### EARLI SIG 27 – Online Measures of Learning Processes

**29.11. – 1.12.2016**

#### Conference Program

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<tr>
<td>9:00</td>
<td>Registration</td>
<td>PARALLEL SESSION: No-or-not-perfect-data sessions</td>
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<tr>
<td>9:30</td>
<td>(continue until 14:30) Snellmania hall</td>
<td>Papers LeaForum &amp; V-lab</td>
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<td>10:00</td>
<td>Opening ceremony</td>
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<td>16:00</td>
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<td>SIG 27 business meeting</td>
<td>Nordic walk City centre</td>
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<td>18:00</td>
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| 19:00  | Pub Quiz Welcome reception Conference dinner | | | }
## Tuesday 29.11.

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
<th>Chair</th>
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<tbody>
<tr>
<td>9:00-14:30</td>
<td>Registration</td>
<td>Snellmania hall</td>
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<td>10:00-10:45</td>
<td>Opening ceremony</td>
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<tr>
<td>11:00-12:30</td>
<td>PARALLEL SESSION: No-or-not-perfect-data sessions/SYMPOSIUM</td>
<td>LeaForum &amp; V-lab</td>
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### Learning strategies

**Location:** V-lab  
**Chair:** Essi Vuopala  
Amélie Rogiers and Hilde Van Keer:  
*Measuring secondary school students’ text-learning strategies: Comparing task-specific self-reports to think-aloud protocols*  
Leen Catrysse, David Gijbels and Vincent Donche:  
*How students process expository texts: triangulating results from general self-report questionnaires with taskspecific eye tracking data, cued recalls and self-report questionnaires*  
Karen Triquet, Jelten Peeters and Koen Lombaerts:  
*Supporting Self-Regulated Learning within Technology-Enhanced Learning Environments: A Systematic Review for Primary Education*  
Michelle Nugteren, Halszka Jarodzka, Liesbeth Kester and Jeroen van Merrienboer:  
*Self-regulation of secondary school students: Self-assessments and learning-task selection*

### SRL and motivation

**Location:** LEAF1  
**Chair:** Jaana Isohätälä  
Sofie Heirweg, Mona De Smul, Sabrina Vandevelde, Emmelien Merchie, Geert Devos and Hilde Van Keer:  
*Do measures matter? Differences between think-aloud protocols and task-specific self-report questionnaires in investigating self-regulated learning of primary school children*  
Marijn Wijga and Maaike Endedijk:  
*Using Process Mining to Develop a Dynamic Model of Self- and Social Regulation in Relation to Team Performance at the Workplace*  
Matthias Boehm and Jutta Maegdefrau:  
*Using Eye Tracking Data to Verify Common Measurements of Situational Interest During the Perception of Learning Material*  
Anja Schiepe-Tiska and Ingrid Gast:  
*Assessing Flow Experience using Eye-Tracking Indicators as a Nondeclarative Method of Measurement*

### Symposium: What you look at, you integrate? Using online measures to investigate critical processing of information from multiple sources

**Location:** LEAF2  
**Chair:** Ladislao Salmerón  
Christian Scharinger, Yvonne Kammerer and Peter Gerjets:  
*Fixation-related EEG frequency band power analysis: A promising neuro-cognitive methodology to study integration processes during reading of web search results?*  
Johan L.H. van Strien and Halszka Jarodzka:  
*Keep your cool! Critical thinking when processing emotion-laden information in information-rich environments*  
Annette Andresen and Øistein Anmarkrud:  
*Digital natives with reading difficulties: A study of dyslectic adolescents’ integration of conflicting information across Internet sites and presentation formats*  
Ladislao Salmerón, Laura Gil, Alicia Carrión and Ivar Bråten:  
*Is eye-tracking useful to assess sourcing in multiple documents?*

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<tr>
<td>12:30-13:30</td>
<td>Lunch</td>
<td>Restaurant Balance</td>
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<td>13:30-14:30</td>
<td>Chair: Jonna Malmberg</td>
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<td><strong>KEYNOTE:</strong> Ass. Prof. Guoying Zhao: Towards reading hidden emotions: micro-expression analysis and heart rate estimation</td>
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<tr>
<td>14:30-15:00</td>
<td>Coffee</td>
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FLIPPING THE PAPERS SESSION

Location: L2
Chairs: Halszka Jarodzka and Hanna Järvenoja

Fien De Smedt, Emmeleen Merchie, Nele Mortaignie and Hilde Van Keer:
How do novice writers write texts? Using digital pen technology to explore the development and application of cognitive writing processes

Anselm Strohmaier and Kristina Reiss:
Electrodermal activity as an indicator for context effects in mathematical learning and achievement situations

