



Multiple Modality Pedagogical Approach Based on High Engagement for Diverse Learners

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Abstract

Focusing on a Multiple Modality Pedagogical Approach utilizing flipped learning, student response systems, and discussions and in-class activities, allows teachers to create the foundation for a more engaging learning environment. In creating a range of different learning modalities within the classroom, teachers can then build upon the foundation to scaffold their curricula utilizing this multi-modal approach. With this pedagogical stance in mind, both students and teachers benefit. Teachers can learn where deficits lie within their classrooms while seeing increased performance and student satisfaction while students can learn at a rate that works for their individual lives while becoming more engaged with classroom curricula.

Keywords: Pedagogical; Diverse Learners

Abbreviation: SRS: Student Response Systems.

Perspective

Multiple Modalities

Teachers often underutilize the use of multiple modalities (videos, interactive assignments, and student response systems (SRS)) to reach students in the classroom, resulting in the absence of diverse learning conditions [1]. There is a strong need to create multiple modalities to learn, not just in online courses and blended courses, but in traditional face-to-face courses [2]. The main reason to switch to a multiple modality pedagogy is to overcome the lack of learning conditions that do not enable diverse learners to thrive as they do not learn as effectively in a traditional teacher-centered approach of lecture-based education [3]. Further, a teacher center approach lacks diversity of stimuli which leads to boredom thus making it take more effort for students to learn and engage in curricula. This approach is

not as effective as executing new stimuli utilizing different modalities that light up the brain and help with attention and effort which is considered a finite resource [4]. Switching from a teacher-centered approach to a more collaborative and constructivist approach is a challenge and met with resistance by educators [1]. When educators switch from a teacher-centered approach of depositing knowledge to a more collaborative and constructivist approach, students become more engaged in their learning, as discussed later on [5].

The remainder of this paper will cover a proposed pedagogical approach to scaffold and integrate different learning modalities throughout a unit and the benefits of each. One goal at each level is to leverage high expectations and engagement from the students. The order of the modalities is; flipped learning, a student response system (SRS), and interactive class activities such as projects and small group discussions. These are in this order as that allows for scaffolding of the information from cursory to in-

depth [6].

Flipped learning uses videos that allow students to learn at their own pace [5]. The SRS will use Kahoot!® as it provides immediate feedback to students and professors [7]. Last, small group discussions will be discussed, which provide for collaborative learning and interactive activities that follow the constructivist approach [1].

Flipped Learning

Students, both typical and diverse, prefer active learning environments to traditional lectures [8]. Flipped learning offers benefits such as allowing students to work at their own pace and personalizing the learning experience for them [5]. Students are able to view material in video format prior to attending class, thus gaining knowledge at a time and pace that is comfortable and efficient for them [9]. In addition, it is a fantastic way to increase student engagement as reported through self-reports [10]. However, it is important to note that students need to buy into the material and be interested in it otherwise, they will not be engaged in the content Birgili, et al.

One of the major caveats to a flipped classroom being effective is material that is not directly applicable or developed appropriately for the audience Birgili, et al. The material needs to be relevant and when there are videos, they should be about 6-8 minutes [11] and well-made [1]. If the videos are too long, students will not watch and if the video covers too many topics at once, the students are less likely to engage. If recorded lectures have poor audio and video quality, students are likely to disengage, similar to how one would tune out a badly produced TV show [1].

The biggest challenges with producing or sourcing videos is not the length or the quality, and rather, it is the challenge of getting students to engage with the videos [12]. There has been no consistent pattern of student engagement with prerecorded videos. Sometimes, low-performing students watched many videos, and others did not. Engaging trainees or students with the material is consistently challenging in all disciplines and forms of training [13]. In order to get the students to engage, it is necessary to link the videos in some meaningful ways to the material covered in class. The aim is to establish a direct connection between the videos and SRS, discussions, and activities.

