

Evaluating Students Previous Knowledge

Educational Situation:

On the first day of the semester, the course instructor asks the student to recall some knowledge from a previous course and they answer it correctly. As a result, the course instructor deems that the first assignment he has set is appropriate with the level of challenge which he simply asks to them to apply this knowledge to a specific problem and then they will analyze and interpret the results. However, when they submit the assignment, the course instructor notices that did not choose the appropriate knowledge to complete the assignment, while others they chose the correct knowledge, but they had no idea how to apply it, and others were unable to interpret the results.

So why did the students say that they familiar with this knowledge when it seems from their assignment that they do not have the slightest idea about this knowledge?

The Issue:

This problem emerges from a lack of correspondence between the knowledge that students have, and the knowledge that the course instructor expects them to have for them to study effectively in the course. Despite that the students have some knowledge, this knowledge may not be sufficient to do the tasks and assignments that asked by the course instructor. Which require them to determine the appropriate methods, apply these methods to the given assignment, and then interpret the results.

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In order to clarify the idea, we can provide an example: (the experience of learning how to drive a car). At that time, you then had to consider a series of steps (adjusting the mirrors, applying the brakes, starting the engine, driving in reverse, paying attention to the rearview mirror, releasing the brakes, and pressing the accelerator pedal). In addition to a set of facts (traffics rules and regulations, the meanings of traffic signals, and the functions of the car's switches and meters), as well as a set of skills (accelerating smoothly, parallel parking, and making turns at the roundabout). You must in addition to everything mentioned above, learn how to integrate all these skills and information, such as checking the mirrors, changing lanes, and ultimately, understanding the appropriate context for the relevant skills and information. Such as adjusting speed and being alert in using the brakes while driving. For an experienced driver, the driving process is easy and automatic, requiring only minimal conscious awareness to perform well. However, for a new driver, it is a complex and stressful process, requiring conscious and gradual development of varied skills and abilities. We observe a similar process in achieving proficiency in academic context.

Educational Practice: Evaluating Students Knowledge

To overcome this issue, the course instructor should evaluate what students know and believe, so that they can build on accurate and relevant knowledge, address any gaps and deficiencies if present, and help students understand when to apply previous knowledge correctly.

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Implementation Procedures:

The following steps can be used to overcome this issue:

1- Determine the extent and nature of previous knowledge related to the requirements of the course, such as by speaking with colleagues who are taking the courses or conducting a brief and non-graded evaluation at the beginning of the semester.

2- Identify specific previous knowledge, such as by asking a question at the beginning of the lecture about what students already know of a topic related to the lecture and encouraging them to brainstorm ideas or create a concept map.

3- Address insufficient previous knowledge, such as by identifying the previous knowledge you expect students to have if it becomes apparent that a small number of students lack the basic skills. They can be directed to appropriate supportive resources to help them develop these skills by themselves. However, if a large number of students lack on basic skills, you can allocate a time during the lecture to support them or schedule an additional session through virtual classes.

4- help students avoid applying previous knowledge in incorrect contexts, such as by assisting them recognizing the appropriate or inappropriate states for applying previous knowledge. As well as, providing them with general rules to help determine whether their knowledge is relevant or not.

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5- Evaluate the students understanding of the course content by analyzing the patterns of errors that students make in exams, essays lectures, oral assignment, and so on. This information can help design guidance to enhance important skills or improve the latest version of the course.

Resources

The Book of How Learning Works: Seven Research-Based Principles for Smart Teaching. Translated by Anas Maktabi (King Saud University).

Center for Excellence in Learning and Teaching – Promising Faculty Ambassadors program (first session) 1441 AH
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