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Digital Additions to Microeconomic Principles: Student Pre-Survey and Digital Note-Taking Handouts

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I have been teaching the Principles of Economics for 30 years and in that time, I have tried to stay current with new pedagogical technology, but I typically feel a few steps behind. For that reason, when the call went out to apply for the Teaching Innovation Institute, I eagerly applied. My primary aim in applying was to improve my technological expertise in the classroom by learning more about teaching technologies and how to judiciously incorporate them to greatest effect. My broader goals were to learn how to use these innovations to increase student engagement and learning and to elevate the level of inclusivity in my classes. I would like to describe two specific innovations—a digital student pre-survey and digital note-taking handouts—but I would first like to explain the impetus for these innovations in a broader context.

The Student Pre-Survey

During the Institute workshops, one presenter mentioned the Universal Design for Learning (UDL) framework. This educational framework articulates the connection between variety in the classroom and enhanced learning equality. An educational nonprofit in Boston, CAST, developed this comprehensive framework to help make learning inclusive and transformative at all levels and in all disciplines. UDL includes a set of guidelines for implementation that offer concrete suggestions for how educators can ensure that all learners can access and participate in learning opportunities. Based on cognitive science research, the guidelines center around three key tenets: the inclusive learning experience must incorporate i) multiple means of engagement, ii) multiple means of representation, and iii) multiple means of action and expression (CAST). This framework significantly informed my innovations.

Not unlike the experience in other disciplines, instructors of economics have become more cognizant of the need for inclusivity and more deliberate in their attempts to promote diversity and inclusion in their classes. One recent article that many economic educators have looked to for guidance is a piece written by Bayer et al. Using evidence from their own economic education research and connecting with previously established results from cognitive science research, they propose that we improve the inclusivity of the introductory experience in economics by focusing on relevance, belonging, and a growth mindset (RBG). The UDL framework, in tandem with the RBG construct, shapes my approach.

For twenty-five years, I distributed a student information questionnaire on the first day of class and asked students to complete and submit it for a daily quiz credit. They included basic questions about contact information, demographic information, and academic experience. By asking students about who they are—including their major, where they are from, and their interests, you immediately give students a chance to express their identity. Given the extreme size (400+ students) of these courses, these questionnaires were vital to my ability to get to know my students. I also asked a few questions about their concerns regarding the course and an open-ended question about real-world issues that concern them. I also hoped these questionnaires would signal to them that I am approachable and care about knowing them, something that might not be immediately evident in a very large lecture course. When I started using this information sheet years ago, I knew nothing about learning theories and frameworks, but it seemed like a good way to build rapport, community, and to give students a sense of belonging early in the course.

My participation in the Teaching Innovation Institute, along with the forced online migration of the pandemic, prompted me to convert my paper survey into an online survey instrument that I administer using Qualtrics. With this transition, I saw the opportunity to move beyond the number of questions that fit on the front and back side of a piece of paper, to create a richer and more complex presurvey with a broader range of goals. I expanded the questions that I thought allowed a student to establish and express their identity by asking more about their preferences and interesting things about them and how they interact with the world. I ask students to complete the survey before

the first day of class. This allows me to share the results on the first day of class so I can also convey the collective identity of the class as a whole by sharing summary demographic information and fun summaries about their interests and backgrounds. Allowing students to express their individual identities and letting them see how that connects to the broader identity of the class also promotes the sense of belonging prescribed by the RBG model and a sense of inclusion as students begin to feel they are a part of something bigger. More broadly, I believe the survey forms the foundation of a comfortable and safe classroom environment where students feel they belong and that it is safe (and fun) to participate.

Recall that Bayer et al. suggest that to promote diversity and inclusion in economics courses, we should focus on relevance, belonging, and a growth mindset. Relevance implies that “the student perceives the material to be directly relevant or useful to their own life” (294). I suggest that we achieve this relevance objective by connecting to i) the student information set, ii) student concerns, and iii) current events. The presurvey data is an excellent source of fuel for relevant examples and discussion throughout the semester. Often instructors feel they are pandering when they select examples that connect with the student information set. But it is vital to meet students where they are and provide cultural relevance. If you are a relatively young instructor, connecting to the student information set can be simple, but this task can become more difficult as the instructor progresses through their career. A pre-survey for students that asks about interests, favorites (music, movies, books, etc.), and hobbies can be incredibly valuable to the instructor. The pre-survey can also be a useful place to learn about your students’ fears and concerns as they pertain to real world circumstances and events. Showing students how economists view and address some of these concerns can have enormous demonstrative power as we convey the value of economics to students in their everyday lives. From past surveys, in addition to the pandemic, students are concerned about their student debt, getting a job, climate change, discrimination, and social justice—just to name a few. Economics provides a set of tools and a unique lens to consider these issues. Examples derived from survey output, that add relevance and a sense of immediacy to what we do in the classroom, can be profoundly important for true intellectual engagement.

