonstrate minimum proficiency of the target language required for programme acceptance, they still struggle with academic language and can have difficulties with managing the programme. Secondly, they have also limitations communicating in the clinical settings experiencing difficulties speaking and listening with patients and colleagues. Thus, this project has been initiated in order to develop a language support intervention as well as to identify the needs and opportunities of the students in their clinical practice.

The theoretical and pedagogical framework for the project comes from two fields such as academic second language literacy and genre-based second language instruction. The research cycle followed four main steps: planning, action/intervention, observation and evaluation. The data in this cycle was collected through interviews, questionnaires, field notes, and course documentation and student texts. The participants were two nurse educators, 24 students and a language teacher.

The results are reported in terms of (i) How was the intervention derived from the understanding of the specific situation? (ii) What were the standards and criteria for success of the intervention? (iii) How was reflexivity addressed? and (iv) How was practice changed?

## **Didaktik för naturvetenskap och hållbar utveckling - Fem former av demokratiskt deltagande**

**Lundegård Iann and Caiman Cecilia**

Education is often argued as crucial to reverse development towards a fairer and more sustainable world. This article uses a wide range of research and literature in the field of

education for sustainable development, to discuss an educational, 'didactic', framework on areas in the intersection between science, technology and society. First, the introduction outlines an overview of the nature of the issue and its relevance. This is followed by a theoretical approach to education and learning that primarily challenges the normativity of schooling, puts the democratic teaching processes, and the value of authenticity at centre. Finally, based on this we present the framework, "Five didactic forms of participation", focusing on student participation in deliberation, agency, creativity, criticism and authenticity as well as recommendations for, research and further development of education in these areas.

## **Money, debt and banking in the Finnish social studies matriculation exams: A Post-Keynesian critique of upper secondary school economic education**

**Löfström Jan and Kinnunen Timo**

In the broad field of heterodox economics, Post-Keynesian theories have challenged conceptions of money and debt in the Neo-Classical economic theories. For example, questions about the desirable inflation rate and neutrality of money are answered differently in the two theoretical traditions. The answers have implications for how economic policy targets like low inflation and restricted public spending are judged. Economic education in school cannot delve deep in economic theories, but it is important to take a critical look at what conceptions of money it reproduces.

In Finland the matriculation examination is a high-stakes exam, hence students may easily see its content as an authoritative statement on what is relevant, valid knowledge. In our paper we report the results of a study of the content of selected exam questions and their assessment criteria in the social studies matriculation exams, in 2006–2018, and selected student essays on the questions, in 2006–2015. We focus on exam questions on topics relating to money, debt, inflation and banking. Our research question is how money, debt, inflation and the functions of banking in economy are described and explained in the exam questions, the assessment criteria and the student essays. We also analyse what value judgments are made in this material. Our research objective is to identify elements that from the perspective of Post-Keynesian theories are problematic in the material. We do a theory-driven qualitative analysis of the description of money, debt, inflation and banking in the material. Our preliminary findings suggest that the exam questions, the criteria and the essays express the view that money is neutral. Public and private debt are seen as identical, central banks are seen as the sole creators of money, and commercial banks are seen only to transfer money but not create money. This can be considered problematic from the perspective of the Post-Keynesian theories of economy. In the end we discuss implications of the results for economic education and the benefits that could follow from introducing elements of pluralist economic thinking in school economy teaching.

## Madsen Roar

At August 21st 2013 the Norwegian Department of Education defined a mandate and established an expert committee given the task to establish relevant knowledge and give their recommendations for a quite radical curriculum reform. 21st century skills, defining core elements of the school subjects and the key concept of deep learning alongside with a more heavy handed skills orientation, defines the central parts of the reform.

The committee produced two Official Norwegian Reports and later the Department of Education produced a Government White Paper. Then a parliamentary process lead to formal decisions defining the major principles of the curriculum change. Thereafter the principles were fine tuned by the Department of Education, and given into the hands of the Norwegian Directorate for Education – which in turn is now overlooking and closely directs the processes of writing the curriculum documents of the different school subjects.

This paper presentation will analyze these documents and some selected statements from prominent politicians and experts as efforts to drum up support for radical and rapid curriculum change, echoing the dominant liberal ethos of the OECD Directorate for Education and Skills.

My hypothesis is that the core documents and central statements conflates the projection of established contemporary trendlines into the future and the more or less uncritical “dropping” of rather fluent social science terms (such as globalization and digitalization) with an appropriate social science or humaniora-centred analysis of expected social developments. I will also argue that they conflate the almost exponential increase of researchbased knowledge with a similar development of the central elements of knowledge relevant for primary and secondary schools. Thus they are overlooking the fact that relatively large parts of the research based knowledge fundamentals for school subjects are constant or are changing slowly. Example: The Pythagorean theorem in geometry. By giving this misleading account they are promoting alarmist conceptions on the need of extent and rapidity of the curriculum change.

The theoretical points of departure will be the theory of social acceleration developed by the sociologist Hartmut Rosa and the closely related thoughts of historian Reinhart Koselleck. My hypothesis is that the present (as understood by the political elites and the expert committee) have appropriated both the past and the future and consequently reduced the importance of the past and also narrowed the political options available. I will argue that the expert committee actually never had any serious understanding of neither the contents nor the relevance of historical analysis, the leading expert on the contrary reduced history to a premodern caricature: nostalgia.

Thus dehistoricization and cultural delinking of several school subjects are now more or less inevitable and will definitely narrow the possible options for developing critical skills in a wide variety of school subjects, most notably within history and social sciences.



# **Student teachers' perceptions of a democracy board exercise: challenges of social science concepts and differentiated instruction in social studies**

**Mathé Nora E. H.**

## Objectives

Education for democracy is often aimed for across school subjects and democracy constitutes an important theme in individual subject areas, such as social studies. As the ways democracy is presented to students may influence their perceptions and engagement, it is important to examine available teaching materials and prospective teachers' perceptions of these. The research question guiding this study is:

How do student teachers (STs) in social studies didactics experience and perceive a board exercise on democracy?

## Theoretical framework

To understand various aspects of student teachers' perceptions of an educational board exercise about democracy, I draw on theoretical perspectives relating to the role of social science concepts, democratic theory, discussions, and differentiated instruction.

## Methods

This article is based on data from observations and a questionnaire concerning 47 student teachers' perceptions of the board exercise 'The Democracy cake' developed by the Rafto foundation. The data comprises field notes and a total of 144 written responses in addition to responses to multiple choice questions from the questionnaire. The project was approved by the Norwegian Data Services.

## Preliminary results

**Social science concepts:** A large portion of the responses concerned the role of concepts in the board exercise. Primarily, issues related to concepts represented one of the things STs found to be the most challenging about the exercise, although the opportunity to work with and practice using concepts was also highlighted as something positive.

The role of discussion: The responses that mention aspects of student discussion represent the majority of the positive perceptions of the board exercise. Many STs describe how they believe the exercise facilitates discussion and reflection. Some responses link this to the instructions of the exercise, namely making priorities and considering different views.

Differentiated instruction: Survey questions concerning the potential of the exercise in contributing to differentiated instruction elicited a range of responses from the student teachers. Mostly, STs indicated that the exercise was well suited for differentiation, but they also reflected on challenges related to differentiating instruction with the democracy exercise. Conceptualisations of democracy: The STs related the board exercise to liberal democracy.

One set of responses focused on what participants called 'liberal' or 'unidimensional' understanding of democracy in the exercise, while a few responses mentioned that the exercise does not facilitate problematisation of the model of democracy it is built on or of democracy itself.

# Between the Life World and Academia: Defining Political Issues in Social Science Education

Mathé Nora E. H. and Sandahl Johan

## Objectives

While some studies have indicated that young people's perceptions of politics focus on top-down ideas, studies have also found that young people perceive politics as being about change and shaping society. Further, researchers have argued that traditional civics instruction focuses on complex democratic processes, without enabling students to apply it to political issues. This strengthens the need to consider how to make social science education more relevant for students. The purpose of this paper is to present mutual understandings of political issues from students and academics in social science and discuss some guiding principles for defining such issues in social science education.

## Theoretical framework

To analyse the data, we build on Christensen's (2015) model of knowledge domains in social studies (topical issues, structures, and processes; social scientific disciplines; students' life-world; democratic values). We supplement this with conceptualisations of the political from political theory.

## Methods

This paper is based on data from interviews with six 16-year-old students and five social science academics in Norway about how they understand and define political issues. The students This paper focuses on participants' responses to the question 'Is it possible to talk about issues as being more or less political?'

## Results

Collective: Primarily, political issues that affect society, national political issues, or beyond, were seen as more political than issues affecting smaller groups of people.

Contemporary: The contemporary nature of political issues is most clearly represented in the students' responses. All the examples of political issues mentioned by the students were contemporary issues in that they were currently ongoing.

Conflictual: The conflictual nature of political issues is a theme in both students' and academics' responses. Such conflicts are characterized by disagreements relating to values and priorities in terms of resource use.

Contextual: Context was described as an important criterion both by students and academics, cutting across the principles of collective, contemporary, and conflictual. The students frequently mentioned that "big" and "important" issues are the most political, while the social and political context was highlighted by several academics.

The combination of disciplinary and student perspectives in the guiding principles enables educators to discuss issues and problems with their students and work towards in-depth understanding sensitive to students' life-worlds. Consequently, this study contributes to social science education by suggesting an empirically founded framework to use when teaching about political issues

## What sorts of subject-specific teacher knowledge informs student teachers' (ST) instructional design?

McCrorry Catherine

From the perspective of an HE tutor scrutinising hundreds of STs' lesson plans each year, numerous instructional designs are poorly conceived when critiqued against logical criteria such as the expectation that content and activity selection ought to align with learning intentions in viable combinations and sequences. Stage theory, the acquisition of diverse knowledge types, and contextual pressures feature in accounts of how learning to teach might be challenging (Furlong & Maynard, 1995; Loughran, 2006; Shulman 1986; Hagger & McIntyre, 2000; Ball 2008; Spielman 18.08.18). Drawing upon the philosopher Robert Brandom's work on Inferentialism which suggests gradation between representational knowledge that is more or less adequately populated with contentful reasoning, this study suggests that teacher education curricula could do more to attend to the fine-grained implicit inferential reasoning required to assist teacher understanding.

This paper considers the following aspects of STs instructional designs:

The ways and extent to which the purpose of the content-activity pairing is understood by STs?

The adequacy of the content selection for the activity and purpose specified?

The adequacy of the activity selection for the content and purpose specified?

The study uses artefacts such as STs' assignments, and lesson observations to discern what subject specific teacher knowledge influences STs' instructional design. Vital aspects of instructional design which currently do not receive adequate research attention (Durden 2018) are brought into sharper relief. Two key ideas emerged in answer to each research question. The significance of the research lies in: a) identifying the subject specific teacher-knowledge thought to be foundational to planning lessons that could have a favourable impact on pupil learning and b) in developing a teacher education curriculum.

## **Quality in Mathematics teaching: inquiry and inference in mathematical situations**

**Misfeldt Morten, Michelsen Claus**

The purpose of the KiDM project has been to develop materials that make inquiry-based teaching in mathematics as simple as possible without compromising the student's competence development. We conceptualize quality as a problem of orchestrating mainstream teaching in ways that respects the insights from mathematics education research. This means that quality is intimal connected to implementation. Our design balances: (1) enquiry outset, (2) multiple layers of meaning of the content, (3) focus on student dialog, and (4) the aim of developing mathematical competencies (Larsen et al. forthcoming). These principles have been derived from literature (Dreyøe et al. 2018).

To measure quality we applied a combination of qualitative and quantitative methodologies, and scope the investigation as a matter of to what extent the students apply mathematical reasoning. Two aspects of the students reasoning process are addressed: (1) the material configuration of the students' learning environment, and (2) how the students' inquiry are encoded in data, constitute a focus for our analysis, and embodies our ambition of quality in mathematics teaching.

## Specialised knowledge and teaching economics

Modig Niclas & Kristiansson Martin

In order for people to make well-informed decisions when facing economic questions, in private as well as public life, they need economic knowledge. However, research from different parts of the world show that adults, students, youngsters, and even social studies teachers, who are responsible for basic economic education, often lack this kind of knowledge. In the meeting between peoples' everyday knowledge and subject-specific knowledge, provided by school systems, people will be able to develop deeper and more advanced understanding of the world and thereby develop skills required to function effectively in the society. This raises questions about what kind of economic knowledge people really need. Based on the curriculum principle that specialised knowledge emerging within epistemic communities should be of central interest when deciding on what to teach in school, we have turned to Swedish economics professors, asking them what they see as core economic concepts and what concepts they find most important for people to know and master to be economically well-informed. In this paper, we would like to discuss some preliminary results from a survey conducted in 2017 among Swedish economics professors as a starting point for discussing what might be important specialized economic knowledge educating students in school today. We would also like to discuss what might be fruitful ways of teaching these students in order for them to acquire this knowledge.

## **Year 5 students' views on computer programming in compulsory school**

**Mohsin Gashawa, Norén Eva, Nouri Jalal and Zhang Lechen**

Programming education is a new research domain in Sweden. The attention is due to the formal introduction to the national curriculum July 2018. Mathematics and Technology are the subjects most affected by the changes. The government has, among other things, decided that teachers in compulsory school are to teach programming to support problem solving in mathematics. There is some research on teaching programming in Swedish schools, but no studies on how students perceive to be taught programming. Earlier, we have investigated which didactic strategies teachers use when teaching programming in compulsory school. In this paper, we move to the students and explore their views on computer programming. Thus, the main research question is: What views do year 5 students have on computer programming in school?

The empirical data derives from two schools, one in the south of Sweden and one in the greater Stockholm area, and consists of 58 students' interviews. 14 students in their first semester in year five, and 44 in their last, were interviewed. Focus group interviews with 2- 4 students have been carried out, and drawing on Braun and Clark, a thorough thematic analysis was performed. The result shows that the year 5 students relate computer programming in school to mathematics. A usual comment is that they learn mathematics, for example coordinate systems and geometry, when programming, but they also have to know mathematics to be able to program. Students view computer programming as fun and free, but also as hard and challenging. Another result is that difficult challenges when programming makes some students give up, while others try harder.



## Use of feedback practices at language classes in Finnish upper secondary schools

**Mäkipää Toni**

Despite increasing awareness of the importance of feedback practices to learning, studying these practices is scarce in foreign languages in Finland. Moreover, research indicates that Finnish language teachers use traditional, summative assessment methods, such as exams. This poses a threat for the Finnish education. To gain greater insight into the enhancement of formative assessment, I study how Finnish language teachers give feedback at different CEFR levels (language proficiency levels) in upper secondary school. The major research question is: What feedback practices are used at different CEFR levels across English, Swedish, and French in upper secondary school? To illuminate this question, two sub-questions are examined; RQ1: What differences exist across languages regarding feedback at CEFR levels? RQ2: How do students want to receive feedback at different CEFR levels? The key constructs applied are formative assessment, assessment literacy, corrective feedback, and sociocultural learning theory. The participants are students (N=400) studying English, Swedish, and French in two upper secondary schools, and their teachers (N=8). All the participants answer an online survey, and I will interview 12 students and four teachers showing different answer profiles. I will apply mixed-methods approach to data analysis. The students wrote an essay in October 2018; based on this essay, their teachers and I will determine the students' CEFR levels. I have conducted a pilot study in October 2018, and I am currently collecting the data through survey. The interviews will be held in January 2019. In the conference, I will discuss the results from the pilot study as well as the preliminary results from the actual study. My hypothesis is that feedback in English is more detailed, as students should reach a higher proficiency level in English than in Swedish or in French.

The Finnish curriculum for upper secondary school emphasizes a strong change in assessment practices from learning outcomes towards processes. However, Finnish language teachers are not aware of current assessment practices. These viewpoints lay the foundation for my study, and they are especially connected to assessment literacy and challenges in classroom-based language assessment. The novelty of my research lies in the research task, as I examine how feedback practices vary between different CEFR levels and languages. My research contributes to the promotion of language assessment; the results provide language teachers with practical knowledge of how to adjust feedback to different learners.

