

# Preferred Cognitive Learning Patterns (VAK) Among Secondary Students Admitted to King Saud University and its Effect on their Academic Achievement in Physics

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## Abstract

The aim of this study was to determine the preferred cognitive learning patterns among secondary students and their effect on their achievement in physics. To achieve the objective of the study, the researcher designed a scale of cognitive learning patterns (VAK) that consisted of (16) items, and after verifying its validity and reliability, it was applied to the sample of the study that consisted of (628) students randomly selected from the study population composed of secondary students admitted to King University Saud for the academic year 2017-2018. The results showed that there were statistically significant differences between the types of learning patterns preferred by students, that the majority of students preferred the visual pattern, followed by those who preferred the auditory pattern, while the kinesthetic pattern was the least favored by the students. The results also showed statistically significant differences in the learning patterns preferred by students attributed to the gender variable. It showed that males prefer the auditory pattern more than females, while females preferred the visual pattern more than males. There were no gender differences in their preference for the kinesthetic pattern. Moreover, Results related to the effect of the learning pattern on achievement showed a statistically significant effect of learning patterns on students' achievement in physics. It showed that the students who preferred the kinesthetic pattern are those who had the highest academic achievements, followed by the students who preferred the visual pattern, while the students who preferred the audio pattern were the least achievable students. Based on these results, the study recommended that teachers should be encouraged to diversify the strategies and methods of university teaching to suit the learning styles preferred by their students, especially the new students, to motivate them to learn in the university environment and to provide the training needs and requirements necessary to enable them to take into consideration the individual differences among their students when they identify educational goals, content, methods, and strategies.

**Key words:** Cognitive Learning Patterns (VAK), Academic achievement, Physics