Markus Hörmann and Maria Bannert:
Recording, visualizing and pre-processing mouse and keyboard data for process analyses in web based learning: presenting the ScreenAlytics software framework

Tomás Martínez, Eduardo Vidal-Abarca, Arantxa García, Ignacio Mañez and María-Ángeles Serrano:
eTextBook template (eT-t): An application based on Read&Learn technology for the analysis of learning processes on electronic textbooks

Maaike Endedijk, Stijn de Laat and Elze Ufkes:
Opening the black box: experiencing the use of sensor technology to continuously monitor social interaction at the workplace as a proxy for informal social learning

Tarja-Riutta Hurme, Marjaana Puurtinen and Hans Gruber:
When activities matter: Depicting regulation in collaborative music-making

19:00 Welcome reception

Oulu City Hall

Wednesday 30.11.

9:00-10:30 PARALLEL SESSION: Papers/SIG 27 SYMPOSIUM
LeaForum & V-lab
Affect and emotions
Location: V-lab
Chair: Kristiina Kurki

Carolin Schultz, Marold Wosnitza and Igor Mayer:
Spotting, analysing and understanding emotions in collaborative online learning settings.

Markus Hörmann and Bannert Maria:
Observing keystrokes in the learning process: do they correspond with learners’ cognitive, affective and motivational states and task performance?

Sara Scrimin, Elisabetta Patron, Gianmarco Altoè, Erlis Ruli, Martina Ferrante and Lucia Mason:
Engagement at Physiological Level: Heart Rate Variations during Reading and Assessment in Different Reading Conditions

Nicholas Mudrick, Roger Azevedo, Michelle Taub and Joseph Grafsgaard:
How Do Time and Multimedia Discrepancies Influence Students’ Learner-Centered Emotions?

SRL and e-Learning
Location: LEAF1
Chair: Jonna Malmberg

Michelle Taub, Roger Azevedo, Jonathan Rowe and James Lester:
Time vs. Meaningful Time: How do duration and fixation duration differentially impact using a monitoring tool during SRL and gameplay with a game-based learning environment?

Jonna Malmberg:
Going beyond what is visible –What physiological measures can reveal about regulated learning in the context of collaborative learning

Gayane Sedrakyan, Sanna Järvelä and Paul Kirschner:
Conceptual Framework for Feedback Automation and Personalization for Designing Learning Analytics Dashboards

Lena Engelhardt, Frank Goldhammer, Johannes Naumann and Katja Hartig:
Can Different Instructions Influence Smart Behavior in ICT Environments?
**SIG 27 Symposium: Processes of Learning: Why they matter and how they might be investigated**  
**Location:** LEAF2  
**Chair:** Ellen Kok  
**Organizers:** Halszka Jarodzka, Ladislao Salmeron and Ellen Kok  
**Introduction:** Prof. P. A. Kirschner, Open University of the Netherlands & University of Oulu, Finland  
**Discussion:** Prof. H. Gruber, University in Regensburg, Germany and visiting professor at the University of Turku, Finland  

**Ladislao Salmerón:**  
*Online measures of digital reading*  

**Halszka Jarodzka:**  
*Eye tracking in Educational Science: Case studies and research agenda*  

**Ellen Kok:**  
*Developing visual expertise. From shades of grey to diagnostic reasoning in radiology*  

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**10:30-11:00** Coffee  
**11:00-12:30** PARALLEL SESSION: No-or-not-perfect-data sessions/SYMPOSIUM  
LeaForum & V-lab  
**Reading and writing**  
**Location:** V-lab  
**Chair:** Gayane Sedrakyan  
**Yasemin Tuerktron, Gerald Weiher, Mark Ullrich, Katja Knuth-Herzig and Holger Horz:**  
*Do prior beliefs and prior knowledge affect how we read? Reading texts on controversially discussed topics - An eye tracking study*  
**Carolin Hahnel, Ulf Kröhne, Frank Goldhammer, Cornelia Schoor, Cordula Artelt, Daniel Reimann, Kathrin Lockl and Hans-Günther Roßbach:**  
*Using process data from log files to explain measures of multiple documents literacy (MDL)*  
**Fabian Lang, Yvonne Kammerer, Peter Gerjets and Kerstin Oschatz:**  
*Epistemic beliefs in action: Integrating online and offline measures when students evaluate scientific controversies*  
**Roy Clariana, Kyung Kim and Fan Zhang:**  
*Graphical Interface of Structural Knowledge (GISK)*  