## Dilemmas and discourses in teaching Civics

Möllenborg Evelina

### Research questions

This paper is a part of an on-going PhD-project which aims explore how the Swedish curriculum LGY2011 is translated when recontextualised from National Civics syllabus to teachers and their teaching practices in upper secondary schools. Civics [“Samhällskunskap”] is an interdisciplinary subject, which consists of political science, sociology and economics.

Although, some Swedish research has been carried out on Civics didactics in recent years c.f. (Morén, 2017; Olsson, 2016; Sandahl, 2015), very little is still known about Civic education in upper secondary school after the curriculum reforms in 2011. A key research question of the study is: What ideas concerning civics are expressed by teachers, principals and students? This paper will argue that discursive psychology can provide strategies for analyzing qualitative data in the field of civics didactics research, focusing on rhetoric, discourses and ideological dilemmas in civic education. The aim of this paper is two-fold, first, to outline theoretical framework for this research, and second, to discuss dilemmas and discourses in teaching and learning Civics.

### Theoretical framework

A potential for theorizing the complexity of teaching civics is found within discursive psychology and curriculum theory. While curriculum theory directs attention to the overall question of what counts as knowledge in Civics (Deng & Luke, 2008; Englund, 2005), discursive psychology contributes to a more specified focus on the social and cultural construction of such discourses (Lester, White, & Lochmiller, 2017; Wetherell & Potter, 1992) and ideological dilemmas (Billig et al., 1988) as they develops in micro practices such as classrooms and every day talk among teachers and students. Discursive psychology address questions of social consequences, power and negotiation at a micro level. Discourse analysis can, according to Lester, White and Lochmiller (2017), provide tools and concepts for analyzing how policy ideas meet practice at the classroom level.

### Research methods

Data in the on-going study consists of focus group interviews with teachers and students in Swedish upper secondary schools, and individual interviews with principals. Key curriculum documents will be analyzed.

### Expected outcomes

This paper suggests discursive psychology as a language-based methodology for curriculum theory research in the field of subject didactics. The paper also contributes to the development of the methodological and theoretical repertoire of the field of civics didactics research.

## Learning about oneself through another: a methodology for recognizing local particularities

Niemi Kristian

Increasing diversity is a global trend. Many European countries, which historically have been rather monocultural, have experienced a large influx of people from other cultures and religious traditions, such as from Africa and the Middle-East (Minkenberg, 2008). Sweden can be taken as an example: there have been several waves of immigration during the 20th century (Bevelander, 2004, p. 7), and an even greater influx in the 21st century (Krzyżanowski, 2018, p. 101). As a consequence, today Sweden is arguably one of the most diverse European societies (Schierup & Ålund, 2011, pp. 46–47). Religious education (RE) in schools could be expected to discuss and describe aspects of this diversity, yet it seems like the school subject might be ill equipped for the task. To better accommodate today's multicultural reality, one might, Eva Pföstl (2015, p. 136), Péter Losonczi and Walter van Herck (2015, pp. 95–96) respectively suggests, learn from a context where a plurality of cultures and religions were taken into consideration from the very start of the development of a national education: India. Global issues must be handled locally, informed by the context – but we can also learn from each other instead of re-inventing the wheel over and over again. The purpose of the present article is to develop a methodology for contrasting local contexts with each other, to highlight characteristic traits and particularities for how global issues, like migration and religious diversity are handled (cf. Niemi, 2016, 2018; Bråten, 2014, 2015).

## **Students' writing in Physical Education and Health – entextualizations of what knowledge?**

**Norberg Anna-Maija**

The use of texts has increased in society, not the least in areas which are not normally seen as textmediated (Karlsson, 2006), and thus it may not be surprising that written practices have become more common even in school subjects which have not traditionally been text-mediated, such as Physical Education and Health (PEH). In Swedish research on PEH, the increasing use of written and spoken texts in assessment has been questioned, due to the fact that written and spoken texts tend to be considered as more valid knowledge than embodied learning (Tolgfors, 2017, p. 193).

This study, part of an ongoing ethnographic study of PEH-instruction in a class in lower secondary school, investigates students' texts used as examinations of three different teaching units: Dance and Rhythmics, Sports injuries and Setting up goals for training.

The aim is to investigate the texts according to how subject content, subject voice and subject specific language- and textstructures are entextualized (Bauman & Briggs, 1990).

The study draws on New Literacy Studies (NLS), based on the idea that reading and writing can best be understood as situated in social practices. In the study, it means that such literacy practices are situated in PEH-instruction where they get their meaning, while they are also embedded in a wider social and cultural context and affected by e.g. curriculum (cf. Barton & Hamilton, 1998).

Expected outcomes, in terms of what is entextualized in students' texts, aim to describe possible interpretations of disciplinary literacy in PEH, in this case if and how students' writing is an integrated part of the subject, and thus has a potential to contribute to the learning of subject knowledge.

## Nordgren Kenneth

We all use history to communicate. Historical references turn up in advertisements, in political discourse, and at the cinema. Buildings, statues, street names, and memorial sites render the use of history tangible in the public sphere (i.e. Black, 2005; Lowenthal, 1985; Nora, 1989). Our everyday references to the past are often vague and understated, but occasionally they become bombastic or propagandistic. When we communicate through history it does not generally seem to be about the past, but a way to interact with present needs and desires and thus affect the future course. This presentation will theorize public use-of-history and suggest a framework to analyze it as a performative expression and an activity of communication; that is, to understand it as utterances in motion (Nordgren 2017). The advantage of this conceptualization is to pinpoint a phenomenon that, on the one hand, has a markedly evident and dynamic impact on our lives, and on the other, is difficult to survey and complex to interpret because the meaning of the uses tends to shift within the community of communication (Rüsen, 2005). The point of departure is that the concept use-of-history is both analytically and educationally useful, however in requisite of theoretical elaboration and operationalization. The ambition is to outline a definition by investigating the relationship between history and the idea of its use. This makes it necessary to discuss the relationship of nearby and overlapping concepts such as collective memory and heritage.

## **Powerful knowledge as a relational concept: Possibilities and consequences**

**Nordgren Kenneth**

Young (2013) makes a sharp distinction between curriculum (defined as the knowledge pupils are entitled to) and pedagogy (the teacher's work of transmitting his knowledge). Teaching is thus a task to customise specialised knowledge and make it available. However, the meetings between the discourses are also constitutive for teaching and learning. In order to support teachers, it is not enough to refer to specialised knowledge as powerful.

The question is also 'powerful for what?' By discussing meetings between history as specialised knowledge and socialisation, interdisciplinary collaboration and the contemporary culture, examples are given of how powerful knowledge can be understood as a relational concept,

i.e. as a framework that does not deny the differences between knowledge regimes, but enables thinking on how teachers can interrelate them in a way that qualifies history education. The use of powerful knowledge as a relational concept points to the teaching profession as a highly qualified mission in need of both peer collaboration and collaboration with a research-based epistemic community in order to maintain a dynamic teaching subject.

## **What about the infrastructure for planning and evaluating teaching? A quantitative perspective on the conditions for teaching, learning and professional learning communities**

**Nordgren Kenneth, Kristiansson Martin and Liljekvist Yvonne**

There is a strong but also complex relation between teaching and learning. Nevertheless, there is not much attention paid to how schools organize the possibilities for teachers to plan lessons and evaluate the results of their teaching. We have conducted a survey, in which 2285 teachers in primary up to upper secondary school participated. The topic of the survey were the conditions to plan and process teaching. In this session, we want to highlight three research results and discuss the conditions for teachers to design teaching that gives students access to powerful knowledge (Young & Muller 2013). The results show that conditions needed in order to plan and process teaching are generally poor (in relation to time, as well as working environment and possibilities for collaboration). However, the results also indicate that teachers who have a mutual time to plan are significantly more positive towards their working conditions. Lastly, the results show that teachers, regardless if they have mutual time or not, seldom use systematic and research based models when they design teaching. By using these results as starting point we want to discuss the conditions for actually developing professional learning communities (Schaap & de Bruijn 2018; Botha 2012; Stoll et al. 200&) in a Swedish context. A developed infrastructure is needed for professional teacher collaboration, where an knowledge from subject-related and didactic research facilitates both professional growth and deepens the teaching.

## The ethical perspective on value-based work - care ethics as an analytical opportunity?

**Norgren-Hansson Mimmi**

According to the Swedish education act (2010: 800), teachers are assigned to convey not only knowledge but also values. These values are concertized in the curriculum. For example, under the headline ethical perspective,

"An ethical perspective is of importance for many of the issues that are taken up in the school. This perspective should permeate schooling in order to provide a foundation and support pupils in developing their ability to form personal standpoints and to act responsibly towards themselves and others."(Lgr11)

The importance of being able to make personal standings, but also to actually be able to translate these into respectful acting in relation to one selves and others is therefore established. The care perspective is further highlighted as the curriculum states that " can empathize with and understand the situation other people are in and also develops the will to act with their best interests at heart". The ability to empathize with others is regarded as fundamental from a care ethical perspective as it is the basis for later action (Noddings, 1984: 16). The subject of religion can often play a particular role in the work of moral education (for example, Almén, 2000: 205, Hartman 2008: 78, Larsson, 2009: 63, Franck & Löfstedt, 2015: 129, Lindström & Samuelsson, 2018). The care-oriented parts of the curriculum are therefore possible to describe, analyse and conduct a critical discussion about based on the basic values in the Swedish curriculum but also through a religious didactic perspective.

Increased knowledge regarding the value-based mission based on the aspect of care, can generate new strategies which will allow students to develop these abilities and values. Instead of focusing solely on the complications in peer to peer climate, it is important to seek the expressions for the ability to maneuver in a social landscape with care for others as goals and means. The current debate on the basic values in the Swedish curriculum is often in reference to violations of current standards in forms of bullying, harassment, discrimination and offensive treatment (Nyström 2011: 11). This perspective may be interesting to turn around.

I argue that in order to increase goal achievement in school's value-based education, care ethics are to provide analytical basis to the student's prosocial behavior within peer groups. This can also be the basis for a discussion about moral education, highlighting the importance of masculine and feminine coded ethical perspectives in school.



## **Flexible or equal citizens? Norwegian Social Science education after the Bologna-process**

**Noven Eide Thomas**

The social reproduction of class inequalities in education is a persistent global phenomenon also discussed in the social science education research (Barton & Avery 2017). In my presentation I ask how class comes to play in everyday didactic relations, in the local context of the Norwegian comprehensive schooling project (Telhaug, Mediås & Aasen 2006). At the transnational level, norwegian social science education is embedded in the Bologna-process, forwarding standardization of education systems in Europe. The primary purpose being workforce mobility promoting economic growth. In this project, there is need for pupils with flexible dispositions and transferable skills. On the other hand, recent studies show how this standardization bring forward an educational disource that proposes narrow identity structures for future students (Hilt, Riese & Søreide 2018). In addition, recent findings also suggest that pupils from the educational middleclasses benefit more from the norwegian democratic education because of their political habitus (Borge 2018). In contrast, a main purpose of the Norwegian social science education is the education of equal civic citizens.

These pupil dispositions is in large different from the ones above, involving the mastering of complex skills to equal participation not only in the market and industrial world, but also in the domestic sphere such as in family life and the local community, organizations, the spiritual world, in the arts, and especially active democratic participation in civic spheres. Having this conflict between the global and local schooling projects in mind, I use ethnography to explore the role of class inequality. In my presentation I show how different pupils relate to the subjects' skill-dimension. My findings shows that that pupils from the educated middle classes draw on resources from their spare time to engage in and cultivate school their skills in the social science education.

## Cross-disciplinarity in Social Studies

Nyström Daniel

In the national curriculum for the upper secondary school, the social studies subjects are presented as vital for the development of certain competences. A word frequency count shows that terms such as “understanding”, “analyzing”, “relations” and “perspectives” stand out in passages describing geography, religion, history and civics. There are also differences between the subjects. In geography “the world”, “processes” and “living conditions” are highlighted; in religion “ethics”, “life view” and “religion”; in history “the present”, “the future” and “societal changes”; and in civics “rights”, “democracy” and “social structures”.

Although the school subjects within social studies have their own specific profiles, there are noticeable similarities and overlapping moments in terms of content and problematizations. They are all situated in the scholarly tradition of the humanities and social sciences, with a strong focus on social, political and cultural aspects of human life. A recurring term used in the national curriculum to characterize the subjects is “cross- disciplinary”. However, what is meant by “cross-disciplinary” changes depending on the subject. Geography situate itself as drawing on both natural science and social science; religion underlines that the main focus is religion, but that it is cross-disciplinary to its core; civics describes itself as a mixture of different social science disciplines.

At NOFA7, I present a paper where I study the ways in which cross-disciplinarity is outlined in the social studies subjects. Taking the national curriculum as a vantage point, the study analyzes the framing of cross-disciplinarity in textbooks and other teaching materials. The purpose is to discuss to what extent epistemological claims are central to the formulation of these subjects. From a comparative subject didactics perspective, such a discussion casts a light on the fact that similar terminology is ascribed different meanings; as well as the opposite, that overlapping content is presented using different terminology.

## **Epistemic quality in the Connected Classroom. Exploring perspectives from students', teachers' and researchers' shared reflections**

**Olin-Scheller Christina, Tanner Marie, Wejrum Marie, Tarander Eva**

As a part of what constitutes so called “21st century skills and competences” (OECD, 2016:9), and through a wide range of international and national policies (c.f. Redecker, 2017; Unesco, 2017), education today faces strong demands to become digitalized. Hence, teachers are under pressure to implement digital resources into instruction. This has shown to profoundly reframe the classroom as a learning space, resulting in some salient challenges in terms of individual vs. collective learning processes (Asplund et al., 2017), changed frameworks for student participation in classroom discourse (Sahlström et al. forthcoming) and constraints due to different digital resources provided by a so called ed-tech market (Player-Coro et al., 2017; Tanner et al. forthcoming). With these challenges as a point of departure, we focus on the enactment of digitalization in four different school subjects (Swedish, English, Science and Social studies) in grade seven in one digitally rich Swedish classroom. We discuss what happens with the instructional content in terms of epistemic quality in these four subjects. Two consecutive lessons in each subject (in total eight lessons) have been video recorded using three cameras focusing the teacher, a focus student and this student’s laptop screen. Selected clips with examples related to subject specific teaching are jointly analyzed in two groups consisting of researchers and students, respectively researchers and teachers, in order to identify qualitative aspects. The results of the joint analysis from the different research positions are expected to deepen the understanding of epistemic quality in connected classrooms in relation to the identified challenges.

## On the weakness of social sciences teaching and its reconciling didactical power

Olson Maria

There is a substantial amount of “strong language” in today’s social science teaching in school and its related social science didactic research. What is referred to in terms of ‘strength’ is the current addressing of the potential of the subject matter’s disciplinary knowledge content to provide for the students’ acquirement of ‘secure’ or solid knowledge. The ambition of finding a safe ground for social science teaching, as well as for the legitimization of the very school subjects as mandatory, is of utmost relevance as it brings in the important purpose of the social science teaching; to see to widened student *agency*. Disciplinary knowledge, together with student interest and engagement are here central objectives to embrace. This purpose does not go without good motive. Social science teaching does involve purposes and objectives that need to be considered and effectuated in qualitative and quantitative measures. To this aim, we argue, the acquisition of solid knowledge content is key.

In this symposium, we want to make a case for what may be considered to be of equal importance in the social science teaching practice; to see to, and take didactical measures on the *weakness* of this practice. More precisely, we want to elaborate theoretically and empirically the experience of any teacher; that there is in no way a straight line between subject teaching and subject learning. On the contrary, this relationship is by necessity characterized by constant and ever-present *unexpectedness* (Olson et al. 2017:2). Its weakness, its vulnerability in terms of the possibility to calculate for and expect firm learning outcomes is, we argue, related to the circumstance that teaching is hermeneutic. It is profoundly linked to students’ processes of *interpretation*.

