Challenges of teaching with technological support

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Introduction

Using technological tools appears the unavoidable fate of teaching in the next few years. In fact, 2020 has provided the perfect opportunity for every instructor (some more willingly than others) to turn their sessions into fully online activities. While technology can be used as a bridge to increase the interaction between learners and instructors, there are some aspects that need to be tackled, in order to avoid these tools become a way of further disadvantaging students with special needs, diverse ideologies and various socioeconomical backgrounds.

In this poster, I present the results of desk research on the topic of technology in teaching, through which I display the most prominent technological tools and identify the most salient challenges for both learners and instructors.
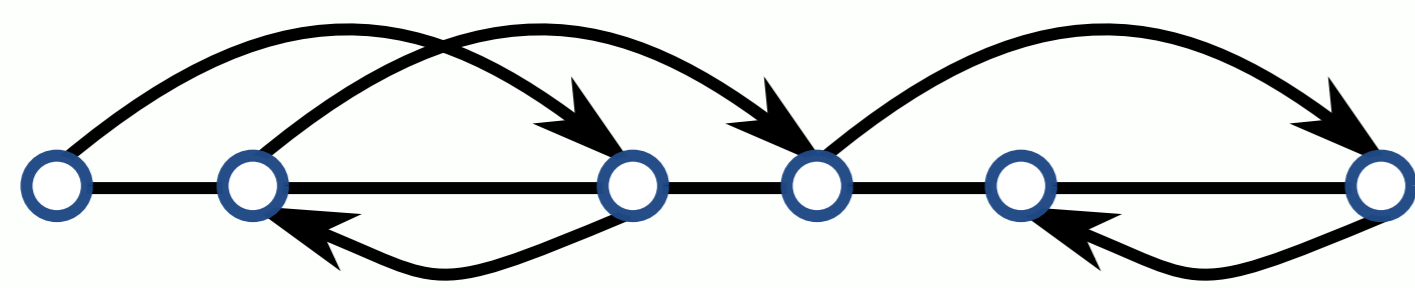
Lecture Presentation Software

Power Point presentations should be accessible to students, regardless of their preferred style of learning.
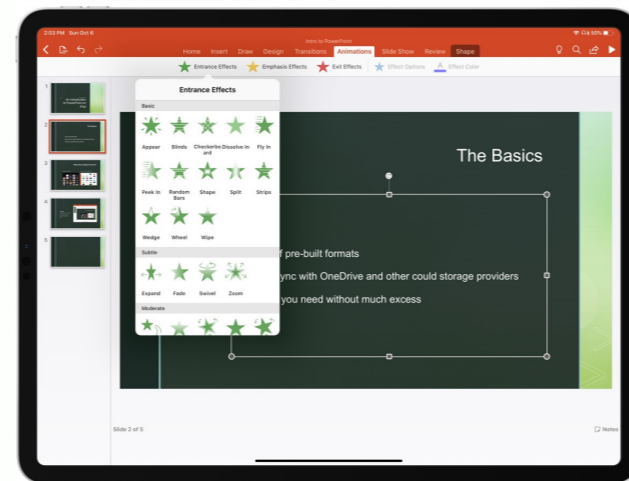
Engaging presentations are endowed with descriptions for the visually impaired and follow a non linear progression (Morton 2007).

Audience Response Systems

Engaging students becomes difficult as they are more expose to distractions. One can use technological assistance to make the lectures interactive. Moreover, the feedback from students can be delivered more easily using electronic devices.

Clickers (Caldwell, 2007) and applications such as *Kahoot* and *Plickers* (Campbell and Monk, 2015) can be used to enhance the students' participation in the lectures.

Virtual Learning Environment

Screencast: Presenting the information as a mixture of visual material (slides) and audiovisual components (the lecturer explaining the featured content) can be broadcasted to students, bringing another dimension of interactivity, which ultimately yields gains in module marks (Morris and Chikwa, 2014).

