

Levels of Informational Density of the Educational Content and Its Pattern of Repetition in a Multi-interval E-learning Environment and the Development of Digital Citizenship Skills and Cognitive Absorption among Primary School Students

The current research aims at identifying the effect of different levels of providing informational density: brief and detailed and its pattern of repetition: fixed and variable in a multi-interval e-learning environment on the development of digital citizenship skills and cognitive absorption among primary stage students. The research sample consisted of (60) female students in the fourth primary year. They were selected and distributed randomly into four groups according to the factorial design (2×2). To achieve this aim, the researchers designed and developed a multi-interval e-learning environment based on the level of informational density of the interactive content: brief and detailed and its pattern of repetition: fixed and variable in light of the educational and technical design criteria that have been identified. The researchers prepared the measurement instruments and verified their validity and reliability. Then, they implemented those instruments including: the cognitive achievement test for digital citizenship concepts, the digital citizenship skills observation card, and the cognitive absorption scale. The results confirmed that the students who studied at the detailed density level were more positive in the achievement of the cognitive and performance aspects of digital citizenship, in addition to cognitive absorption, compared to the students who studied using the fixed density level. Furthermore, the results showed that there was no interaction between the level of informational density: detailed and brief and its repetition pattern: variable and fixed in the cognitive test, the digital citizenship skills observation card, and the cognitive absorption scale. In light of the research results, a set of recommendations and suggestions were presented including: expanding the preparation of more researches and studies related to information density and e-learning environments, generally, and multi-interval e-learning ones, particularly, and their relationship to developing the skills of designing and

producing digital learning resources and improving the various learning outcomes as well.