With point of departure in this integral vulnerability of social science teaching, as in any educational process, which in turn is linked to the role of subject disciplines and theory in education (Biesta 2011), the purpose of this symposium is to qualify the question of opening up for an additional objective to exist side by side with the aforementioned of agency; to see to a widening of student *existence*. This is being done through a theoretical elaboration of what knowledge is inspired by Lisa Disch’s (1997) work on Hanna Arendt, where point of departure is taken in Arendt’s ‘visiting metaphor’. This elaboration is made as an attempt for a subject didactical offer to social science teaching that may serve as a reconciling power for its, in our view, *two* core objectives.

## **Från turist till kolonistör? Relationen elev-ämne i arbetsuppgifter i svenska läromedel i historia 1947-2003**

**Persson Anders**

The history of History as a Swedish school subject has usually been based on two sources: curriculum plans and textbook narratives. Drawing upon more than 600 exercises that occur in history textbooks published 1950–2003, this article challenges some previous results. It is shown that a great majority of the exercises, throughout the whole period of time, prescribe a simple reproduction of unchallenged truths. It is also argued that both disciplinarian assignments and aesthetic tasks, seem to appear at least as often before, as after, the 1970s. Subsequently, especially in the 1990s, the exercises quite often ask for the individual student's own opinions - without demanding them to consider any historical circumstances. From an Arendtian (1982) perspective, it is accordingly argued that while the former exercises often enjoin the view of the uninvolved tourist, the latter rather instruct the pupil to embrace the coloniser's perspective of the past.

## Lärares bedömningspraktik i två olika SO-ämnena – erfarenheter, utmaningar och möjligheter

Persson Anders and Berg Mikael

Under hösten 2017 togs ett initiativ från lärare och ledning på VBU för att, tillsammans med en forskare från Högskolan Dalarna, arbeta fram ett forsknings- och utvecklingsprojekt som kan stödja det egna arbetet med bedömningsfrågor. Det bakomliggande motivet utgår från antagandet att lärares bedömningspraktik, i vid mening, utgör en mycket betydelsefull del i skolans arbete med elevernas kunskapsutveckling.

Projektet "Lärares bedömningspraktik i två olika SO-ämnena – erfarenheter, utmaningar och möjligheter" har arbetats fram gemensamt av representanter från VBU och HDa. Projektet har både ett skolutvecklingsfrämjande och ett forskningsinriktat motiv. Vår ambition är således att både skapa underlag för vidare professionsutveckling och ett utrymme för att fördjupa förståelsen av lärares arbete med bedömningsfrågor.

I tidigare ämnesdidaktisk forskning om lärares bedömningspraxis inom SO-ämnena märks en betydande övervikt för de studier som ytterst hanterat lärares arbete i termer av ett implementeringsproblem. I det här projektet närmar vi oss istället frågan om lärares bedömningspraktik genom att ta avstamp i lärares egna berättelser och erfarenheter.

Det tilltänkta projektet består av två steg. Först avser vi att inventera utmaningar som framträder i lärarnas berättelser om sin egen bedömningspraktik. Med dessa lärarerfarenheter som grund formulerar vi sedan ett antal "case". I ett andra steg erbjuds lärare i kollegiala grupper att samtala om hur de själv hade hanterat dessa ämnesspecifika och bedömningsrelaterade dilemman. Slutligen försöker vi som forskare, utifrån båda dessa olika typer av berättelser, identifiera ett antal skilda lärarstrategier. Vår förhoppning är således att de olika typer av kollegiala lärar-samtal som initieras inom ramen för detta projekt skall kunna bidra med att synliggöra hinder och möjligheter i lärares bedömningspraktik.

Vår avsikt är också att, med utgångspunkt i lärarnas berättelser, skapa antal praktikgenererade analytiska tankeverktyg med praktisk bäring på lärares bedömningsarbete i SO. Dessa verksamhetsnära tankeverktyg torde förhoppningsvis, på liknande sätt som redan skett med en del av de praktikgenererade modeller som genererats ur de deltagande forskarnas avhandlingar (Berg 2014, Persson 2017), även kunna användas i såväl fortsatt utvecklingsarbete vid VBU, som högskolans lärarutbildningar.

## Ecological literacy in fieldwork – teaching, learning and materiality

Persson Kristin, André Maria and Caiman Cecilia

Fieldwork in Biology education offers contingent and unique experiences in establishing relations with nature which may not be as easily achievable in the classroom. However, research has shown that there are a number of barriers to ecological fieldwork for teachers to overcome including for example school culture and confidence in teaching outside the classroom. The overall aim of the study is to explore the importance of fieldwork for the development of ecological literacy in students. The study explores the practical and emotional management of field work practice by drawing on actor-network-theory and posthumanist science studies. From the theoretical framework of actor-network-theory and posthumanist science studies, human actors are seen as entangled with nonhumans. Humans and nonhumans have their own agency and are constantly doing things, forming relations and alliances in the world. The main research questions are: How do relations between humans (teachers and students) and non-humans emerge during field work? In what way do these relations contribute to development of ecological literacy in students? What is the importance of closeness with non-humans for the development of ecological literacy in students?

The study is based on data from ethnographic participant observation of ecological fieldwork in upper secondary school. The fieldwork analysed includes an over-night fieldtrip where a group of students and teachers went to experience black grouse lekking in a nature reserve. The data consists of film- and audio-recordings during the fieldtrip; from afternoon to early morning.

The preliminary analysis shows examples of how relations emerge between different actants. Particularly important actants are the black grouses, sphagnum, labrador tea, a small lizard, students, teachers, golden plover, common snipe and binoculars. The teachers, and the students help each other in establishing relations to the different actants, relative to the

actants' actions. Example of events where relations are established include handling of binoculars to capture the agency of different birds, unexpected vocalization of birds not yet seen, smelling the labrador tea, imitating and acting like birds and performing care towards nonhumans. The importance of the establishing of these relations are discussed in light of the aim to develop ecological literacy in students. To establish relations to, for example sphagnum, in the classroom through a text, a picture, a lecture, or even a piece of the moss is different than experiencing it in its place. The feeling of sphagnum's full agency would be lost indoors.

## Positioning among students affecting the learning outcome

Persson Mikael

In this presentation I will, drawing from material from my recently finished doctoral thesis in Music pedagogy, argue that positioning among students' is not to be regarded as a parallel, but an integrated, part of the learning process in the classroom.

The material comes from a videoethnography, documenting interactions in two different music classrooms in upper secondary school in Sweden. The material is then being transcribed, analysed and thematised using Jonathan Potters question of what is at stake in the interactions among the students. By using the concept of positioning by Rom Harrée and Bronwyn Davies I have identified how every interaction also to some extent does positioning labour in which differences between the students as well as between the students and the teacher is made visible. A position in this sense is thereby not to be understood as a complete identity with a larger set of features, but is rather fragmental in its nature. Finally I have used the concept of rhetorical resources, as it is being used in both Conversation Analysis and the early Discursive Psychology, do try to grasp how the process of positioning actually is occurring.

As I have done the analysis two major risks were detected. The first one is the tendency to regard the two positions available in every formal educational setting, the teacher and the student, as self-evidently meaningful in every interaction. Doing so could reduce important aspect of the interactions in the classroom. The other risk is to enter the analysis by regarding the subject matter as an important aspect in the students' interactions, which does not seem to be the case. This is especially crucial in my case as the subject matter is music, which a large set of contemporary research on has been described as a central part of identity formations in youth cultures. Giving music primacy in the analysis, by focusing the relations to different instruments or musical genres as an example, would result in leaving important parts of the interactions unanalysed.

To make my case I will present excerpts from my thesis showing how the students position themselves in regard to humour and seriousness as well as confidence and insecurity affects the way they engage in different activities in the music classroom which most probably affect the possible learning outcome.



## **Falsification and manipulation of history**

### **Peters Rikke Alberg**

Issues such as fake news, alternative facts and propaganda are hot topics in today's public debate. However, attempts to create alternative and false histories or manipulations with the truth are not new (Macmillan 2008). It has been well known for centuries and reached a climax during the totalitarian regimes in the 20th century. Classical examples are the falsification of photographs in Stalin's Russia (King 1997) by which all Stalin's political opponents would be physically eradicated or the editing of Danish university class photos after WW2 in which all collaborators with the German Wehrmacht would disappear.

The presentation will outline a history didactics of exploring abuse and falsification of history by suggesting various teaching strategies to address the use and abuse of history in the present and in the past. It will also present and discuss different approaches and activities which can encourage pupils to ask questions, explore biases, generate group discussions and hopefully develop their analytical and critical thinking skills. By using propagandistic or falsified photographs as history sources pupils in secondary school are encouraged to analyse and recognize the nature of propaganda, conflicts and power and to reflect upon how falsifications can be used as a political tool to control certain groups or peoples. It is also argued that dealing with issues such as fake news and propaganda can be used to enable young people to develop skills and values needed to prepare them for life in the 21st century (Teaching Controversial Issues, Oxfam 2006).

## A fit model for model fitting – an a-didactical situation for model building

Petersson Jöran

Mathematical modelling in school mathematics encompasses a wide range of questions such as curricular aspects, mathematical concepts involved, orchestrating lesson activities, and many more. When building models, one approach is to use epistemological arguments and another approach is to base the model on empirical data. In the latter case, we can either focus on applying the resulting model to real life problems or we can focus on the mathematical methods needed to find the resulting model.

In this empirical study, students in school year 10 in Sweden were asked “How do you think a digital tool calculates the fitted curve?” Doing so, the students were given an open-response task where they themselves are expected to develop mathematical knowledge that is new to them. One outcome of the students’ work was the following: They suggested mathematical methods corresponding to those analytical and geometrical methods that have been developed and used through the history of mathematics. Moreover, they suggested both discrete and continuous metric spaces as a means for measuring the distance between data and model. They also suggested modern methods from exploratory data analysis such as trimming the empirical data before fitting the model to them. Another outcome was that the tasks for the students were formulated so that they promoted and enthused the students’ mathematical creativity and reasoning in a way that in this mathematical area reached far beyond the curriculum for secondary school mathematics.

## Methods for visual and statistical comparison of the distribution of codes from content analyses

Petersson Jöran

The FoNS-project (Foundational Number Sense) in Mathematics education at Stockholm University aims to compare different countries with respect to opportunities for acquiring FoNS in first school year. We do this by analysing textbooks, teachers' classroom activities and parent engagement with respect to mathematics. This means that the FoNS-project focuses less on the pupils themselves, but more on the mathematical education environment the pupils meet. One part of the FoNS-project is to compare textbooks through content analysis. The generated data are a sequence of codes from each textbook. In the generated data, the authors found that besides comparing frequencies, there is also much to be found in comparing the distribution of the codes for different textbooks. For this purpose we developed a novel method that allows a visual comparison of how the content in each textbook is distributed and we present this method and compare it with other methods found

in a literature review. Another challenge is to make statistical inference tests on the generated data.

Typically, the generated data set is large and a drawback is that with large data sets even small differences can result in statistically significant but in practice irrelevant differences. The authors will also compare various statistical methods for dealing with this challenge for both the case of comparing frequency and for comparing distribution of the data.

## Can the humanities learn from the teaching of mathematics?

Pharo Lars K. and Fuglseth Kåre

It was the American scholar Lee Shulman who, in the 1980s, first introduced the idea and notion of a special pedagogical content knowledge that is experience-based. According to Shulman (1987), there are several kinds of knowledge involved in a teacher's work.

Pedagogical content knowledge is developed through years of experience and differs from content knowledge based in scientific or scholarly knowledge traditions.

The idea generated new paths into the whole research field on the impact of teachers' knowledge (cf. Shulman 2004 "The wisdom of practice") and has developed into a complete qualitative research program. In German pedagogy, with its stress on formation or *Bildung*, some of these matters have long been studied, although mainly theoretically. Lambert (2011) and Lambert, Solem & Tani (2015) have argued in the same line, with a stress on content knowledge of the specific field (geography) as "powerful knowledge".

In mathematics teaching theory, there are basic theories of the field related the analytical concepts of the theoretical model by Rowland and Thwaites (2005, cf. Rowland, Turner & Huckstep 2009) in a mathematical project, forming a general theory on dimensions of pedagogical content knowledge of mathematics. In their study, 4 categories denote dimensions of pedagogical content knowledge that a teacher should master and teacher education strive to develop:

The foundation dimension, consists of knowledge and understanding of the subject matter (mathematics) per se and of subject-specific pedagogy, as well as beliefs concerning the nature of the subject, the purpose of subject education and the condition under which students will best learn the subject.

The transformation dimension, concerns the presentation of ideas to learners in the form of analogies, illustrations, examples, explanations and demonstrations.

The connection dimension, includes sequencing of material for instruction, and an awareness of the relative cognitive demands of different topics and tasks.

The contingency dimension, is the ability to make cogent, reasoned and well-informed responses to unanticipated and unplanned events.

These, and other concepts from the large body of subject specific mathematical teaching theory that are promising also for teaching theory in other school subjects despite all differences. As theoretical methodology, one may these analytical concepts, as transferable to the study and teaching of other subjects, all variances apart, in schools and as a basis for further research by master students in the new five-years teacher education.

The paper therefore asks if the humanities-based education may find similar distinctions. Seen in relation to this previous mathematics and science teaching theory research, this approach may complement and further complete our understanding of learning and teaching in all school subjects.

## Othering and belonging in Danish as second language subject, L2: Master- and counter narratives of education and ethnicity

Piekut Anke

How do students with an ethnic diverse background narrate sameness, difference and otherness in an ethnic relatively homogeneous educational context in Denmark? Exploring three non-native Danish students in a Danish as second language subject through one year, their educational narratives show ambivalence in affiliation with master and counter narratives of both the subject and of ethnicity as an identity marker. The paper will focus on how student's in adult education narrate sameness and 'otherness' (Fludernik, 2007; Ahmed, 2000) regarding the subject L2 in adult education. The ambivalence of positioning themselves of being and feeling 'Danish' and the lack of being acknowledged as fully-fledged members of the 'Danish culture' give rise to counter narratives of both in- and exclusion (Somers, 1994; Hopkins, 2007; Syed & Azmitia, 2008). Master narratives as 'majoritarian stories' (Solorzano & Yosso, 2002:28) are in that perception characterized by conforming to a dominant, national and native-Dane perspective on education and subject choice, thereby supporting master narratives as a "script that specifies and controls how some social processes are carried out." (Stanley, 2007:14). Characteristics not conforming to 'majoritarian stories' are at risk of being defined as different, deviant or even defiant and by that 'othered'. The student participant's educational narratives are part of a larger study on narratives in and about Adult Education (Piekut, 2017). The background data derives from four different adult centres in Denmark and consists of observations of L2 courses (about 30 hours over the year 2015-2016), semi- structured interviews with the teachers of the courses and informal talks with the students. As those are background data, guiding and informing my key data, the narrative interviews with four L2 students at one adult education center in a larger Danish town, they also serve as

implicit 'thick description' (Geertz, 1973). The focus for the presentation will be on how three student's narratives constitute both educational and social identities through counter and master narratives of 'otherness' and how these relate to their perceptions of ethnicity,

education and the subject 'Danish as second language'.

## History and knowledge in times of fake news and conspiracy theories

Pietras Jens and Gerken Sven

Everywhere in the public discourse and in the media we meet examples of loose claims, propaganda, fake news and even conspiracy theories. Some of these have proven to be true. Other so called 'facts' and 'theories' are being kept alive by smaller or larger groups of people, who continuously try to persuade others about their own versions of the truth. Like all of us, students in public schools and in education, hear and meet different versions of half facts, false news or allegations; they are exposed to the claim that real news are false and that politicians and the official media deliberately spread these.

In our paper we present a course module within the teacher training programme in which lecturers and students have worked with different types of conspiracy theories. We attempt to find similarities for these and work with different methods to typologize and analyse them. The purpose of the common research is to explore the extent of the theories and their function in society and to establish a research design.

In the theoretical part of the course we intend to thematize the relevance of the subject within a school context and invite the students to develop a didactic for this special use of history. During the course the students will produce their own examples of fake news and conspiracies as well as their own teaching modules which will be tested in practice in schools. The presentation will present our findings and results from the project.

## **Daring to stay with the trouble: Exploring boundaries in upper secondary school sexuality education**

**Planting-Bergloo Sara**

UNESCO states the importance of enabling students to reflect on social norms, cultural values and traditional beliefs in sexuality education. However, engaging students in conversations about sex, identity and relationships is attested difficult. The task is even more hampered by sexuality education interacting with and being framed by cultural backgrounds, religiosity, and secularism.

