

Talk Announcement for the Psychological Research Colloquium, Winter Term 2022/23

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Investigating how Teachers Integrate Technology in Learning Activities Through the Lens of the ICAP Framework

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f2f talk in room 2108/D, participation via ZOOM on request

Abstract: Since the effects of educational technology on learning depend on how digital tools and software are used by teachers and students, a measurement instrument assessing how technology is integrated into learning activities is necessary to investigate its impact on teaching and learning processes. Most studies have focused on general indicators of technology use that reflect whether educational technologies were available in classroom or how often they were used in teaching. However, the frequency as an indicator of technology use is not sufficient anymore. According to the Interactive, Constructive, Active, and Passive (ICAP) framework, which distinguishes four learning activities based on the level of students' cognitive engagement, we developed the 12-items ICAP Technology Scale (ICAP-TS) to assess the quality of technology integration. In our first study, we aimed to validate the ICAP-TS on a sample of 1059 upper secondary teachers. The results confirmed the four-factor structure of the ICAP-TS and revealed good instrument accuracy. The main contribution of the validation of the ICAP-TS is providing researchers with a valid measurement tool to assess teachers' technology use in the upper-secondary level of education. Furthermore, as the ICAP framework states that cognitive processes of knowledge acquisition become increasingly elaborated from Passive to Interactive learning activities, the use of technology to engage students in constructive and interactive activities would be more desirable than in active and passive ones. Therefore, our second study aimed to understand what teachers-related factors (i.e., skills and beliefs) significantly affect the quality of technology use operationalized with regard to the ICAP framework. Results showed that both self-reported skills and beliefs positively and significantly correlate with Interactive, Constructive, Active, and Passive technology use. We discuss the importance of investigating the quality of technology integration and understanding what factors could enhance the use of digital tools in teaching and learning activities.

All colleagues, doctoral researchers and students are cordially invited.