Annual Report 2018

SLATE

Centre for the Science of Learning & Technology

UNIVERSITY OF BERGEN

The Centre for the Science of Learning & Technology (SLATE) is an R&D learning sciences unit, which contributes to international research and national competence development on the use data and data approaches in understanding education and lifetime learning. As such SLATE will advance knowledge by exploring and clarifying concepts such as learning analytics, big and small data in education, assessment for learning, and creativity, learning & technology, in all facets of human learning. SLATE draws together researchers from multiple disciplines including information science, cognitive science, and pedagogy, and thereby conducts integrated research that will advance the frontiers of sciences of learning, as well as inform education practice and policy.

MANDATE from the Ministry of Education and Research:

- SLATE shall carry out research of high quality on learning analysis*.
- SLATE shall be an R&D unit that contributes to national competence and knowledge development within learning analytics.
- SLATE shall map and be a central resource for the possibilities and challenges related to the use and research on learning analytics in Norway.
- SLATE shall be internationally oriented and seek relevant international collaboration within learning analysis.
- SLATE shall through its R&D activity develop and disseminate knowledge to the relevant actors in the Educational sector.
- SLATE shall through seeking collaboration influence competence development within the learning analysis disciplines in other milieu in the Higher Education sector.

The long term ambition is that SLATE will develop into a broad milieu for the learning sciences by drawing together an even larger spectrum of relevant disciplines such as sociology, design, development psychology, and neuroscience.

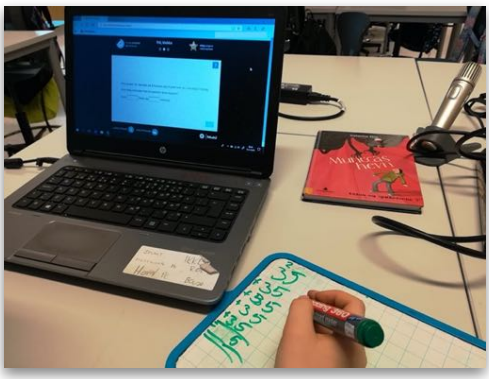
** the study of the role of data and data analytics for understanding and improving learning, teaching, and education, and covers, among others, the research fields of Learning Analytics and Knowledge (LAK), Educational Data Mining (EDM), and Big Data in Education.*

Director's Reflections

2018 was our third year as a research centre. Our research capacity grew with 1 new PhD student, 1 permanent Researcher, 1 Postdoc, and 1 Professor II. Interest in the centre has gown nationally and internationally.

We expanded our Project Portfolio, and by the end of 2018 we had participated in 30 projects in total. One of the new projects, *Adaptive Learning in Mathematics (ALMath)*, led by our new PostDoc Kjetil Egelandsdal, has been studying and evaluating the use of Gyldendal's Multi Smart Øving (MSØ) in primary schools. MSØ is the only adaptive learning tool being used in Norwegian schools. The final report is due during the first half of 2019. Another new project was our participation in the 7th *Innovative Pedagogy Report* that is produced every year by the Open University, UK. This report explores new forms of teaching, learning and assessment, to guide educators and policy makers. Four of our researchers participated in the selection and description of 10 new innovative pedagogies. The report was published at the beginning of January 2019, despite the work being done in 2018. Barbara Wasson and PhD student Kamila Misiejuk participated in a systematic review of ICT in higher education, led by the Norwegian Knowledge Centre for Education. Our new Industrial PhD student, Fredrik Sundt Breien, is conducting research on *narrative digital game based learning*, funded by Equinor and the Norwegian Research Council, with an aim to provide better interactive learning displays at the Vil Vite Science Centre in Bergen. Mohammad Khalil, our newly hired permanent researcher is working on a number of projects with higher education data. At the end of the year we were informed that the challenging Activity data for Assessment and Adaptivity (AVT) project was awarded another 2 years of funding from KS. AVT is an exciting project that involves EdTech vendors, schools, and Municipalities, and captures all aspects of learning analytics.

Research results and outputs for 2018 ranged from academic publications (5 journal papers, 1 book chapter, 1 conference proceedings, 8 conference articles, 6 conference extended abstracts), 7 posters, 1 demo, organising 1 international conference, 1 international symposium, and 14 workshops. In addition, we participated in decentralised competence development for teachers, and developed learning materials for epistemic network analysis, an emerging method in learning analytics. Furthermore, during 2018, SLATE researchers gave 60 presentations and attended 144 (non-project) meetings. We also had 3 Masters students graduate in December. I was honoured to be invited to sit on a panel on implementation of learning analytics at the final SHIELA EU project conference held in Brussels in June. I also held a keynote lecture on learning analytics and its role in education at the Norwegian Conference for Education and Didactics in IT subjects (UDIT) held in Svalbard in September. One of the highlights of the year was our presence at the International Association for Educational Assessment Conference (IAEA) held at the University of Oxford. I want to share how proud I was of the excellent 6 presentations we had, the most for any group or university in attendance. Each one of us received very good responses during the presentations, enabling lively discussions and question-asking. Each of us received positive feedback throughout the week with colleagues emphasising how much they liked our work, and how our Centre was producing very compelling research. A second highlight was the International Symposium, Building Bridges, arranged in December by SLATE researcher Ingunn Johanne Ness. Focussed on interdisciplinary innovation, Ness pulled together a stellar array of presenters, panels, and interactive activities with the aim to unravel some of the mystery around interdisciplinary collaboration and innovation.



"SLATE has created an inclusive, creative interdisciplinary environment with a culture of team work and open-mindedness: a platform for researchers from different disciplines to meet, set up new projects, and produce joint publications."

technopolis group

SLATE had the privilege to be highlighted in the UiB Magazine (2018 issue), the yearly report on research conducted at the University of Bergen. The Research Council of Norway also commissioned "A case study review of Interdisciplinary research in Norway" from technopolis, in which SLATE was one of 5 centres that were reviewed.

SLATE had 62 collaborators (e.g., on research projects, applications, co-authors) in 2018 coming from academia, the public and private sectors, publishers, EdTech sector, and research centres. Our collaborators can be found across 16 countries with the majority of collaboration conducted in Norway, followed by the Netherlands, UK, USA, Sweden, and France.

During 2018 we hosted 6 SLATE Guest Lectures with speakers from Universities in Edinburgh, Copenhagen, Shanghai, Maastricht, Tallin, and Oslo. We had a guest researcher, Tamara Rozas, from Chile, visit us for a month to collaborate with Fay Wheldon and Astrid Tolo on the Intelligent Accountability project. PhD student Joakim Vindenes participated in the local Forsker Grand Prix, presenting the research he conducted at SLATE during his Masters.

SLATE's expertise has been integrated into 3 important committees. First, Ingunn Johanne Ness is participating in an academic committee that is developing a PhD course on sustainable innovation at the Faculty of Social Sciences, UiB. Second, myself (leader), Ingunn Ness, and Jorunn Viken (secretary) were invited to participate in a committee looking at the possibilities for interdisciplinary ICT and learning education courses/programmes at UiB. Third, I am a member of the Fagutvalg for Arkitekturstyring, a subcommittee of the national Digitaliseringsstyret (Digitalisation Board) for higher education, where I bring expertise on learning analytics.

Finally, we continue to develop our expertise in learning analytics and in innovation, creativity, learning and technology. The word cloud on the next page visualises the 2018 competence profile for SLATE. Carrying out learning analytics research is challenging — gaining access to data, wrangling with the data, analysing, interpreting the analysis, and making the results relevant for various stakeholders is a demanding enterprise. We will continue our efforts and expand in 2019, bringing on a permanent Full Professor, a Postdoc in visual analytics, and a permanent system developer, giving us even more competence and expertise.

Barbara Wasson

Barbara Wasson, Director SLATE

SLATE competence profile
(self-assessment)

Core Values

Integrity

To maintain an inclusive community and working environment that is based on trust, ethical behaviour, open communication, and flow of information for all constituents.

Interdisciplinarity

To apply the broadest views of learning and the learner through collaboration across disciplines, institutions, and industries.

Excellence

To strive and maintain the highest standards of research. To nurture a thriving, creative environment where individuals are inspired to make the best use of their talents as they develop learning innovations.

Globality

To lead and mediate authentic collaboration nationally and internationally, and ensure that diverse cultural perspectives are continuously represented.

Strategic Approach

ENGAGE...

in research on learning and the learner that spurs insight and innovation.

COMMUNICATE...

with Ministry, educational community, teachers, schools, students, parents, and the public about the various events, findings, and implications of the research.

INSPIRE...

the next generation of learning researchers through interactions with faculty, postdocs, teachers, and industry partners.

EXPAND...

partnerships with national, international, intergovernmental, academic, industrial and entrepreneurial communities.

Strategic Goals

Specifically, over the next 5 years, SLATE will:

- Broaden our understanding of learning and creative knowledge processes in a variety of learning contexts.
- Generate and aggregate data that can advance and transform educational practice and policy, in the broadest sense at the intersection of learners, technology, and pedagogy.
- Investigate the cultural and social implications of data analytic approaches in all facets of human learning throughout a lifetime.
- Inform the use of data analytic approaches in education by understanding their impact on learners, teachers, institutions, and society.
- Apply computational approaches such as data mining, learning analytics, machine learning algorithms, predictive modeling, and data visualizations as a lens to better understand learning and inform teaching and assessment.
- Advance our understanding of emergent technologies, new work patterns, and future learning pathways of “next gen” learners in order to better prepare them for a world where information is pervasive, dynamic, and continuously accessible across multiple channels and devices, and multidisciplinary collaboration and creativity are necessary.

Research Profile

SLATE has four research themes that capture the essence of our research. In 2018 we worked on 30 projects that fall into these categories (two projects, *Desentralisert Kompetanseutvikling* and *Innovating Pedagogy with Virtual Reality,* cross two themes).

Learning Analytics – Research that explores the methods for measuring big data, analyses, and the design of volumetric data architectures optimised to measure learning from a variety of educational, technological, and workplace contexts.

Projects

- Adaptive Learning in Mathematics / Gyldendal Multi Smart Øving (ALMATH)
- Aktivitetsdata for Vurdering og Tilpassning (AVT)
- Coping after Breast Cancer
- Desentralisert Kompetanseutvikling
- Developing Course Materials on Epistemic Network Analysis (ENA Materials)
- Høyskolen Kristiania Flex
- Inquire Competence for Better Practice and Assessment (iComPass)
- Learning Analytics Architecture at UiB (LA@UiB)
- MAP LA
- MOOC: Seksuell og Reproduktiv Helse og Rettigheter (LA in Health Education)
- Open Educational Resources in Computational Biomedicine (OERCompBio)
- Peergrade BI study on Peer Assessment and Learning Analytics (Peergrade BI)
- Peergrade study on Peer Assessment and Learning Analytics (Peergrade)
- Scalable Learning Analytics for Data Integration in Higher Education (LA in HE)
- Teacher Inquiry Into Student Learning (TISL)

Creativity, Learning & Technology – Sociocultural and cognitive underpinnings of creativity, learning and technology and how innovation happens is critical for the advancement of new ideas in both school and business, in order to help business stay competitive and enable learners to cope with an uncertain future (i.e., 21st Century Skills).