The research project takes its theoretical departure from a feminist and critical approach, where scientific production is seen as situated, and where the researcher creates a history in which she is involved. Sex, sexuality and sexuality education are seen as varying across time and place and the study aims to contribute to the field of sexuality education from a Swedish context. Sexuality education is in upper secondary school included in the interdisciplinary course Science studies as well as in the subject of Biology. The operational concept 'Openness but with boundaries' was used to explore boundaries emerging in the intra-actions among the students (aged 17 to 18 years), the teacher and various materials. The aim were to examine whether the boundaries constituted in the students' intra-actions could serve as educational possibilities. The analysis draws on the theoretical framework of Barad (2007)

and agential cuts were used to display boundaries present in various classroom situations. The preliminary results show how the student intra-actions move towards boundaries of both sensitivity and emotions. Some of the boundaries might be due to cultural-religious-secular conflicts present in the classroom.



## Co-teaching between pre-service and in-service teachers

**Portaankorva-Koivisto Päivi, Kesler Merike, Kaasinen Arja, Uitto Anna, Kervinen Anttoni and Juuti Kalle**

Co-teaching is defined to be based on interaction, equality, trust and professionalism. It enables sharing of collective expertise, and it can take advantage of the diversity of competences of each teacher, like subject knowledge, pedagogical knowledge and work experience. Most studies on co-teaching investigate settings where the collaboration takes place between peer teachers collaborate (e.g. Shibley, 2006; Ronfedlt et al., 2015) or peer student teachers under the supervision and mentoring of more experienced teachers (e.g. Baeten & Simons, 2014; Birrell & Bullough, 2005). Diverse backgrounds of the teachers have shown to be both rewarding and challenging premises for team teaching practices (e.g.

Gardiner & Robinson, 2010; Shibley, 2006). Yet, little research exists on the possibilities of collaboration between pre-service and in-service teachers in co-teaching and professional development. This study was designed to investigate how pre-service and in-service teachers perceived collaboration where all the participants shared equal responsibilities in planning and teaching.

We draw on data from a research and development project run from 2014 to 2017 where altogether 7 teams practiced co-teaching (52 pre-service teachers and 36 in-service teachers). Teams worked together for 6-8 weeks; planned and implemented integrative science and mathematics learning continuums mentored by teacher educators from the university. The data consisted of audiotaped reflection sessions recorded at the end-of each design cycle of the project. The content analysis and the classifications of Weilbacher & Tilford (2015), Baeten & Simmons 2014 and Kangastie (2016) were used to analyze the data.

We recognized that both in-service and pre-service teachers used different strengths, the in-service teacher having the knowledge on classroom practices and pre-service teacher using more time resource for planning the teaching. However, the participants found it difficult to break out of their expected roles despite the encouragement for equal contributions in the teaching. Pre-service teachers took the role of a trainee, they met more actively as their own group, preferred to plan and work on the materials needed, and took the role of the teacher also in the classroom. In-service teachers instead interpreted their role as mentors, expressed their wishes about the content of the learning continuum, withdrew from the planning stage, took responsibility of the class and organization of the work, but did not participate equally in teaching. Bases on the results we suggest that co-teaching between pre-/in-service teachers needs more attention in educational research.



## The local area and” the bigger picture” in history teaching

Poulsen Jens Aage

Many students do not believe that there is a connection between the school subject history and their own history, the history of their family and of the local area. For these students, the most important thing in the subject is to acquire fixed knowledge about the past and to be able to reproduce this knowledge as stories about the past. The consequence of this is a widespread perception among students that history is not particularly relevant or useful, and that is why they often have very little motivation to take the subject seriously (Knudsen & Poulsen 2016). This is a challenge that poses questions as to whether our teaching lives up to the curriculum and the purpose of the subject: Students can use what they learn about history to understand themselves and their societies and reflect on their future prospects.

In 2017, HistorieLab launched a two-year school-based research and development project aimed at addressing this challenge. The research questions are:

Can an increased involvement of the local area as a learning space and as semantic teaching material facilitate the students' understanding of the relevance and usefulness of the school subject history?

Can the use of the local area in teaching strengthen students' prerequisites for "doing history". That is, promote historical reflection, investigative work methods and the active production of stories about the past, thereby also promoting the intentions of the competence-oriented curriculum?

The research questions arise from the assumption that a more student-centered approach promotes the students' experience of the value of the subject history. Teaching must involve students' prior historical knowledge and experiences from their family life and local area.

These assumptions are based learning theory.

Firstly, stories about the past are personified by taking into account the history of the students and their families. Secondly, by working with the immediate area, students become directly connected with specific physical surroundings that have traces of the past which they can use as historical sources. Thirdly, the local area as semantic teaching material immediately encourages students to study to use historical methods. When history is understood as being personal and anchored to a specific place, to family history and to the history of the surrounding areas, students get a true sense of their connection to national and global history, and history becomes more relevant to them.

The project is organized within an action research framework, where the participating researchers and teachers develop the teaching concept through experimentation.

Based on concrete examples from the project, the presentation discusses the historical and learning theoretical background and potentials of using the local area and creating coherence between local, national and global history.

## **The relation of political science and the didactics of civic education within university teacher training in Civic Education / Social Studies. A comparison of the conceivabilities for the political teacher training program in Germany, Denmark and Sweden.**

**Propst Katharina**

The demand for professionalisation of the teaching profession remains unabated. Referring to this, teacher education and the related analysis of its contents and responsibilities are still in the centre of attention. Despite the attempted contouring and structuring of competences within teacher education, due to the common content requirements for the subject sciences and subject didactics (KMK 2008), the relation and impact of these complementary areas in the first phase of teacher training in Germany is unfortunately less clear as one might assume and charged with tensions. Regarding these challenges, the research project deals with the conceivabilities, concepts and beliefs of the persons who are involved in teacher training education especially in the field of Civic Education / Social Studies. Since other countries face similar difficulties, an international view is more than worth it.

To gain comparability and to enable acquisitions regarding Germany, Denmark and Sweden, university teachers are getting individually interviewed with the help of guided questionnaires. The compiled interviews are getting exploratively analyzed, to figure out whether and in which way the teacher training program might have a social effect on the students and at which point appropriate (didactic) concepts for the future teaching being activity taught. This also includes ideas about the role of a teacher, the didactic habitus (Besand 2004 a and b) and professional and ethical convictions. Based on the concept of the Appreciative Inquiry (Cooperrider et al. 2011), the interviews should initiate a process of reflection on the role and teaching activity among all involved actors.

Already during the implementation of the individual interviews it was possible to raise awareness regarding the common task of teacher education among the respondents of political science and its didactics. They also saw the need to record a better mutual coordination and quotation between didactics and contents.

## **Observing Historical Literacy in Finnish Classrooms – Ambitious Aims, Traditional Reality?**

**Puustinen, Mikko and Khawaja, Amna.**

History education in the West has gone through a significant change during the last decades. It is widely agreed upon, that history education should involve more than the simple learning of facts. In many countries, including Finland and Sweden, the aim at the curricular level is an ambitious one: to develop students' historical thinking and literacy skills. However, research suggests that although history teachers may be favorable to inquiry-based learning, many teachers find it difficult to put these ideas into practice in the classroom. In the present study we observe ten upper secondary school teachers and ten primary school teachers over five consecutive lessons. The focus of the study is in the way teachers promote historical literacy.

The data gathering process includes observing both the type of texts and activities used in the classrooms. Additionally, we analyze the teaching materials and assessment tasks. Finally, to gain a better understanding of teachers' thinking, we interview the teachers. The interviews are conducted using the retrospective think-aloud-method so that teachers can reflect on their actions and decisions concerning the observed lessons. We expect to find a significant gap between teachers' intentions and the actions in the classrooms. The results may also show inconsistency between teachers' historical thinking and pedagogical content knowledge (PCK). Because the curricular aims are in conflict with teaching tradition and textbooks,

teachers might struggle to organize learning assignments of high epistemic quality, which would help students to improve their historical thinking and literacy skills. Furthermore, the lack of coherent historical process instruction in the classrooms may cause difficulties for students to form powerful knowledge, which in turn could help them to understand the challenges of today's societies.

## Using tasks to support language development in multilingual classrooms

Resare Jansson Anette

Conceptions related to language education are often guided by the assumption that instruction should be conducted in the target language only, and that different languages should be kept strictly separated in the learning process. In light of the increased mobility of people and distribution of information however, these assumptions should be reconsidered, giving way to more flexible approaches to language use in education (Garcia & Wei, 2018). One way of adapting language instruction to this view of communicative practices as going beyond separate languages is to adopt the concept of spatial repertoires, according to which diverse semiotic resources are assembled to create and shape meaning in communication (Canagarajah, 2018). Despite a growing number of research projects focusing on the benefits of including students' diverse languages as useful resources in the classrooms (e.g. Busch, 2014; Cummins, 2007), further research on language instruction in multilingual educational settings remains under-researched. This is particularly relevant in the context of Sweden, a country that has received a large number of incoming immigrants from a range of countries. The current study explores how tasks can be designed to support multilingual students' development of a functional communicative competence (Long, 2014) when participating in oral tasks in English. It was carried out as a classroom intervention in a group consisting of 15 recently arrived immigrant students, who were video recorded when performing tasks designed to encourage the use of various semiotic resources in authentic oral communication in English. The video recordings have all been transcribed and analyzed by using discourse analytical procedures. The study considers especially if, and to what extent, such tasks

contribute to students' development of a functional communicative competence.

The initial findings suggest that the participation in tasks that encourage the use of available semiotic resources, e.g. gestures, pictures, body language and whiteboard, have a positive

effect on students' possibilities to actively participate in functional communicative processes. Such tasks seem to have a positive effect on students' development of language proficiency. Furthermore, such tasks seem to have a potential to contribute to inclusiveness and equal opportunities in multilingual classrooms to a greater extent than an education favoring monolingual instructional strategies.

## Retz Tyson

History, according to a commonly used taxonomy, is a pure-soft discipline. It is pure in the sense that its knowledge has no practical application, and soft in the sense that it works within no hard disciplinary paradigm. And this 'softness' has long been considered by historians to be history's greatest strength. To the question of what characterises the discipline, historians tend to respond that history is about incorporating numerous different theories and methods, and that they are free to define themselves in ways in keeping with their topic and research aims. But a peculiarity of the history discipline is that this horses for courses mentality coexists within a far less flexible conception of history's methodological identity. Historians are united in their belief that they possess an unrivalled commitment to unearthing primary sources, submitting them to critical analysis, and building arguments on a foundation of empirical evidence.

This tension, on the one hand, between a fluid and inclusive conception of the history discipline and, on the other hand, a strict methodological identity rooted in primary source criticism, is explored in this paper as it relates to the teaching of history in schools. The explosion in recent decades of research on historical thinking concepts and modes of inquiry seen to belong to the history discipline presupposes a consensus on history's disciplinary character that few professionals practising the discipline are prepared to grant it. This paper examines these viewpoints in order to illuminate possible directions for historical teaching and learning in schools.

## **Expected Talk and Speak in the Middle School Science Classroom**

**Reusch Charlotte F.**

Which oral contributions do middle school science teachers expect and value in the science lesson? And what do they do to support valued language?

In my Ph.D.-project, “Modelling Speak in the Middle School Science Classroom” (2019-2022) I intend to investigate how science teachers consider and support students’ oral contributions in class and design and test supportive model language with a group of teachers. Modelling is a well-known and commonly used practice in writing instruction, when teachers teach students to write reports on science experiments, but less is known of what they do to support students’ oral presentations.

In this qualitative interview study, my preliminary objective is to uncover what middle school science teachers expect to hear from their students and how they consider their own role

when it comes to supporting students’ science vocabulary and language. I also wish to get a deepened understanding of whether science teachers distinguish the language of investigative classroom talk from the language of speak in oral presentations. Therefore, I will conduct individual semi structured research interviews with 8-10 middle school science teachers. Teachers will have different backgrounds and work conditions. For example, experiences with multi-lingual classrooms and students from diverse backgrounds will be consider.

The study is based on classroom talk-research as well as linguistic research. Whereas research in classroom talk often emphasizes investigative reasoning (Mercer, Dawes & Starman, 2009, Mercer et al. 2004, Warwick & Dawes, 2018, Dysthe, 2003), linguistic research emphasizes how meaning is represented in language (Beck, McKeown & Kucan, 2013, Lawrence, White & Snow, 2010, Uppstad & Walgermo, 2014, Barber & Pearson, 2010).



## What does it mean to make progress in history?

Richardson Mary, Chapman Arthur

Schools often talk about progression. Teachers report that, “Karen is progressing well in science”, or parents may ask “Is Karen making progress in mandarin too?” or Karen herself might ask “How am I progressing in art?” Such questions remind us that a wide variety of beliefs exist about how to characterise progression in education (Taber 2017). Progression is commonly conflated with assessment (specifically measurement), but as Furtak, Morrison and Kroog (2014) argue, progression is not a measure – instead, it might be an observation of action, thought, comprehension and understanding. Establishing progress is linked to, but should not be guided by, assessment outcomes.

In this paper, we explore the complex nature of progression and argue that within school curricula, attempting to define progress as 'one thing' that can be applied across subjects defies a logical consideration of its meaning. Using history education as a model, we consider what progress looks like in history and reflect on how, over the past generation, practice has been dominated by the wide spread use 'attainment targets' focused on historical thinking competencies. However, recently there has been a shift towards content-based assessment, but what it actually means to make progress in history is still unclear. Drawing on empirical and theoretical work (e.g. Lee & Shemilt 2003), we will review approaches to determining progress, identify the problems raised and scope ways in which they might be addressed with a view to establishing a better understanding of progression.

## Challenges and opportunities: Mathematics teachers' stories on teaching multilingual students

Riesten Laila, Skog Kicki and Valero Paola

Many classrooms in Sweden are nowadays multicultural and multilingual, also mathematics classrooms. There has been an on-going debate about the relationship between the language of instruction and success in learning mathematics. On the one hand, there is the idea that mastering the language of instruction (Swedish, in this case) is a pre-requisite to cope with the demands of the curriculum. On the other hand, there is the view that strengthening the students' mother tongue as well as the language of instruction is beneficial for the cognitive and overall development of the student. These two positions have been present in the Sweden (Norén, 2010) and internationally (Moschkovic, 2007) since the 1980's. Nowadays, the policies have changed to support the second position, in an attempt to recognize and appreciate cultural diversity. Indeed, to be able to use one's mother tongue is conceived as a right in Sweden. Thus, the National Agency of Education has published support materials for study guidance on mother tongues.

For teachers, the tension emerges on how to organize an inclusive education where language of instruction and mother tongue are present for the purpose of teaching and learning mathematics, in ways that allow to build on student's mathematical knowledge.

This paper reports on an on-going study that explores mathematics teachers' stories about their experience of teaching multilingual students. The stories are analyzed using a storytelling framework (Jørgensen, 2007) that highlights the issue of teaching and learning mathematics through language as a matter of power and subjectivation. The questions explored are: What are teachers experiences from teaching multilingual students? How do these experiences relate to the national policies?

In the presentation the results of the conversations with teachers and their stories will be presented in order to make visible the tensions and to problematize the power effects of current educational practices and policies for inclusion in mathematics.

## **Teachers' attitudes and beliefs towards inclusive mathematics education in Denmark and Germany**

**Rottmann Thomas, Kleinschmidt Sandy and Quvang Christian**

As a result of the Salamanca Statement (UNESCO, 1994), inclusive education is one of the most recent topics in educational policy, accompanied by an increase of placement rates of children with disabilities in regular schools in many countries (Ainscow & César, 2006).

However, inclusive education places new demands on teachers and teacher education. In this context, teachers' attitudes towards inclusion show significant effects on learning in inclusive classroom (Lee, Yeung, Tracey & Barker, 2015). Therefore, positive attitudes and beliefs of teachers towards inclusion can be regarded as relevant factors for successful implementation of inclusion in school both in general and in a specific subject like math.

