Artificial Intelligence (AI) and the Educational Process: Using AI to Enhance Student Performance in Content Skills

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Abstract
This paper examines the effectiveness of using audio artificial intelligence in Saudi classrooms. Currently, high school students in Saudi Arabia find physics difficult and they struggle to remain motivated to learn. By facilitating student interaction with the activities that use Google Home Mini, it is anticipated that the degree of student achievement in physics can be increased. One participating class of students will be divided into two groups, the experimental group and the control group. The experimental group will engage with AI technology through Google Home Mini, under the supervision of the teacher. The control group will receive only traditional instruction from the teacher. The study will take place over a full semester. Student performance will be evaluated by using pre- and post-curriculum-based assessments of each group. The researcher then will compare the results using statistical tests via the SPSS program. The effectiveness of Google Home Mini will be measured using the Blake equation to determine the average gain (Blake, Sutton, Masson, & Phillips, 1986). The target indicator of success for the experimental group is a score of 90% on the post-assessment. AI is important in education because of its inherent strength in helping to address students’ learning needs in the classroom. AI systems provide flexibility in presenting scientific material and in responding to students’ interests and needs. AI systems benefit students through their ability to support information gathering and processing that enables greater diversity of response. There are many competing types of intelligence, including the capacity for logic, understanding, planning, emotional knowledge, self-awareness, creativity, problem solving, and learning. Deep Learning of AI: Machine-learning technology powers many aspects of modern society, from web searches to content filtering on social networks, to recommendations on e-commerce websites, and it is increasingly present in consumer products such as cameras and smartphones. Machine-learning systems are used to identify objects in images, transcribe speech into text, match news items, posts, or products with users’ interests, and select relevant results of a search. Increasingly, these applications make use of a class of techniques called deep learning (LeCun, Bengio, & Hinton, 2015).

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Implementation Plan
Implementation Activities: In this study, the experimental group will receive a set of questions that they will try to answer by using Google Home Mini, under the supervision of the teacher. The speakers’ roles may shift toward overseers who design and post the speakers’ tasks, and who, in turn, will evaluate the speakers’ answers. The teachers will use the IBM SPSS Statistics Subscription. Independent sample t-tests will be used to compare the pre and post averages of the assessment results after the use of the Google Home Mini AI technology for the experimental group and typical instruction only for the control group. I will measure the effectiveness of using Google Home Mini by employing the Blake equation (Blake, Sutton, Masson, & Phillips, 1986). In short, I will determine whether the experimental group statistically outperforms the control group after using the artificial intelligence technology.