Public Abstract

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PREDICTING STUDENT PERFORMANCE IN SONOGRAPHIC SCANNING USING SPATIAL ABILITY AS AN ABILITY DETERMINENT OF SKILL ACQUISITION

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ABSTRACT

Spatial ability refers to an individual's capacity to visualize and mentally manipulate three dimensional objects. Since sonographers manually manipulate 2D and 3D sonographic images to generate multi-viewed, logical, sequential renderings of an anatomical structure, it can be assumed that spatial ability is central to the perception and interpretation of these medical images. Using Ackerman's theory of ability determinants of skilled performance as a conceptual framework, this study explored the relationship of spatial ability and learning sonographic scanning.

Beginning first year sonography students from four different educational institutions were administered a spatial abilities test prior to their initial scanning lab coursework. The students' spatial test scores were compared with their scanning competency performance scores. A significant relationship between the students' spatial ability scores and their scanning performance scores was found. This result suggests that the use of spatial ability tests for admission to sonography programs may improve candidate selection, as well as assist programs in adjusting instruction and curriculum for students who demonstrate low spatial ability.