

Online Education and the "New Normal"

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ABSTRACT

Blended Learning has traditionally been seen as a popular choice in the pursuit of educating the masses in an ever increasing digital world. The 2020 pandemic forced educators across the globe to re-think how their courses could be delivered in an alternative format to this traditional blended approach. We present here a discussion on a suite of tools *Tutors*, which allows for the complete online delivery of single modules or even full courses both synchronously and asynchronously, and its application in a global context.

CCS CONCEPTS

• **Applied computing** → *Education*; **Distance learning**; **Learning management systems**; *Computer-assisted instruction*.

KEYWORDS

Higher education; Online Delivery; Blended Learning

1 INTRODUCTION

The beginning of online course components marked the introduction of the authors to trialling a suite of technologies under development for blended learning. The *Tutors* platform began as set of tools for an individual educator to organise very neatly their material and has evolved into a "one stop shop" for online course delivery. Using *Tutors* allows for a single module or even a full course to be delivered in either blended mode or fully online, offering a mix of presentations in pdf, video lectures and/or prescribed labs - one can have as much or as little as suits the module to be delivered. While similar in some functionality to other learning platforms [1], *Tutors* is open-sourced and generally expandable without requiring dedicated infrastructure or other investments. *Tutors*¹ consists of two key tools [2]: (1) a command line application that generates a course package (json content, images, pdfs, and other assets) from a simple folder structure can be published to a static hosting service (e.g., gh-pages, bitbucket pages, or Netlify) and (2) an Aurelia application, the *Tutors* reader, which presents a course in a visually compelling manner.

¹<https://github.com/tutors-sdk>

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2 IMPLEMENTATION EXAMPLES

Tutors has excelled in its usage in the delivery of 2 internationally based courses. Firstly, a joint delivery of a semester long Mobile App Development course between Central Michigan University in the US and Waterford Institute of Technology in Ireland and secondly, 2 short courses in GUI Development and OO Programming in China, delivered by a WIT lecturer. The semester long course was made possible by utilising the tutors platform primarily by using the presentations and labs features. The short courses in China however relied heavily on prerecorded video lectures due to the time differences involved. This worked exceptionally well, with the practical labs delivered synchronously, in this particular instance, via Zoom. While 2 short courses were delivered face to face in 2019, the global pandemic and subsequent travel restrictions in 2020, necessitated the course to be delivered fully online and beyond "The Great (Fire) Wall". (YouTube is restricted in China but with a small update to *Tutors*, a viable alternative delivered the same user experience in terms of the pre-recorded video lectures).

3 OUTLOOK AND CONCLUSION

The *Tutors* platform has recently gained features to track student participation in real-time and as a total, so one can see what students are taking practical labs and how long they are spending on each step in each lab as well as total effort time-wise. This offers instructors significant benefits similar to expensive or non-open platforms. From the beginning OBS was (and still is) the chosen software for recording and/or live streaming for video lectures. Future versions of *Tutors* will additionally allow Zoom recordings of live online meetings, which can be stored in the cloud and embedded in tutors, akin to YouTube, removing the need to upload any recordings prior to viewing via tutors. In conjunction with Slack, a Zoom meeting can be scheduled and posted on a Slack channel for students, who in turn will have instant access to the recording, once *Tutors* is updated with the zoom link (which is a simple repo commit). The *Tutors* environment enhances the students overall educational experience and has the added bonus of simplifying the process of online delivery for the lecturer, all in an open-sourced and free to deliver environment that is undergoing continuous development. The learning curve of working with the *Tutors* framework is not steep and provides significant benefits for instructors and, more importantly, students.

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