

Utilizing Formative Assessment Technology Tools as a Cooperative Learning Strategy

Introduction

Since the early 2000's innovative classroom technology has become a vital part of education practices in traditional and non-traditional classroom settings. Laptops, tablets, cellphones, cameras, and clickers have transformed the structure of these classrooms by increasing student participation while also providing students with tools that connect them to a greater amount of digitized information. Currently, one of the most popular forms of classroom-based technology are formative assessment tools. Used to generate feedback on performance and assess learning occurring in the classroom, formative assessment tools have undergone a transformation of their own as we are now able to quiz and poll students, enhance classroom discussions, and create digital artifacts that can be drawn upon in future lessons. These tools are designed to empower students with the overall intended goal of improving and accelerating content knowledge and deepening a connection to the lesson's essential questions, standards, and objectives. Technology-based tools, such as Plickers, FlipGrid, and Socrative bring classroom learning into the digital age, are easy to use and engage a variety of learners. Integrating technology into the classroom can be an effective strategy to create a dynamic cooperative learning environment and provide opportunities for the learner to utilize their mobile device for instructional purposes.

Procedure: Examples of Technology Tools

FlipGrid is a formative assessment tool and video discussion platform which allows students to respond to classroom topics by creating a 15 second to 5-minute video using a cellphone, tablet, or laptop camera. By utilizing a system such as FlipGrid, educators have an ability to capture and archive student work, stimulate conversations, and enhance overall classroom participatory practices. An example of how a formative assessment tool such as FlipGrid can be integrated into a post-secondary agriculture course would be to ask your students to track and archive their progress in the creation of a project. Students can regularly share and update course instructors on the development of their project while demonstrating, through short video clips, content and sections within the project. Through the use of the FlipGrid system, instructors and fellow classmates can easily provide feedback to one another and share ideas as a cooperative learning strategy.

Plickers, which stands for "picture-clicker", is a free student response tool which utilizes a specialized QR style code that is printed onto a sheet of paper and is assigned to students. Using the Plickers response tool, students can then turn and orient their code in different positions to indicate the answers A, B, C, and D. The instructor can then download the Plickers app onto their smart phone, activate and project their Plickers questions, and scan the room with their phone's camera. The recorded responses are then translated and sent back to the

Plickers online classroom where the instructor can then view the response statistics associated with that question. By utilizing the Plickers system, educators are able to identify potential learning gaps occurring within their classroom instruction which can help them understand key concepts which may need reiteration. By employing this system with regularity students are able to measure their own knowledge of classroom concepts in a way that is more engaging than traditional paper and pencil assessments. An example of how Plickers can be integrated into a post-secondary agriculture course would be to ask your students to use the Plickers system to practice identification skills in areas such as horticulture, animal science, forestry, agriculture mechanization, or entomology. Using this system students are able to exercise their knowledge of certain systems and their components easily and effectively while receiving feedback on their successes in the classroom. By applying a system such a Plickers, instructors will be able to increase classroom participation and address issues of possible confusion in the course content.

Socrative is a formative assessment tool which creates an online digital classroom. Using the Socrative system, educators can generate quizzes, poll their class, and allow students to engage with one another. While Socrative can be activated online through one's computer, the creators of this system have also produced a free smart phone app which transforms a student's cell phone into their own personal clicker. Using Socrative, students can either be assessed on their classroom knowledge in the form of multiple choice, true or false, or short answer questions. Student responses are captured in the digital classroom which then gives the instructor an ability to provide consistent feedback to students at a deeper and more collaborative level, the instructor can assign students to groups, where they are able to work together to answer questions collaboratively in a system game known as Space Race. Space race is a collaborative learning strategy which allows students to break into groups and complete quizzes together. As students correctly answer questions their assigned group marker is moved forward on the Space Race game until one group answers all of the questions correctly and wins the race. The application of a system such as Socrative can be used as a means to increase classroom participation while encouraging responsible and appropriate technology usage during the instructional period. An example of how Socrative can be integrated into a post-secondary agriculture course would be to ask your students to work together in groups to complete the space race game. By allowing students the opportunity to engage with one another in a competitive activity, students who fully grasp concepts can assist their fellow classmates who may need help. Cooperative instructional strategies can create a dynamic learning environment in which students support each other through discussion and engagement to help them acquire knowledge and support academic success.

Conclusion

The utilization of formative assessment tools in a post-secondary education environment can be used to encourage continual and ongoing classroom engagement amongst fellow peers. Utilizing technological resources can also help to engage students in the content delivery by connecting to the diverse needs of the individual learner. By utilizing formative assessment, the quality of work created by students will likely be stronger and more thoroughly developed as students are required to consistently seek and receive feedback and advice from others who are also engaged in the learning environment. Collaborative learning strategies such as those

highlighted in the examples presented empower students in their learning experience and provide instructors a variety of assessment methods to help evaluate their student's success on a regular basis throughout the semester.

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