

Recent Developments in Geoscience Education - the Middle East Perspective

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Abstract

Global warming is forcing legislators to take measures to limit CO₂ emissions and reduce them to net zero around the middle of the century. Although oil and gas will continue to be needed for energy production and as raw materials in the next few decades, we are seeing a dramatic decline in new students and thus in courses and modules that deal with topics related to hydrocarbon production, especially in Europe and North America. The trend towards geosciences among students in the MENA region is still unbroken, but in the near future a lack of suitable professors from Europe and overseas will make it more difficult to provide a sound education, especially in the postgraduate area. Therefore, it is essential to train qualified teachers from Oman and the GCC countries.

At GUtech we are currently developing a graduate school that takes these needs into account and allows both master's and PhD students to combine working life and academic training. To address this challenge, particularly for part-time Master students juggling work commitments, GUtech devised a three-stage teaching model. This model comprises an initial online instruction phase, during which students engage with literature and prepare for upcoming sessions; followed by an extended weekend of intensive face-to-face teaching to impart new information and skills; and culminating in a group phase where students collaborate to solve problems, with regular online consultation available from their instructor.

A new challenge emerged in November 2022 with the introduction of ChatGPT by OpenAI. While both teachers and students have embraced the opportunities presented by this technology in research and education, it is evident that the ethical utilization of AI-generated content must be emphasized. Key concerns include the proliferation of false information and biased sources, necessitating a nuanced understanding of subjects to discern the accuracy and reliability of texts.

Recent developments indicate a growing trend towards the development of specialized AI models tailored to specific fields, such as GeoGPT, which offers an open and transparent repository of training sources. These advancements underscore the ongoing evolution of AI in education, highlighting the importance of ethical considerations and specialized applications in fostering meaningful learning experiences.