Student Response Systems

Student Response Systems are ideal for engaging students in the classroom [7]. Its efficacy in fostering engagement stems from the fact that students interact with the content through question answering, survey participation, and

inquiry [14]. In order to assess students' comprehension of the previously watched videos from the flipped learning environment, educators can use a survey system that links to PowerPoint [14] or a program like Kahoot and encourage students to watch the videos by utilizing low stakes rewards like extra credit or small participation points based on how they do [7].

Incorporating a game like Kahoot in educational settings provides significant advantages, with one such benefit being the highly engaging nature of game-based learning for students [15]. Kahoot is useful in bringing life to dull lectures and creating an interactive pedagogical platform to enhance mundane lectures [16]. Wang, et al. [15] found that students reported that overall, there is a feeling of increased performance, better classroom dynamics, and a reduction in overall student anxiety when utilizing this approach. The research findings indicate Kahoots are a perfect fit for large lectures as they facilitate deeper learning through active engagement, as highlighted by Butler [17]. However, researchers discovered some drawbacks of Kahoot in the same study, including an unreliable connection, the pressure of answering questions quickly, and the realization that competition may not be suitable for everyone. However, the benefits seem to outweigh the drawbacks.

A key benefit of Kahoot as an SRS is that real-time assessment allows for breaks between questions. A natural stopping point in the class allows for real-time micro lectures that provide targeted feedback. By seeing what students understand and struggle with on a Kahoot, an educator can give an in-person micro lecture that will help those who are struggling to catch up [18]. Research by Olde Scholtenhuis, et al. [19] found that micro-lectures positively impact students' test performance. These Micro-lectures are the perfect setup for the next step of discussions and in-class activities.

Discussions and In-Class Activities

The subsequent phase of the multimodal pedagogical process involves the utilization of activities and discussion groups to accomplish the mastery aspect of learning. Small discussion groups are incredibly effective for detailed learning in various situations [20]. Students typically derive enjoyment and actively take part in interactive in-class activities that effectively incorporate the unit's information [21].

In an ideal scenario, the small group discussion will be structured to promote collaborative discourse. The educator should thoroughly explore the material through the utilization of discussion and methodically arranged and curated [22]. The research points out the benefits of elaborated discussion on important classroom metrics, such

as satisfaction, engagement, and test achievement [23]. It is worth emphasizing that learning and attainment stem from the requirement to elucidate and expand upon the designated topics [22].

In addition to the increase in understanding and comprehension of the material, students enjoy and report high satisfaction when taking part in discussion groups [20]. High satisfaction with discussions is why Hamann, et al. [20] thinks there is an increase in critical thinking and communication skills among students who take part in discussions. The same paper emphasized the importance of students' preparedness to engage in material discussions during class for them to be successful. By implementing the technique explicated in this paper, students enter the classroom possessing prior knowledge because of their participation in an SRS-led class featuring targeting micro-lectures that seamlessly transition into subsequent discussions or in-class activities.

Active participation in in-class activities serves as a valuable means for students to witness the practical application of the material they have learned [24]. Furthermore, researchers posit that the improvements in grades and satisfaction overall stem from actively participating in the learning experience [25]. A last benefit of in-class activities and discussions in this method is that these activities and discussions would have been homework. When students actively participate in collaborative activities in the presence of the teacher, they can optimize their productivity outside of class. This eliminates the need for spending extensive hours on problem-solving, as peers or the teacher can efficiently resolve them [5].

Conclusion

Through the integration of flipped learning, micro-lecture, SRS, discussion, and assignments, educators can leverage the many advantages offered by each of these modalities while simultaneously building a scaffold to approach diverse needs within the classroom. Educators can achieve increased performance, engagement, and satisfaction by combining flipped learning, micro-lecture, SRS, discussion, and assignments, as highlighted by the research. Students are more willing to participate and engage in curricula as it becomes a more diverse atmosphere for learning. The inclusion of different modalities throughout a unit of material can help alleviate boredom and fatigue. This is due to the novelty and excitement that each modality brings, resulting in a more engaging experience [4]. Maintaining a sense of novelty and excitement in the lessons proves to be an effective method for engaging both traditional and diverse students in the classroom and university [26-29].

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