Digital Note-Taking Handouts

My second innovation involved the development of digital lecture note-taking handouts. The note-taking handout is a great tool for keeping students engaged in the lecture/class session. These are sometimes called skeleton notes, because they include pieces of the content, but not everything—forcing students to participate and complete the handout as you go through the class period. If the handout opens with an outline, it also provides the element of a road map for your class sessions. Students can be more attentive and invested in a lecture/class session if they know where you are headed during the lecture. If you were on a tour with a tour guide, they would typically give you an itinerary, so you know where you are going and what to expect. But often instructors just start into a lecture without providing context or direction and students feel lost from the beginning. Students

also feel they have more control and ownership of the learning experience if they can see the roadmap. The direction and the plan for the day are not secrets that only the instructor knows.

Lecture note handouts are especially helpful for students who are learning how to engage in the kinds of behaviors that will make them more successful as students. These model the structure for successful note-taking, thereby supporting students who are still developing that skill. It provides a sense of order and organization and adds to the student's sense of agency in the course. The instructor could have all notes assembled at one time into a course packet, as I did for many years, or you could provide them electronically, chapter by chapter. As my second innovation, I converted my hard copy course note-taking packet to a chapter by chapter digital version.

As a result of the Smart Campus Initiative at the University of Kentucky, each incoming undergraduate receives an iPad, Apple Pencil, and keyboard. When converting my packet to a digital format, I wanted to ensure that students would utilize these technologies that they all received with this course resource. For that reason, I significantly increased the size of the font and left larger open spaces for students to make their annotations. The digitization of these note-taking handouts also required some intentional additions to course instructions. For instance, students needed to know how to download the file to the appropriate application to use the pencil. To further assist students in knowing what applications to use and how to manage these files, I worked with the Center for the Enhancement of Learning and Teaching to make instructional videos (see fig. 1) for students that I posted in Canvas. Students could use these videos to find how to pull the note-taking files from the Canvas iPad app to their Microsoft OneNote.

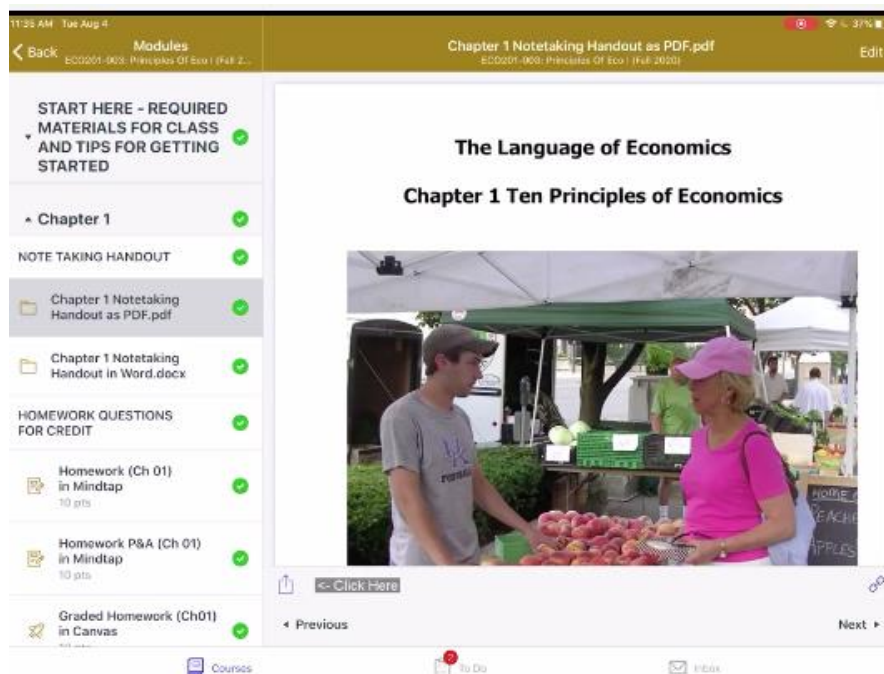


Fig. 1. Example of digital note-taking handout cover page on Canvas

As a new attempt to help students succeed, I asked a few successful students from my fall 2020 class to make short videos providing spring 2021 students tips for how to succeed in my course. All of the success tip videos from students mentioned the role the note-taking handouts played in their success in the course. Additionally, in a mid-semester student feedback session conducted by CELT, 83% of students who completed an evaluation survey “agreed” or “strongly agreed” that the note-taking handouts were useful to them in the course. I would point out that when I had one large full course packet, students bought hard copies at a local print shop for approximately \$25. Neither me nor my department has ever received profit from the sales of the ECO201 course packet, but it was a notable cost to students. Now students receive electronic versions for free in Canvas one chapter at a time which, I hope, adds to the accessibility of my course materials.

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