

### **From predetermined to cooperative and emergent learning task: Fostering creativity in internship learning environment**

*Morteza Karami, Somayeh Ghazi, and Jeroen Van Merriënboer*

The task-centered learning environment is the well-suited approach to ameliorate fostering professional competencies. This study is designed to compare the effects of three different ways of designing learning tasks based on the 4C/ID model (pre-determined by designer, cooperative by designer and learners and emergent by learners) on students' creativity. Participants will be 160 student teachers who are spending internship courses in schools. The participants will be divided into four groups: three experimental groups and a control group ( $n = 40$ ). Material: Students will learn and perform tasks to develop lesson plans, teaching and assessing student learning. The same materials will use in different groups. To measure creativity, the performance-based assessments will be used. Assessing lesson plans and test materials that will be developed by student teachers and observing teaching and learning opportunities based on creativity criteria. The data will be analyzed by one variable covariance analysis, multiple covariance analysis.

### **Teaching an expert diagnostic strategy for car mechatronics apprentices with video-based worked examples and self-explanation prompts**

*Julius Meier, Peter Hesse, Stephan Abele, Luca Spliethoff, Alexander Renkl, and Inga Glogger-Frey*

Self-explanation prompts promote learning from worked examples. Usually, these prompts ask learners to self-explain past steps of a solution procedure or problem-solving strategy (i.e., retrospective prompts). The effects of prompts that ask learners to predict and explain upcoming steps of a strategy (i.e., anticipatory prompts) are less clear. We will compare the effects of these two prompt types with car mechatronics apprentices studying a worked example that provides an expert strategy for diagnosing the cause for a car's malfunction. More specifically, we will investigate two main research questions: (1) Does studying a video-based worked example showing an expert's diagnostic strategy in a computer simulation promote apprentices' diagnostic strategies? (2) What are the effects of anticipatory prompts in comparison to retrospective prompts when learning from such worked examples? Data collection will take place in June and July 2020.

**Slot G: Paper Presentation: Instructional Design and Self-regulated Learning II**

**14:45-15:45**

*Chair: Lisa Ollesch*

### **Interaction effects of cognitive and behavioural group awareness information in collaborative learning with wikis**

*Lisa Ollesch, Sven Heimbuch, and Daniel Bodemer*

Group awareness (GA) tools can visualize different types of group attributes. Although social media environments like wikis may benefit from GA combinations, the investigation of GA interaction effects is largely unexplored. To close this research gap, we conducted two 2x2-between-subject experiments ( $N = 158$  and  $N = 20$  with eye-tracking), in which we systematically provided learners with a wiki environment and variations of cognitive GA (knowledge) and behavioural GA (participation) information. Our results showed that only the combination of these two types of GA information and not their separate visualization had a positive effect on the learning performance as well as on the wiki article productivity. This highlights the need for a holistic perspective in the development of GA tools to improve wiki collaborations. However, there was a negative interaction effect on the learners' well-being, which underlines the need for a stronger investigation and support of emotional GA.

### **Individual differences in the preference for worked examples: lessons from an application of dispositional learning analytics**

*Dirk Tempelaar*

Worked-examples have been established as an effective instructional format in problem-solving practices. However, less is known about variations in the use of worked examples across individuals at different stages in their learning process in student-centred learning contexts. This study