International Review of Economics Education 16 (2014) 87–99

Contents lists available at ScienceDirect

International Review of Economics Education

journal homepage: www.elsevier.com/locate/iree

The case for the traditional classroom

Alan Green *

Stetson University, Economics, 421 N. Woodland Blvd., DeLand, FL 32724, United States

ARTICLE INFO

Article history:
Received 23 July 2013
Received in revised form 11 April 2014
Accepted 13 April 2014
Available online 23 May 2014

JEL classification:
A22

Keywords:
Classroom experiment
Simulation
Hybrid course
Sample selection

ABSTRACT

Criticisms of higher education and tight budgets have increased pressure on instructors to consider new pedagogical methods, including classroom experiments and online or hybrid/online courses. This study analyzes the impact of different pedagogical methods in six sections of macroeconomic principles taught during the 2011–2012 academic year. A traditional lecture/discussion control section is compared with experimental sections that used an extensive class simulation and two hybrid online sections that met only once per week during the regular semester. Students in simulation sections scored on average nearly five percent worse on the post-test, although those who participated the most did score higher. Students in the hybrid online sections scored nearly ten percent lower than students in the control section. These results indicate that instructors and administrators should be wary of unproven methods, especially online instruction.

Higher education is under attack. Well publicized evidence indicates that students are learning less than the previous generation and perhaps not learning anything at all (Arum and Roksa, 2011). Meanwhile a combination of tight budgets, burgeoning student debt and a weak job market has increased pressure on colleges and universities to both keep costs down and provide solid evidence of the value of a college education.

As a young economics faculty member at a teaching college I responded to the current pressures of higher education by experimenting with two approaches. The first is extensive use of experiments/active learning techniques in the classroom. Research suggests that experiments improve student

* Tel.: +1 3868227571.
E-mail address: amg84@cornell.edu.

http://dx.doi.org/10.1016/j.iree.2014.04.002
1477-3880/

performance (Emerson and Taylor, 2004) and they offer an enjoyable change of pace for professor and students. Experiments have become increasingly common in economics as a valuable addition to the old "chalk and talk" lectures (Emerson and Taylor, 2007). Given the evidence that students are not learning enough and that active learning techniques are effective, I tried several classroom experiments and then created my own economic simulation, which is an extended class experiment where a class economy is created and used to illustrate textbook concepts.

The second approach I considered is offering hybrid online classes that meet only one day each week. These courses offer more flexibility to students and professors while ostensibly maintaining content standards; they are in high demand among students. Proponents of online education argue that lectures are ineffective, which seems to mesh with the evidence that students are not learning (Arum and Roksa, 2011). Pelz (2004), for instance, repeats the saying: "A lecture is the best way to get information from the professor's notebook into the student's notebook without passing through either brain (Pelz, 2004)." Online courses allow students to independently access the material and become more engaged virtually by asking their own questions and learning from each other in an online community.

My expectation was that both of these methods were effective; my classroom simulation was well received by students and peers (Author, 2011) and my hybrid online classes filled up before any others. However, at the suggestion of a reviewer I sought empirical evidence of the effectiveness of these approaches. Over the 2011–2012 academic year I taught six sections of macroeconomic principles at Lander University. One was the control section, which consisted of traditional lecture and discussion. Three sections used the extensive classroom simulation and two sections were hybrid online classes that met only one day per week and had a large online component; one of these hybrid online sections also used class time for simulation. All sections took the same post-test, which was embedded in the final exam; five sections took a pretest as well.

Careful analysis including regressions on the difference in posttest and pretest scores and on posttest scores with controls for student characteristics indicates that the traditional classroom resulted in the best exam performance. Results show that the classroom simulation lowered posttest scores by about five percent on average, although with wide variation depending on the degree of participation. The hybrid online classes also resulted in significantly worse performance; being in a hybrid online class on average lowered scores by at least nine percent.

These results were surprising and indicate that assessment of pedagogical methods is critical. The results here, while dependent on the type of class and exam used, indicate that the traditional classroom holds up well in comparison to new methods. The next section reviews the literature on experiments in economics education and describes the classroom simulation I implemented. Section 2 provides background on online pedagogy and Section 3 describes the data and estimation methods. Section 4 presents results and Section 5 includes discussion and conclusion.

1. Experiments and active learning in economics

The use of active learning techniques, most commonly experiments, is now widespread in economics and social sciences more broadly (Mitchell et al., 2009; Lantis et al., 2010). The motivation for these techniques is well summarized in Lantis et al. (2010): "creating memorable experiential learning events that tap into multiple senses and emotions" (page 6). There is evidence that experiments improve student achievement and retention in economics principles classes (Dickie, 2006; Durham et al., 2007; Emerson and Taylor, 2004), although they have not been shown to increase the number of students majoring in economics (Emerson and Taylor, 2010). Active learning techniques may engage different types of learners and help some students more than others (Emerson and Taylor, 2007; Durham et al., 2007). However, the overall effect is found to be either neutral or beneficial (Durham et al., 2007). Experiments have also been shown to be beneficial in large principles courses, although implementation there may rely on technology that is not widely available (Ball et al., 2006). Perhaps the clearest case for experiments in the economic education literature comes from Emerson and Taylor (2004), who show that in a sample of 9 sections of micro principles the two sections that did extensive experimentation (11 experiments from an experimental textbook) performed significantly better on the Test of Understanding in College Economics (TUCE).