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**Non-cognitive skills as admission criteria for university**

**A systematic review**

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I will discuss research on the effects of both direct gaze cues (i.e., the model's eyes/head turn towards the task) and indirect gaze cues on attention and learning. Indirect gaze cues are created by recording the model's eye movements and displaying them as, for instance, circles or dots overlaid on the video.

Both types of gaze cues are expected to help synchronize the students' with the model's attention, which should help students follow the model's explanation. Therefore, this 'joint attention' is expected to enhance students' learning from video modeling examples –at least under conditions in which the explanation would otherwise remain unclear.
Last but not least, I will present studies on how gaze displays are interpreted. We may be naturally attuned to direct gaze, but can we correctly infer the intentions and thoughts of others from a moving circle or dot? Come and see for yourself!

### Eye Follow You: Effects of Gaze Cues on Learning
**Presenting Author:**Tamara Van Gog, Utrecht University, Netherlands

In this keynote I will present the findings from a five-year research project about the effects of gaze cues on learning (funded by a NWO Vidi grant – what's in a name).
Other people's faces, and especially their eyes, are real attention magnets. Eyes quickly and automatically capture our attention, and this mechanism presumably evolved because eye gaze provides us with very powerful social cues that help us understand the intentions of others.

In this project, we investigate whether we can use gaze cues to improve learning from video modeling examples, in which a model (instructor) demonstrates and explains how to perform a task.
I will discuss research on the effects of both direct gaze cues (i.e., the model's eyes/head turn towards the task) and indirect gaze cues on attention and learning. Indirect gaze cues are created by recording the model's eye movements and displaying them as, for instance, circles or dots overlaid on the video.

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### Session F 1

30 August 2017 15:45 - 17:15
Main Building A - A3
Single Paper
Higher Education

#### Higher Education

**Keywords:** Achievement, Assessment methods and tools, Cognitive skills, Competencies, Content analysis, Higher education, Instructional design, Quantitative methods, Reflection, Student learning, Survey Research, Synergies between learning - teaching and research
**Interest group:** SIG 04 - Higher Education
**Chairperson:** Lotta Uusitalo-Malmivaara, University of Helsinki, Finland

#### Non-cognitive skills as admission criteria for university: A systematic review
**Keywords:** Achievement, Assessment methods and tools, Cognitive skills, Higher education
**Presenting Author:**Tine Nielsen, University of Copenhagen, Denmark; **Co-Author:**Ida Sophie Friderichsen, University of Copenhagen, Denmark

The aim of this review was to explore which non-cognitive skills (NCS) are used as alternative admission criteria (AAC) to higher education, that is alternative to grade point average, and the benefits of using NCS for this purpose. A systematic search of the databases REX, PsycINFO, ERIC and Google Scholar resulted in a pool of 809 studies. A screening according to five inclusion criteria resulted in a final number of 46 studies investigating 9 different readily defined NCS as AAC and a further 11 different NCS-like AAC. Analyses showed that NCS in most studies were able to predict academic performance at university and that NCS had an attrition protective effect resulting in fewer students dropping out. The NCS and NCS-like AAC that predicted academic performance at university the best were found to be self-efficacy and admission interviews. The NCS and NCS-like AAC that most strongly predicted attrition at university were found to be personality traits and a secondary quota procedure with diverse content. The findings of this review emphasize why it is important to study NCS as admission criteria within a higher educational context. Thus, using NCS as a sole admission procedure or in combination with cognitive measures holds promise both research-wise and in relation to student performance and

attrition. Keywords: Review, non-cognitive skills, admission criteria, higher education, academic success, dropout

**The R-Comp - A New Instrument to Assess University Students' Research Competences**
**Keywords:** Competencies, Higher education, Quantitative methods, Synergies between learning - teaching and research
**Presenting Author:**Franziska Boettcher, Freie Universität Berlin, Germany; **Co-Author:**Felicitas Thiel, Freie Universität Berlin, Germany

