Abstract

Design an adaptive learning environment based on artificial intelligence and its effectiveness in developing the skills of digital applications in scientific research and future information awareness among gifted high school students.

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The study aimed to design an adaptive learning environment based on artificial intelligence and its effectiveness in developing the skills of applications of digital technology in scientific research and future information literacy among gifted high school students, by building standards designing of adaptive electronic environment based on artificial intelligence, identifying the skills of applications of digital technology in scientific research and future information literacy that needs to be developed by gifted female students in secondary school, and measuring the effectiveness of an adaptive electronic environment that adapts artificial intelligence based on the development of knowledge and digital application skills of applications of digital technology in scientific research and future information literacy in gifted female students in secondary school, and to achieve the objectives of the study follow the mixed methods based on the combination of quantitative and qualitative approaches, and used quantitative tools represented by the cognitive achievement test, the observation card, and the test of situations for for future information literacy, also used the specific tools represented by the semi-structured interview questions, students journal, and the classroom reflections, and the sample to which the study was applied consisted of (54) gifted students in Makkah, and the results of the study concluded the following results ; statistically significant differences at the level of significance (0.05) between the average of students grades of the study sample in the pre and post study of achievement test in cognitive aspects that connect to the skills of applications of digital technology in scientific research and all the differences for the post study, the results of the study found statistically significant differences at the level of significance (0.05) between the average students grades of the study sample in the pre and post study of the note card of performance aspects that connect to the skills of applications of digital technology in scientific research and all the differences for the post study, the results of the study found statistically significant differences at the level of significance (0.05) among the average grades of female students for the study sample in the pre and post study in test the future information literacy and all the differences were in the post study, and the study recommends to include the concepts and skills of digital scientific applications in the secondary courses in Saudi Arabia because of the importance of the female students future in research and academic, adopting a plan for training and developing to employ the artificial intelligence applications in learning and teaching the courses of gifted female students in secondary education, which has effectiveness on the performance of female students at the levels of Knowledge, performance and future information literacy.

Keywords: Adaptive Environments - Artificial Intelligence – Application of digital technology in scientific research - Future Information literacy - Gifted - Secondary School.