

Crime, Inequality, and Dating: Cohesive Themes in Principles of Microeconomics

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Abstract

This paper describes a new, low-cost approach to increasing content relevance and student engagement in Principles of Microeconomics by organizing the class around a cohesive theme. While continuing to teach students standard introductory material, we use supplementary readings, assignments, and examples throughout the semester that are related to a specific topic. Instructors at the University of Richmond piloted themed sections for Principles of Microeconomics in Fall 2022 and Spring 2023 on the topics of crime, inequality, dating, and globalization. In this paper, we provide an overview of our approach, including the institutional environment in which it was implemented, examples of how we related the themes to economic principles, and instructor and student perceptions of the benefits and difficulties of themed classes. We also provide a general framework and guidance for other instructors to use when implementing themes.

Keywords: Economics education, Principles of Microeconomics, Student Engagement

JEL Codes: A20, A22

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Section 1. Introduction

Surveys and focus groups of undergraduate economics students reveal that many students want a greater focus on how economics can be applied to relevant, real-world issues (Jones et al., 2009; Pühringer and Bäuerle, 2019). In particular, women and members of racial and ethnic minorities in introductory economics report lower levels of content relevance (Bayer et al., 2020). In response to findings that point to a lack of engagement by economics students with the content taught in their classes, economics instructors have adopted a wide range of pedagogical innovations, including active learning, flipped classrooms, metacognition exercises, and in-class experiments. However, many of these techniques are quite costly to implement. We added cohesive, semester-long themes to our Principles of Microeconomics courses in the 2022-2023 academic year as a low-cost way of increasing content relevance and thereby student engagement, interest, and continued enrollment.

Four instructors at our university selected and offered sections on a different theme: (i) crime, (ii) inequality, (iii) dating and marriage, and (iv) globalization. We chose these themes to appeal to students' interests or to align more closely with their lived experiences. Following the American Economic Association's Best Practices for Working with Students, we also chose themes that counter stereotypes of economics and are relevant to a diverse student body. As Olney (2023) notes, "Introductory courses that feature social issues prominently, consider ethical questions carefully, and emphasize economic intuition over rote mathematical applications, can attract more women to study economics." Fricke et al. (2018) also show that increasing students' exposure to topics not typically thought of as being a part of economics can increase the probability of students choosing an economics major. Stock (2023) argues that issues-oriented courses improve student learning and course completion rates. Consistent with this literature, we found that students report high levels of interest in themed examples.

Our primary goal was to improve student engagement with course material and thus improve student learning. These goals are in part motivated by decreasing student engagement and increasing absenteeism since the COVID-19 pandemic (Dee, 2024). Stanca (2010) finds that time spent in the classroom is more effective than "self-study" time and adds that absenteeism is therefore a critical problem. He suggests that improving the quality of teaching will alleviate this problem, but making content more relevant to students is another way to engage students. This is

in line with studies of interventions across disciplines showing that when students see content as more relevant, they are more interested and motivated, put in more effort, and perform better on assessments (Johansen, Eliassen, and Leno, 2023; Rosenzweig, Wigfield, and Hulleman, 2019; Hulleman et al., 2010; see Harackiewicz and Priniski, 2018, for a review). In short, there is substantial evidence that students learn better when they understand how what they are learning is relevant to their lives or to things they care about. In addition, students are more likely to continue their economic coursework if they are more engaged in their courses and find those courses more relevant to their own experiences and to the problems in which they are interested (Jensen and Owen, 2001).

Many pedagogical approaches for increasing student interest and engagement impose high costs on the instructor, often requiring a complete redesign of the course pedagogy or delivery method. For example, incorporating a semester-long game (Secchi and Banerjee, 2019) requires the instructor to redesign an entire course; implementing a flipped classroom (Craft and Linask, 2020) requires the instructor to create both video content as well as exercises for use in the classroom; using experiments to demonstrate economic concepts uses class time and may therefore reduce the amount of content that can be covered¹; and incorporating active learning techniques can be costly as instructors must develop both new pedagogical materials and shift some content delivery to outside the classroom (Watts and Becker, 2008).

