

Flipped Classroom

The Next Frontier of Health Science Education

The availability and efficiency of technology and the modern digitally empowered learner is requiring a paradigm shift in how teaching is conducted. There is also a need to use teaching methods that enhance the relevance and retention of knowledge through rich interactive exercises, and facilitate in-depth learning to achieve the wide range of skills health practitioners are expected to master. Therefore, this brief document describes the flipped classroom model which represents a potential future for an improved classroom instructional efficiency in health science education.

Definition: “Flipping the classroom” means that students gain first exposure to a new material doing pre-work at home, usually via reading or video lectures, and then use class time for an active learning experiences to assimilate that knowledge, through problem-solving, discussion, debates, role play, simulation or others.

Why flip a class?

Enhanced Learning: There is evidence that having students engage in active learning and peer learning in class leads to deeper understanding and greater retention of concepts than traditional lecture information transfer in class.

Improved clinical skills: The cases they discuss/solve are more complex than simple memory recall—they are problems that must be solved and mirror clinical practice and encourage students to clinically reason and work collaboratively, which are all essential skills for clinicians in today's team-based health care. The expertise required to solve the case is rarely completely covered by the pre-work, so students must turn to alternative resources to get their answer and learn how to acquire knowledge.

Better focus and engagement: In a lecture, the attention of most students starts to decrease after ten or fifteen

strengths and weaknesses in knowledge and skills. So they are additionally developing teamwork skills and peer learning.

Self-paced/individualized learning: Since students can control the time, pace and place of learning with the online materials, they find it useful to repeat segments of an online presentation when they are having difficulty with a particular concept. For some students the ability to rewind and listen to a presentation or explanation again can help them make more meaningful notes.

Teacher satisfaction: Although an up-front investment of time is necessary to create online materials, including video content, the materials can be reused by the instructor from year to year. Rather than transmitting information, teachers also get to actively participate in the construction of knowledge in the classroom, guiding students as they make sense of the content for themselves.

Enhanced student motivation: Flipping some classes can add some variety and change of pace to classes and make the course more interesting for students.

Key components of Flipped Classroom

1. Introducing the Task/process

Instructors should introduce the tasks by clearly explaining their expectations for what the students will be doing before class and the amount of time the students will need to invest to be ready for the class activity. For some students, active learning in the classroom will be a new experience so explaining the participatory approach ahead of time can reduce possible anxiety. Explaining what the in-class activity potentially would look like is also equally important.

2. Pre-class task

Instructors can create their own materials such as narrated PowerPoints, or reuse online content such as websites, readings and videos for students to go through before class. Video content should be concise, no more than 10-20 minute segments, and it can be helpful to students if there are guiding questions or prompts to help them recognize the keys objectives of the preparatory work. Having pictures, animations or videos in the video PowerPoints help to make the viewing interesting. If instructors inform the students to jot down questions about difficult concepts or other questions and bring it to class, they can use some class time to discuss these issues. Having an online system to submit these questions when possible will have an added benefit for instructors to see the questions before class.

3. In-class activities

Before starting the actual in-class activity, brief assessment of how adequately prepared the students are, is a valuable learning tool for the students. Three to four questions that mostly provide an opportunity for students to apply what they have learned rather than questions that merely test factual knowledge are ideal. Formative feedback on the assessment questions, an opportunity for students to pose their own questions to the instructor or a short assignment can also be included at the beginning of the in-class portion of the flipped class



activity time can be used to encourage students to be creative and make discoveries (and errors) in a relaxed environment. Activities that foster peer-to-peer and student-instructor dialogue and that create opportunities for collaboration and active learning are most effective for promoting a deep-learning approach. The primary role of the instructor will be to monitor, guide, and support the learning process of the students. The activities can be individual or group-based. Individual activities like case based problems are helpful for students who need more individual reflective time to learn. Group activities are often the goal of the in-class portion of the flipped classroom. Each student will bring their own individual understanding of the content to the lesson, and together, in small groups, they will be able to draw on each other's knowledge and understanding of the material to forge new understandings for in-depth learning. There are few of the things you can do:

- Vignettes or case studies
- Team-based problem-solving
- Games
- Point/counterpoint debates
- Live patient case presentations
- Role plays

Potential Challenges of Flipped Classroom (and possible remedies)

- Initially, more time and effort is required to rethink and prepare both pre-class materials and in-class activities; however, the materials can often be reused without too much effort the next time the class is offered.
- Activities that can be facilitated easily in a really large class are fewer than those in a small class, but there are still many ways to engage students in applying concepts and peer learning. A mixture of mini-lectures and think-pair-share can be effective even in really large classes.
- For many students being passive in a lecture is easier and less intimidating than being actively involved in a class. However, if asked, students often acknowledge that more active, deeper learning experiences are very valuable and that they prefer meaningful learning in the classroom.
- The type of pre-work assigned is crucial to the success of the flipped classroom. Telling students to read a chapter or watch a video before coming to class maybe insufficient. The content needs to be engaging, to adhere to adult learning behavior, and to accommodate more than one study strategy. A combination of reading and viewing material, questions, and cases is necessary to facilitate all learning strategies.
- Student motivation, which underlies the whole learning process, can be affected by the design of the activity. Activities that are designed to be challenging, but achievable, can help motivate students. Also students will be more motivated if they find personal meaning and value in the material and see that the course is relevant and linked to their future success. Providing frequent feedback to students as they complete their learning can also increase motivation.



every curriculum. So these interactive sessions should replace the didactic instructions for those topics not to affect the overall time/schedule.

References

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