Developing Large-scale Interactive Online Gateway Courses for Undergraduate Economics

By Dmitriy V. Chulkov and Surekha K. B. Rao *

* Chulkov: School of Business, Indiana University – Kokomo, Kokomo, Indiana 46904 (e-mail: dchulkov@iuk.edu). Rao: School of Business and Economics, Indiana University – Northwest, Gary, Indiana 46408 (e-mail: skrao@iun.edu). Acknowledgments. The authors gratefully acknowledge grant support from Indiana University Online and thank the faculty participating in this project – Dr. Kathleen Arano, Dr. Gihoon Hong, Dr. Micah Pollak, Dr. Arun Srinivasan, Dr. Jason VanAlstine, Dr. Litao Zhong, as well as the participants of the Committee on Economic Education poster session at ASSA.

I. Introduction

Universities worldwide are striving to create strategies for economic education in the age of new instructional technology and online courses (Becker, 2000; Goffe and Sosin, 2005). Both faculty members and administrators are responding to student demand for online courses. In particular, undergraduate Economics courses are in significant demand as they often serve the function of a gateway course, being a prerequisite for various economics and business degree programs, as well as a core component of general education. These courses typically have large enrollments with associated scheduling issues and waitlists. Online course delivery helps reach more students as well as create scheduling flexibility for both faculty and students.

However, the advent of online education in traditional universities comes with significant challenges. These challenges are both pedagogical and administrative in nature.

First, online education requires using different pedagogical methods and tools in order to achieve the same learning outcomes as a face-to-face course (Coates et al., 2004; Gratton-Lavoie and Stanley, 2009). Learning in the online environment has no traditional lecture component, however this may provide an opportunity for having a significantly higher share of interactive assignments, critical-thinking, and problem-solving exercises (Vachris, 1999; Chulkov and Nizovtsev, 2015).

Second, the administrative structure of a traditional university has not been constructed with the online format in mind. As a result, the creation of online courses often follows an ad hoc model as courses are created by interested faculty members with no strategic view of which courses make the best online offerings. Furthermore, large university systems often have similar courses offered at multiple campuses. In an online education environment, students are not constrained in taking the course on a specific campus, and so the learning goals and outcomes across university systems must be harmonized. An approach that takes into account a University’ strategic needs, as well as recognizes faculty’s control over the curriculum and online-specific pedagogy is necessary.

In this study and poster presentation, we discuss the pedagogical and administrative aspects of designing a fully online version of core
undergraduate Economics courses in a modular format that encompasses the two principles-level courses (micro- and macroeconomics) as well as survey courses offered in a collaboration at five Indiana University (IU) regional campuses. IU has established an online education office to create pathways for online degree completion. Economics courses are some of the first ones being created for the IU Online effort.

II. Online Gateway Course Design

The starting point for the development of this online curriculum was a clear identification of common course goals and learning outcomes. When we began with the project, we realized that all the different campuses of the same university system have a very different approach to teaching the principles courses. Some did this as a sequence, others as standalone micro- and macroeconomics courses. Even the prerequisites and catalog course numbers were different. As the project progressed, the faculty at the different campuses jointly developed common course goals and learning outcomes. These goals and outcomes were designed to be consistent with AACSB recommendations, as well as the Single Articulation Pathway (SAP) documents that are created to provide a common set of learning outcomes for all public universities and community colleges in the state of Indiana.

Grounded in the learning outcomes, course content and materials were developed in modules that can be utilized by all IU regional campuses regardless of the specific bulletin course number and course version that they choose to offer (micro- or macroeconomics or a survey course). These modules, following the best teaching practices for online instruction, incorporate content chunks, interactive learning, and engage students by presenting subject matter that connects real-life examples with the concepts of economics. Figure 1 presents an overview of the timeline for the online gateway course development.

![FIGURE 1. COURSE DEVELOPMENT TIMELINE](image-url)

Faculty members maintained autonomy in the choice of modules and related teaching material while collaborating on the overall design of the course and learning outcomes. By selecting the combination of materials that fit a particular course
description, we were able to offer high-quality, interactive economics courses in an online format from one or more of the campuses every semester to reach a large number of students across the university.

Each online learning module was designed to have the same structure. Figure 2 presents an overview of this structure. In an Economics course that requires not only critical thinking, but also quantitative, and graphing skills it is especially important to organize the online course material appropriately. With this objective we align course materials and assignments with the learning goals and outcomes, and create interactive assessment and feedback methods.

![FIGURE 2. ONLINE MODULE COMPONENTS](image)

Each module starts with a video introduction by the instructor. Common scripts were developed for each module, but the actual video was done by the actual instructor of the course. Following the video introduction, the students were presented with a learning guide that listed all learning goals and outcomes for the module and then aligned them with the corresponding textbook readings, assignments, and other resources. All materials developed were compliant with ADA and the principles of universal design (Rose and Meyer, 2002).

The modules were designed to be independent from a specific textbook, but relied on textbooks for the presentation of course content. Offering students a selection of textbook options including printed as well as electronic ones allows each student to select an option that works for them (Chulkov and VanAlstine, 2014 and 2015).

Most electronic textbooks in economics have well-developed online interactive learning and feedback systems that allow instructors to take advantage of variety of assessments tools including algorithmic problems, discussions, essays questions, and graphs. A wide variety of analytics tools available in these packages assists in establishing the rigor that makes the online course comparable to face to face classes. Integration of interactive feedback with an electronic textbook is a benefit of such packages for students. Faculty members teaching in this online effort leveraged this technology, as well as the tools available in the online course management system (Canvas by Instructure) for the assessment of student learning.

A key question in the development of the Economics online gateway course at IU was distinctiveness. What makes this course an Indiana University course? The faculty involved in course development recognized the need to find differentiation from other online offerings and identified access to strong faculty as one of the distinctive features. We designed ways to
incorporate multiple student-faculty interactions into the course starting from the use of faculty introduction videos for each module and for the course overall and continuing with frequent opportunities for faculty feedback to the students. The content created for the course is free from a cookie-cutter approach and is independent from a specific textbook. The structure of the course aligns assignments to specific learning goals and outcomes for our students and uses current events and relevant local content.

### III. Conclusion

This study and poster presentation reports on the experience of Indiana University campuses with developing large-scale online gateway courses for undergraduate economics. We outlined the steps necessary for the successful completion of such a project, including the overall planning and organization, the development of course goals and learning outcomes, aligning these outcomes with instructional materials and assignments, and the assessment of student learning. As the newly developed online gateway courses are offered, we plan to collect assessment data and continue this study to examine the impact of the teaching methods and course design on student attainment of learning outcomes and the university’s progress towards its strategic goals in online education. This extension will be helpful for other universities considering their online course offerings in Economics.

### REFERENCES


Coates, Dennis, Brad R. Humphreys, John Kane, and Michelle A. Vachris. 2004. "“No significant distance” between face-to-face and online instruction: evidence from principles of economics." Economics of Education Review 23, no. 5: 533-546.


