The Matter of Time Management in Distance Learning

Oybek F. Khatamov
Student
Gulistan State University
Gulistan, Syrdarya Region
Uzbekistan

Salamat M. Khatamova
Senior teacher
Gulistan State University
Gulistan, Syrdarya Region
Uzbekistan

Abstract

Time management skills are an essential component of college student success, especially in online classes. Through a randomized control trial of students, we test the efficacy of a scheduling intervention aimed at improving students' time management. Results indicate the intervention had positive effects on initial achievement scores; students who were given the opportunity to schedule their lecture watching in advance scored about a third of a standard deviation better on the first quiz than students who were not given that opportunity. These effects are concentrated in students with the lowest self-reported time management skills. However, these effects diminish over time such that we see a marginally significant negative effect of treatment on the last week's quiz grade and no difference in overall course scores. We examine the effect of the intervention on plausible mechanisms to explain the observed achievement effects. We find no evidence that the intervention affected cramming, procrastination, or the time at which students did work.

Keywords: Scheduling; procrastination; online courses; persistence; performance; achievement

1.0. Introduction

We seek to answer one primary research question: what is the effect of encouraging students to schedule their coursework on academic performance in an online, for-credit postsecondary course?

To answer this question, we employ a randomized control trial testing the effects of a low-cost, scalable scheduling intervention on course achievement in an online, for-credit course for degree seeking students in a 4-year selective public college. The intervention we examine is a suggestion by the course instructor that students schedule when to watch the lecture videos and an online survey in which they could set their lecture watching schedule. The suggestion was delivered to a randomly selected group of students in each of the first 2 weeks of the course. Treated students were asked to state when (day of the week and hour of the day) they intended to watch the daily lectures in the first 2 weeks of the course. In order to ensure that the control students had an equal number of contacts from the instructor in an effort to isolate the effect of the scheduling survey, control students received an email from the course instructor with a link to a survey asking them which web browser they used to access the course (week one) and whether they listened using speakers or headphones (week two).

Although many studies have previously explored the correlation between time management, scheduling, and student outcomes in higher education, there is a dearth of evidence on the causal effect of scheduling on student performance in online education. The causal evidence that does exist is limited to evidence from three studies that took place in MOOCs (Baker et al. 2016; Kizilcec et al. 2016; Patterson 2014). The MOOCs in these three papers present a very different context, and it is questionable whether or not these results can be generalized to students in online classes offered by traditional colleges. In each of the prior studies, the MOOCs were free, open access, and students could not earn college credits for successfully completing them. As such, student motivation to take and complete these courses is likely very different from motivation to pay for and enroll in a credit-bearing online course. This difference in motivation for enrolling leads to very different student populations and likely leads to substantially different behaviors and outcomes among students. Therefore, it is important to test scheduling interventions in for-credit online classes as well as in open access non-credit bearing courses such as MOOCs.

In addition to the different context, the current study also extends the previous literature by examining heterogeneity of treatment across student characteristics. We measure students' perceived time management skills using a pre-course survey. This enables us to assess whether our intervention, which targets improving time management through scheduling, has differential effects on students with high and low self-reported time management skills. We hypothesize that the treatment effects will be stronger for students who report having poor time management abilities.

A final contribution of our analysis is a consideration of potential mechanisms. We have access to many student behaviors within the course (e.g. timing of watching lectures and completing assignments). These detailed clickstream data allow us to observe micro interactions and examine if the scheduling intervention has effects on student behaviors such as procrastination and cramming. This level of detail enables us to examine potential mechanisms through which the scheduling intervention may yield effects on course performance.

2.0. Literature Review

Concerns about student learning and poor academic performance are prevalent among parents, faculty, administrators, and policymakers in postsecondary education. Empirical evidence suggests that these concerns are not unfounded. Research indicates that student learning and academic growth is limited in some sectors of modern higher education (Arum and Roksa 2011) and academic performance, as measured by grades, can affect a student's eligibility for financial aid, choice of major, and probability of dropping out (Griffith 2010; Rask and Tiefenthaler 2008; Schudde and Scott-Clayton 2016; Stratton et al. 2008).

Recently, new modalities, such as fully online courses, have posed novel challenges to students and instructors. These modalities are associated with even lower levels of learning and persistence (Cochran et al. 2014; Evans et al. 2016; Figlio et al. 2013; Leeds et al. 2013; Perna et al. 2014; Xu and Jaggars 2013).

Institutions and scholars are searching for causes of and solutions to low academic performance. One promising area of focus is the inherent need for advanced time management skills in college classes and individual student characteristics associated with poor time management. Babcock and Marks (2011) have documented the decline of study time over the last several decades and have suggested that an increase in leisure activities might be a cause. Relatedly, a long line of empirical evidence suggests that poor time management and relatively few study hours are predictors of poor academic performance (Beattie et al. 2017).

While most of the extant research has focused on traditional, in-person higher education, there are at least two reasons to believe time management is even more critical in online higher education.