Projects

- Creative Knowledge Processes
- Desentralisert Kompetanseutvikling
- Innovating Pedagogy with Virtual Reality (Innovating Pedagogy with VR)
- Mapping Relational Leadership
- Polyphonic Orchestration: The Dialogical Dynamic of Creativity

Assessment Innovation & Theoretical Pedagogy – Research on formative assessment, governance, and policy, including scaffolding student & teacher competency and professional development, with an emphasis on how data-driven technologies can inform their practice.

Projects

- Clickers and Formative Feedback at University Lectures (Clickers and Formative Feedback)
- Innovative Pedagogy Report
- Intelligent Accountability in Schools
- Systematic Literature Review on ICT in Higher Education (ICT in HE)

Emerging Technologies & their Underlying DATA – Research to understand how the data is generated and informs learning and its contexts (e.g., MOOCs Immersive VR, Learning Management Systems, Machine Learning, AI).

Projects

Learning Trails: Vilde Vite and Make Your Fish for VilVite and Bergen Aquarium

Neptune: Tactical Simulation Game to Train Officer Cadets in Maritime NATO operations

eSports in Nordic Schools (eSportsNS)

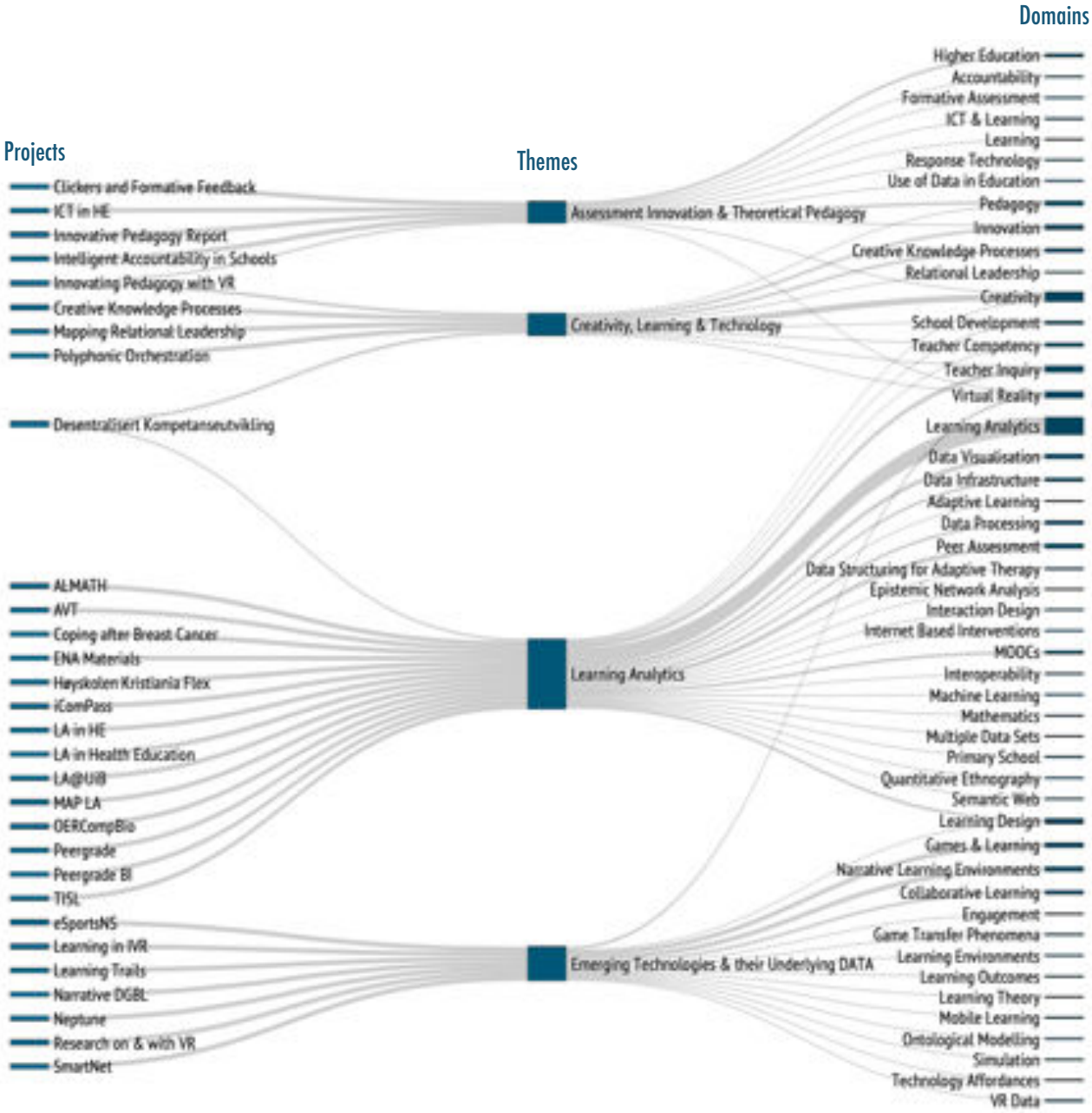
Innovating Pedagogy with Virtual Reality (Innovating Pedagogy with VR)

Learning in Immersive Virtual Reality (Learning in IVR)

Narratives and Narratives Effects in Digital Game-Based Learning (Narrative DGBL)

Research on & with Virtual Reality (Research on & with VR)

SmartNet: Initial Technical Development

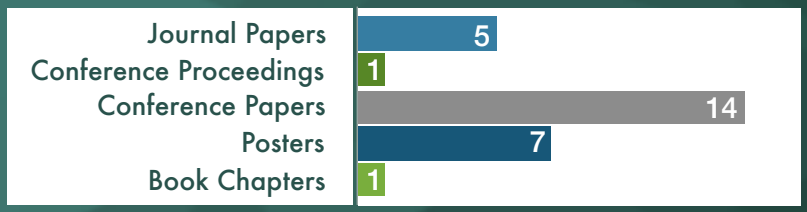


SLATE project by themes and domains

2018 in numbers

We had

28 publications



We organised

1 conference

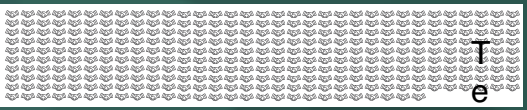
1 symposium

1 demo

14 workshops

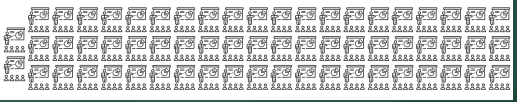
We attended

144 meetings



We held

62 presentations

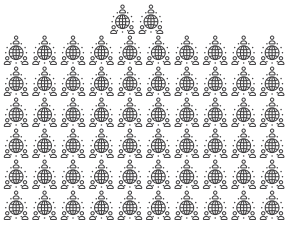


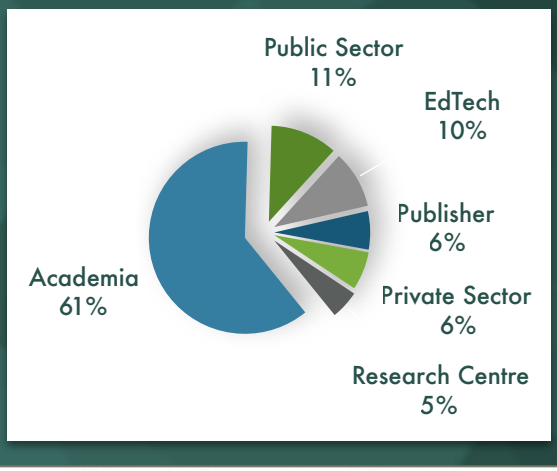
We hosted

6 guest lectures

We had

62 collaborators





from **16** countries:

RESEARCH RESULTS and OUTPUTS

Examples of research results and outputs from 2018 are presented here.

User Consent to MOOC Data

Khalil, M., Prinsloo, P., & Slade, S. (2018). User Consent in MOOCs - Micro, Meso, and Macro Perspectives. *International Review of Research in Open and Distance Learning, 19*(5), 62-79.

While many strategies for protecting personal privacy rely on regulatory frameworks, consent, and anonymizing data, they are not always effective. Terms and Conditions often lag behind advances in technology, software, and user behaviours, and consent to use data for a range of unclear purposes may be provided unwittingly. As the commercial market for (student) data expands, so does the number of brokers who move, share and sell data across continents and legislative environments. This paper reviews four Massive Open Online Course (MOOC) providers from different geopolitical and regulatory contexts. It explores how consent to collect and use data is described to potential users, and how that consent applies at micro, meso, and macro levels. This paper proposes a need for greater transparency around the implications of users granting consent at the point of registration. Further, it highlights that though MOOC providers have a responsibility to make clear the potential uses and sharing of user data, users themselves should also be more aware and consider how meaningful student agency can be achieved.

Knowledge Development in Higher Education

Ness, I.J., & **Egelandsdal, K.** (2018). The STEPRE-Model: Knowledge Development in Higher Education. In F. Guribye, S. Selander, A. Åkerfeldt, N. Bergdahl, T. Cerrato-Pargman, & **B. Wasson** (Eds.) *Proceedings of the 6th Designs for Learning Conference*. Norway, Bergen.

This paper presents a phase model describing a way to structure knowledge development in student groups in higher education. The model (STEPRE) is based on research conducted by Ness on multidisciplinary groups in knowledge intensive organizations. The focus was on how group members with different expertise developed new knowledge and ideas. Results showed that the knowledge processes went through phases and that active participation and dialogue between the different perspectives was crucial in order to achieve new ideas. These findings were transferred to a context with cross faculty student groups and the STEPRE model was developed and tested in seminars. The research is placed within a sociocultural perspective on knowledge development and we emphasise the importance of engaging in dialogues with peers and the content for promoting student learning, socialization, individualization, and self-assessment in light of Dewey's concept of experience and Bakthin's concepts of dialogue and polyphony.

Creativity, Learning & Technology

Glăveanu, V., Ness, J., **Wasson, B.**, & Lubart, T. (2018). Sociocultural Perspectives on Creativity, Learning, and Technology. In C. Mullin (Ed.) *Creativity Under Duress in Education? Creativity Theory and Action in Education*, 3, (pp. 63-82). Cham, Switzerland: Springer.