Virtual Classroom: Sessions mediated by computer, using the Big Blue Button software available in Canvas, help with reducing anonymity of the students in online course and to improve the perception of the instructor, thus making the students more likely to ask questions (Weimer, 2013).

Conclusions

Teaching/learning embedding technology will continue to pose a huge challenge both for instructors and learners, both needing to adapt to ever improving software and devices.

Forecasting what technological tools will be available in ten years time is a herculean task, whose chance of success are rather limited.
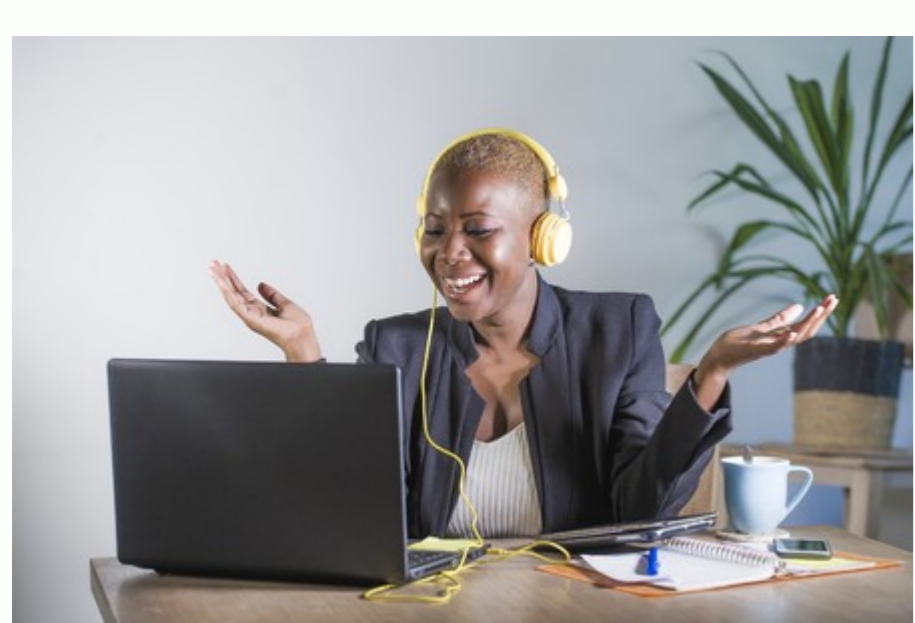
Instructors and institutions must develop strategies that allow the usage of technologies in the teaching/learning process, without generating further disadvantages to learners with special needs.

Economic challenges

Although technology can facilitate the relation between students and instructors, the cost of technology cannot be disregarded. Requiring the purchase of a computer to attend lectures is unethical. Using technology should increase the participation but not generate further exclusion to disadvantaged students.

The response systems do not necessarily have to be implemented with expensive clickers. For instance, *Top Hat* lets students use their own devices (e.g., phone or tablet) as response tool (Wilsman, 2014). Alternatively, other strategies can be implemented in which the various answers are encoded in colored cards which are provided to students beforehand (Ambrose, 2010).

Supporting students who cannot bring their own computers to lectures can be done by printing out copies of the visual materials and making them available at the beginning of the session. Doing this also prevents the learners having to pay for the printing services.

Technical challenges

Using technological tools for teaching implies that instructors must become proficient in the software used to apply such tools. In turn, it means that instructors will also play the role of learners of the technological platforms.

The institutions should promote staff to take part in modules associated to teaching with technological aids. Ideally, such process should be paid by the institutions as a part to develop the professional capabilities of their employees.

As the lectures turn to technological applications, the student engagement becomes a serious topic. While imposing a strict attendance to the "*live*" lectures undermines the advantages of the online sessions, instructors face the task of guaranteeing that their students are indeed interacting with the material.

Relevant references

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The presentation of this poster can be watched online following this QR code