Which learning resources do undergraduate students perceive as most valuable and does their usage contribute to student module success?

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Thursday 2 September, 15:00-16:30 BST

The move to blended/online learning for many students in the face of the Covid 19 pandemic in 2020/2021 provides a great opportunity to identify which learning resources students value most highly. In this paper we use Virtual Learning Environment (VLE) data to identify which module learning resources students use most frequently. Since the move to blended/online learning students have had to rely more on online resources provided, for example asynchronous lecture recordings. There are also learning resources that were previously provided via VLEs and continue to be provided in this way, such as discussion forums. This paper offers an opportunity to compare students' use of module VLE learning resources in the 2019/2020 academic year prior to the shift to blended/online learning, with their use of VLE learning resources in the 2020/2021 academic year, considering both whether learning materials that were already provided have been used more in the current academic year, plus the take up of new learning resources that have been uploaded this year.

There is a large literature including but not restricted to an Economics literature that considers consumers' demand for a product or service on the basis of their willingness to pay. However, there are challenges in designing focus groups and/or surveys to determine accurately consumers' willingness to pay / valuation of a resource. An alternative approach to determining the extent to which consumers value a good or service is to observe their demand or use of the item. This is known as the revealed preference approach, and is the approach used in this analysis, whereby we assume that the learning resources students use provide a good indication of the resources that they value most highly. Fortunately, VLEs offer rich data on the extent to which individual students access the various module online resources, including the frequency and timing of access.

We are also interested in whether similar patterns of student usage of VLE materials emerge across different university Economics Departments. As such a comparative analysis is offered, using individual student data from two different UK Economics Departments, one being a Post -92 and the other being a Pre-92 university. It is hoped that the analysis will inform and guide academics in terms of online resources they make available to students in the future, through better knowledge regarding those resources that students most use and value.

Finally, it is natural to follow up on the above analysis by considering which factors contribute to students' success on a module, considering students' engagement with various VLE resources provided, while controlling for a variety of student characteristics and background factors. This is achieved through a cross-sectional econometric analysis in which student module final marks are the dependent variable, with usage of a variety of VLE resources as

explanatory variables and various individual student characteristics as controls including gender, age, previous qualifications, ethnicity, and home/EU/international status. The results are helpful as they enable us to better advise students on study techniques. Again, through a comparative analysis we are able to assess whether there are similar factors that contribute to Economics students' module success across contrasting UK institutions.

Throughout the paper we use secondary data from two undergraduate Economics modules from Nottingham Trent University, namely the level five Economics of International Banking module and the level six Industry, Corporations and Government module. Meanwhile, data from the level five Econometrics University of Warwick module are used.