

BAPS 2021 - Symposium Proposal

How to measure and support engagement for an optimal learning experience?

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Last year, the global pandemic forced us to rethink education by applying social distancing in education and workplace training. Fortunately, current technologies make it possible to organise teaching and learning online, synchronously as well as asynchronously. Both literature (Gonzalez et al., 2020) and the current examination marks (February 2021) show that online learning did not negatively impact cognitive learning outcomes. Yet, several affective variables, including students' well-being, optimal experience and engagement for learning, have been shown to significantly affect the learning experience of remote participants (Raes et al., 2020).

In this symposium, researchers from KUL and UCLouvain (Belgium), and ULille (France) want to shed light on students' engagement, which is a multidimensional construct within online teaching and learning and which can be studied based on several theories including autotelic experience (Csikszentmihalyi), Self-Determination (Deci & Ryan) and the Theory of Cognitive Development (Piaget). We aim to present up-to-date methods to both capture and support engagement. In the first presentation, **Jean Heutte (ULille)** will present what we mean by optimal learning experience by presenting his research on flow as an autotelic experience within a Massive Open Online Course (MOOC). In the second presentation, **Dennis Rivera (UCLouvain)** will focus on cognitive and metacognitive prompts in MOOC discussion forums to facilitate socio-cognitive conflicts. In the third presentation, **Annelies Raes (KU Leuven & ULille)** will present how to assess and support students' engagement during synchronous hybrid learning including both remote and on-site students. Finally, **Karine Verschueren and Fien Depaepe (both KU Leuven)** will provide a discussion including the psychological and the instructional design perspective. They will present concluding thoughts and possible directions for future research in the field of educational psychology.

Contribution 1: The dualistic perspective of optimal learning experience

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Under the initial inspiration of Seligman and Csikszentmihalyi (2000), the 4th wave of contemporary scientific psychology is particularly interested in the empirical study of optimal human development. It also brings to light the theory of optimal or autotelic experience developed in the 1970s by Csikszentmihalyi. Over the past 35 years, empirical studies have mainly focused on the “bright sides of flow” (Csikszentmihalyi, 2014), because someone who is in a flow state is enjoying a positive subjective experience. However, flow has also an amoral character (Delle Fave, Massimini & Bassi, 2011; Nakamura & Csikszentmihalyi, 2002). Some researchers are involved in the study of this phenomenon that has been called the “dark side of flow” (Schüler, 2012). In this presentation, I will first highlight the links between optimal experience in online learning (Heutte, Fenouillet, Martin-Krumm, Boniwell, & Csikszentmihalyi, 2016) and student motivation and persistence based on empirical research in the context of a Massive Open Online Course (MOOC) including 3132 students. The study shows the relationship between optimal motivation (Deci & Ryan, 2008; Fenouillet, Heutte, & Vallerand, 2015), orientation goals (Ames, 1992; Elliot, 2005) and self-regulation (Pintrich, 2003; Zimmerman, 2001). Next, the research results provide an opportunity to discuss the dualistic perspective of Flow (Heutte, 2020a, 2020b), including the effects of the “dark side of flow”. These effects include the peak of stupidity (Kruger & Dunning, 1999) linked to the illusion of having understood (ignoring one's own ignorance) and these are particularly shown by the “free learners” who learn in communities without interaction with the academic world.

Contribution 2: The teaching presence in the forums of Massive Open Online Courses (MOOCs) to facilitate socio-cognitive conflicts

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In education research, socio-cognitive conflicts are discrepancies of knowledge that can trigger in the learners a cognitive imbalance. This imbalance could be beneficial for learning because it can lead to the reconstruction of knowledge. However, socio-cognitive conflicts can only promote learning when they are aimed at finding an epistemic solution to the cognitive imbalance. This requires a collaborative effort in an environment that facilitates cognitive and social processes and leads them to an optimal educational experience. The discussion forums of Massive Open Online Courses (MOOCs) could potentially provide an environment where learners can have and resolve socio-cognitive conflicts. Several studies have provided guidelines on sound online pedagogical practices to encourage discussions aimed at the co-construction of knowledge. Nevertheless, few studies have analysed how these guidelines have been applied in MOOC forums and their effect on learning. This study seeks to fill this gap by analysing the cognitive and metacognitive prompts that MOOC instructors provide in discussion forums to help learners self-regulate their learning and resolve socio-cognitive conflicts. We study the effects that these prompts have in the social and cognitive interactions

of the learners. Thus, our study contributes to a better understanding of how an online collaborative environment can support and foster the co-construction of knowledge.

Contribution 3: Creating presence from a distance through the development of optimal learning spaces

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This presentation will first present the results of the Lecture+ research project (2016-2018) (<https://www.imec-int.com/en/what-we-offer/research-portfolio/lecture>) which focused on unravelling learning engagement in the hybrid virtual classroom connecting both f2f and remote students. Three important research questions which we tackled in our research were: 1) how can we capture students' engagement by means of multimodal learning analytics, 2) to what extent does the learning environment satisfy students' basic needs (Deci & Vansteenkiste, 2003) in the remote setting, and 3) how we can improve students' engagement, including relatedness or sense of belonging. Regarding RQ1, our findings show that the multifaceted nature of engagement makes it especially challenging to capture its emotional and cognitive component, and the connection between a manifest variable and students' self-reported engagement is not always straightforward and consistent. Regarding RQ2 & 3, our results confirm previous research that remote learners feel a significant sense of distance with regard to their teacher and the on-site classmates, yet our results also show that instructional design decisions can improve the sense of connectedness. In a second part of the presentation, we will focus on current research conducted with 240 students from the Faculty of Law which aims to measure students' affective engagement combining theoretical constructs from different perspectives: i.e. immersion (Georgiou & Kyza, 2017), flow (Csikszentmihalyi, 2014), (social) presence (Witmer & Singer 1998) and relatedness (Deci & Vansteenkiste, 2003). In our research we aim to examine convergent validity of the different scales and we aim to better understand the experience of on-site versus remote teaching and learning.

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