In this chapter we focus on the links between creativity, learning, and technology in education. More specifically, we propose and exemplify a unitary, sociocultural framework of creative learning based on the notions of position and perspective. We start by specifying some general principles of sociocultural theory, in particular the interdependence between person and context and the way in which psychological processes "extend" into the world through the means of action, interaction, and communication. Following this, we outline the perspectival model of creativity and learning, focused on how re-positioning and perspective-taking lead to new, creative insights, and relate it to various uses of technology in education, including technology mediated creative learning practices and immersive technology. In the end, we reflect on the consequences of these uses for how we understand, theorise, and cultivate creative learning in and beyond the classroom.

International Association for Educational Assessment

SLATE's presence was felt at the 44th International Association for Educational Assessment (IAEA) Conference held at the University of Oxford in September 2018. The theme of the conference was Assessment & Big Data. We had 6 extended abstracts accepted to the conference and thus held 6 presentations — this was the most for any research group represented at the conference. We had a lot of interest in our research. Three of our PhD students presented their work.

Cecilie Hansen & Barbara Wasson: Using Big and Small Data to See, Explore, and Inquire.

Technology rich learning environments offer new pedagogical possibilities, new ways of learning, and generate new types of data that can be used both for assessment and for improving teaching and learning. The emerging use of Open Learner Models (OLM), Learning Analytics (LA), and/or Visual Analytics (VA) that draw on this data creates new opportunities for teachers/instructors and learners to be presented with visualizations of learning and competence development to facilitate decision-making with regards to learning and teaching.

Similar to student progress and performance reports, OLMs facilitate both self-reflection on the part of learners, and teacher/instructor planning and decision-making. However, they do more than report progress, they model and externalise learning and competence development. LA on the learner model (LM) underlying the OLM can, for example, identify competence gaps or learners having trouble. VA provides interactive visual interfaces that enable teachers and learners to see, explore, and inquire LM data in order to gather evidence for decision-making and self-reflection about learning and assessment.

Furthermore, these technology and information-rich learning environments and these emerging approaches of using and visualising learner data, place new demands and require new competence of teachers/instructors and learners. That is, these data-rich work environments require new knowledge, skills, and abilities to leverage the possibilities that big and small data offer. Our own research in an EU (data rich classrooms) and a national project (professional workplace training) indicates that digital competence to take advantage of these opportunities needs to be extended to specifically address data literacy and use for teaching, and for learning. In this presentation we draw on our own research to highlight a number of issues (data literacy) and challenges (e.g., collecting data) related to using learner data to support decision-making.

Kamila Misiejuk & Barbara Wasson: Challenges in Using Learning Analytics to Explore Peer Assessment Data.

The Learning Analytics (LA) is a field that analyses educational Big and small Data in order to improve and better understand the learner, learning processes, and learning environments. The analysis of educational Big Data, especially generated from assessment situations, leads to many issues, such reductionism, perpetuation of social inequalities, or an assumption that the sheer amount of data collected and analysed is enough to solve current problems in education. In addition to ethical challenges that should be central in any such analysis, performing automatic analysis of text data, such as peer assessment data, has its own special challenges. For example, text data can often be of low quality and include many grammatical and spelling errors, and irony and sarcasm are hard to detect. Moreover, the quality of automatic data analysis can only be as good as the available data, and in the majority of instances assessment software is not designed to capture the data required for useful analysis, but to optimise the user experience. In this research we work with a big dataset generated by an online platform that facilitates peer assessment and is used by a variety of high schools and higher education institutions. The platform not only enables giving feedback on assignments to other students, but also creates a feedback loop, in which the reviewer feedback is evaluated by the student whose assignment was assessed. To analyse the data requires cleaning the data, understanding the database structure, and applying LA techniques such as natural language processing and epistemic network analysis. In this presentation we will discuss the challenges, related to both applying LA to the dataset, and in providing results that are useable for assessment by a variety of stakeholders.

Jeanette Samuelsen, Weiqin Chen & Barbara Wasson: Supporting Assessment Through a Semantic Web Approach to Integration of Multiple Data Sources

Due to technological advances and the Internet, more and more educational data are being generated. Combination of data from different sources opens up new and exciting possibilities for assessment. However, challenges exist when integrating data from different systems. Data must have shared meaning and structure for their combination, and data need to be made available outside their origin databases. Reviewing the literature on data sources used in higher education, we have found that most learning analytics systems only merge datasets available in the same formats, and from the same systems. This may be because combination of disparate data is tedious when using traditional approaches, such as data warehousing. Especially challenging is the alignment of concepts from different systems, since this needs to be handled ad-hoc for data from every system that should be integrated into a common solution. In our research we propose a practical solution, using semantic technologies to organize and store different data from higher education. The alignment challenge is addressed through the construction and use of an ontology (a machine-readable data specification). The ontology supports pre-existing educational data models, but is extended with new concepts as needed. The ontology is reusable, and it allows for inference (given some stated fact, we can state new and related facts). The proposed solution will leverage data from a variety of systems, such as learning management systems, student information systems, and exam systems. It will scale both technically, across institutional silos, and across time periods. Thus, future analyses can explore new questions and measures for assessment, providing a fuller picture of student learning for different educational stakeholders; whether it be for the learners' own self-assessment, or for the assessment done by instructors or other university employees.

Astrid Tolo, Sølvi Lillejord & Therese Hopfenbeck: School Leaders Transforming Accountability Information into Actionable Knowledge: Balancing Trust and Control

Educational systems are typically loosely coupled and layered, and responsibility vaguely distributed amongst stakeholders. School leaders are key actors in implementation processes and act as intermediaries between data, national policy, district level politicians, bureaucrats and teachers. In schools, big and small data are collected both intentionally and randomly to shed light on various aspects of practice. Research on how school leaders act in implementation processes is scarce, but research on Data-Based-Decision-Making indicates that both teachers and school leaders struggle to understand how to interpret and use data for improvement purposes. The presentation contributes with insights into such processes by analyzing interview data from eight primary school principals using trust as an analytic tool. The intention is to show how school leaders can use their professional discretion to transform accountability information into actionable knowledge and create a room for maneuver in implementation processes. Assessment activities are complex, and ripe with unintended consequences. Leadership in professional practice must balance trust and control, know which knowledge to trust and when to be suspicious. Leaders have the responsibility to oversee that the work is conducted according to expectations and to make it visible. When teachers' work is transparent, it can also be argued for, inspected, assessed and improved. This kind of internal, institutionalized active inquiry is a vital professional quality insurance, and contributes to the trustworthiness of schools. Findings reveal that while some school leaders trust their teachers blindly, others trust external authorities to help them when they meet resistance. A third group does not trust the teachers' professionalism, and tries to 'help' the teachers by reducing professional practice to technical procedures. We conclude that the profession makes itself trustworthy for the public by developing routines for assessing and improving its own standards and practices.

Cecilie Hansen, Barbara Wasson & Nina Morlandstø: Exchanging Activity Data for Competence Based Assessment

Digital learning resources are increasingly used in classrooms, either to provide content or as adaptive learning tools that provide individualised learning/assessment tasks. When a student interacts with these resources they leave behind electronic traces of click-stream data, which are referred to as activity data. Activity data usually comprises quantitative data such as how long it took to answer a question or write an essay, or the selection in a multiple choice question, and qualitative data such as the actual textual answer to the question or an essay. As such collecting activity data creates big data. Learning analytics (LA) is one approach to analysing these big activity datasets in order to make an assessment of the competence development of individual students, a group of students, or an entire class. The analysis can be used to automatically select appropriate content or

tasks, to provide automatic feedback/feedforward, or to present visualisations of the analysis to teachers and/or students so they can take action or select appropriate content or tasks.

To increase the quality of assessment in their schools and motivated by 1) transparency around what activity data is being generated and analysed to assess student competence by different EdTech vendors, and 2) to avoid a monopoly of one vendor in their schools, a Norwegian municipality envisages requiring that activity data be shared between vendors who offer resources relevant for the same competences being assessed (e.g., 6th grade geometry). In this presentation we present our research on a learning analytics framework that we are developing with the municipality, vendors, and schools, that supports the systematic, secure, and lawful sharing of activity data across vendors, and exploits the potential of the activity data for teaching, learning, assessment, adaptivity, and identification of competence gaps for an individual student.

Fay Wheldon & Astrid Tolo: Intelligent Accountability and Big Data

In this paper, we will illuminate and discuss the concept intelligent accountability with the intention of establishing a theoretical foundation for empirical research on accountability in light of the growing amount of big and small data in today's education system. The amount of data school leaders and administrators are required to collect, interpret and present for accountability purposes is expected to increase dramatically in the coming years, and also includes data collected from learning activities (not only those produced for assessment purposes) as well as real time data. The use of Big Data in education elevates the need for knowledge in this field, thus it adds an extra dimension to the complexity, opportunities and problems of accountability systems in the educational sector. The opportunities and consequences of this increasing amount of data, which can be used for accountability purposes, needs to be investigated carefully. The concept intelligent accountability was introduced by the British philosopher Onora O'Neill. According to O'Neill, the current focus on accountability may be ascribed to a perceived decline of trust in society, and there is a political tendency to replace trust with more accountability. This has sent accountability systems on a trajectory of increased transparency and has led to perverse consequences as a result of managerial or "stupid" accountability systems. As a response to these harmful types of accountability systems, O'Neill suggests a turn to intelligent accountability systems that communicate intelligibly the relevant information, which is needed to be able to intelligently place trust and judge trustworthiness. Ideas of intelligent accountability have since 2004 been frequently mentioned in educational research and grey literature. However, the concept is in need of being further elaborated, explicated and operationalised. Our contribution in this paper is to explore O'Neill's account of the concept intelligent accountability in relation to education and Big Data.

Desentralisert kompetanseutvikling

Desentralisert kompetanseutvikling (Decentralised competence development) is a government initiative that addresses the competence development of teachers. During 2018 SLATE has been involved in this process through our collaboration with the Municipality of Ytre-Midt Hordaland. We have held workshops on teacher inquiry and on creativity for teachers from several schools. This work will continue in 2019.

Literature review on ICT in Higher Education

Lillejord S., Børte K., Nesje K. & Ruud E. (2018). Learning and teaching with technology in higher education – a systematic review. Oslo: Knowledge Centre for Education, www.kunnskapssenter.no. (*In collaboration with Professor Barbara Wasson & PhD student Kamila Misiejuk, SLATE (Centre for the Science of Learning & Technology) at the University of Bergen*)

This systematic review was commissioned by the Norwegian Ministry of Education and Research and answers the following research question: How can teaching with technology support student active learning in higher education? The systematic review covers 35 studies that address innovative use of ICT, how technology influences teaching and/or promotes student active learning. These were grouped into five categories: 1 Institutional level: Decision making; 2 Learning and teaching across contexts; 3 Emerging educational technologies and innovative learning; 4 Collaborative learning; and, 5 Barriers to technology use and innovative teaching.

