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**Reviews in Educational Technology Research: Potential and pitfalls**

*Background and Motivation*

Conducting systematic reviews has become more prominent in the field of educational research (Gough & Thomas, 2016). Defined as “a review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review” (Moher et al., 2009, p. 1), they serve two purposes: establishing a base for evidence-based decision making on the policy level and also thoroughly analyzing a specific field of research to identify research gaps (Gough, Oliver & Thomas, 2012). This also applies to the field of educational technology and its applications, which recent systematic reviews within the field have shown, for example the application of augmented reality in education (Akcayir & Akcayir, 2016), Web 2.0 technologies for student learning (Hew & Cheung, 2012), and learning and engagement within MOOCs (Joksimovic, et al., 2017).

In the broader context of teaching and learning research, the construct of student engagement (e.g. Dunne & Owen, 2013; Kahu, 2013, Christensen et al., 2012) has received increased attention in the past decade, as it is directly linked to students’ learning outcomes and cognitive development (Ma, Han, Yang, & Cheng, 2015). Research has shown that using technology can predict increased student engagement (Rashid & Asghar, 2016; Chen, Lambert, & Guidry, 2010), including through improved self-efficacy and self-regulation (Alioon & Delialioglu, 2017; Bouta, Retalis, & Paraskeva, 2012), and increased participation and involvement (Salaber, 2014; Northey, Bucic, Chylinkski, & Govind, 2015; Alioon & Delialioglu, 2017). However, without careful planning and sound pedagogy, technology can promote disengagement and impede rather than help learning (Popenici, 2013; Howard, Ma, & Yang, 2016).

The overarching question of how educational technology can support student engagement in higher education is the focus of the research project ActiveLeaRn, funded from 2016 to 2019 by the German Federal Ministry for Education and Research (BMBF). A systematic review is being conducted as part of this project, whose results will be validated through discussion with practitioners in the field – hence closing the often times perceived research practitioner gap (Belli, 2010)

*Contribution*

In this Brief Paper contribution, the authors place emphasis on three central aspects of the systematic review and share their hands-on experience with this method. Topics covered include student engagement, the process of searching and screening studies, and the potential and pitfalls of the method, as identified within the current review and within the field of educational technology.

Student engagement

The ‘meta-construct’ of student engagement is multifaceted and complex (Kahu, 2013; Appleton, Christenson, & Furlong, 2008; Christenson, Reschly, & Wylie, 2012; Fredricks, et al., 2004), with ongoing disagreement about its definition and form (e.g. Reeve & Tseng, 2011; Zepke & Leach, 2010). Recent reviews (Joksimovic, et al., 2017; Henrie, Halverson, & Graham, 2015) have attempted to synthesize educational technology literature, in order to further develop the construct, and this systematic review further adds to this body of work. An overview of the construct will be provided, alongside how its complexity influenced the set up of the systematic review.

Searching and screening studies

In order to identify the studies relevant for inclusion in the review (Brunton et al., 2012), an intentionally broad search string was developed, piloted and then applied to four major databases in the field (Web of Science, PsychINFO, ERIC and Scopus). Pre-defined inclusion criteria were applied; contributions are peer-reviewed articles in English language journals, published in 2007 or after, discuss technology-enhanced learning and student engagement and target students in higher education. By means of the PRISMA statement (Moher et al., 2009), collected references were documented during the searching process and then screened on title and abstract. Following initial screening, 4,153 potential includes remained for closer analysis. Peculiarities of these two parts of the systematic reviews will be discussed in the presentation.

Potential and pitfalls

In the course of the execution of the review, a number of issues have emerged that require further attention and are helpful for other researchers to consider when conducting future reviews in the field. Alongside an appraisal of the systematic review method, examples shared in the presentation will include questions regarding how to develop complex search strings for study identification, the management of large reference corpi, the importance of research teams for conducting systematic reviews, and deciding for or against text mining for use within reviews in the broad field of educational technology research.

The contribution closes with an outlook on the further steps within the review.

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