First, the asynchronous setting, with few, if any, set times at which a student must do work or participate in class does not generate an environment with a consistent schedule. This greater flexibility forces students to make more decisions about when to do work and puts greater demands on the self-regulatory skills necessary for making plans for learning (Broadbent and Poon 2015).

Second, the lack of a face-to-face connection and joint social presence with instructors and classmates creates fewer opportunities for extrinsic accountability, which can negatively affect student motivation and the extent to which students carry out their plans (Bowers and Kumar 2015; Zhan and Mei 2013).

These structural issues may disproportionately harm students with worse time management skills. Several studies have identified student characteristics, such as student motivation, student interaction in the course, proclivity towards self-regulated learning, and time management skills, that predict success in online courses (Cochran et al. 2014; Hart 2012; Rostaminezhad et al. 2013). Additionally, a meta-analysis of self-regulated learning in online higher education identified that effective time management is positively related to academic outcomes (Broadbent and Poon 2015).

This trend is unlikely to stop; over 60% of chief academic officers across institutions of higher education say online education is part of their long-term institutional strategy (Allen et al. 2016). This growth is motivated by the opportunity to expand enrollments with minimal investments in infrastructure and the view that providing postsecondary content online may slow the rapidly growing costs of delivering higher education (Deming et al. 2015).

3.0. Academic Performance in Online Learning

A great deal of effort has gone into identifying the effects of online postsecondary coursework on student performance. Lack (2013) cites numerous observational studies that examined the difference in academic performance between online and face-to-face courses. These studies found inconsistent results, but all were plagued by selection bias. Xu and Jaggars (2013) improved on observational studies by comparing the same students when they take face-to-face versus online coursework and found students generally performed worse in online delivery. The best identified studies have shown

mixed results. Bowen et al. (2014) randomly assigned students to a hybrid versus face-to-face statistics course at six 4-year public institutions and observed no difference in learning outcomes between the two delivery formats. However, in another randomized control trial, Figlio et al. (2013) found male, Hispanic, and lower achieving students performed worse when assigned to an online economics course relative to their peers assigned to the in-person version.

Although these studies investigated different interventions in different contexts, the balance of evidence suggests that students perform no better, and oftentimes worse, in forcredit online postsecondary coursework relative to traditional face-to-face coursework. However, from an institutional cost–benefit perspective, and in the context of limited resources, it is possible to argue that potential performance loss is worth the substantial savings, to schools and to students, of delivering content online. However, that debate obscures what we consider to be the more relevant question: can we improve learning outcomes in the online context? To accomplish this goal, we must identify the critical challenges students encounter in online education and help students overcome those challenges.

4.0. Results

One critical challenge in online classes is time management. Prior research has repeatedly demonstrated that time management is an important skill related to college performance in both face-to-face and online postsecondary classes. Poor time management and fewer study hours are the leading predictors of poor academic performance in a traditional 4-year college education setting (Beattie et al. 2017). Specifically, studying course materials throughout the term, as opposed to cramming right before a deadline, is positively correlated with a higher college assessment system. Similarly, We found that scores on a robust time management scale were positively related not only to higher college GPA but also to higher students' self-perceptions of performance and general satisfaction with life. College students with better time management skills both scored higher on cognitive tests and were more efficient students, spending less total time studying. There is not a large literature focusing explicitly on the scheduling component of time management, but short range planning, including scheduling study time, has been found to be more predictive of college grades than SAT scores.

Important for our specific context, these results have been shown to extend to online learning settings. In a study of online learners who completed degrees, students identified that developing a time management strategy was critical to their success. Guàrdia et al. (2013) argue that providing a scheduling structure with clear tasks is one of ten critical design principles for designing successful MOOCs. Hypotheses to explain why scheduling is so important are thin, but we propose several potential mechanisms. Scheduling could simply encourage students to spend more time on their coursework. By scheduling when to work, it is more likely students will spend that scheduled time on their classes rather than on alternate activities.

It is also possible that planning induces more efficient studying by reducing the probability that students will do work at non-ideal times of day. Prior research on adolescents links improved performance on intelligence assessments with working during students' preferred time of day, and a study of college students demonstrated that starting classes later in the morning improves academic performance. It is likely that if students establish and stick with a schedule, they are more likely to complete work during ideal times.

Another possible explanation of the importance of scheduling is that it reduces the likelihood of students cramming a lot of work into a short period of time or putting off work until just before the deadline. Cramming and procrastination have both been found to be negatively related to success in online classes. A final potential mechanism is that time management is an effective strategy to reduce academic stress and anxiety, which in turn may increase performance. We are able to explore the time of day, cramming, and procrastination mechanisms with empirical data in our analysis below.