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**Teaching**  
**Location:** LEAF1  
**Chair:** Jari Laru  
**Jeltse Peeters, Free De Backer, Karen Triquet, Shihua Li and Koen Lombaerts:**  
*Online assessment of mobile teacher learning and students’ self-regulated learning*  
**Halszka Jarodzka:**  
*EyeTeach: Teachers’ professional vision and its effect on their classroom management*  
**Enrique Garcia Moreno-Esteva and Markku S. Hannula:**  
*Eye-tracking study in real classrooms: Exploring the variation in teacher presentation of a geometry problem and its effect on student visual attention*  
**Anouschka van Leeuwen, Margot van Wermeskerken and Gisbert Erkens:**  
*Eye tracking and thinking aloud procedures to study how teachers use learning analytics*  

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**Symposium: Math garden**  
**Location:** LEAF2  
**Chair:** Muhterem Dindar  
**Han L. J. van der Maas:**  
*Educational games as research tool: error analysis in Math Garden*  
**Abe Hofman:**  
*Developmental processes on time series of single items*  
**Nienke Ruijs, Alexander Savi, Han van der Maas and Gunter Maris:**  
*Experimenting in online practicing systems*  

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**12:30-14:00** Lunch  
Restaurant Balance

14:00-15:00  Chair: Sanna Järvelä


15:00-15:30  Coffee  L2

15:30-16:30  POSTER SESSION  L2

Location: L2

Chair: Ellen Kok

Eye tracking and expertise:

Anna-Kaisa Ylitalo, Aila Särkkä, Marjaana Puurtinen and Erkki Huovinen:
Modeling eye movements during temporally controlled music reading

Marjaana Puurtinen, Erkki Huovinen and Anna-Kaisa Ylitalo:
Reading rhythms: Eye movements of amateur musicians and novices-in-training

Christian Hartels, David Gijbels and Robert Kluch:
Pattern recognition and Corporate Design: An explorative eye-tracking study on detection of errors

Method and assessment:

Mirjam Neelen, Neil Peirce and Alec Serlie:
Supporting Career Development Through Transversal Competency Assessment

Tomas Martinez, Ignacio Manez and Eduardo Vidal-Abacar:
Automatic Scoring of Relevant and Non-relevant Text Information when Answering Questions from an Available Tekst. Testing Two Methods

Lenka Schnaubert, Sven Heimbuch and Daniel Bodemer:
Extracting selection strategies: comparing measures to analyze sequential data

SRL, social processes and eye tracking:

Johannes Hellenbrand, Maria Opfermann, Annett Schmeck and Detlev Leutner:
Using eye tracking to identify underlying processes of generative drawing as a self-regulated learning strategy

Stijn Van Laer and Jan Ellen:
Uncovering the Relationship between Learners' Self-Regulatory Behaviour Profiles and Designs of Blended Learning Environments

Michelle L. Nugteren:
Measuring Socially Shared Regulation of Learning with a Mobile Eye Tracker

Tim van Marlen, Margot Van Wermeskerken, Halszka Jarodzka and Tamara van Gog:
The Role of Ambiguous Instructions in the Effectiveness of Eye Movement Modeling Examples

Sonia White, Joanne Wood, Alexander Black and Enrique Garcia Moreno-Esteva:
Using eye movements to understand how Year 3 children engage with a graph task

Eetu Haataja, Jonna Malmberg, Sanna Järvelä and Paul Kirschner:
What EDA can tell about SRL? Case study in the context of collaboration

16:30-17:30  SIG 27 Business Meeting  L2

18:00  Conference Dinner  Restaurant Nallikari

Bus transportation is arranged for the Conference dinner.
The bus from Lapland Hotel to Restaurant Nallikari leaves at 17:30.
The bus from university to Restaurant Nallikari leaves at 17:45.
There are two buses going back from Restaurant Nallikari to Lapland Hotel at 22:00 and 22:30.

Thursday 1.12.

9:00-10:30  PARALLEL SESSION: No-or-not-perfect-data sessions  LeaForum & V-lab

E-learning
Location: V-lab
Chair: Piia Näykki
Johanna Pöysä-Tarhonen, Piia Näykki, Päivi Häkkinen, Sanna Järvelä and Jari Laru:  
Acquiring a better understanding of individual students’ collaborative problem solving processes combining objective and subjective process tracing data

Marielle Dado and Daniel Bodemer:  
Enhancing Group Awareness in Computer-Supported Collaborative Learning Using Social Network Analysis Visualizations

Ruth Boelens and Bram De Wever:  
Identifying collaborative writing processes and shared regulation in CSCL environments

Shihua Li, Koen Lombaerts, Jeltjes Peeters and Chang Zhu:  
How did students learn in a MOOC?