A summary of the main findings:

- Analysis shows that 25 of the 35 included studies mention student active or student-centred learning. The arguments revolve around instructional approaches or learning designs that require students to actively collaborate in groups or on discussion forums. Collaborative learning is often used to exemplify active learning approaches, and technology is referred to as a tool that can support student active learning and the co-construction of knowledge.
- Studies find that pedagogical use of technology in teaching is challenging. Technical training in how to use technology is necessary, but not sufficient, when the goal is innovative teaching and more student active learning. Researchers argue that pedagogical considerations must be integrated in all efforts to motivate teachers to use technology.
- Challenges related to teaching are more often shared across than within academic disciplines. For example, will themes such as teaching with technology or student active learning transcend disciplinary boundaries. However, opportunities for staff to collaborate and learn from one another are limited because there are few mechanisms in place to support academics' teaching and few incitements to support teacher collaboration.
- While researchers assume the transforming potential of technology, studies find few examples of sustainable innovative teaching practices, few examples of successful student active learning designs and findings on student motivation and learning outcomes are inconsistent and inconclusive.

The systematic review has identified these knowledge gaps:

- There is a need for longitudinal studies to investigate how technology is adopted over longer periods of time, not only early adoption.
- For the progressive knowledge development within this research field, there needs to be a change from the current focus on simply exploring the latest technology in quasi- experimental evaluations.
- Characteristics of beneficial student active learning should be empirically investigated.
- There is a need for more consistent and rigorous study designs (common methods, consistent concept use, measures and reporting standards) and objects of study.
- Studies should establish characteristics of effective knowledge scaffolding, social factors, feedback, timing, assessment modalities etc.) to help understand what attributes of a learning environment leads to improved learning outcomes.
- Empirical research on teaching strategies and learning outcomes associated with MOOCs is limited.
- There is limited evidence in the literature that the flipped classroom and personalised learning leads to better grades and improved learning outcomes.
- Currently lacking in the literature is research about what level of control is beneficial for students, and at which level of flexibility higher education courses are effective in improving student engagement, experience and learning outcomes.
- Future research should not only address the development of teaching strategies, which may be context- and platform specific, but also iterative design approaches for refining these strategies.
- More systematic reviews are needed to establish the knowledge status of various topics and research strands.

VR Research at Forsker Grand Prix

SLATE PhD Candidate Joakim Vindenes participated in the 2018 Forsker Grand Prix — a national contest of science dissemination — where each participant gets only four minutes to present their research to the audience.

Joakim's research is concerned with whether we can increase our memory through Virtual Reality (VR) technologies. He has developed an application where users can create their unique "Memory Palace" in VR — that can work as a data bank for knowledge. We know that humans remember images better than words, and this is certainly the case when the visual stimuli is combined with spatial dimensions. In Joakim's memory palace, one can place visual associations to what one want to recall. During his presentation in Forsker Grand Prix, Joakim had a live demo in VR, where he walked through his virtual memory palace while describing his research.

The Memory Palace in VR was developed as part of Joakim's Masters research, also carried out at SLATE. He continues to work with VR in his PhD and he is interested in VR Learning Environments and how we can collect and analyse data to understand learning. The presentation is available at NRK: https://tv.nrk.no/serie/kunnskapskanalen/2018/MDDP17002618/avspiller

Developing Course Materials on Epistemic Network Analysis

Epistemic Network Analysis (ENA) is an innovative method for modeling and comparing the structure of connections between elements in coded data. The method has been developed by Professor David Shaffer and his group at the Department of Educational Psychology, University of Wisconsin-Madison, and is gaining popularity among learning analytics researchers. ENA both visualizes data as networks and enables a statistical comparison of the networks. ENA has been used to explore the communication patterns of trauma teams, to analyze the eye-tracking data during collaborative learning, and to visualize competencies and topics across grades in a mathematics curriculum, just to name a few examples. SLATE PhD student Kamila Misiejuk has been developing course material for use in ENA workshops and has given 2 workshops on ENA. The course materials include:

- theoretical material (explaining ENA, step-by-step)
- tutorial material (introducing features of the ENA web tool), and
- group work activities (put new acquired skills into practice)

Learning Analytics architecture at UiB (LA@UiB Architectures)

Gaining access to student data for learning analytics research is challenging. In addition to receiving consent from students, those who collect the data on behalf of the students need to give access to the data. Since the Spring of 2017, students at the University of Bergen have been asked for consent to access various types of student data.

Exchange of student data enables SLATE researchers to conduct research students success in higher education. The aim of the research is to improve learning for the individual student. Among other things, we want to offer students visualizations ("dashboards") that can display information about learning progress in your courses, and to develop systems that offer individual recommendations (for example, in terms of study techniques, study materials and courses). At the University of Bergen, students are asked for consent to use the following data:

Data from MittUiB: This includes data from the activity log concerning student activity within the Canvas LMS. Examples of the kind of data to be received includes: logins, visits to course pages, accessing course notes and other files, submissions, participation in discussions and quizzes, calendar activity, reading list information, and course announcements. If available, SLATE will also record any data concerning student results (for example, mid-way grades) as well as information about course participation.

General data includes: user-ID (recorded anonymously), sex, birth year, postal code (from the address used in your student registration). Data from MittUiB and StudentWeb are linked via an anonymous user-ID.

Data from UiB's Student System (Felles Studentsystem, FS): Data from FS about student's current and previous study programme and courses, final results, and individual login information on StudentWeb.

To data approximately 72% of students give consent. The data is being used by PhD student Jeanette Samuelsen to study student success.

Outreach

During 2019 SLATE hosted 6 SLATE Guest Lectures the highlight of which was Sir Timothy O'Shea, recently retired Chancellor of the University of Edinburgh, who shared his insights gained from a long research career in technology enhanced learning and from his leadership at Edinburgh where he was very strategic in investing in the use use of MOOCs for continuing education and in the professions.

Designs for Learning 2018

In May SLATE was the host, and Barbara Wasson the conference chair, for the 6th International Conference on Designs for Learning. Designs for learning addresses issues related to designs for learning, technology enhanced learning, design-based research, multimodal knowledge representations, embodied interaction, on-line environments, and learning ecologies. A special conference thread focused on the design of learning environments and the implications of design for learning-centric analytics.

Building Bridges: Interdisciplinary Collaborations for Innovation

Around 80 people from industry, public and academic institutions in Bergen and beyond registered to hear inputs from leading global experts, and to engage in "hands-on" interactions in their own multidisciplinary groups, at a one day International Symposium, Building Bridges: Interdisciplinary Collaborations for Innovation, held at the Faculty of Fine Art, Music, and Design at the University of Bergen. SLATE researcher Ingunn Johanne Ness and her team arranged Building Bridges that aimed to unravel some of the mystery around *interdisciplinary collaboration and innovation*. The keynote speakers included M*ichela Magas*, an innovation catalyst who bridges the worlds of science and art, design and technology, and academic research and industry, *Mark Runco* a leading creativity scholar who is active in empirical research and has published cognitive, economic, genetic, historical, developmental, and educational books and articles on creativity, and SLATE's Associate Professor II, *Vlad Glăveanu*, Associate Professor and Dept. Head of Psychology and Counselling at Webster University Geneva, whose research focuses on creativity, imagination, culture, collaboration, and societal challenges.

SLATE Guest Lecture Series

In 2018 SLATE hosted 6 guest lectures by leading international researchers.

SLATE Guest Lecture Series	
11.01	**Anneke van der Niet**, School of Health Professions Education, Maastricht University *Affordance Perception in a Simulated Emergency Care Situation Using Eye-Tracking and Video Data*
13.02	**Sir Timothy O'Shea**, University of Edinburgh *Computers in Education: The First Hundred Years*
7.03	**Øystein Gilje**, Institutt for Lærerutdanning og Skoleforskning (ILS), Oslo University *I spenningen mellom Ark og App*
22.05	**Luis Pablo Prieto Santos**, Learning Analytics and Educational Innovation (CEITER) School of Educational Sciences & School of Digital Technologies, Tallinn University *EDUCATIONAL LIVING LABS: A Story of Co-Creation and Multimodal Learning Analytics*
3.07	**Jun Xiao**, Information and Network Management Centre, Shanghai Open University & Vice Director of Shanghai Engineering Research Center of Open Distance Education *Design and Case of Shanghai Open University Open Architecture for Learning Analytics*
18.12	**Ravi Vatrapu**, Centre for Business Data Analytics, Copenhagen Business School *Social Set Analysis: A Set-Theoretical Approach to Big Data Analytics*

Management and Administration

The SLATE Centre is hosted by the Faculty of Psychology (PSYFA) at the University of Bergen (UiB). SLATE's primary funding support comes from the Norwegian Ministry of Education and Research, and UiB. PSYFA also provides some administrative support.

Administrative Structure

The Centre is led by Director, Professor Barbara Wasson and the Administrative Leader, Jorunn Viken. In addition to these two, the SLATE leader group comprises PostDoc Ingunn Ness. SLATE is responsible for administering its own economy and communication. General IT support is provided by the IT department at UiB.

In 2018 we have been working to further establish personnel in the Centre. One new Post Doc, one permanent Researcher, and one Professor II were hired in 2018. We will continue to expand in 2019. One permanent Researcher was hired from 1st March and one Professor II will be hired from 1st May. The hiring process is underway for one permanent programmer and one permanent Professor. Finally, we plan to hire one Postdoc in the second half of 2019.

Employees in 2018	
Barbara Wasson	Director
Jorunn Viken	Administrative Leader
Dana Kvietkute	Centre Economist (40%)
Elinor Bartle	Communications Advisor (40%)
Ingunn J. Ness	Postdoc, Theme 3 Leader
Nina Morlandstø	Senior Engineer, Project Leader
Weiqin Chen	Professor II, Theme 2 Co-Leader
Therese Hophenbeck	Associate Professor II
Vlad Glaveanu	Professor II
Jeroen van Merrienboer	Professor II
Chronis Kynigos	Professor II
Elaine Coleman	Research (20%)

PhD Candidates & Masters Students	
Rosaline Barendgret	PhD Candidate
Fay Weldon	PhD Candidate
Jeanette Samuelsen	PhD Candidate
Kamila Misiejuk	PhD Candidate
Joakim Vindenes	PhD Candidate
Fredrik Sundt Breien	PhD Candidate (Industrial PhD with Equinor and VilVite Science Centre)
Fredrik Vonheim Heimsæter	Masters Student (graduated December)
Sigve Solvaag	Masters Student (graduated December)
Edvard Pires Bjørgen	Masters Student (graduated December)
Vidar Daatland	Masters Student (6 months)
Audun Gulbrandsen	Masters Student (6 months)
Jay Poltakova	Masters Student

The Board and the Scientific Advisory Committee

The SLATE Board is an administrative body that meets twice a year. One meeting was held in June 2018. In addition, the Board can be consulted on issues outside the regular meeting times. The new student representative is Natalie Johnsen and Håkon Randgaard is her alternate.