5.0. Discussion and Conclusion

The goal of our study, unlike much of the prior literature, is not to survey students about their study strategies to look for a relationship between study skills and academic outcomes. Rather, given the consistent evidence that good time management practices are associated with positive outcomes, we attempted to manipulate students' time management practices by encouraging students to schedule their study times. Such an intervention is particularly important in asynchronous online contexts which lack structure, as there are no scheduled class meeting times. Most online courses have weekly deadlines for submitting assignments but lack any sort of meeting schedule like those traditionally found in face-to-face courses. Our goal is to induce students to improve their time management by scheduling when they will watch the lecture videos. Our hypothesis is that the scheduling will result in improved academic performance.

Our intervention encourages creating a structure and timeline in an otherwise unstructured course environment. Self-defined course schedules continue to provide flexibility, a notable advantage of online education, by allowing students to choose when they will watch the lecture videos throughout the week. However, by committing to the days and times they choose, students should be more likely to hold themselves to that schedule instead of putting off the online coursework in favor of other more immediate demands.

References

Allen, E., Seaman, J., Poulin, R., & Straut, T. (2016). Online report card: Tracking online education in the United States. Babson Survey Research Group and Quahog Research Group, LLC.

Arum, R., & Roksa, J. (2011). Academically adrift: Limited learning on college campuses. Chicago, IL: University of Chicago Press.

Babcock, P., & Marks, M. (2011). The falling time cost of college: Evidence from half a century of time use data. The Review of Economics and Statistics, 93, 468–478.

Baker, R., Evans, B., & Dee, T. (2016). A randomized experiment testing the efficacy of a scheduling nudge in a Massive Open Online Course (MOOC). AERA Open, 2, 1–18.

Beattie, G., Laliberté, J. P., Michaud-Leclerc, C., & Oreopoulos, P. (2017). What sets college thrivers and divers apart? A contrast in study habits, attitudes, and mental health. National Bureau of Economic Research Working Paper No. 23588.

Bowen, W. G., Chingos, M. M., Lack, K. A., & Nygren, T. I. (2014). Interactive learning online at public universities: Evidence from a six-campus randomized trial. Journal of Policy Analysis & Management, 33, 94–111.

Bowers, J., & Kumar, P. (2015). Students' perceptions of teaching and social presence: A comparative analysis of face-to-face and online learning environments. International Journal of Web-Based Learning and Teaching Technologies (IJWLTT), 10(1), 27–44.

Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies and academic achievement in online higher education learning environments: A systematic review. The Internet and Higher Education, 27, 1–13.

Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. Research in Higher Education, 55, 27–48.

Deming, D. J., Goldin, C., Katz, L. F., & Yuchtman, N. (2015). Can online learning bend the higher education cost curve? American Economic Review, 105, 496–501.

Evans, B., Baker, R., & Dee, T. (2016). Persistence patterns in Massive Open Online Courses (MOOCs). Journal of Higher Education, 87, 206–242.

Figlio, D., Rush, M., & Yin, L. (2013). Is it live or is it internet? Experimental estimates of the effects of online instruction on student learning. Journal of Labor Economics, 31, 763–784.

Griffith, A. L. (2010). Persistence of women and minorities in STEM field majors: Is it the school that matters? Economics of Education Review, 29, 911–922.

Guàrdia, L., Maina, M., & Sangrà, A. (2013). MOOC design principles. A pedagogical approach form the learner's perspective. eLearning Papers, 33, 1–6.

Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. Journal of Interactive Online Learning, 11, 19–42.

Kizilcec, R. F., Pérez-Sanagustín, M., & Maldonado, J. J. (2016). Recommending self-regulated learning strategies does not improve performance in a MOOC. Learning @ Scale Work in Progress.

Lack, K. A. (2013). Current status of research on online learning in postsecondary education. ITHAKA S+ R.

Leeds, E. M., Campbell, S. M., Baker, H., Ali, R., & Brawley, D. (2013). The impact of student retention strategies: An empirical study. International Journal of Management in Education, 7, 22–43.

Patterson, R. W. (2014). Can behavioral tools improve online student outcomes? Experimental evidence from a Massive Open Online Course. Working paper.

Rask, K., & Tiefenthaler, J. (2008). The role of grade selectivity in explaining the gender imbalance in undergraduate economics. Economics of Education Review, 27, 676–687.

Rostaminezhad, M. A., Mozayani, N., Norozi, D., & Iziy, M. (2013). Factors related to e-learner dropout: Case study of IUST eLearning center. Procedia, 83, 522–527.

Schudde, L., & Scott-Clayton, J. (2016). Pell Grants as performance-based scholarships? An examination of satisfactory academic progress requirements in the nation's largest need-based aid program. Research in Higher Education, 57, 943–967.

Stratton, L. S., O'Toole, D. M., & Wetzel, J. N. (2008). A multinomial logit model of college stopout and dropout behavior. Economics of Education Review, 27, 319–331.

Xu, D., & Jaggars, S. S. (2013). The impact of online learning on students' course outcomes: Evidence from a large community and technical college system. Economics of Education Review, 37, 46–57.

Zhan, Z., & Mei, H. (2013). Academic self-concept and social presence in face-to-face and online learning: Perceptions and effects on students' learning achievement and satisfaction across environments. Computers & Education, 69, 131–138.