**Eye tracking data**

**Location:** LEAF1  
**Chair:** Hanni Muukkonen

Markus Nivala, Christian Harteis and Hans Gruber:  
Using eye-tracking to examine chess expertise and chunking

Diederick C Niehorster, Tim Cornelissen, Halszka Jarodzka and Kenneth Holmqvist:  
Whole-classroom eye tracking

Tristan Haselhuhn, Klaus-Peter Wild and Sebastian Schmid:  
Measurement errors on a technical and conceptual level: The psychometric quality of fixations in eye-tracking experiments with naturalistic texts

Margot van Wermeskerken and Tamara van Gog:  
Eye See What You Are Doing: Inferring Task Performance from Eye Movement Data

**Physiological data**

**Location:** LEAF2  
**Chair:** Héctor J. Pijeira Díaz

Nicholas Mudrick and Roger Azevedo:  
The Theoretical, Methodological, and Analytical Challenges of Facial Expressions of Emotions During Multimedia Learning

Ellen Kok, Anique de Bruin, Ide Heyligers, Andreas Gegenfurtner, Simon Robben, Koos van Geel, Bettina Sorger, Diana Dolmans and Jeroen van Merriënboer:  
fMRI as a process measure of visual and motor expertise in medicine

Thomas Martens, Oliver Schneider and Moritz Niemann:  
Identifying Sensor Measures of Motivation for Personal Learning

Héctor J. Pijeira Díaz, Sanna Järvelä, Paul A. Kirschner and Hendrik Drachsler:  
Capturing the invisible expressiveness of the body in a learning process

10:30-11:00 **Coffee**

11:00-12:30 **PARALLEL SESSION: Papers/E-Cir invited symposium**

**Engagement and motivation**

**Location:** V-lab  
**Chair:** Arttu Mykkänen

Sanni Pöysä, Kati Vasalampi, Joona Muotka, Marja-Kristiina Lerkkanen, Anna-Maija Poikkeus and Jari-Erik Nurmi:  
Quality of teacher-student interaction contributes to students’ situational engagement

Johannes Naumann:  
Use of large scale data for the analysis of task engagement processes: Issues of replicability and open science

Jaana Isohätälä, Hanna Järvenoja and Sanna Järvelä:  
Participation in cognitive-oriented and socio-emotionally oriented interaction during collaborative learning

**Learning processes**

**Location:** LEAF1  
**Chair:** Ameir Mwanakhamis

Leen Catrysse, David Gijbels, Vincent Donche, Pim Pullens and Paul M. Parizel:  
Deep and surface processing: what do we learn from fMRI studies?
Liesje De Backer, Hilde Van Keer and Martin Valcke:  
A process-oriented analysis of collaborative learners’ metacognitive regulation behavior

Eduardo Vidal-Abarca, Ignacio Manez, Tomas Martinez and Joseph Magliano:  
Are verbal and behavioral online data harmonious in tracing individual differences in task-oriented reading situations?

Johanna Kaakinen, Ugo Ballenghein, Geoffrey Tissier and Thierry Baccino:  
Embodied attention during reading: Evidence from concurrent recordings of eye movements and head motion

Symposium: E-Cir invited symposium: Understanding the added-value of multimodal data to maximize students self-regulated learning

Location: LEAF2
Organizer & Chair: Sanna Järvelä, University of Oulu, Finland
Discussant: Paul A. Kirschner, Open University of the Netherlands & University of Oulu, Finland

Roger Azevedo, Nicholas Mudrick, Michelle Taub, Seth A. Martin, Joseph Grafsgaard Measuring, Garrett Millar, and Megan Price:  
Measuring, Analyzing, and Infering Self-Regulatory Processes from Multimodal Data

Maria Bannert and Janina Limbrock:  
I spy with my little eye: Investigation of Student’s Self-Created Prompts

Sanna Järvelä, Jonna Malmberg, Marta Sobocinski, Eetu Haataja, Héctor J. Pijeira Diaz and Paul A. Kirschner:  
What Multimodal Data Can Tell Us about the Self-Regulated Learning Process

Cindy Klompmaker-Paans, Eliane Segers and Ludo Verhoeven:  
Multimodal online measurement of young learners SRL in hypermedia

Jelena Jovanović, Dragan Gašević, Abelardo Pardo and Shane Dawson:  
Using learning analytics to uncover online learning strategies in flipped classrooms

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<td>Lunch</td>
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<td>13:30-14:30</td>
<td>Panel Discussion &amp; Closing Ceremony</td>
<td>KTK112</td>
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<tr>
<td>16:30-17:30</td>
<td>Nordic walk</td>
<td>City centre</td>
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