SLATE Board			
UiB		Alternate	
Bente Wold (Leader)	Dean Psychology Faculty	Gro Mjeldheim Sandal	Vice-Dean of Research Psychology Faculty
Oddrun Samdal	Vice-Rector of Education		
Jan Erik Askildsen	Dean Social Science Faculty	Dag Elgesem	Vice-Dean of Education Social Science Faculty
Natalie Johnsen	Student Representative	Håkon Randgaard	Student Representative
External		Alternate	
Ingvild Eide Graff	Research Director Uni Research Health	Torill Helen Tveito	Research Leader Uni Research Health
Bjørn Lyngdal	Rector Amalie Skram Videregående Skole	Lin Holvik	Director Kulturtanken

The SLATE Scientific Advisory Committee (SAC) comprised of leading international researchers and consultants from the international research community. SAC is a sounding board for research directions and strategies. SAC members were consulted independently in 2018.

Scientific Advisory Committee	
Jo-Anne Baird	Department of Education, Oxford University
Elaine Coleman	Strategic Consultant
Nancy Law	CITE, University of Hong Kong
Konrad Morgan	EDUVATE INC
Sølvi Lillejord	Norwegian Knowledge Centre for Education

Finances

The Norwegian Ministry of Education and Research (5,45 MNOK core funding) and UiB (5,0 MNOK core funding) were SLATE's primary funding sources in 2018. There is a still a delay in the use of both KD and UiB funds (from 2016 and 2017) as the hiring time to fill the positions has taken longer than anticipated. As described earlier, one position is now filled from early 2019, and 3-4 persons more will be hired in 2018.

The actual costs incurred in 2018 are presented in the table below.

KD Financed	5 450 000
Salary- and personal costs	2 028 004
Procurement R&D	1 708 186
Operating costs	1 305 156
Total costs	**5 041 346**
Transferred to 2019-2020	408 654

UiB Financed	5 000 000
Salary- and personal costs	5 129 136
Operating costs	28 581
Total costs	5 157 717
Transferred to 2017-2020	-157 717

External Financing (BOA)	
AVT	1 618 895
Intomat	1 039 139
Desentralisert kompetanseheving	260 000
Total	2 918 034

Appendix

Journal Papers

Hoel, T., & **Chen, W.** (2018). Interaction Between Standardisation and Research: A Case Study. *International Journal of IT Standards and Standardization Research, 16*(1), 22-38.

Hoel, T., **Chen, W.**, & Gregersen, A.B. (2018). Are Norwegian Academic Librarians Ready to Share Usage Data for Learning Analytics?. *Nordic Journal of Information Literacy in Higher Education, 10* (1), 4-17.

Hoel, T., & **Chen, W.** (2018). Privacy and Data Protection in Learning Analytics Should be Motivated by an Educational Maxim - Towards a Proposal. *Research and Practice of Technology Enhanced Learning*, *13*(20), 1-14.

Khalil, M., Prinsloo, P., & Slade, S. (2018). User Consent in MOOCs - Micro, Meso, and Macro Perspectives. *International Review of Research in Open and Distance Learning, 19*(5), 62-79.

Wake, J.D., Guribye, F., & **Wasson, B.** (2018) Learning through Collaborative Design of Location-Based Games. *International Journal of Computer-Supported Collaborative Learning*, *13*(2), 167-187.

Conference Papers

Guribye, F., Selander, S., Åkerfeldt, A., Bergdahl, N., Cerrato-Pargman, T., & **Wasson, B.** (Eds.) (2018). Design & Learner-Centric Analytics. *Proceedings of the 6th International Conference on Designs for Learning*. Bergen, Norway.

Khalil, M., & Wong, J. (2018). The Essence of Time: Taking a Look at Learning Sessions in MOOCs. In *Proceedings of the Learning with MOOCs Conference (LWMOOCs 2018)* (pp. 131-133). IEEE.

Misiejuk, K. (2018) The Potential of Learning Analytics to Support Peer Assessment. Doctoral Consortium. In A. Pardo, K. Bartimote, G. Lynch, S. Buckingham Shum, R. Ferguson, A. Merceron & X. Ochoa (Eds.), *Companion Proceedings of the 8th International Conference on Learning Analytics and Knowledge*. Sydney, Australia: Society for Learning Analytics Research.

Netteland, G., **Hansen, C.J.S.** & **Wasson, B.** (2018). Professional Competence Development of future Healthcare Leaders. In E. Ugon, D. Karlsson, G.O. Klein, & A. Moen, (Eds.), *Proceedings of the Medical Informatics Europe Conference (MIE 2018)*. Gothenburg, Sweden.

Ness, I.J., & **Egelandsdal, K.** (2018). The STEPRE-Model: Knowledge Development in Higher Education. In F. Guribye, S. Selander, A. Åkerfeldt, N. Bergdahl, T. Cerrato-Pargman, & **B. Wasson** (Eds.) *Proceedings of the 6th Designs for Learning Conference*. Norway, Bergen.

Samuelsen, J., & **Khalil, M.** (2018). Study Effort and Student Success: a MOOC Case Study. In M. Auer, T. Tsiatsos (Eds.) *Proceedings of the 21st International Conference on Interactive Collaborative Learning*. Cham, Switzerland: Springer.

Vindenes, J., de Gortari, A. O., & **Wasson, B**. (2018). Mnemosyne: Adapting the Method of Loci to Immersive Virtual Reality. In L.T. De Paolis, & P. Bourdot (Eds.) *International Conference on Augmented Reality, Virtual Reality and Computer Graphics*. *Lecture Notes in Computer Science* (pp. 205-213). Cham, Switzerland: Springer.

Wake, J.D., **Morlandstø, N.**, Pham, K., & **Wasson, B.** (2018). The Learning Analytics Portal: The Development of a National Community Resource for Learning Analytics. In A. Pardo, K. Bartimote, G. Lynch, S. Buckingham Shum, R. Ferguson, A. Merceron, & S. Ochoa (Eds.) *Companion Proceedings of the 8th International Conference on Learning Analytics and Knowledge* (pp. 76-83). Sydney, Australia: Society for Learning Analytics Research.

Extended Abstracts

Hansen, C.J.S., & **Wasson, B.** (2018). Using Big and Small Data to See, Explore, and Inquire. In *44th International Association for Educational Assessment Annual Conference Abstracts.* Oxford, UK: International Association for Educational Assessment.

Misiejuk, K. & **Wasson, B.** (2018) Challenges in Using Learning Analytics to Explore Peer Assessment Data. In *44th International Association for Educational Assessment Annual Conference Abstracts*. Oxford, UK: International Association for Educational Assessment.

Samuelsen, J., Chen, W., & **Wasson, B.** (2018). Supporting Assessment Through a Semantic Web Approach to Integration of Multiple Data Sources. In *44th International Association for Educational Assessment Annual Conference Abstracts*. Oxford, UK: International Association for Educational Assessment.

Tolo, A., Lillejord, S., & **Hopfenbeck, T.N.** (2018). School Leaders Transforming Accountability Information into Actionable Knowledge: Balancing Trust and Control. In *44th International Association for Educational Assessment Annual Conference Abstracts*. Oxford, UK: International Association for Educational Assessment.

Wasson, B., **Hansen, C.J.S.**, & **Morlandstø, N.** (2018). Exchanging Activity Data for Competence Based Assessment. In *44th International Association for Educational Assessment Annual Conference Abstracts.* Oxford, UK: International Association for Educational Assessment.

Wheldon, F., & **Tolo, A.** (2018). Intelligent Accountability and Big Data. In *44th International Association for Educational Assessment Annual Conference Abstracts.* Oxford, UK: International Association for Educational Assessment.

Book Chapters

Glăveanu, V., **Ness, J.**, **Wasson, B.**, & Lubart, T. (2018). Sociocultural Perspectives on Creativity, Learning, and Technology. In C. Mullin (Ed.) *Creativity Under Duress in Education? Creativity Theory and Action in Education*, 3, (pp. 63-82). Cham, Switzerland: Springer.

Posters

Hansen, C.J.S., & **Wasson, B.** (2018, August). *Some Time Ago, in the same Galaxy not far, far away….* Poster Session Presented at the LASI-Nordic 2018, Copenhagen, Denmark.

Hansen, C.J.S., **Wasson, B.**, Netteland, G., & Reigem, Ø. (2018, August). *Data Collection for LA & OLM*. Poster Session Presented at the LASI-Nordic 2018, Copenhagen, Denmark.

Hoel, T., & **Chen, W.** (2018). Advancing the Delicate Issue of Ethics and Privacy for Learning Analytics. In A. Pardo, K. Bartimote-Aufflick, G. Lynch (Eds.), *Proceedings of the 8th International Conference on Learning Analytics and Knowledge (LAK'18)* (pp. 141-150). New York, USA: ACM.

Misiejuk, K. (2018, March). *The Potential of Learning Analytics to Support Peer Assessment*. Poster Session Presented at the 8th International Conference on Learning Analytics and Knowledge, Sydney, Australia.

Samuelsen, J., & **Khalil, M.** (2018, August). *Study Effort and Student Success: A MOOC Case Study*. Poster Session Presented at the LASI-Nordic 2018, Copenhagen, Denmark.

Wake, J.D., Heimsæter, F., Bjørgen, E., **Wasson, B.**, & **Hansen, C.J.S.** (2018, August). *Supporting Firefighter Training by Visualising Indoor Positioning, Motion Detection, and Time Use: A Multimodal Approach*. Poster Session Presented at the LASI-Nordic 2018, Copenhagen, Denmark.

Wasson, B., **Hansen, C.J.S.**. & **Morlandstø, N.** (2018, August). A*ctivity Data for Assessment & Adaptivity. A Framework for sharing Activity Data between Vendors delivering Learning Resources to Schools in Norway*. Poster Session Presented at the LASI-Nordic 2018, Copenhagen, Denmark.

Demo

Breien, F. (July, 2018). *Game Night: Naval Operations*. Connections Wargaming. Washington DC, USA.

Conferences organised

Wasson, B. (Conference Chair) (2018) Design and Learning Centric Analytics. 6th International Conference on Designs for Learning, Bergen, Norway. May 23-25, Bergen, Norway

Symposiums organised

Ness, I.J., Glaveanu, V., Irminger, B., Kjome, R., Johnsen, S. **& Viken, J.** (2018) Building Bridges: Interdisciplinary Collaborations for Innovation. *International Symposium*, 6 December, Faculty of Fine Art, Music & Design, University of Bergen.