At present only little research in this domain is available with a focus on mathematics education. In an interview study conducted in Germany some of the interviewed teachers consider math as highly challenging for inclusive education compared to other subjects.

However, this perception is largely depending on the specific mathematical content area and on the type of learning situation dominantly used in teaching (Korff, 2015).

Even though Denmark and Germany share many cultural similarities, there are some considerable differences regarding the domain of inclusion both in teacher education and in the school system. Our research project aims at analysing and comparing teachers' attitudes and beliefs towards inclusive mathematics education in some regions of Denmark and

Germany. The online questionnaire used builds on the scale EZI (Seifried, 2015), supplemented by an adaptation for mathematics education. In this presentation we provide insights into this joint research project from Bielefeld University (Germany) and University College Syd (Denmark). The theoretical background, the questionnaire as well as first results of the evaluation will be presented.

## Taking notes with peers in the context of primary school environmental studies

Routarinne Sara and Juvonen Riitta

This paper focuses on literacy events of taking notes with peers in the context of primary school environmental studies. We analyze interactional sequences between peers that result from teacher instruction to retrieve knowledge and take notes from different types of sources. While we report on how students go about to take notes and how these actions unfold in peer interaction, we seek to answer: i) how is notes taking sequentially organized in interaction, ii) what is treated as notes-worthy and salient in sources and iii) how do peers negotiate through the process of notes taking.

Our objective is to widen our understanding of the scope of writing and writing assignments in classroom and to explore how literacy develops in socially constructed practices in 10–12-year-olds. Previous research into writing in comprehensive school has mainly dealt with e.g. assessment of texts, methods of writing instruction and individual writing process (Juzwik 2006; Kulju et al. 2017) whereas the micro-level actions of choosing, copying, erasing and rephrasing have not been a core area in research. By focusing on the micro-moments of information retrieval and notes taking, the study widens the scope of research into writing in comprehensive school and aims at understanding the students' agency in their class activities. The study can be located to the emerging field of writing in interaction. This line of research places emphasis on micro-level phenomena of how texts are produced and evolve from multimodal social interaction (Tanner 2014; Svinhufvud & Mondada 2016). Within this approach to writing, texts are seen as social achievements.

The research data for the study consist of multi-angle video-recordings of elementary school environmental studies' lessons. Four classes with altogether 86 students from two different schools participated in the study for a period of two years. The fourth and fifth grade classes of our data differ from each other in their pedagogical emphasis. As a method, we use multimodal conversation analysis (Goodwin 2000).

Based on a detailed analysis of interactional micro-moments, the results demonstrate how actions of reading and writing are intertwined and how students collaborate in formulating their joint text product. In taking notes, students work to locate information in sources, and adapt their actions to the time allocated for the task. One way of managing both task and time, seems to be the process of verbatim recycling.

## Crosscurricular food- and health education via digital games in primary school – a contribution to reduced inequality in learning?

### Ruge Dorte

The aim of this paper was to discuss the following research question: How can digital games be integrated in cross curricular food- and health education in an attempt to reduce inequality in learning and health. The object of this research is a school driven project on pupil development of food-and health related action competence (2018-2019). The multicomponent intervention took place in the municipality of Aalborg in Denmark, where a public school was building up collaboration and 'educational links' with a local organic farm. The background was grounded in results from research in a LOMA-local food project the school previously participated in. These results indicated that differences in pupil outcome at end-line were related to initial differences at base-line in pupil pre-understanding. This included pre-knowledge of notions ('vegetarian food') and names ('cauliflower', 'oregano',

'nutrition') with regard to food and health. The pedagogical methods for implementing this new evidence-based knowledge in schools was based on a social-constructivist and social realist approach. The intervention was directed to the challenge of reducing difference in pupil pre-understanding via didactical, digital, multicultural and inclusive pedagogy and didactics. It was acknowledged that socio-economic factors in pre-school life, such as immigration, had a huge influence on these differences and that the school was a learning setting having the possibility of reducing the influence of social background on pupil outcome. Capacity building among staff was obtained via workshops on digital gaming, storytelling, food culture, agriculture and knowledge of the local farm. The digital platform afforded simple and more complex games. Teachers and teacher assistants developed the content for the digital frames for primary school (6-10 years). Firstly, in drawings of analog cards, second on digital cards. The simple games were constituted of 'making pairs', 'putting into categories. The complex games were dealing with the endurance of activities, either in the form of 'timeline stories' or in the form of 'geographical-historical maps. The expected results consisted of 1) outputs in the form of games with certain affordance for various topics at primary level: history, Danish, language, science, PA, food and cooking. 2) Outcomes in the form of pupils' improved pre-understanding through creative production of games and playing of own games. Furthermore, preliminary results of the project with regard to improved pupil pre-understanding and reduced inequality will be presented in the paper. Finally, the implication of the results for practice in schools, scaffolding in teacher education and design of research will be discussed in a wider pedagogical perspective.

## Complexity in children's texts in year five

Salomonsson Johanna

This study aims to focus on complexity in texts written by pupils in year five at a Swedish primary school. All children in the class learn Swedish as a second language and they manage a task of daily expressive writing during the whole fall semester. The children use a note book as a diary, but the frequency decreases as the semester passes by. In all, the students have the possibility to write at 61 occasions, most of them take part in about 40 of these. The average length varies between 39 to 191 signs including blanks per pupil. The task is to write about "My moment", the content is not specified in any terms, and the pupils are allowed to express this moment as they please. In this sense, the task is very free and little contextualized.

However, some of the texts are initiated by the teacher, giving the pupils advice what to write about. One of these tasks is actually initiated by the principal following misbehavior in the class, as she wants them to define respect. These texts are among all pupils longer with the average of 237 signs including blanks.

The main research question is, how the pupils manage language in order to produce short texts under these contexts reduced conditions. Both a quantitative and a qualitative approach are combined in order to evaluate these texts. On the surface, these texts seem very poorly composed, and the morphological mistakes are frequent. Analyzing these texts out of a functional perspective using SFL, gives at hand that the pupils show a variation of linguistic competence, being able to perform coherent language adjusted to the communicative purpose of these texts.

Following this, it is worth investigating the content of the texts, using Robinson/Gilaberts (2007) model of task complexity. Applying the variables +/- here and now, +/- few elements, -

/+ spatial reasoning, -/+ causal reasoning, -/+ intentional reasoning and -/+ perspective taking

on the children's texts, the complexity of the texts within a continuum is being discussed.

## Learning outcomes from practical teacher training in Africa

Samnøy Åshild

This paper is an analysis of what teacher training students themselves report as learning outcomes after one month's internship in a primary or lower secondary school in an African community.

The background for the study is one variant of internationalization. During two decades NLA University College have offered international students' placement for their teacher training students. The students have gotten affiliation to local primary and lower secondary schools, and they have taken part in practical teaching in another cultural environment and in a different language for a period of four weeks. A great majority of these schools are located in the Global South, most of them in East Africa.

The students have written reports after completion of their internship. Parts of these reports deal with the student's reflection upon what have been their learning outcomes. These reflections are the material of this study, which is a thorough examination of a random selection of 40 reports from students who have had their internship in Eastern Africa. The reports will be analyzed with a stepwise-deductive inductive approach. The expected outcomes of the study is that the students self-assessment of learning outcomes emphasis on language and communication skills, a comparison of school systems which also include a different look at Norwegian school, and a deeper understanding of some aspects of the North- South relation.

## **Knowledge circulation on facebook: a comparative study between history and civics**

**Samuelsson Johan**

Teachers in different social studies subjects use Facebook groups to gain knowledge of teaching. In this presentation, a comparison is made between the subjects of history and civics regarding what kind of knowledge is requested and shared on Facebook groups that are dedicated to social studies teachers. The empirical data consists of posts from a Facebook

group dedicated to social studies teachers. The posts have been collected during a spring term. The paper is based on theories of knowledge circulation and subject didactic perspectives.



# Opening the Echo Chamber: The Role of Perspective Taking in Political Education

Sandahl Johan

Public discourse is increasingly polarized when it comes to contemporary political issues and the modern democratic agora of social media has been described as an “echo chamber” where we tend to find our own comfort zones of established truths rather than having our horizons widened (Bauman & Obirek, 2015, p. 126). Consequently, this polarization can be seen in classrooms where political discussions and topics surface within social science education. Traditional teaching offers important arenas for deliberation (Hess, 2009) but can be as homogenous as filter bubbles online, particularly in highly segregated urban school

settings. One way of challenging students’ closed narratives is to engage in and practice perspective taking (Sandahl, 2015), a second order concept engaging with different cultural and ideological understandings of political issues. This study examines a classroom intervention in an upper secondary school and the aim of the paper is to examine how perspective taking can help students open closed narratives about political issues. The data consists of classroom observations, students’ logs and follow-up interviews in focus groups. The results suggest that perspective taking through role play can influence students’ understandings of standpoints other than their own and increase their engagement in class.

## Samhällskunskapsämnets medborgarbildande potential

Sandahl Johan and Olson Maria

Det demokratiska samhället är beroende av kunniga, engagerade och deltagande medborgare och skolan har därför ett särskilt ansvar att bidra till att nya generationer utbildas för ett liv i demokratin. Samhällskunskap ses som det primära ämnet med ansvar för att bidra till att eleverna får möjlighet att utveckla elevernas kunskaper, förmågor och attityder för att delta och agera som aktiva och ansvariga medborgare under och efter sin skoltid i vad som kan beskrivas som medborgarbildning (Campbell, 2012; Sandahl, 2015; Olson, 2012). En grundläggande fråga är vilka kunskaper, förmågor och förhållningssätt som är av särskild vikt i detta sammanhang – en fråga som inte sällan besvaras med att det är disciplinära kunskaper som är helt avgörande (Blanck & Löden, 2017). I detta paper argumenterar författarna för att dessa kunskaper är av stor vikt (jfr. Sandahl, 2015; 2018), men inte tillräckliga i termer av medborgarbildning (Biesta, 2011). Detta kan i sin tur ses mot bakgrund av att det är skillnad mellan utbildning och bildning (Gustavsson, 1996), och att detta i sin tur är inbegripet i en nödvändig öppenhet inför det oväntade i ämnesundervisning (Olson, 2017). Utifrån Hanna Arendt (2017; Disch, 1997) diskuterar författarna samhällskunskapsämnets medborgarbildande potential och vilka nödvändiga förutsättningar som undervisningen behöver vila på för att kunna kallas medborgarbildande.

## Didactic modelling for eco-reflexive Bildung

Sjöström Jesper

Bildung is the German and international term for an educational-philosophical key idea. In the German/Danish/Norwegian Didaktik-tradition the notion of Bildung is central. Especially Klafki (2000) has been central in consolidating this relationship. He identified two main orientations in the understanding of the concept of Bildung: material and formal Bildung. Furthermore, he also argued for a position mixing these two views and called it categorical Bildung. More recently, for example Kemp (2005) applied the thinking of Klafki on ideas about our latemodern society. Furthermore, he discussed views of the “world citizen”. In teaching practice Didaktik-models can be used both as tools for analysis and as tools in planning of teaching (e.g. Jank & Meyer, 2018). Klafki developed Didaktik-models for Bildung-oriented Didaktik. For the science subjects (especially chemistry) professor Ingo Eilks from University of Bremen with coworkers have formulated and empirically evaluated a framework for socio- critical and Bildung-oriented science teaching (e.g. Marks et al., 2014). I myself have together with especially Eilks further elaborated on the Bildung-concept in relation to the science subjects (e.g. Sjöström, 2013; Sjöström et al., 2017). Also, for chemistry, I together with professor Vicente Talanquer from University of Arizona recently discussed the consequences of sustainability ideas on chemical thinking and action (Sjöström & Talanquer, 2018). Such perspectives – about the curriculum subjects’ relationship to sustainability issues, democracy, citizenship, action etc. – is relevant beyond chemistry and science education (Sjöström, 2018). In this paper I will take my thinking and writing about Bildung-oriented science education as a point of departure and suggest core ideas that are common for most curriculum subjects. Such ideas can inform our understanding of Bildung-oriented general subject-Didaktik. The latter can be seen as the meeting point between different research areas of subject-Didaktik (Sjöström, 2017; 2018). When Didaktik-models are formulated, used and/or developed it is called didactic modelling. In this paper focus is on Didaktik-models and didactic modelling in support of the development of categorical Bildung-perspectives in curriculum subjects and – as a consequence – the development of eco-reflexive Bildung for citizenship (Sjöström et al., 2016). Implications for research in subject-Didaktik will also be discussed.

## How is inclusion foregrounded in mathematics teacher education research?

Skog Kicki

Inclusive mathematics education is an area of interest for researchers world-wide – at least within compulsory school – focusing on aspects of including students with different needs. This research can, in the long run, inform teacher education practices. So: how is the inclusive perspective reflected in research concerning mathematics teacher education?

Within the TRACE project, we study Swedish mathematics teachers from their last year of education into the first 2-3 years of employment, in particular focusing on the transformation of teacher education during this time. The inclusivity perspective is central as new teachers enter different contexts at their workplaces, and hence meet learners with diverse backgrounds and needs.

This presentation reports on a literature review focusing research on inclusive education in mathematics teacher education programs. It includes peer-reviewed journal articles from 2007 to 2017, found in EBSCO with the search terms mathematics teacher education, inclu\*, (and/or: social justice, equity, multicultural/-lingual and access). Only articles focusing especially on issues tightly connected to mathematics teacher education - such as course content or projects, teacher educators' work and experiences, or student teaching - were included. This resulted in 17 articles being included for review.

The review shows that research studies focusing inclusive perspectives in teacher education programs are rare. Internationally the USA is well represented in this field, as well as some African and Asian countries. No papers from Europe or South America met the inclusion criteria – the latter possibly because Spanish and Portuguese were excluded.

Two “trends” emerge from the review. Firstly, the main message from the US research is the focus on prospective teachers' knowledge, beliefs and views on mathematics education. The importance of developing models for effective learning to teach is prevalent, as well as the focus on equitable education. Secondly, studies from Asia and Africa are very diverse, however there is a common “insider” approach trying to understand how culture, language and views on mathematics education affect prospective mathematics teachers. These trends will be elaborated and discussed further.

Research focusing inclusive mathematics teacher education research Through the TRACE project we focus on a broad perspective on inclusion. as a way of developing

## Technological Literacy in the Teaching of Danish

Slot Marie, Jensen Michael and Rasmussen Søren

This intervention study investigates how a new Technological Literacy curriculum can be incorporated into Danish teaching in two Year 4 classes at a municipal primary/lower secondary school in Denmark. The learning objectives of the new subject include development of pupils' digital creativity. Curriculum studies indicate that new standards cannot always be integrated into existing subjects, because new perspectives challenge known practice. In Danish, technology is often an implicit actor used in the production of digital products, but what happens when technology and Technological Literacy as a subject impact on teaching routines? Inspired by Sørensen (2009) and Fenwick et al. (2011), we argue that technologies and social practice are 'entangled'. Including technology as a participating actor brings about a sensitivity as to how technology acts in practice in different and unforeseen ways. On this basis, the research question of the project is: 'How can a focus on didactic freedom in the teaching of literature, combined with technology as a participating actor, contribute to the

development of a new technological literacy standard in the subject of Danish?'

Design and method: in collaboration with teachers of Danish, researchers and PhD students developed three design-based prototypes focusing on a creative, pupil-focused learning environment, a creative and concrete approach to literature work and an integrated use of technology. Over one year, the project collected video observations from lessons in two intervention classes, conducted a series of interviews with pupils and teachers, and collected pupil products. Provisional findings point to technological literacy as a professional disruption in Danish. Danish teachers' literature-teaching routines are challenged. The heightened focus on technology impacts on certain established understandings of the use of technology and introduces to the subject of Danish a new academic standard calling for new approaches and concepts in the teaching of the subject.

