	Fan et al. (2025)	Li, Liu and Dong (2025)	Gerlich (2025)
Memory retention			Internal cognitive skills like memory retention and critical analysis may deteriorate as a result of an over-reliance on outside assistance. (p.3) The concept of "Google effect" indicates that the availability of information at our fingertips lessens the requirement for internal memory recall (Sparrow, Liu and Wegner, 2011). (p.4)
Knowledge mastery	There was better knowledge transfer among participants using ChatGPT or chatbots than those employing traditional technology, indicated by the performance on various tests (Vázquez-Cano et al., 2021; Hakiki et al., 2023). (p.495) The study indicated that while there was significant improvement in AI group's essay scores when compared to the other groups, there were no substantial discrepancies regarding knowledge gain or knowledge transfer among the groups. (p.507)	The better performance among the experimental group could not be found in the testing phase, inferring that knowledge transfer may not be promoted by Gen-AI. (p.17) Overdependence on Gen-AI results in negative cognitive offloading, which impairs the mastery of knowledge. (p.18)	
Critical thinking	Despite its potential benefits for managing cognitive load, cognitive offloading may eventually result in a decline in internal cognitive engagement, which could affect students' capacity for self-control and critical engagement with the content (Risko and Gilbert, 2016). (p.492) The experience of cognitive disfluency encourages more in-depth analytical processing, implying that critical metacognitive activities can decrease when these challenges, such as relying on AI-generated responses, are avoided. (p.506)	While the experimental group relied heavily on Gen-AI to complete different tasks, the control group, without any AI support, relied more on their own efforts and engaged more critically with resources. (p.18) Over-reliance on Gen-AI results in negative cognitive offloading, which hinders one's development of problem-solving skills and critical thinking. (p.18)	Internal cognitive skills like memory retention and critical analysis may deteriorate as a result of an over-reliance on outside assistance. (p.3) According to Krullaars et al. (2023), students who depended too much on AI tools for their academic work showed less engagement in independent cognitive processing and fewer problem-solving abilities. (p.6)