Examining Student Spatial Thinking in Preparation for the Integration of GIS in the Egyptian Geographical Primary Curriculum.

Yaser Abdelzim Abdelmawgoud Samak

Abstract:

Spatial abilities studies have tackled the topic from different aspects. Our study concentrates on primary school students so as to develop a geography curriculum appropriate to their potential abilities, especially their technological abilities. Student eagerness to navigate using Google Maps and play games that are more complicated than Geographic Information System (GIS) programs needs to be capitalized on. As a result, the researcher designed a scale for spatial abilities appropriate to the mental age of Primary stage students. The scale was consistent with the development of the new Mathematics curriculum promoting spatial abilities so as to make a good use of student abilities, as well as the curricula development of the Egyptian Primary education stage Geography curriculum. Spatial abilities will be developed in addition to promoting GIS and developing teacher abilities so they can easily incorporate GIS into teach school activities. In a correlational study, 311 participants were randomly selected from the Primary stage and tested. The study proved the validity of the scale and its reliability when applied according to its design purpose. The study proved the existence of significant differences between males and females, and between Primary and Preparatory stage students, as well as confirming student ability to deal with the components and items of GIS in mobile GPS. The study revealed student cartographical abilities and survey abilities to sketch maps by evaluating the drawings according to Kevin Lynch's method. The results indicate that there are many indexes encouraging student spatial thinking and promoting spatial awareness.

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