## **Analysis of language games in mercantile upper secondary school subjects**

**Spanget Christensen Torben and Kølsten Petersen Camilla**

We present a pilot project on study of language games in mercantile upper secondary school subjects. The overall aim is to investigate rationalities and values, and thus to further an understanding of different concepts of quality underlying the formal curriculum (also including central examinations, external requirements, admission requirements for higher education, etc.), teaching resources (including textbooks, computer programs, classroom facilities etc.), teacher instruction and student learning activities. Interest is in context, form, content and function of the subject (see table showing analytical framework below). Focus in the analytical work is on language games (Wittgenstein, 1958) at the abovementioned levels. Languages are in this context to be understood in the broad sense, i.e. not only as verbal speech and writing, but also use of other semiotic resources and actions. The analyses address the integration of the levels, which in practice means how utterances at the different levels interact and how they integrate, or do not integrate, in different language games. By utterance is understood meaningful verbal and non-verbal statements produced by actors in communication at the different levels and between the different levels (Bakhtin 1986).

The overall research questions are:

What characterizes language games at the various levels of teaching in mercantile subjects in upper secondary school practice?

How are these communicatively integrated?

This ambitious purpose cannot be covered by a single research project, and certainly not a pilot project.

The more limited ambition of the pilot project is expressed by the following research questions:

Which language games can be observed in teacher and student communication in upper secondary school mercantile classrooms?

How are they integrated?

This will be investigated using video observation of teaching and interviews with teachers and students.

The analysis distinguishes between scripted language and living language. In scripted language meaning is locked e.g. as in a computer program or a textbook, and in the living language, meaning is dynamic and in constant development, for example in a class dialogue and in interactive media settings. The two language forms offer the actors very different positions and possibilities.

## Quality Indicators for Social Science Teaching in Nordic classrooms

**Spanget Christensen Torben, Stig Christensen Anders, Mikander Pia H, Kristiansson Martin and Walkert Michael**

This presentation addresses results from a project on Quality in Social Science Teaching (QUISST) carried out by a Nordic researcher in social science didactics, who are part of the Nordforsk financed Quality in Nordic Teaching (QUINT).

In the presentation we propose quality criteria for social science teaching in grades 5-7/8-10. The practical aim of the project is to provide a theoretically informed guide and operational quality indicators for QUISST observations in Nordic social science classrooms. Indicators of quality can refer to either the process, the content or the function of the teaching. One important basis for QUINT is the LISA-project (Linking Instruction and Student Achievement) conducted at Oslo University and Karlstad University, focusing on generic qualities associated with the process of teaching (the how-question) i.e. the clarity of the teachers' presentation of a theme, dialogue or non-dialogue etc. However, these types of "how"-qualities are always related to the quality of what is taught and why. In addition, we will therefore focus on subject specific qualities related to social science content (the what question) and function (purpose - the why-question)

In a recent work, Christensen & Christensen (2015) identify four types of social science. Type 1 (social science as 'talk' and lifeworld), type 2 (social science as method), type 3 (social science as current knowledge about society) and type 4 (social science as science) referring to four corresponding societal domains proposing that all four domains should be present in all social science teaching, but with different weight depending on the level. Each domain represents different knowledge forms (everyday knowledge, methodological knowledge, professional and current knowledge, social science knowledge) and corresponding languages (and other semiotic resources) from everyday language to social science language (and other social science semiotic resources).

We will present and discuss the understanding of quality in social science teaching we have achieved so far, and we will present suggestions for observation categories to be used in Nordic social science classrooms.

## Majority teaches about two minorities, context of Sweden

### Spjut Lina

Sweden has five national minorities, Sami, Jews, Roma, Sweden-Finns and Tornedalians. Swedish laws has defined that national minorities are an included part of Sweden's population, and their languages and cultures are to be protected and promoted (Lag 2009:724). Focus in this study are the two Finnish-related minorities, Tornedalians and

Sweden-Finns. Tornedalians has lived in the northern part of Sweden since before Finland and Sweden was divided in 1809. The border between Sweden and the great Duchy of Finland (ruled by Russia) was drawn right through Torne valley which divided the Finnish speaking area. Sweden-Finns are mainly related to Finnish working migrants which moved to Sweden from 1950s and forward.

The present curricula express that its mandatory to teach about the national minorities, and it is also specified in some of the school subjects (history, religion, social science and Swedish) (Skolverket, Lgr 11 s.12-13, 176, 188-189, 201-203, 225-227). Since present society often is a reflection on the majority culture (Ljunggren 2012, s.156-158), and because of textbooks role as an interpreter of the curricula (Englund 2005, s 130-136), textbooks content are essential to study. Earlier studies has shown that textbooks, are insufficient according information on the national minorities (Johnsson Harrie 2016, Spjut 2018).

My aim is therefore to study in what way present textbooks are insufficient and what actually is written about the two Finnish-related national minorities, Tornedalians and Sweden-Finns. I will also study the textbooks perspective, is it a majority- or a minority-perspective.

Questions asked are:

What is told about the two studied minorities?

Can the texts/information be traced intertextually?

Who owns the narrative voice, the majority- or the minority?

Work-in-progress-results indicates that information about the studied minorities varies between textbooks, some of the texts are also reproductions of older texts. The perspective seen is the often a majority perspective, and it is obviously that the narrative is the majority's narrative about the minorities.



## **Embedding Epistemic Quality in the Pedagogy of Student Geography Teachers**

**Standish Alex**

Any notion of epistemic quality must proceed from the discipline itself since each discipline has its own distinctive epistemological framework. In our Post-Graduate Certificate of Education course, student teachers are challenged to grapple with the question of what does geographical knowledge look like and how is it structured? The following categories are used to explore geography curricula: conceptual knowledge (theoretical/systematic geography), contextual knowledge (of locations, places and regions) and procedural knowledge (skills and methods) (Standish, 2018; Young and Muller, 2016). As geography is an integrative subject, meaning we explore how the connections between different 'layers' of knowledge give rise to distinctive spatial patterns and places at the surface of the Earth, the geographer's perspective is essentially to synthesise knowledge. Student teachers must integrate conceptual, contextual and procedural knowledge into their planning and teaching such that their pupils learn to think like a geographer, and begin to identify order rather than chaos in the world around them. This presentation will illustrate how student teachers integrate different knowledge types into their planning and



## Powerful Knowledge in Primary School

Stolare Martin

The powerful knowledge approach can be perceived as a curriculum principle (Young & Muller 2010). Initially, the discussion about the re-contextualisation of specialised knowledge (proven to be powerful) has primarily been held in connection to the secondary school (Maude 2015, Nordgren 2017). Less attention has been on Powerful Knowledge in the perspective of Primary School. The topic of this paper is thus Powerful Knowledge in Primary school. The case addressed is the Social Subjects education in Sweden, year 1-6.

Traditionally, subject perspectives are less prominent in Primary School (Stolare 2016). The thematic layout is particularly apparent during the first three years of primary school (upper-primary, Bladh 2014). Even though, subjects are not visible it does not mean that specialised knowledge is not present in the teaching content. On the other hand, a thematically organized social studies education is often linked to a social constructivist position, which epistemologically is difficult to combine with the pronounced social realistic point of departure of the Powerful Knowledge approach (Millar 2016). In this sense, the introduction of the powerful knowledge approach to primary school puts the spotlight on the interplay between the aspects of significance (re-contextualisation of specialized knowledge) and relevance (the link the students 'every-day world). On the basis of this problematisation is the question discussed in this paper: how to balance the dimensions of significance and relevance when re-contextualising specialized knowledge in social studies education in primary school?

## **Specialised Knowledge and Transformation: Supporting Knowledge Practices for Teachers' Professional Development**

**Stolare Martin, Bladh Gabriel and Kristiansson Martin**

The discussion taking place in the sociology of knowledge about 'powerful knowledge' as a curriculum principle has been an important contribution to the ongoing debate about knowledge, curriculum and the future school (Young and Muller, 2016).

In this paper, we contribute to the discussion above by addressing the issue of content selection and transformation from the perspective of teachers' professional development and knowledge practices. The point of departure will be our research on social studies education in upper primary school, more particularly teaching about social issues in year 4-6. The empirical ground of the discussion is a research- and development circle with in-service teachers addressing the social issue of migration (Bladh, Stolare & Kristiansson, 2018).

An ambition with the work in the circle is to explore what possibilities an introduction of specialised knowledge, in this case, specialised knowledge about migration, might have for teaching about social issues. But also, to understand the steps needed to transform the specialised knowledge into a teaching content for these parts of the compulsory school an issue which also have implication for teacher education. The overarching question is: How can researchers' and teachers' differing knowledge bases jointly contribute to the development of knowledge practices in teaching and learning?

# Contributions from three secondary school subject areas to environmental and sustainability teaching

Sund Per, Gericke Niklas and Bladh Gabriel

## Introduction

Teachers in science, social science and languages are according to the Swedish national curriculum supposed to collaborate on cross-curricular issues such as sustainable development (SD) in compulsory school. This study investigates similarities and differences in ten teachers' group working in different subject areas in secondary school regarding a question of their contribution to environmental and sustainability education (ESE) teaching.

The research question:

What are the specific curricular and pedagogical contributions from different subject areas such as science, social sciences and language when teaching environmental and sustainability issues?

Theoretical and analytical framing

The question is answered by analysing group responses regarding the pedagogical questions What, How and Why.

Teacher groups from the subjects of science, social sciences and language were chosen from five different secondary schools in Sweden. The teachers were divided into 10 teacher groups during the interviews consisting of forty-three teachers. The distribution in the different subject areas were four science, three social science and three language groups. The teachers in one group worked at the same school. The group interviews lasted about 80-100 minutes and were video- and audio-recorded. All the data was transcribed verbatim.

What The analytical question:

Which content and abilities related to ESE are describe by the teacher group? (Borg, Gericke, Höglund, & Bergman, 2012, 2014)

How – teaching aspects

In the interview teachers discuss how they conduct their teaching. This data is analysed with five analytical questions (Sund, 2008; Sund & Wickman, 2011).

Why are environmental issues important?

What does the teaching aim to change?

What kind of inter-human relations are established?

How useful is school knowledge for environmental and development issues?

What role do students play in education and environmental work?

## Why – the object of responsibility

To discern the teacher groups long term purposes the analytical question is: What does this teacher group, in this specific subject area, really care about together when discussing their ESE teaching? (Sund & Wickman, 2008)

## Preliminary result

Science and social science are in close collaboration in ESE teaching through curricular commonalities and ESE teaching traditions. Language is connected through an every-day view ESE content and as a tools to enhance the collaboration between science and social science. One important contribution from language to this collaboration is the focus on individual's ability to communicate and thereby offer students possibilities for identity making.

## **A comparative study of language use in L2 English multilingual secondary school classrooms in Norway and Sweden**

**Sundqvist Pia, Brevik Lisbeth M., Sandlund Erica and Rindal Ulrikke E.**

It is crucial that teaching practices rest on empirical findings from classroom research. In Norway and Sweden, second language (L2) English teachers have for a long time been guided by monolingual (English Only, EO) ideology, as this is believed to aid learning and many students are proficient enough to use English as the medium of communication (Others, Author1, & Author3, 2017; Lundahl, 2012). While the predominant ideology has been EO, observation studies of classroom work have revealed that in practice, many teachers enact a bilingual, English-Norwegian/Swedish, classroom language policy (Author2 & Author4, 2018; Lundahl, 2012; Author3 & Author1, 2016; Swedish Schools Inspectorate, 2011). However, in light of the growing linguistic diversity in schools in both countries, English may be the only shared language in a particular classroom, which in turn may provide support for EO teaching practices (Lundahl, 2012). Teachers may also adopt teaching practices aligning with a translanguaging ideology and pedagogy in adapting to the multilingual classroom (García & Wei, 2014), which would entail involving students' entire language repertoires. Notably, there is little guidance from national English curricula regarding classroom language use, leaving teachers to rely on their own professional judgement for what language(s) to use to facilitate students' learning. Internationally, empirical studies from multilingual L2 English classrooms are scarce, but much needed. The key research question is, then, what languages are used in such classrooms in Norway and Sweden? In this small-scale study, video and audio data were collected from seven lessons in three secondary school classrooms in each country, totaling 14 lessons. Learners were around 14 years old, which means that data were drawn from the 9th grade in Norway and the 8th grade in Sweden. Data were coded using the time-stamping

method (Author2 & Author4, forthcoming), employing four codes: (1) 'Norwegian/Swedish';

(2) 'English'; (3) 'Both' (i.e., code-switching between Norwegian/Swedish and English), and (4) 'Other language(s)'. A quantitative analysis was then carried out, examining the frequency and duration of each code, and putting those findings also in relation to the total speaking time of each lesson, followed by a qualitative analysis, focusing on characterizing the language practices. Preliminary findings reveal a range from English Only-dominant classrooms to classrooms where the majority language (Norwegian/Swedish) dominated. Whereas code-switching occurred frequently, there was hardly any use of other languages. Findings are discussed in light of learner group compositions, teacher beliefs about language learning and multilingualism, and didactic decisions in situ.

## Opportunities for progression in subject-matter didactics

Svensson Maria, Ståhl Marie, Åström Maria, Friis Johannsen Björn and Börjesson Git

The professional skills that teachers need when teaching a specific subject has for a long time been of interest and relevance for teacher education. In the teacher education at the University of Gothenburg, this is referred to as subject-matter didactics inspired by both the European tradition and US-inspired Pedagogical Content Knowledge.

Another important issue in teacher education, as well as in other educational contexts, is the interest in progression of learning. Progression can be described in different ways, one a matter of individual learning, another, a matter of the extent to which various aspects of the curriculum connect. Research about progression exists, and so does research on what subject-matter didactics knowledge is, and how it can be interpreted and integrated in different educational contexts. However, research investigating the progression of subject-matter didactics knowledge in teacher education is rare. To address this gap, the following research question was formulated: How can progression in subject-matter didactics of science and technology be described in teacher education courses?

In an exploratory phase we approached both issues inductively by analysing theories that reflect different perspectives on subject didactic in line with our research question. The study departs in an investigation of our own teaching in the teacher education to thus gather empirical evidence of what, why and how subject-matter didactics appears in courses in the programme, and if and how progression is expressed. The empirical material consists of several observations of lessons and course document analyses directed toward student teachers in primary school teacher programmes inspired and supported by tools previously developed by other researchers in various educational contexts.

The results show indications of progression in subject-matter didactics in the courses that links to certain tasks in the courses where students plan, implement and analyse teaching, as well as analyse pupils' learning. The result also point to tasks with no clear or implicit progression that nevertheless can be interpreted as opportunities to strengthen progression in and between courses and tasks. Examples of such implicit opportunities that were identified are tasks that aim to develop systems-thinking in the subject areas and tasks that engage students in conceptual understanding. The question is whether the teaching we currently have in teacher education, explicitly emphasis subject-matter didactics or if it is something that we take for granted as teacher educators, invisible to students but assumed implied by our teaching.



## **Citizenship and systems thinking: how social studies education contributes to sustainability education**

**Sæther Elin**

Climate change is caused by our ways of living and upheld by political and economic systems. Despite the social and systemic causes of global warming, science curricula and teachers have carried more responsibility for sustainability education compared to social studies education in Norway and elsewhere. This paper asks what contribution social studies education can make to sustainability education and explores this question through analysing a social studies project about sustainable development in an upper secondary school in Norway.

In this project, students were asked to change a habit or an aspect of their everyday life in a more sustainable direction for a period of 21 days. These individual changes became the starting point of an inquiry process. The students were asked to identify different perspectives upon the change they were making and to reflect on the consequences their individual changes could have on different scales, ranging from the individual, the local to the global. The teachers also took part with their own change processes, and students and teachers shared experiences and insights through social media platforms. The social media micro-texts were combined with written assignments throughout the process, and constituted a mixed source of resources for the students' reflection papers towards the end of the project. These final papers are the main source of data for this paper.

The paper is based on a discourse analysis of more than 40 student papers and shows how social studies' conceptualizations of citizenship and training in systems thinking can be major contributions that social studies offer to sustainability education. However, the issue of sustainability also contextualizes and influences our understanding of these key concepts.

Regarding citizenship, sustainability challenges the territorial delineation of citizenship, and opens up for understandings of communities as consisting not only of humans, but also non-human others. When it comes to systems thinking, the conventional binary between structure-oriented and voluntarist explanations of social change is challenged by the students' discovery of connections between their own individual experiences, their engagement in collective dialogues and acknowledgement of social, political and economic structures.

