POSTER 60

AN EXPLORATORY STUDY OF SPATIAL ABILITY AND STUDENT ACHIEVEMENT IN SONOGRAPHY

Doug Clem, MHS, RDCS, RVT (PhD Candidate)

Sharlette Anderson, MHS, RDCS, RVT, RDMS

Joe Donaldson, PhD

(Moses Hdeib, MD, RDCS, RVT, RDMS)
School of Health Professions

Purpose: Spatial ability refers to an individual's capacity to visualize and mentally manipulate three dimensional objects. Since sonographers manually manipulate 2-D and 3-D ultrasound 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. However, little is known about the relation between spatial ability and sonographers' performance. This study explores this possible relationship.

Methods: Seventeen first-year sonography students were administered a spatial abilities test prior to their initial scanning lab coursework. The students' spatial ability scores were compared to their scanning competency performance scores after the first thirty hours of lab instruction and after two semesters of lab instruction.

Results: No significant relationship between the students' spatial ability scores and their scanning performance scores was found for the first thirty hours of lab instruction. However, a very strong relationship was found after two semesters of lab instruction (See figure 1).

Conclusion: This study suggests that the use of spatial ability tests for admission to ultrasound programs may improve student selection as well as assist programs in adjusting instruction and curriculum for students who demonstrate low spatial ability.

Figure 1. Regression analysis shows a strong linear relationship between the spatial and scanning test scores.