



INNOVATION ABSTRACTS

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Differentiated Instruction Leads to Increased Student Engagement

Student achievement is important in all levels of education. The effective use of classroom time has long been considered a key element for increasing student achievement. The most common use of classroom time is direct teaching, otherwise known as the “sage on a stage” approach. Unfortunately, direct teaching is one of the least effective uses of classroom time, since students typically aren’t engaged with the course content, unless they are extremely interested in the content or their instructor is a professional orator.

Many educational leaders have suggested using the 3R’s framework—rigor, relevance, and relationships—to facilitate increased student achievement. In the 3R’s framework, rigor refers to instructors creating demanding curriculum that develops students’ skills; relevance refers to instructors ensuring course content touches on current events and students’ interests; and relationships refer to the connections students form with each other, their instructors, and the course content. I support the 3R’s framework. However, I would like to introduce a fourth component to the framework that will improve academic engagement, increase student achievement, and address all students’ unique academic needs. The fourth component to the framework is “Differentiation.”

Differentiation

Differentiation, an instructional strategy that can lead to increased student achievement, involves providing a variety of learning pathways. Instructors in differentiated classrooms engage students in instruction through a variety of approaches to learning by appealing to a range of interests and using varying rates of instruction along with varying degrees of complexity. Instructors can differentiate three elements of instruction: Content, process, and product.

- Content – What you teach and expect students to learn.
- Process – How you teach and expect students to learn.
- Product – How you expect students to demonstrate what they learn.

In this *Innovation Abstracts*, I focus solely on the “process” element of differentiated instruction because it is the element that is easiest to change.

Student-Centered Learning

A common strategy used to differentiate the “process” in the classroom is by moving the classroom from being

instructor-centered to student-centered. In the more traditional instructor-centered learning environment, the instructor is the center of the learning experience and he or she takes the “active” role of teaching, while the students assume a more “passive” or receptive role. In contrast, in the student-centered learning environment, the interests of the students take center stage and students take on more “active” roles in their education experiences.

Student-Centered Example

In an instructor-centered classroom, the chemistry instructor stands at the front of the class and writes on a dry-erase board to explain the three different types of chemical bonds. Students might take notes and ask questions, but they typically don’t participate in any other way. However, in a student-centered classroom, the instructor has students inform their peers about the three different types of chemical bonds. To do this, the instructor splits the class into groups of three or four students. Each student group is given the assignment to research one type of chemical bond. After a pre-established amount of time, the student groups share information about their assigned bonds with their peers, followed by a discussion period. If students present inaccurate information, the instructor intervenes to correct mistakes. In this example, students do the research, they provide the instruction, and they learn from each other. Engaging students in the learning process increases their attention, focus, and promotes meaningful learning experiences. Consequently, students retain more information because they are active in their learning.

Technology in the Classroom

In recent years, educators have begun using new technologies and tools to individualize and differentiate how they provide instruction in their classrooms—the “process.” A variety of technologies and digital resources can appeal to a variety of student learning styles. When instructors effectively use technology in the classroom, they can address the learning needs of all students and increase their engagement and comprehension.

Technology in the Classroom Example

To integrate technology into the lesson about the different types of chemical bonds, the instructor begins the class with a YouTube video that includes chemical experiments showcasing the different types of bonds. By using a YouTube video to introduce the content, the instructor is accommodating students who are visual learners. As the lesson continues, the instructor introduces a podcast

about the different types of chemical bonds, a format that appeals to learners who learn best by hearing the content. Lastly, to reach students who learn best through hands-on activities, the instructor completes the lesson by having students explore an interactive educational app that allows them to simulate and create the various types of chemical bonds on classroom provided tablets. By using technology to account for a variety of learning styles, each student is provided with the tools they need to engage with and understand the lesson's content.

Conclusion

Classrooms today are becoming more diverse. Every student has a unique learning style, and instructors should attempt to meet each student's individual needs. Therefore, the "sage on the stage" style of teaching is no longer an effective way to engage all students in course content. By using a student-centered approach along with the appropriate technology, instructors are able to differentiate their instruction and meet their students' academic needs.

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