## Artistic practice and didactic and cultural pedagogy in Arts Education

Sæthre-McGuirk Ellen Marie

While art education as an area of research traditionally has been strongly tied to artistic practice, some didactic and cultural pedagogy specific research initiatives have informed its current status and common methods of instructional design in the classroom. This paper will discuss possible research initiatives in art education that will take on a holistic view of content knowledge from the perspective of the art and design teacher – both looking at the interaction and powerful knowledge requirements of the early school years and the later years.

The aim is to find research theories to build up a greater understanding of the specific competency needs for the 1-7 and 5-10 teacher education programs. Is it possible to run a smaller test project on Norwegian field- specific publications manually harvested from digitalized sources the last decade, thus continuing previous research overviews in the field (cf. Nielsen 2007)? While earlier studies on conversational pedagogy have emphasized understandings “of the cognitive, imaginative, social, and affective components of young children’s creative endeavour” (Eckhoff 2013:265), on may study forms of conversation and communication, the terminology used and information exchange, and the frequency of this exchange to gain a greater understanding of the classroom teacher’s competency and the ways in which they actively engage with that competency in the classroom setting. This work can be considered a continuation of earlier work on classroom art practice orientations (Bresler 1993).

Whereas teachers lacking significant content knowledge “inevitably struggle to support comprehensive early arts experiences in the classroom” (Eckhoff 2013:265), in this project part, we aim to uncover any possible differentiations across the grades 1-10; that is, if the teachers in these grades actively engage with their theoretical and practical knowledge in any different manner and what this means for guided-exploration contra teacher- driven art education practice (cf. Eckhoff 2013). This work may inform teacher education master programs with regards to emphasizing artistic pedagogical research and didactic artistic development work (and the relation between the two) contra artistic practice (cf. Doseth- Opstad 2016).

## Choice of text and didactic knots

Söderberg Eva, Rejman Katarina and Vuorenpää Sari

When teachers choose texts for their instruction, they take a number of factors into consideration. What genre should the text represent? What should the outcome of the reading be? How should reading be carried out in the classroom? Our study focuses on reading and work with literary texts in the teaching of Swedish in a school with a large percentage of multilingual pupils. The aim is to investigate what importance the choice of text has for the desired goal: the pupils' understanding and engagement. What happens if teachers choose the "wrong text"? Can a text be "wrong"? From a literature didactics perspective, the choice of text is interesting both in terms of its content and aesthetic qualities. From a literacy perspective, what is of interest are the pupils' previous written cultural experiences and individual writing events in the classroom they participate in. These two perspectives constitute a theoretical framework for our understanding of literature work in the classroom.

We followed two teachers in Grades 1 and two teachers in Grade 5 who plan, carry out and discuss instruction in which literary texts constitute material for the pupils' work. In Grade 1, instruction is supposed to involve fairy tales, and the teaching outcome should be that pupils fill in blanks to express their understanding of the text they have read. In Grade 5, the goal is for pupils, after having read several ghost stories, to write their own texts that captivate the listener.

The material consists of videos, field notes and literary texts. In a qualitative content analysis, we studied how teachers reason about and justify their choice of texts. We also analysed the texts the teachers chose, one story for young children and several ghost stories.

One result of our analysis is that the teachers' choice of text does not correspond to the ambitions they communicate in their preliminary planning talks. In our presentation, we shed light on how a decision about the choice of text can lead to what we call didactic knots, even in what seems to be carefully considered didactic planning.

## **Finnish primary school pupils' literary landscapes: What do Finnish- and Swedish-speaking pupils read at school?**

**Tainio Liisa and Henri Satokangas**

In the national curriculum for the comprehensive school in Finland, the two national languages, Finnish and Swedish, form the most common syllabi of mother tongue in schools. According to the curriculum, one of the aims of literature education is to “bind the students to their own culture and widen up their knowledge about other cultures”. The goals of the literature education appear very similar for both Finnish- and Swedish-speaking pupils.

However, the means to reach these goals differs between the syllabi. In Swedish language and literature syllabus the Nordic context is emphasized, whereas in the syllabus of Finnish language and literature it is not mentioned at all. Yet no specific works of literature are mentioned in the curricula. Which books do pupils actually read in school? How do their literary landscapes look, regarding the origin of the books?

In the on-going research project Lukuklaani ('Reading Clan') we have an opportunity to take a look at the literary landscapes in primary schools in Finland in detail. Lukuklaani is a project that aims to explore literature education in primary schools (grades 1-6) in Finland; the project is funded by Finnish Cultural Foundation and Kopiosto. Our data consists of the answers to an e-questionnaire that was sent to Finnish primary school teachers in November 2017. We received 885 answers, including 69 answers from Swedish-speaking schools. We asked, for example, what books pupils read and what kind of methods teachers use to motivate the children in reading. In this presentation the focus is set on the books viewed by teachers as the most popular among pupils.

Interestingly, the answers revealed big differences between the literary landscapes in Finnish and Swedish-speaking schools. While the genres, topics and some other characteristics were similar, the selection of authors and popular book series were quite different. In Finnish-speaking schools, Finnish books are prominent but the variety of the countries of origin is relatively wide. In Swedish-speaking schools, books written in Sweden are notably prominent, whereas different countries are scantily represented and books originally written in Finnish are almost absent. Books written originally in pupils' mother tongue are most popular in the lower grades, whereas the popularity of foreign books increases in the upper grades of primary school.

In our presentation we intend to analyze the findings and discuss the possible reasons and consequences for this differentiation.

## Den kulturskoledidaktiska bron/The Art-School Didactic Bridge

### Thorgersen Ketil

Denna presentation tar sin utgångspunkt i de didaktiska utmaningar som kan identifieras när frivillig musikundervisning möter didaktiska teorier. Presentationen använder sig av Frede V. Nilsens analyser av musikundervisningens didaktik såsom den framstår i Almen Musikdidaktik. Detta kombineras med teorier om relationell pedagogik, relationell estetik, social estetik samt estetisk kommunikation, för att lyfta frågor och dryfta vad som särskiljer och kännetecknar musikundervisning och musikaliskt lärande utanför den mål-, innehålls-, och läroplanstyrda skolan, samt vilka möjligheter och utmaningar sådan undervisning medför.

Vid mina två arbetsplatser, bedrivs utbildningar som utbildar studenter som förväntas undervisa i kulturskolor, studieförbund, folkhögskolor och andra utbildningsverksamheter som baserar sig på frivillighet och där det i liten grad finns centraliserad styrning. I arbetet med detta har frågor om vilken förståelse av didaktik som kan öka förståelsen för den verksamhet vi utbildar för växt sig allt starkare. Detta paper är en del i en process att skriva fram ett sådant underlag för en didaktik för (musik)undervisning på frivillig grund.

Sveriges kommunala musikskolor växte fram från och med 1940-talet som en del av den nordiska folkbildningsrörelsen. Fokus låg främst på individuell undervisning i sång, samt spel av instrument inom den konstmusikaliska traditionen. Mot slutet av 1900-talet började andra konstarter utgöra en del av denna verksamhet och det har blivit vanligt att tala om kulturskolor. Trots att det inte finns något regelverk som föreskriver att alla kommuner måste erbjuda kommunala kulturskolor, finns det kommunalt finansierade kulturskolor i 283 av 290 kommuner och mer än 550 000 barn och unga deltar i verksamheten.

Merparten av offentliga skolformer är målstyrda. I svensk kulturskola, liksom i många (ut)bildningsverksamheter som försiggår på fritiden, finns ingen statlig styrning och inga styrdokument (även om det kan finnas lokala sådana). Innehåll, metoder, mål, ramar, bedömning och utvärdering blir således beslutade på annat sätt än genom centraliserad styrning: Läraren, eleven och den lokala verksamheten utformar i samspel löpande en dynamisk, informell läroplan utifrån kvalificerade gissningar kring utbildningens uppdrag, elevens behov, samhällets behov och lärarens behov, samt utifrån analyser av förutsättningar, ramfaktorer och handlingsutrymme. Detta kan beskrivas som att en läroplan förhandlas fram i mötet mellan varje elev och lärare, och omförhandlas vid varje möte. Den klassiska didaktiska triangeln där undervisning kan förstås som ett samspel mellan tre parter; elev, lärare och innehåll blir därför utmanad i och med att innehållet inte är definierat.

Detta paper är således ett försök att skissa på en teori för en relationell didaktik där innehållet blir till i mötet mellan eleven och läraren – i en kulturdidaktisk bro. Hur dessa val kan göras kan förstås med hjälp av Handal och Lauvås och deras teorier om hur didaktiska val görs baserat på en kombination etiska värden och erfarenhetsbaserad förståelse av verksamheten.

En teori om en kulturskoledidaktisk relationell bro kan utmana målstyrningen som präglar västvärldens skolsystem och kan ses som ett inlägg i debatten om utbildning som nyttig i en neoliberalistisk mening, eller utbildning som nyttig genom bildning.

## Patterns of teaching across subjects

Ting Graf Stefan and Lønfeldt Weiglin Lena

Internationally seen (e.g. TIMMAS video study 1994-95), in Denmark, the field of big scale observation studies of teaching is still in its infancy. In connection with the Danish Demonstrationskoleforsøg 2013-15 Bundsgaard & Hansen (2018) have developed a highly structured observation study. In continuation of this research, we have carried out a similar study (2016-17) by collecting highly structured in situ observations of the 4th to 9th grade teaching of 6 schools in 4-6 classes each on 2 times 2 consecutive days. In other words, on these days we followed and scored all the teaching of the selected classes. Based on an elaborated scoring manual that distinguishes between organizational forms and types of student activities we collected a range of properties to these basic categories such as visible goals, teachers' scaffolding, use of it, communication forms. The use of a digital online scoring instrument made it possible to analyze the data by both a statistical approach, based on duration and frequency and a qualitative visual analysis based, on the notion of functional weight. While other research focuses on pattern like IRE (Mehan 1979), IRF or even more differentiated patterns (Cazden 2001), that all – from different theoretical stands – scrutinize classroom communication, we focus on basic patterns in the light of teaching methods and Didaktik (Graf 2012). Bundsgaard & Hansen identified some patterns typical to specific subject. In addition, we scrutinize in depth a) how much times is used for the teachers framing of the teaching and time on task, b) whether there are typical relationships between organizational forms and student activities such as listening, training, producing, investigating, and so forth. Preliminary analysis makes it plausible that there are some typical patterns, but it is questionable whether it is appropriate to call them either traditional or innovative teaching patterns.

## Young students' theoretical thinking

Tuominen Jane

The aim of this presentation is to discuss what may enables students, nine years old, to discern relationships between numbers in equations with negative numbers included. In the study, the students were invited to, collectively, explore, reflect and theoretically think (Davydov, 2008; Zuckerman, 2004) regarding relationships between numbers, based on a "part-whole structure" (Davydov, 2008). In order to visualize important, but abstract properties and to enable the students to discern relationships as a "part-whole structure," a learning model was used as a mediating tool (Davydov, 2008; Gorbov & Chudinova, 2000). In an equation like  $3 + x = 2$ , a negative number is included, which cannot easily be explored empirically (Schubring, 2005). Consequently, the students had to explore the equation by reflecting, theoretically think, and communicate about the relationship. Further, the students had to reflect on what constitutes the parts respectively the whole, and why. According to the analysis, findings indicate aspects that the students need to discern regarding relationships between numbers in equations. Further, findings also indicate what may enables students to develop an ability to reflect and to develop theoretical thinking. In the symposium, I would like to discuss these aspects.

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## Discussing opinions or critically assessing arguments? Conflicting activities in primary school civics teaching about judicial justice

Tväråna Malin

Civics teaching in primary school is often shaped by a crowded curriculum, with an abundance of subject matter for teachers to cover in short time (Stolare, 2016), and often seems to be directed towards remembering and recapitulating facts rather than developing qualified ways of reasoning about societal issues (Odenstad, 2010). Nevertheless, critical reasoning is regarded a crucial ability for civics, both in the national curriculum and by teachers. The article explores teaching designed to benefit students' possibilities to qualify their critical reasoning about issues of judicial justice in civic education in year 6 of primary school. The focus is on how the actions of students' and teachers' build teaching activities that promote or hinder critical reasoning about justice issues.

The study is influenced by a cultural-historical activity theoretical perspective, and assumes that actions and motives of teaching are shaped by the cultural and social needs developed in certain historical contexts. Critical reasoning in civics can be constituted and realised in different ways, depending on the motives for civics as a classroom activity, and how it is expressed and mediated through the actions of both teachers and students. Based on the theory of objectification (Radford, 2013; 2015), the analysis describes how reasoning about judicial justice issues as an object of knowledge is actualised through different teaching activities in the research lessons.

Data material in the study consisted of transcribed group discussions and whole class conversations from three cycles of research lessons in a learning study conducted in collaboration with a team of seven primary school teachers. The teaching design in the lessons was based upon variation theory (Marton, 2015) and dialogical intersubjectivity (Matusov, 2001). The actions of students and teachers were thematically analysed and described as making up different kinds of joint labours between teachers and students. Actions constituting these joint labours were then correlated with students' different ways of reasoning about justice issues.

Four kinds of joint labours between teachers and students were identified, driven by different motives: participation, identity, deliberation and critical judgment. The actions driven by deliberation and critical judgment benefitted students' critical reasoning about justice issues, while actions driven by participation and identity conflicted with it. The results may contribute to teachers' understanding of their own practise and to the discussion within social science didactics about the meaning of critical reasoning and critical judgement as a subject specific ability.

## **The persons within power – the role of subject content knowledge in developing the ability to analyse in Social Studies**

**Tväråna Malin & Jägerskog Ann-Sofie**

The aim of this presentation is to illustrate the importance of the subject content in describing, practising and developing the ability of analysing societal issues in Social Studies education. The presented paper discusses results from a phenomenographic analysis of upper secondary students' conceptions of power relations in society, regarding their way of analysing issues of power during Social Studies education. The research addresses what

aspects of conceptions of the subject content that are critical for developing students' conceptions in a way that promotes their ability to analyse issues of power relations. The data material consists of written pre- and post-tests from three research lessons of a learning study (Marton 2015; Runesson 2017). The research lessons were iteratively planned and conducted in different student groups (in total 67 participating students) and analysed and revised before the beginning of a new cycle. The findings suggest that it is crucial for students to discern certain aspects of the concept of power, dealing with relations and agency, in order to analyse the power relations that are in play in a specific societal situation.

Keywords: Social Studies, critical thinking, phenomenography, power relations, teaching and learning

## **“Enlarged thought” as ethical competence**

### **Törnégren Gull**

Ethics has always been part of the central content in the Swedish national curriculum for Religious Education. But what should be the core of knowledge in ethics? Set in relation to the aim of the RE subject that students “should be given the opportunity to develop a readiness to understand and live in a society characterized by diversity”, I will argue that such an understanding can’t be reached primarily through knowledge about ethical theories and the capacity for formal ethical argumentation. My aim is to contribute to a discussion of what ought to be learned in ethics, through investigating how the capacity for moral judgment could be included as an aspect of the teaching and evaluation of ethical competence. The analysis is based on Benhabib’s (1992) understanding of moral judgment as based on the capacity for what Arendt (1976) called “enlarged thought”, drawing on narrative and hermeneutic competences to mold to oneself a dialogue with all the others that one knows that one has to come to an agreement with.

I argue that the capacity for “enlarged thought” can be fostered through “visiting the ‘world of the other’”, through exposure to as well as analysis of different kinds of narrative materials, biographic and fictional, as a way of coming to and understanding of the alterity of the concrete other, through an understanding of how her most cherished values are embedded in the webs of narratives through which she presents her identity (Young 1997; Stone-Mediatore 2004; Nussbaum 1995; Törnégren 2013).

## **The film Sami Blood in education on identity, ethics and historical consciousness**

**Törnegren Gull & Deldén Maria**

Use of fictive film in teaching has previously been investigated and discussed in both historical didactic and religious didactic research. The film Sami Blood of Amanda Kernell (Sameblod, 2016) highlights questions of identity, a theme that has a central position in the school subjects history and religious education, in the former related to historical understanding and in the latter to questions of religious belonging and philosophies of life, and to teaching of existential questions and ethics. The aim of this paper is to investigate what potential the narration of the film Sami Blood offers for teaching related to the theme "identity" in the two school subjects religious studies and history in the late years of elementary school and upper secondary school. This will be conducted through a theoretical analysis of the film narration, which is related to central themes in the curricula of the two school subjects, leading to a comparative analysis of how the theme identity could be comprehended as a theme of education in the contexts of the two school subjects.