Workshops organised

Hansen, C.J.S, **Ness, I.**, & **Egelandsdal, K.** (2018, August). *Forskning på Egen Praksis. Desentralisert Kompetanseheving* at the Knappskog skole, Norway.

Misfeldt, M., & **Misiejuk, K.,** (2018, August). *ENA – Quantitative Ethnography, an Open Source Workshop* at the 2nd LASI-NORDIC Learning Analytics Summer Institute, Copenhagen, Denmark.

Misiejuk, K., (2018, November). *Introductory Epistemic Network Analysis (ENA) Workshop: Shakespeare Dataset* at the SLATE Workshop, Bergen, Norway.

Spikol, D., **Wasson, B.,** Misfeldt, M., Berhelsen, U.D., Viberg, O., & Bruun, J. (2018, August). *Nordic Approach for Learning Analytics* at the 6th International Conference on Designs for Learning, Bergen, Norway.

Vindenes, J. (2018, January). *VR Journalism* at the INFOMEVI171 seminar, Bergen, Norway.

Vindenes, J. (2018, February). *WebVR Programming* at the INFOMEVI171 seminar, Bergen, Norway.

Vindenes, J. (2018, February). *360 Video, Sound, and Photogrammetry* at the INFOMEVI171 seminar, Bergen, Norway.

Vindenes, J. (2018, March). *Interactivity and Animation* at the INFOMEVI171 seminar, Bergen, Norway.

Vindenes, J. (2018, March). *Natural Interaction and Virtual Reality* at the INFO262 seminar, Bergen, Norway.

Vindenes, J. (2018, April). *Hyperportals and 360 Sound* at the INFOMEVI171 seminar, Bergen, Norway.

Vindenes, J. (2018, April). *Debugging and Workflow* at the INFOMEVI171 seminar, Bergen, Norway.

Vindenes, J. (2018, June). *Introduksjon til Virtual Reality* at the Media City Bergen, Bergen, Norway.

Vindenes, J. (2018, November). *Natural Interaction and Virtual Reality* at the INFO361 seminar, Bergen, Norway.

Wasson, B., & **Hansen, C.J.S.** (2018, May). *Hva er Læringsanalyse og Hvordan Koble Dette til Egen Undervisningspraksis?* at the NKUL 2018, Trondheim, Norway.

SLATE Presentations				
Date	Event	Place	Who*	Title
5.01	EdTech workshop	KS	NM, CH	Presentation of the AVT-project
21.01	Lunch talk	SLATE	IN	Staying abroad during PhD period
30.01	INFO134 (Client programming)	InfoMedia, UiB	JoV	Journalistic Prototyping
31.01	Lecture on PhD research	Iped, UiB	KE	Clickers and Formative Feedback at University lectures
5.02	Læringskomiteen, UDE	Udir	NM	Presentation of the AVT-project
7.02	Faculty of Psychology Board meeting	Faculty of Psychology, UiB	BW	Research at SLATE
20.02	UiB Administration workshop	Solstrand	IN	Innovation in multidisciplinary teams: Cross-boundary team work
1.03	Digital humanities and technology enhanced learning Seminar	Aalborg University, Copenhagen	BW	International trends in digitalisation of teaching and learning
2.03	DVS, Stockholm, University, Invited presentation	DVS, Stockholm University	BW	What is Learning Analytics?
5.03	Doctoral Consortium at the International Conference on Learning Analytics and Knowledge (LAK)	Sydney, Australia	KM	The Potential of Learning Analytics to Support Peer Assessment
7.03	Ped113 course	Iped, UiB	IN	Læring i og for arbeidslivet
8.03	International Conference on Learning Analytics and Knowledge (LAK)	Sydney, Australia	JW	The Learning Analytics Portal: The Development of a National Community Resource for Learning Analytics.
20.03	Watching in the Media, Bergen University Aula	Bergen, Norway	JoV	VR Experiments at the University of Bergen: Journalistic Prototypes
23.03	UH-NETT Vest Seminar	Solstrand	KE	Digital kompetanse hos vitenskapelig ansatte
4.04	Presentation for Visualiseringsgruppe	SLATE	IN	Interdisciplinary team work
10.04	Media City Bergen	MCB, Bergen	JV	Presentation of SLATE & information on possible Masters projects
13.04	American Educational Research Association Meeting	New York, USA	AT, TNH	A Systematic Review on Teachers' Implementation of Technology-enhanced Formative Assessment. Insights and Implications
19.04	Instituttleder Gruppe	Bjerknes-senteret, UiB	BW	What is Learning Analytics
25.04	Medical Informatics Europe Conference	Gothenburg, Sweden	GN	Professional Competence Development of future Healthcare Leaders
2.05	Desentralisert Kompetanseutvikling Workshop	Knappskog skole	IN, CH	Creativity in interdisciplinary teams
7.05	NKUL 2018	NTNU	NM	Er Læringsanalyse Svaret?
8.05	NKUL 2018 Workshop on Hva er Læringsanalyse og Hvordan Koble Dette til Egen Undervisningspraksis?	NTNU	BW, CH	Hva er læringsanalyse?
25.05	6th Conference on Designs for Learning Conference	Bergen, Norway	IN, KE	The STEPRE-Model: Knowledge Development in Higher Education
5.06	SHEILA Project Symposium	Brussels, Belgium	BW	Panel on Future of Learning Analytics
6.06	EdTech vendors, KS, UDE	UDE	NM	Presentation of the AVT-project
7.06	International Consortium of Educational Development Conference (ICED 2018)	Atlanta, GA	RG	Teaching and Learning in the Digital Age: Redesigning Assessment Strategies in Norwegian Higher Education
9.06	SHEILA Conference	Brussels, Belgium	BW	Practical issues in the implementation of learning analytics and steps forward
11.06	TNC18	NTNU	NM	Activity Data for Assessment & Adaptivity

SLATE Presentations				
Date	Event	Place	Who*	Title
27.06	Salento AVR	Otranto, Lecce, Italy	JoV	Mnemosyne: Adapting the Method of Loci to Immersive Virtual Reality.
15.06	Creativity Week Conference	Webster University, Geneve	IN, OD	Polyphonic Imagination: Understanding how multidisciplinary groups develop innovative ideas through a multivoiced stimulation of fantasy
15.06	Expert Panel	Webster University, Geneve	IN	Networked Creativity - Sustainable Innovation
19.06	Paper presentation	SLATE	JoV	Towards a metaphysics of Virtual Reality: on mediums of abstraction and transparency
20.06	European Distance and E-Learning Network (EDEN) Conference	Genoa, Italy	RG	Current Status and Challenges for OER in Norway
10.09	4th International Association for Educational Assessment Annual Conference	Oxford, UK	JS	Supporting Assessment Through a Semantic Web Approach to Integration of Multiple Data Sources
11.09	4th International Association for Educational Assessment Annual Conference	Oxford, UK	AT	School Leaders Transforming Accountability Information into Actionable Knowledge: Balancing Trust and Control
11.09	4th International Association for Educational Assessment Annual Conference	Oxford, UK	BW	Exchanging Activity Data for Competence Based Assessment
11.09	4th International Association for Educational Assessment Annual Conference	Oxford, UK	KM	Challenges in Using Learning Analytics to Explore Peer Assessment Data
13.09	4th International Association for Educational Assessment Annual Conference	Oxford, UK	CH	Using Big and Small Data to See, Explore, and Inquire
13.09	4th International Association for Educational Assessment Annual Conference	Oxford, UK	FW	Intelligent Accountability and Big Data
15.09	IBC 2018	Amsterdam, Netherlands	JoV	Holosuite: A Holographic Cloud-Based Video Editing Suite For Microsoft Hololens
16.09	IBC 2018	Amsterdam, Netherlands	JoV	Holosuite: A Holographic Cloud-Based Video Editing Suite For Microsoft Hololens
19.09	Keyonote @ NIKU 2019	Svalbard	BW	What is Learning Analytics: What is it and what is its Role in Education?
26.09	Forsker Grand Prix	Bergen, Norway	JoV	Hvordan kan vi øke hukommelsen vår med VR-teknologi?
27.09	Forskningsdagene Ung	Høyskolen på Vestlandet	JoV	Trene hukommelsen med Virtual Reality?
27.09	21st International Conference on Interactive Collaborative Learning	Kos Island, Greece	JS	Study Effort and Student Success: a MOOC Case Study
27.09	Learning with MOOCs Conference	Madrid, Spain	MK	The Essence of Time: Taking a Look at Learning Sessions in MOOCs
29.09	TekLab seminar at Royal Holloway	University of London, UK	JoV	Journalistic Prototyping at the University of Bergen
4.10	Media City Bergen	Bergen, Norway	JoV	What is SLATE?
10.10	Tænketanken DEA (Denmark), Utdanningsetaten Oslo	Utdannings-etaten Oslo	NM, CH	Presentation of the AVT-project
17.10	SIEE2 Seminaro Internacional en Evaluacion Educativa: Assessment and Social Justice	Santiago, Chile	AT	A Trust Based Assessment System: The Case of Norway.