Our approach aims to increase student engagement and interest with a relatively low-cost intervention. Adding themes did not require a course redesign. Rather, it entailed revising some of the examples and supplemental materials that we use in our classes so that they were all related to the same topic. However, our pedagogical approach did not change to accommodate these new examples; we incorporated these examples within our existing assignments, lecture plans, and assessments. This is a key benefit of our approach: Instructors are not required to change their teaching methods or pedagogy but instead simply replace old examples with new ones that all focus on a single theme. While this does require some preparation, in our experience it is less intensive than adopting active learning pedagogy or flipping the classroom.

¹ For example, Cartwright and Stepanova (2012) report that each experiment in their class takes about 30 minutes.

Our paper is related to the extensive literature that explores a wide variety of approaches to increasing student engagement and interest in class content. To name just a few, Secchi and Banerjee (2019) implemented a semester-long social dilemma game related to ecology; Al-Bahrani and Patel (2015) incorporated the use of social media; Borker (2013) introduced mindfulness practices to his classes; Das (2015) and Watts and Christopher (2012) explored economic concepts through art; Sexton (2006), Leet and Houser (2003) and Al-Bahrani and Patel (2015) demonstrated concepts with television and movie clips. Our paper is most closely related to Anderton and Carter (2006), Mahar and Paul (2010), and Depro (2022). These papers describe how the authors used the study of terrorism, sports examples, and environmental quality measures, respectively, to illuminate microeconomic concepts. Our paper differs in that we discuss different themes than these previous papers and, more importantly, outline an approach to incorporating any theme throughout an entire course rather than describing the examples related to one particular theme. In this sense, our approach can be implemented both in a liberal arts college environment, where different instructors may teach the same course, or in a large university environment, where graduate students lead sections. In either setting, this approach allows for each instructor to choose a different theme.

This paper provides guidance and examples for instructors interested in implementing their own themed Principles of Microeconomics class. We begin by describing the institutional context in which we implemented themes and provide guidance for how themed Principles of Microeconomics classes could be offered in different institutional settings.

Section 2. Institutional Context for Themed Principles of Microeconomics Classes

Curriculum Requirements: We teach at a liberal arts college that offers 7 to 20 sections of Principles of Microeconomics each semester. Each instructor has substantial autonomy over course design, including choice of textbook and other required and supplemental materials, though an accepted list of core microeconomics concepts is covered by all instructors. This organizational flexibility ensures that all students will be prepared appropriately for further economics courses while at the same time permitting the exploration of additional topics and pedagogical creativity.

Even in departments where all instructors use the same text and follow a common course schedule, it is still possible to incorporate a theme by regularly finding class examples, applications, classroom experiments, problem set questions, accessible research, and other short

articles that apply the basic microeconomic concepts to the theme. While curriculum flexibility makes it easier to incorporate these materials, one could still implement a theme within stricter guidelines. However, a key to successful themed course organization is creatively finding ways to repeatedly return to the course theme throughout the term.

Class Size: Principles of Microeconomics sections at our university generally contain between twenty and twenty-eight students, but class size is not a limiting factor. The materials and content through which a theme is explored are not limited to small sections. The approach is not limited to flipped classrooms, frequent discussions, or any other innovative pedagogical technique. In our setting, two instructors taught themed classes with a standard format that includes active learning while one instructor used the theme in a flipped classroom setting.

Approval and Registration Process: At our institution, implementation of the themed courses did not require formal curriculum committee approval or catalog changes. Instead, we simply added a note to the class section that students could see when registering for classes. When students used the registration system to choose among the many Principles of Microeconomics sections, they encountered messages such as “Focus on Crime Economics. This course will cover all standard ECON101 topics, but many examples, applications, and assignments will focus on the economics of crime.” This allowed students the option to select into themed courses that captured their interest and highlights one of the benefits of our approach, namely, that it does not constitute a change in the curriculum. Because the course title, attributes and general content are unchanged, it is also feasible to implement a theme without noting the theme in the official class schedule for registration purposes.

