## Designing adaptive electronic tests according to the level (item/stage) and the level of the objective of bloom's digital model and its effect on reducing test anxiety and mental wandering among educational technology students

This research aims to develop an e-learning environment based on two patterns of electronic adaptive test design: at the item level and the stage level, and according to the objective level in light of Bloom's Digital Taxonomy. It examines their effect on reducing test anxiety and mind wandering among Educational Technology students.

To achieve this aim, the required tasks were identified in alignment with the educational needs of Educational Technology students enrolled in the course "Introduction to Instructional Design." Instructional design tasks were developed through the use of both patterns of electronic adaptive test design (item-level and stage-level), and the objective levels were aligned with Bloom's Digital Taxonomy (remembering, understanding, applying, analyzing, evaluating, and creating).

The research employed an experimental design based on two experimental groups. The first group was exposed to the item-level adaptive test design aligned with Bloom's Digital Taxonomy, while the second group was exposed to the stage-level adaptive test design aligned with the same taxonomy. The research sample consisted of 100 male and female students from the Educational Technology program, randomly divided into two equal groups based on the two design patterns (item/stage level).

The researcher prepared the following research tools: a pre/post achievement test, a test anxiety reduction scale, and a mind-wandering scale. The validity, reliability, and suitability of these tools were confirmed.

A question bank of 250 questions was prepared and classified according to the six levels of the cognitive domain in Bloom's Digital Taxonomy: remembering, understanding, applying, analyzing, evaluating,

and creating. The percentage of students' responses to the questions across both groups was as follows: 21.28% at the remembering level, 19.3% at the understanding level, 37.54% at the applying level, 19.8% at the analyzing level, 1.98% at the evaluating level, and 0.1% at the creating level.

The research findings revealed the effect of using the two patterns of electronic adaptive test design (item-level/stage-level) and objective levels in light of Bloom's Digital Taxonomy on reducing test anxiety and mind wandering among Educational Technology students. The results favored the second experimental group, which studied using the stage-level adaptive test design, over the first group, which used the item-level design. In light of these results, the researcher presented appropriate suggestions and recommendations.