SLATE Presentations				
Date	Event	Place	Who*	Title
20.10	Global Fusion 2018	University of Virginia, USA	JoV	Authenticity in Virtual Reality
23.10	Design Thinking Course	NHH	IN	Creativity in teams
25.10	International Society for the Scholarship of Teaching and Learning (ISSOTL18) Conference	Bergen	RG	Using formative assessment to change thinking and broaden perspectives in an interdisciplinary course
26.10	International Society for the Scholarship of Teaching and Learning (ISSOTL18) Conference	Bergen	RG	Building a Learning-Centered, Scholarly Culture for Digital Assessment in a Norwegian University
26.10	Gjesteforelesning	Høyskolen i Volda	JoV	Virtual Reality / Virtuell Røynd
2.11	ECREA 2018	Lugano, Switzerland	JoV	Innovation Pedagogy for VR Journalism
22.11	Fagseminar	Kunnskaps-departementet Oslo	CH, BW	AVT-prosjektet
22.11	Fagseminar	Kunnskaps-departementet Oslo	BW	Learning Analytics
22.11	Språklæring i tider med kunstig intelligens	Goethe-Institutt, Oslo	BW	Artificial Intelligence & Language Learning: Some Thoughts
29.11	Workshop on Evaluation and (digital) Assessment-bridging the gap between theory and practice	University of Agder, Kristiansand	RG	Assessment in the Digital Age: Using Canvas to Improve Teaching and Learning in Higher Education
6.12	Building Bridges: Interdisciplinary collaborations for Innovation Symposium	The faculty of Fine Art, Music and Design, UiB	IN	How to succeed with interdisciplinary Innovation work

* AT- Astrid Tolo; BW- Barbara Wasson; CH- Cecilie Hansen; FW- Fay Wheldon; GN- Grete Netteland; IN- Ingunn Ness; JS- Jeanette Samuelsen; JoV- Joakim Vindenes; JV- Jorunn Viken; JW- Jo Wake; KE- Kjetil Egelandsdal; KM- Kamila Misiejuk; MK- Mohammed Khalil; NM- Nina Morlandstø; OD- Olga Dysthe; RG- Robert Gray; TNH- Therese N. Hopfenbeck; WC- Weiqin Chen;

SLATE Meetings				
When	With	Where	Who*	Theme
11.01	Susan Johnsen, Senior Advisor for Innovation & Tarje Wanvik, Dept. of Geography, UiB	SLATE	IN	Innovation course at UiB
16.01	Marja Slavkovik, Dept. of Information Science, UiB	SLATE	BW, KM	AI, ML, and learning analytics
18.01	Astrid Tolo, Leader, Department of Education, UiB	Iped, UiB	IN	Collaboration activities
26.01	Senior Advisor for Innovation, Tarje Wanvik, Dept. of Geography & Oddrun Samdal, Vice Rector, UiB ++	Glasshuset	IN	Innovation course at UiB
26.01	Bente Irmiger, Faculty of Fine Art, Music & Design, UiB	SLATE	IN	Innovation project, exploring collaboration
26.01	Forskningsadministrasjons-samling, UiB	Studentsenteret, UiB	IN	Internasjonalisering (Oxford)
30.01	Technopolis UK	SLATE	BW, CH, JV, IN	Report for Research Council of Norway on Interdisciplinarity
5-6.02	Sølvi Lillejord & Erik Ruud, Norwegian Knowledge Centre for Education	Norges forskningsråd	BW, KM	ICT in Higher Education report
5.02	Læringskomiteen & UDE	Udir, Oslo	NM	Status of Læringsanalyse projects
6.02	EdTech vendors, Udir	Udir, Oslo	NM	Input on Vendor data, AVT-project
6.02	Bente Irmiger, Faculty of Fine Art, Music & Design, UiB ++	Faculty of Fine Art, Music & Design, UiB	IN	Innovation project, exploring collaboration
7.02	Christoph Trattner, Dept. of Information Science, UiB	SLATE	BW	Recommender algorithms & Learning analytics
9.02	Learning Lab BI	Learning Lab BI, Oslo	KM, CH, BW, JS	Initiate collaboration
12.02	Olaug Gardener, BI Oslo	Skype	KM	Q&A about the Peergrade platform
13.02	Tim O´Shea, Vice Chancelor, University of Edinburgh, Eileen Scanlon, Open U, IK, Chronis Kynigos University of Athens	SLATE	IN, BW, JV	EU application planning
16.02	Bente Irmiger & Linda Lien, Faculty of Fine Art, Music & Design, UiB ++	Faculty of Fine Art, Music & Design, UiB	IN	Planning teaching and collaborations UiB, NHH
20.02	Bente Irmiger & Linda Lien, Faculty of Fine Art, Music & Design, UiB ++	Solstrand	IN	Innovation projects & interdisciplinarity at UiB
20.02	Morten Misfeldt, Aalborg University & Daniel Spikol, Malmø University	Skype	BW	Organisation of LASI 2018 in Copenhagen
22.02	Studieadministrasjons avdeling, UiB	SA, UiB	BW, JS	Access to UiB student data (Canvas & Studieadmin data)
25.02	US Coast Guard Academy	USCGA, New London, USA	FB	Technical requirements for- and application of game based tactical software in education
28.02	Fride Haram, Iped, UiB	Iped, UiB	IN	Ethnography
7.03	Øystein Gilje, ISL, UiO	SLATE	IN, BW, KE, CH	Desentralisert kompetanseutvikling
12-13.03	Sølvi Lillejord & Erik Ruud, Norwegian Knowledge Centre for Education	Solstrand	BW, KM	ICT in Higher Education report
14.03	Simon Tjessem, Oslo EdTech Cluster	Skype	BW, CH	Interview om hva er læringsanalyse
16.03	Ingve Bergheim, HR, UiB	SLATE	BW	Instituttlederprogrammet

SLATE Meetings				
When	With	Where	Who*	Theme
16.03	Marianne Johansen Huse, DigUiB & Ingve Bergheim, HR, UiB	HR, UiB	KE	Preperation for UH-NETT Vest seminar
19.03	Hanne Riese, Iped, UiB	Iped, UiB	KE	Collaboration on academic article
10.03	Ole Marius Kvamme, Communications, UiB	SLATE	BW, JV	Article on SLATE in UiB Magazine
20.03	Digital Learning Communities	Iped, UiB	KE	Research group meeting
27.03	Ole Marius Kvamme, Communications, UiB	SLATE	BW	Interview on "Data surrounds us" for reportage
3.04	Professor Hege Ericsson, Høgskulen på Vestlandet	SLATE	BW	Possible collaboration
4.04	Visualiseringsgruppen, UiB	SLATE	IN, CH	Exploring possible projects
4.04	Gunn Inger Samdal, NSD	SLATE	Alle@ SLATE	Information about research data
4.04	Gunn Inger Samdal, NSD	SLATE	NM, CH	Research data in the AVT-project
17.04	Datatilsynet, Udir, KS, Utdanningsetaten Oslo (UDE)	Datatilsynet, Oslo	NM, CH, BW	Data privacy in the AVT-project
18.04	EdTech vendors, KS, UDE	Utdanningsetaten Oslo	NM, CH	xAPI disussions, AVT-project
20.04	NSD	SLATE	CH, BW	Information about research data
25.04	YtreMidt Hordaland kommune	SLATE	BW, CH, IN	Desentralisert kompetanseutvikling; workshop om samarbeid
2.05	YtreMidt Hordaland kommune	Knappskogskole	IN, CH	Desentralisert kompetanseutvikling om kreativitet og teacher inquiry
2.05	Open University UK	Skype	KM, BW, CH	Innovative Pedagogy report
8.05	Kari Øritsland, Bergen Teknologioverføring & Susan Johnsen, Senior Advisor for Innovation, UiB ++	VilVite senteret	IN	Innovation course at UiB
14.05	Fjell ungdomsskule	Fjell ungdomsskule, Straume	CH, IN	Planning for Desentralisert kompetanseutvikling
15.05	Beredskapsklyngen, Bergen	Ørnen hotel, Bergen	BW	Hjernedugnad: Beredskapsklynge in Bergen
22.05	Anna Åkerfeldt, Stockholm University	Knappskog skole	CH	Visiting a norwegian primary school
22.05	Luis Pablo Prieto Santos & María Jesús Rodríguez-Triana, CeiTer, Tallinn University	SLATE	CH, BW	Possibilities for EU applications
23.05	Nordic LA Association meeting	Skype	BW	Exploring possibilities for a new Nordic LA association
28.05	BI Oslo, LæringsLab	Skype	BW, KM	Planning of the BI project
4.06	Kunnskapsdepartement (KD)	SLATE	BW, JV, IN, CH	Dialogmøte
5.06	Knappskog skole	Knappskog skole	CH, IN, KE	Planleggingsmøte for høsten
6.06	EdTech vendors, KS, UDE	UDE	NM	AVT-project
14.06	Vlad Glaveanu, Webster University & Todd Lubart, Université Paris Descartes ++	Webster University, Switzerland	IN	Creativity & Innovation research
15.06	Conexus AS & UDE	UDE	NM	Discussion about model 3 in AVT project
15.06	Chronis Kynigos, University of Athens	Knappskog skole	KE	School visit to observe math class & Multi Smart Øving in use
18.06	Chronis Kynigos, University of Athens	SLATE	IN, BW, KE	Various projects & collaboration

SLATE Meetings				
When	With	Where	Who*	Theme
20.06	Kariane Westrheim, Iped, UiB	Iped, UiB	IN	Anthology project
21.06	Karianne Westrheim, Anders Skogstad, Ivar Nordmo, Iped, UiB ++	SLATE	IN	C1240 project, research collaboration across departments at the Faculty of Psychology
29.06	David Kofoed Wind, Peergrade AS, Denmark	Skype	BW	Peergrade data
3.07	Professor Jun Xiao, Shanghai University	SLATE	BW, CH, IN	Possible collaboration
19.07	US Coast Guard	USCG HQ, Washington DC, USA	FB	Game-based tactical training
17.08	Reidun Kjome & Bente Irmiger, Faculty Fine Arts, Music & Design, UiB	Faculty of Fine Art, Music & Design, UiB	IN	Planning symposium Building Bridges
20.08	Morten Misfeldt, Aalborg University	Skype	KM	Preparing Epistemic Network Analysis workshop
27.08	Reidun Kjome & Faglig Forum	SLATE	IN	Interdisciplinary projects
27.08	Brendan Eagan & Sara Tabatabi, University of Wisconsin–Madison	Skype	KM	Preparing Epistemic Network Analysis workshop
28.08	Knappskog skole	Knappskog skole	IN, CH, KE	Desentralisert kompetanseutvikling
30.08	Reidun Kjome & Bente Irmiger, Faculty Fine Arts, Music & Design, UiB	Smakverket Bergen	IN	Planning symposium Building Bridges
3.09	UNINET	SLATE	MK, BW, JV	SLATE and Learning Analytics
4.09	Markus Søbstad Bensnes, TINKER AS	Skype	IN, VG	Municipality research
4.09	Ann-Karin Valle, Oslomet	SLATE	MK, BW, WC	Learning Analytics in MOOCs
5.09	Brendan Eagan & Sara Tabatabi, University of Wisconsin–Madison	Skype	KM	Follow-up after the Epistemic Network Analysis workshop
5.09	EdTech vendors, schools, KS, UDE	UDE, Oslo	NM, CH	Edtech vendors presented their tools
6.09	Bjørn Sætrevik, Rune Mentzoni, Gisela Bøhm, Staale Pallesen, Elisabeth Norman, Mark Price, Sigurd Hystad, Erlend Sunde, Vebjørn Ekroll, Sebastian Jentschke & Roar Espevik, Department of Social Psychology, UiB	VR lab, SLATE	JoV	Providing experience and advice on VR labs and discussing future potential collaboration
7.09	Monika Nerland, UiO & NATED Graduate School	UiO, Oslo	IN	Exploring collaboration
7.09	UNINETT, Udir, KS, UDE, Oslo	UDE, Oslo	NM	Discussion about AVT-Hub