University students' research competences can be encouraged by *research oriented teaching*. The purpose of this study is to introduce a valid instrument for the evaluation of *research oriented teaching* in higher education in various academic disciplines. This new instrument (*R-Comp*) has been developed on the basis of the *RMRC-K-model* (Authors, 2014) consisting of five dimensions: skills in *r*eviewing the state of research, *m*ethodological skills, skills in *r*eflecting on research findings, *c*ommunication skills, and content *k*nowledge. In order to examine the underlying factor structure of the R-Comp, factorial validation was performed. Data were collected from 391 university students in their Bachelor's or Master's degree and PhD programs from various academic disciplines. Results of confirmatory factor analyses showed first evidence for the instrument's intended factor structure. Sub-dimensions could be identified for all dimensions. There is some first evidence of a valid assessment of student research competences on the basis of a generic competence model. Future directions as well as potential application contexts are presented.

**Development and validation of the Reflection in Business Education Questionnaire (RIBEQ)**
**Keywords:** Higher education, Reflection, Student learning, Survey Research
**Presenting Author:**Luci Gommers, University of St.Gallen, Switzerland; **Co-Author:**Tobias Jenert, University of St.Gallen, Switzerland; **Co-Author:**Taiga Brahm, University of Tübingen, Germany; **Co-Author:**Dietrich Wagner, University of St.Gallen, Switzerland

Student reflection is considered both a crucial feature of high-quality learning as well as an important objective in Higher Education. Despite its apparent relevance for educational practice, most of the research on reflection remains at a conceptual level (Boud & Walker, 1998; Mann, Gordon & MacLeod, 2007), whilst empirical research mainly focuses on measuring students' reflection levels. There is little empirical evidence going beyond case studies and qualitative accounts, regarding the effectiveness of specific interventions (e.g. portfolios) to develop reflective skills. Thus, the purpose of this research was to develop and validate an instrument for measuring student reflection in Higher Education in general and business schools in particular. The questionnaire is designed to measure students' reflection in three dimensions: students' reflection levels, their attitudes towards reflection, and supporting and hindering factors influencing students' reflection processes. A pre-test was conducted at two different universities in Switzerland and Germany to validate the Reflection in Business Education Questionnaire (RIBEQ). In total, 64 students filled in the survey. Exploratory factor analyses and reliability tests showed satisfactory psychometric qualities of the RIBEQ. This study can support further research on student reflection and its development. Also, the questionnaire can be used as a diagnostic instrument for business schools to trace students' development over time. From a practical point of view, it can also be applied to identify supporting and hindering factors at a particular higher education institution in order to develop practical interventions targeting these factors.

**Key situations in service learning initiating reflection on civic engagement**
**Keywords:** Content analysis, Higher education, Instructional design, Reflection
**Presenting Author:**Karl-Heinz Gerholz, University of Bamberg, Germany; **Co-Author:**Silvia Leicht, University of Bamberg, Germany; **Co-Author:**Andreas Rausch, University of Mannheim, Germany

Service learning can be described as an educational tool that is characterised by students giving service to the community and having a learning experience. Previous research has shown that service learning has the potential to promote personality development, especially in the sense of a sensitization for civic engagement. However, the findings of the empirical studies are ambiguous. While some findings show that service learning can foster an understanding of social issues and attitude to be engaged, others revealed no such effect. The reason for these inconsistent findings could be related to the applied method. The considered studies have focused more on in a retrospective manner rather than on a process-oriented approach. In order to get a deeper understanding of the parameters relevant for sensitization, focusing on the process is very promising. Through a service learning course, the students may be confronted with social issues in different ways with different persons at different places. The aim of the present study is therefore to identify key situations and experiences that initiate thinking about civic engagement as a basis for sensitization. First results indicate that there are two main kinds of situations that initiate the reflection on civic engagement – social interaction and problem solving activities.

**Session F 2**

30 August 2017 15:45 - 17:15
Linna - K103
Single Paper
Teaching and Teacher Education