## Low competency and high demands in Music Education

### Vesterlid Strøm Regine

A particular difficulty with teaching of music is that general competence of teachers is low and that it demands a technical knowledge that is far beyond what is to be expected of primary teachers. One aim of teaching music at school is not to create professional musicians but to open the field for students in ways broader than popular music and connect to other well-established traditions. Although pupils are not supposed to play instruments, the teacher aim to develop their motivation and their understanding of music. A central research area is the

relationship between the teacher's own competence of playing an instrument or singing and her ability to motivate children in order to open the world of music for them (cf. Nielsen 1998; 2012).

Music is a well-integrated part of all teachers' work, a fact that makes a full and detailed observation difficult for practical matters. Educated and non-

educated teachers may be studied apart and compared to teachers educated in arts subjects more generally.

## **Subject-specific language in a conversation about welding technique** **Ämnesspråk i ett textsamtal om svetsteknik**

**Visén Pia**

In all school subjects texts are used and learning takes place through subject-specific language. In upper secondary school vocational subjects such as for example Welding, different disciplinary and vocational domains and registers meet in the construction of a classroom language for learning. Syllabi state that students need to develop competence to use the professional language efficiently (Skolverket 2011). Thus, it is crucial that the classroom language prepares them for the professional language.

This presentation regards the study of a classroom conversation about a text excerpt where a term specific to the welding practice is discussed (Visén 2015). The study is based on transcribed classroom observations. In the presentation an intertextual semantic and lexical chain is analysed (Halliday 2014; Halleson & Visén 2016). The findings reveal how classifying and expected lexical links are created. Moreover, in the presentation it is discussed how the teacher draws on theoretical, professional as well as everyday registers. Meanwhile, when participating in the lexical and semantic chain in the conversation, the students use an everyday register, rather than more theoretical and professional language.

## What are controversial issues?

Von der Lippe Marie

What are controversial issues? Who decides whether something is controversial, and how does it affect how a subject is taught whether a topic is presented as either controversial or settled?

Though there has long been a vigorous debate within educational research on what criteria should be used to determine whether an issue is controversial or not, this topic has been less discussed in the specific context of religion education. Recent empirical research based on classroom teaching has uncovered that teachers of religion education feel it is demanding to address controversial issues in their teaching, and that they lack the basic disciplinary and didactic skills to manage issues of such complexity. In order to provide teachers with the knowledge and educational tools they need to navigate pluralistic classrooms, this paper argues that it is of great importance that such issues be thoroughly discussed in the scholarly discourse on religion education. On the basis of current theories, the present paper discusses what can reasonably be characterised as a controversial issue in today's education and how teachers can deal with such issues in religion education.

## **Performance art as a globalising strategy**

### **Wall Tony**

Sustainable development is perhaps one of the most contemporary domains where the global and local tension is most prevalent. Here, global trends of major destructive behaviours and impacts may well be intellectually and experientially understood at the local level, but what can be done to promote a motivation to act or change through the field of education for sustainable development? This research draws from a practice-as-research study to illustrate performance art experiments used in the context of education for sustainable development. Specifically, it draws on experiments which target metanarratives about 'work is good for you', and offers an alternative expression. The dialogue prompted by the performance experiments are shared and further developed with participants.



# Mathematical learning abilities in informal and formal mathematical discourses

Wallin Anna, Norén Eva, Valero Paola

## Background

The arenas of mathematics and mathematics education have spread out in the late 20th century. Nowadays it has become naturalized to talk about mathematical knowledge in different learning environments such as preschools, afterschool programs and extended education. Fritidshem — literally translated “freetime home”— is a special type of offer for children in school age, for activity after the end of the school day, often based on informal learning situations. In 2016, both the preschool class and the fritidshem obtained a new curriculum, where mathematics was explicitly mentioned as one of the new areas that were expected be made visible in the education. This change poses a challenge for the people involved in the education of fritidshem. The question emerges: what does the fritidshem mathematics mean and what do the student express about mathematics in the practice?

## Theoretical framework and method

The change in the official curriculum and what the people involved in the practice engages in as a result of the change can be understood in terms of policy enactment (Ball et al., 2012). This framework allows to study the emerging meanings, discourses and materials through which mathematical activity (Bishop, 1988) appears and develops in the practice of fritidshem. Two case studies in two fritidshem institutions were conducted during the period of 2016- 2019. Observations and interviews with practitioners were carried out. Inspired by the method of Video Stimulated Recall Dialogues, VSRD (Silfver, Sjöberg & Bagger, 2013), student’s mathematical activity is studied at the moment.

## Results

The analysis of the practice shows that four mathematical discourses are present in the practice of fritidshem, framing different possibilities for mathematics learning and positionings for students and pedagogues. The discourses vary according to how concrete or formalized they are, and how the participants in them are positioned.

The landscape of mathematics learning discourses in fritidshem includes; entirely informal mathematical discourse, half informal mathematical discourse, half formal mathematical discourse and entirely formal mathematical discourse. We are currently analyzing how students participate in the four types of discourses. The results will be presented in the NOFA conference.

## **History and civics for the middle years: a comparative analysis of the syllabuses for two school subjects in Sweden and Finland**

**Wibaeus Ylva, Strandberg Max and Lindberg Viveca**

The purpose of this paper is to contribute with a comparison of two curricula, Lgr 11 in Sweden and the curriculum from 2014 in Finland, and the syllabuses for 9/10 to 12-year olds in history and civics. Both these subjects are expected to contribute to forming school students for a future society, where contemporary local societal experiences are expected to be used for interpretations of socially, culturally and historically developed experiences, values and norms (Skolverket 2011; Utbildningsstyrelsen 2014). Both subjects, in principle, have the potential of emphasizing complex societal issues that in different ways have been recurring through history. People escape and have also in precious centuries been escaping from societal or natural catastrophes to other countries; misuse of power and societal inequalities, minorities and prejudices – these are examples of issues and experiences that every new generation has to deal with. Do the syllabuses for history and civics relate to these kinds of issues for 9-12-year olds in Sweden and Finland – if they do, how are they expressed? What similarities and differences are there in what is emphasized? This comparative study is the first step towards a broader comparative study of the two subjects and the results will be used for further developing the design of the following steps of the project, where we specifically will focus on Finland Swedish contexts.

Previous didactical studies of either of these two subjects predominantly relate to school students in secondary or upper secondary school. Studies that combine a comparison of two subjects in two Nordic countries for this age group are very few.

## **Examining science related media through dialogue or argumentation - Developing students' capabilities to participate in socio-scientific reasoning**

**Wiblom Jonna, Andrée Maria and Rundgren Carl-Johan**

The Internet has become the most prominent medium through which younger generations gain access to information and knowledge about socio-scientific controversies. When students search for information about issues relating to science on the Internet (e.g. about climate change, consumption or health), they are challenged to navigate and critically examine a broad range of website genres, information from various fields of knowledge and claims from different interest groups. In science education, socioscientific reasoning has commonly been framed as argumentative practice focusing on students' formation and defence of argumentation elements, how students understand and use scientific knowledge to back up individual decision-making. In this study, we argue that inviting students to examine socio-

scientific controversies, in all their complexity, may be a promising route to develop students' capabilities for socio-scientific reasoning in education for citizenship. The study aims to investigate how classroom practices, that open up for students to attend to the uncertainties and differences of opinion surrounding socio-scientific controversies in media, can be established in science education.

The empirical study is outlined as an educational design study following a cyclic design-based procedure. A research team of two researchers and five science teachers designed, implemented and analyzed a teaching sequence that opened up for student groups to examine information, arguments and opinions about a controversy accessed online between a cow's milk and an oat milk producer in Sweden. Collected data consists of video recordings of upper secondary school student group discussions. The student discussions were analyzed by means of qualitative content analysis. Preliminary results point to that the student groups

examined the 'milk-controversy' in two qualitatively different ways; through argumentation or dialogue. In groups approaching the controversy argumentatively, socioscientific reasoning was expressed as convincing peers with one-sided arguments (for or against). In groups examining the controversy dialogically, socioscientific reasoning was expressed as negotiations on how to interpret, evaluate and contrast contradictory arguments, opinions and beliefs. A conclusion so far is that dialogic classroom practices show promise to open up for students to constructively examine complex societal issues where there are multiple voices and perspectives. However, to afford dialogic approaches to socio-scientific reasoning requires educators to challenge the established recognition of argumentation and debate in science classrooms.

## Tre lärarutbildares erfarenheter av att återvända till fältet

Öhlund Linda

Mångkulturalitet och flerspråkighet är viktiga aspekter och löper som en röd tråd genom lärarutbildningen. Flerspråkighet är mer mångfacetterat än bara att översätta till modersmålet. Här ryms bland annat aspekter av det individuella och det sociala men även skapande och omskapande av identiteter. Det ställs med andra ord höga krav på lärarutbildare runt om i Sverige att väva in detta i de olika kurserna. Den normativa lärarutbildaren är en vars bakgrund baseras på flera års erfarenhet av undervisning inom skolan. Väl inom lärarutbildningen väljer flertalet att stanna kvar inom universitetsvärlden, skälen är diversifierade. Men för att utveckla både verksamheten på fältet och verksamheten inom lärarutbildningen kan det vara av intresse att få se perspektivet av lärarutbildare tillbaka på fältet.

Detta är en pågående studie, vars huvudsyfte är att via perspektivet mångkulturalitet och flerspråkighet inom matematikundervisningen ge tre före detta lärarutbildares, nu verksamma inom antingen mellanstadiet, högstadiet eller gymnasiet, bild av skolan, samtidigt som de får ge en bild på lärarutbildningen som de varit inblandade i. Syftet är även att ringa in hur deras erfarenheter som lärarutbildare bidragit med ytterligare ett lager till den ekologi som de har som utgångspunkt för att forma sin undervisning i sin vardag som lärare. Metod för studien är dels intervjuer samt observationer. Data är ännu ej färdiganalyserad men pekar i nuläget på den styrka deras erfarenheter som lärarutbildare bidragit till

## Entangled in relations - practice based research in visual arts

Öhman Lisa & Johansson Barbro

The school subject visual art can be seen as a free zone and as a break from other theoretical subjects, a subject with opportunities for the students to express their emotions through creative work. In relation to the tradition of free creative expression, which has influenced visual art education immensely, questions located within the field of subject matter didactics in visual arts are very seldom on the agenda.

This presentation explores the knowledge production of teaching in visual arts in a practice-based research. The focus is on how researchers and a teacher and in visual art reorganise and try to provide new and different support structures in the visual art classroom.

The overall aim for the ongoing project is to investigate how different sustainable adaptations can develop the didactic design in the classroom of visual arts. The research material is from a practice-based project carried out in an upper secondary school in an Art program in visual arts. Two researchers, in Visual Arts and in Special Education and a visual art teacher have jointly developed sustainable adaptations in visual arts education. The empirical material consists of documentation from cyclic, recurring discussions with the teacher, classroom observations in one student group, students' digital log and the teachers and researchers own digital logs, four focus groups interviews.

In this presentation, I elaborate on the encounter of practice-based research in visual arts and a socio-material approach. Through this perspective, the complexity of aspects in classroom, the specific material and discursive conditions and ideas about the subject matter, practice and theory, shape what becomes possible to do in the co-operative process of practices based research in visual arts. The presentation is a first step in an ongoing didactic exploration, a contribution with an open-ended, instead of summarizing conclusion.

## **Drama Workshop for Sustainability - can anyone learn through drama?**

**Österlind Eva**

In Sweden Drama has traditionally been labelled a 'teaching method', a tool for 'aesthetic learning' to be utilized in other subjects. The main reason for this is that drama is not (yet) a subject in compulsory schools. Drama is often promoted as a successful way to teach, creating increased motivation and deeper understanding among participants, in pre-schools as well as at university level. This assumption can be questioned. Perhaps drama isn't a great way of learning, regardless of the circumstances? Finding out more about this will allow a more precise understanding, and may affect how drama is applied in various educational settings.

To investigate this, a drama workshop on sustainability was given to university students in Athens, Helsinki and Stockholm, during 2017. Research reveals that many young people associate environmental problems with feelings of hopelessness, guilt and insecurity.

Therefore, new ways of teaching, that gives students an opportunity to learn more about sustainable development, despite emotional constraints, need to be developed. Research also suggests that aesthetic forms of instruction, like drama, may open up for more experience based and value integrated learning processes. Previous research on the potential of drama related to education for sustainability is, however, limited. This small-scale study is based on a drama workshop designed to explore sustainability issues from several perspectives. Based on a questionnaire to the participants, a comparative analysis will be presented.

## The Inward Gaze in Practicum Tasks

Österling Lisa

In teacher education, a bi-directional focus, both inwards and outwards, has been suggested for early teacher development (Conway & Clark, 2003). They describe the inward focus as both hope and concerns about the self-as teacher, whereas the outward focus is directed towards learners, curriculum or instruction. However, the inward focus has been

problematized for “requiring academics to turn the gaze inwards, scrutinizing who they are ” (Fejes, 2016, p. 3), and even confess to a virtual other, a teacher desired in teacher education. In this paper, the inward and outward foci are used to explore what becomes visible as desirable knowledge for prospective teachers.

The data used are tasks assigned to students in relation to their practicum. When such tasks are used to evaluate learning from practice, their focus is also the legitimised, or desired, knowledge. The present paper asks of what this desired knowledge consist : What is focused in practicum tasks, and how explicitly is this knowledge described?

Six focus categories were inductively constructed: instruction, learner, content, curriculum, theory and the self. The self-focus is the only category representing the inwards gaze.

Many tasks contained several foci, as: “Select a problem from /... / which you may adapt to your learners. Let learners work through the problem. Try different ways of organizing their work (single/pair/groups), written work or written work followed by oral presentations. What did you learn about learners’ competencies and knowledge?” This tasks focuses content, learners, and explicit strategies for instruction. It also turns the gaze inwards, towards the intended learning for the student teacher.

In another task, students were asked to set “individual goals” for the practicum. They should provide a “self-evaluation”, and at the end of the practicum to “... exemplify own strengths and areas of development”. Thus, these tasks focuses the self, without making the desired knowledge very explicit.

The analytic approach allows a discussion of how accessible learning becomes for different student teachers. It raises a discussion on the logic behind the self-focus either on learning or the self as an object of improvement.

## Images of the desired teacher

Österling Lisa and Christiansen Iben

Do teacher educators across the world agree on what constitutes good teaching? Individual teacher educators may base their teaching and assessment of student teachers on personal notions of the desired teacher, while formal assessment criteria are attempts to shape institutional practices and/or transmit institutional and national expectations. Analysing these provides a glimpse of the images of the desired teacher which prevail in teacher education. It is for this purpose we analyse observation protocol criteria from six countries across four continents.

Research questions:

What are the images of the desired teacher reflected in references to explicitness of knowledge and implementation practices?

What are the images of the desired teacher reflected in the pedagogical actions included in the assessment criteria?

We analysed the protocols according to three aspects: How explicit is the knowledge base for students' actions during their practicum; how explicitly are the activities expected from the student; and in which pedagogical actions is the student expected to engage? We also worked with the pedagogical orientations, reasoning and actions: comprehension, disposition, transformation, instruction, reflection, and professional development (inspired by Rusznyak, 2012).

We obtained observation protocols from (institutions in) six countries with widely different cultures and histories. The organisation of practicum vary substantially between the cases, which may alter the criteria in practice. This is beyond the scope of the current study.

The unit of analysis was meaning-bearing clauses. These were coded until 100% intercoder agreement was achieved.

Across the protocols, an image of good teaching as something that could be learned was conveyed, and prescribing specific teaching practices was not prevalent. However, there were substantial differences. Only one protocol operated with levels of expected progression, towards increased reasoned judgement and transformation/adaptation of content. Based on the analysis, we generated five images of the desired teacher, which we will introduce in our presentation.