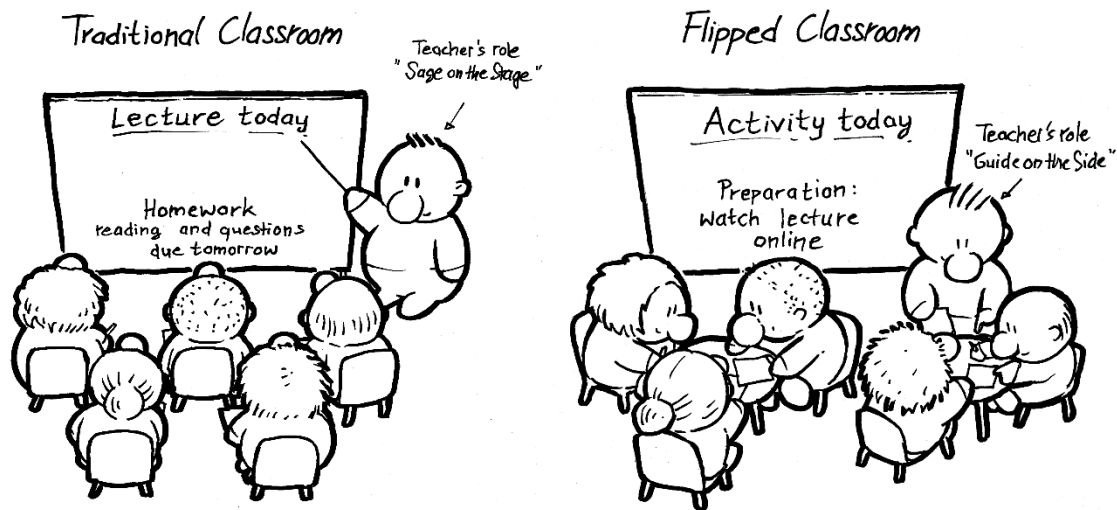


Flipped classroom



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What is it?

Also called the inverted classroom, the flipped classroom capitalises on the affordances for technology-enhanced learning to allow students to prepare for a more engaging face-to-face class (Akçayır & Akçayır, 2018). This involves working through online study resources independently, allowing face-to-face time to be used for more challenging groupwork activities. Thus, students are required to take more responsibility for their learning. Other active learning methods, such as SCALE-UP and TBL, incorporate the flipped classroom as a core part of their methodology.

How does it work?

Unlike the traditional model of education where students would come to class for their main source of learning, using time afterwards for 'homework', the flipped classroom is front-ended so that students do preparation or homework on their own in advance of the in-class session which would typically require them to work cooperatively or collaboratively with other learners, to apply their knowledge to solving problems.

Does it work?

Akçayır & Akçayır (2018) in their systematic review of 71 studies, mostly in higher education, present the benefits of flipped classroom as including enhanced student satisfaction and increased engagement, improved learning outcomes, and development of creativity, critical thinking and problem solving skills. In addition, learners are afforded flexibility in how they prepare for class, there is more student-student and student-educator interaction, and more efficient use of class time. In medical education, a systematic review of 46 articles identified positive student attitudes to the flipped classroom but was hesitant about the quality of existing research on learning gains, noting the need for studies assessing the higher levels of Kirkpatrick's evaluation framework i.e. transfer of knowledge to professional practice (Chen et al., 2017). In a systematic review of 62 articles in engineering education, Karabulut-Ilgu et al. (2018) concluded that the flipped classroom

was as good as if not better than the traditional classroom in terms of learner performance but noted that longer-term studies of retention were needed as well as more qualitative studies.

These studies comment on the fact that it is uncertain whether the flipped classroom design itself versus the incorporation of active learning strategies is responsible for learner satisfaction and learning gains. DeLozier and Rhodes (2017) discuss the benefits to learning that accrue when the flipped classroom design incorporates different active learning strategies such as self-testing, discussion, and student presentations. Self-testing aids learning through retrieval practice, while discussion in the context of think-pair-share activities allows students to articulate their understanding and get feedback from peers. Actively producing information for a presentation aids memory and learning is further enhanced when students are expected to teach the material to their peers.

What do I need?

Given that students are required to do preparatory work in their own time before coming to class, it is important to be aware of potential digital equity issues (Rahman et al., 2021). Not all students have access to suitable devices or reliable Wi-Fi at home, requiring them to come onto campus, so enough time should be given to allow students to do the required preparation.

Preparatory materials might take the form of recorded mini-lectures, assigned reading, online quizzes with feedback, and/or pre-session discussions. The aforementioned studies cite staff workload as a potential barrier to implementing the flipped classroom. Although time-consuming to create digital resources, the pivot to online has enabled educators to create recorded mini-lectures and other digital interactive resources which can be reused in a flipped classroom context. Educators should consider how students will ask questions of the preparatory material out of class (for example, discussion forums and/or video annotations).

One challenge relates to students' familiarity with the traditional classroom and unwillingness to do the work associated with this approach (Akçayır & Akçayır, 2018), so it is imperative that students are inducted into active learning approaches at an early stage in terms of the proven benefits to their learning and performance.

Another significant challenge is checking that students have done their preparatory work (Akçayır & Akçayır, 2018). This could be evidenced by completion of an online activity, such as a quiz or wiki that documents each individual learners' contributions. It is important that the teacher does not revert to 'lecture' mode or this sets the expectation that students do not need to prepare before class. Students may be incentivised to do preparatory work if they get some recognition for this; for example, quizzes counting towards their summative assessment.

In terms of room layouts, any room can support the discursive elements of the face-to-face learning activities, but it may be more effective to encourage students to work in small groups around tables of 4-8 students. Additional technology in technology-enhanced active learning spaces can also help facilitate student groupwork and presentations.

Links

- [Introductory guide to the flipped classroom hosted by AdvanceHE](#)
- [EduCAUSE guide to the flipped classroom](#)

References and further reading

Akçayır, G., & Akçayır, M. (2018). The flipped classroom: A review of its advantages and challenges. *Computers & Education, 126*, 334-345.

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