

The Effect of Different Types of ITSs on Educational Outcomes Various types of ITSs can exert different influences on educational outcomes (Balasooriya et al., 2016). Example-based ITSs can provide problem solutions for learners, which can help learners understand the solutions, apply them to similar contexts, and achieve better academic results (Nye et al., 2018). When effectively used, ITSs may improve educational outcomes based on their adaptability, feedback, gamification, exemplar assistance, and mobile learning. Adaptive ITSs aim to adjust learning contents and difficulty levels according to individual performances. The systems can provide detailed suggestions, by which learners can adjust their learning strategies and improve their learning achievements (Jimenez et al., 2018). Learners may maintain higher levels of engagement and activeness if they have access to gamified elements, leading to higher academic achievements (Gonzalez et al., 2016). ITSs exert complex and multifaceted influences on educational outcomes.