SLATE Meetings				
When	With	Where	Who*	Theme
10.09	Integrert lektorutdanning, UiB	Realfagsbygget, UiB	KE	Workshop "Responsteknologi i undervisningen"
17.09	Digital Learning Communities, Iped, UiB	Iped, UiB	KE	Research group meeting
18.09	Hege Randi Eriksen, Høgskulen på Vestlande	Høgskulen på Vestlandet, Bergen	RB, BW	About Coping after Breast Cancer project
18.09	Olaug Gardener, BI Læringslab, Oslo	Skype	KM, BW	Collecting data for the BI project
18-19.09	Karianne Westrheim, Anders Skogstad, Ivar Nordmo, Iped, UiB ++	Solstrand	IN	C1240 project, research collaboration across departments at the Faculty of Psychology
19.09	Ingve Berheim, HR, UiB	SLATE	KE	Meeting about digital workspaces
20.09	Bente Irmiger, Reidun Kjome, Faculty of Fine Art, Music & Design, UiB ++	Faculty of Fine Art, Music & Design, UiB	IN	Planning symposium Building Bridges
21.09	Karianne Westrheim, Iped, UiB	Iped, UiB	IN	C1240 project, research collaboration across departments at the Faculty of Psychology
21.09	Fagfornyelsen information meeting & symposium	UiO, Oslo	KE, CH	Fagfornyelsen og desentralisert kompetanseutvikling - Samspill mellom forskning og praksis
24.09	Ilya Musabirov, Higher School of Economics, St. Petersburg, Russia & Paulo Okopny, InfoMedia, UiB	SLATE	IN, FW, MK	Exploring projects
24.09	Paul Prinsloo, UNISA, South Africa & Sharon Slade, OU, UK	Skype	MK	LAK'19 Privacy Policy paper
26.09	Brendan Eagan & Sara Tabatabi, University of Wisconsin–Madison	Skype	KM	Epistemic Network Analysis teaching materials
27.09	Bente Irmiger & Reidun Kjome, Faculty of Fine Art, Music & Design, UiB	SLATE	IN	Planning symposium Building Bridges
1.10	OERCompBiomed Erasmus + partners	SLATE	MK	OERBIOMED learning analytics discussion
1.10	VID vitenskapelige høgskole & Høgskulen på Vestlandet	Skype	CH	Application for UH-Nett Vest
1.10	Reidun Kjome, Faculty of Fine Art, Music & Design, UiB	SLATE	IN	Planning projects
3.10	Astrid Tolo, Institutt for Pedagogikk, UiB & Sølvi Lillejord, Knowledge Centre for Education ++	SLATE	IN, JV, CH	Teacher education
3.10	Giske Ursin, Kreftregistere & Hege Randi Eriksen, Høgskulen på Vestlandet	Skype	RB	Meeting with Stressproffen related to Coping after Breast Cancer

SLATE Meetings				
When	With	Where	Who*	Theme
10.10	Tænketanken DEA (Denmark), Utdanningsetaten Oslo	Utdanningsetaten Oslo	NM, CH	Meeting about AVT-project
12.10	Olaug Gardener, Anna Therese Steen-Utheim & Anne Berit Swanberg, BI Læringslab, Oslo	Skype	KM	BI project design
17.10	Carlotta Negri, Klaus Johannsen & Alla Sapronova, NORCE Teknologi	SLATE	KM, MK, BW	Presentation of the Peergrade project
22.10	Jalal Nouri & Mohammed Saqr, DVS, Stockholm University	DVS, Stockholm University	BW	Collaboration possibilities on learning analytics
23.10	Olaug Gardener, BI Læringslab, Oslo	Skype	KM	BI project data collection
23.10	EdTech vendors, KS, Utdanningsetaten Oslo	Utdanningsetaten Oslo	NM, CH	Discussions on FagKart
23.10	KS, Elevorganisasjon (EO), Foreldreutvalg (FUG), Kommuner (Bærum & Øksnes)	KS, Oslo	NM, CH	Feedback on learning analytics & learning technology
23.10	Bente Irmiger & Linda Lien, Faculty of Fine Art, Music & Design, UiB ++	NHH	IN	Teaching, planning projects
24.10	Hiwo Målen, DigiScore Centre, UiB	SLATE	IN	Innovation phd Course planning
26.10	Læringskomiteen & Utdanningsetaten Oslo	Skype	NM	AVT-project
26.10	Hege Randi Eriksen, Høgskulen på Vestlandet	SLATE	BW, RB	Coping after Breast Cancer
29.10	Tim van der Zee, Leiden University	Skype	MK	Coursera MOOC Video analysis study
29.10	Olaug Gardener, Anna Therese Steen-Utheim & Anne Berit Swanberg, BI Læringslab, Oslo	BI, Oslo	KM, BW	BI project meeting
30.10	Birgit Krogstie & Gunhild Lundberg, NTNU	SLATE	Alle@ SLATE	Presentation of NTNU group, PhD project & SLATE activities
31.10	Bente Irmiger, Anders Nielsen, Faculty of Fine Arts, Music & Design, UiB	SLATE	IN	Planning symposium Building Bridges
1.11	Olga Viberg, KTH & Agnes Kukulska-Hulme, OU, UK	Skype	MK	Application planning, AMITY project
6.11	Knappskog skole	Knappskog skole	CH, IN, KE	Desentralisert kompetanseutvikling
6.11	Astrid Tolo & Gunn Søreide, Iped, UiB	Solstrand	IN	Exploring possible collaboration
6.11	Olga Viberg, KTH, Agnes Kukulska-Hulme, OU, UK & Linda Bradley, Gothenburg University	Skype	BW	Possible Nordforsk søknad

SLATE Meetings				
When	With	Where	Who*	Theme
7.11	Torhild Torgersen, Design Region Bergen	SLATE	IN, MK	Possible application collaboration
8.11	Steinar Tverlid, Equinor	Equinor, Bergen	IN	Exploring collaboration
8.11	Mohammed Saqr, Stockholm University	Skype	MK	Introductory meeting and exploring collaboration
9.11	Olga Viberg, KTH, Agnes Kukulska-Hulme, OU, UK & Linda Bradley, Gothenburg University	Skype	BW, MK	Planning Nordforsk søknad
12.11	Lærerutdannere & Administrasjon, UiB	Glasshuset, UiB	KE	Sonderingsmøte om prosjektsøknad: "Fagfornyelse"
13.11	Gunnhild Sofie Vestad, Høgskulen på Vestlandet	VR lab, SLATE	JoV	Providing experience and advice on VR labs
13.11	Lucas Jeno, BioCeed SFU, UiB	SLATE	KE	ArtsApp-project
14.11	Brendan Eagan, Sara Tabatabi, University of Wisconsin–Madison	Skype	KM	Epistemic Network Analysis teaching materials
14.11	Olga Viberg, KTH, Agnes Kukulska-Hulme, OU, UK & Linda Bradley, Gothenburg University	Skype	BW, MK	Further planning Nordforsk søknad
15.11	Jacqueline Wong, Erasmus University Rotterdam	Skype	MK	Gamification in Mobile Applications paper discussion
15.11	Nina Østensen & Jan-Ove Farstad, Juridiske fakultet, UiB	SLATE	BW, CH, IN, KE	Possible DIKU application
16.11	Olga Viberg, KTH, Stockholm	Skype	MK	Mobile applications and Learning Analytics
16.11	Jorn Hoem, Høyskulen på Vestlandet	SLATE	CH	Possibilities for collaboration
22.11	Education Disrupted Conference	Aarhus University, Copenhagen	KE	Participation in sessions
27.11	Teachers at Knappskog skole	Knappskog skole	CH, IN	Desentralisert kompetanseutvikling, Teacher Inquiry workshp
28.11	Hiwo Målen, DigiScore Centre, UiB ++	DigiScore Centre, UiB	IN	Innovation course at UiB
29.11	Bente Irmiger, KMD, UiB	Faculty of Fine Art, Music & Design, UiB	IN	Planning symposium Building Bridges
29.11	Paul Prinsloo, UNISA, South Africa & Sharon Slade, OU UK	Skype	MK	LAK'19 Privacy Policy paper
29.11	Erik Ruud, Norwegian Knowledge Centre for Education	Skype	KM	Search for a systematic literature review on good quality feedback in Higher Education
29.11	Hege Randi Eriksen, Yngve Lamo, Svein Ivar Lillehaug & Susanne Wembstatd, Høgskulen på Vestlandet	Høgskulen på Vestlandet, Bergen	RB, BW	Coping after Breast Cancer

SLATE Meetings				
When	With	Where	Who*	Theme
29.11	Fagutvalg for Arkitekturstyring, Digitaliseringsstyret	Skype	BW	First meeting of Fagutvalg for Arkitektursytring
4.12	ITK og Læring underutvalg, UiB	SLATE	IN, BW, JV	Planning activities
4.12	Hege Randi Eriksen, Høgskulen på Veslandet	Høgskulen på Vestlandet, Bergen	RB	Coping after Breast Cancer
7.12	Mark Runco, University of Oregon, Vlad Glaveanu, Webster University & Reidun Kjome and Bente Irmiger, KMD, UiB	SLATE	IN, BW	Planning future projects
11.12	Nora Clarke, Claus Vang & Martin Gaustad, University of Agder	SLATE	MK, BW	SLATE overview & Learning Analytics collaborations
12.12	Jacqueline Wong, Erasmus University Rotterdam	Skype	MK	Gamification in Mobile Applications paper discussion
12.12	Lars Nyre, InfoMedia, UiB ++	InfoMedia, UiB	IN	Planning course on innovation (CET201)
12.12	Nora Clarke, University of Agder	SLATE	BW, MK, JS	Learning Analytics in higher education (Norway); Canvas
14.12	Rune Smistad, NCE Media, Media City Bergen	VR lab, SLATE	JoV	Providing experience and advice
18.12	Susanne Wembstatd, Høgskulen på Veslandet	SLATE	RB	Coping after Breast Cancer
18.12	Frank Mortensen, Trond Vegard Johannessen, Therese Sverdrup (prorector), Arild Schanke (LMS), Kjetil Sudmann Larssen (head of QA section), NHH	SLATE	MK, BW	SLATE overview & Learning Analytics collaborations
19.12	Saif Rayyan, MIT	Skype	MK	EDUCON'19 workshop proposal discussion
20.12	Jorn Hoem, Høyskulen på Vestlandet	SLATE	CH, IN, KE	Research application
21.12	Gitit Kadar Satat, Open University, UK	Skype	MK	Fellowship visit

* BW- Barbara Wasson; CH- Cecilie Hansen; FW- Fay Wheldon; IN- Ingunn Ness; JS- Jeanette Samuelsen; JV- Jorunn Viken; JoV- Joakim Vindenes; JW- Jo Wake; KE- Kjetil Egelandsdal; KM- Kamila Misiejuk; MK- Mohammed Khalil; NM- Nina Morlandstø; RB- Rosaline Barendregt;

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