Instructor Experience: We each implemented a different theme. These themes were (1) inequality and economic mobility, (2) dating, sex, and marriage, and (3) crime. Each of us had varied experience with these topics. The first author had taught a freshman writing-intensive seminar on the topic of inequality in recent years. The latter author does research related to crime. However, as with the case of the author teaching the dating theme, it is also possible for instructors to use themes as an opportunity to learn about new topics. This is particularly true as themes are not meant to provide a holistic view of that area of economics research, but to use select examples within the topic to illustrate fundamental economics concepts. Another colleague in our department chose the theme globalization. There is a wide range of themes that could feasibly be

added to a Principles of Microeconomics course. At the 2023 Conference on Teaching Research in Economic Education (CTREE), the authors led a workshop in which participants proposed other possible themes, including higher education, sports, health, sustainability and climate change, discrimination, politics, and digital economics. One participant also noted the possibility of adding themes to Principles of Macroeconomics by focusing the class on the study of one country or region.

Section 3. Developing the Theme

As noted above, our intervention imposes a low cost on instructors when compared to other pedagogical innovations such as a flipped classroom or preparing an entirely new course. It also does not require much additional classroom time, unlike many in-class experiments and games. The bulk of work is in course prep and comprises three steps. First the instructor chooses a theme, a task that is fun and provides room for creativity. Then, for each microeconomic principle, the instructor identifies an example related to the theme and locates related material that is accessible and interesting to an introductory level student. Third, the instructor decides how to incorporate the example into class. We discuss a range of pedagogical approaches in the next section.

There are three main factors to consider when choosing a theme for your course: your own interest in the topic, your students' interest in the topic, and the availability of suitable examples and materials related to the theme. A theme can be inspired by someone's research, by a personal experience or observation, or by a hobby or interest. A theme can also be motivated by one of the broader challenges facing society. Themes that focus on current events or social issues include inequality, crime, health care, literacy, higher education, immigration, housing, voting behavior and voting rights, racism, discrimination, and climate justice. Other themes might be motivated largely by a personal interest, observation, or experience, such as a particular sport (e.g. soccer, baseball, football), a local sports team, dating, volunteering, visual arts, the movie or music industry, or beekeeping. Even individual public figures such as Taylor Swift, Bruce Springsteen, or Simone Biles might inspire a theme. However, instructors should aim to select themes that appeal to a wide range of students with varying backgrounds and interests. It should also be noted that there are some topics, such as taxation or trade, that may be of great interest to instructors but are of little interest to the average student in a principles class. While there may be a surfeit of

examples related to these topics, we do not recommend adopting themes with which most students have little personal contact or experience.

In addition to interest in the topic, it is also important to consider the availability of accessible examples related to a theme as well as materials illustrating those examples. In our case, many of the examples were already at hand, either because the theme is linked to the instructor's own research, the instructor had previously taught a related class or module of a class, or the instructor already follows the literature on the topic. Indeed, the themes we selected were largely determined by our pre-existing knowledge of suitable related examples.

In order to identify themed examples of economic principles, we recommend searching popular press and economics podcasts and blogs. Potential sources are described in Table 1. These sources are particularly suitable as they present economics research in a way that is accessible to a general audience and thus can be assigned as out of class reading or listening for introductory level students. As mentioned above, in many cases the instructor will select a theme because they are aware of research that would be of interest to Principles students. In such cases, a good strategy for finding material that can be assigned to students is to check authors' websites for press mentions or blog posts that summarize their research for a general audience. Alternatively, the instructor could create their own summary or slides of published research to introduce relevant research in class. Though this method of incorporating themed examples is more time-consuming for the instructor, it does allow the instructor to use more technical examples.

It is also possible to develop a theme even with limited experience on the topic. One way to keep the time required to develop and implement your theme to a minimum is to start with the syllabus for a topics course that you or someone else has taught. This will supply some ready examples and materials as well as further resources to review for additional examples. Another is to start with a book written to introduce economic ideas to a general audience (see Table 1 for some examples).

We recommend instructors use a mix of media in assigning materials related to the theme. Table 1 provides examples of multiple types of media sources. Combining podcasts, blog posts, videos, and more formal readings can better maintain student interest and appeal to a wider range of students. We have also found that shorter materials are better – student engagement is generally higher with 20-minute podcasts or two-page blog posts than hour podcasts or multi-page research

summaries. This is especially true if the instructor chooses to assign material in addition to required textbook readings.

Table 1: Recommended Sources for Themed Examples

Popular Press
<i>The Economist, The Financial Times, The Wall Street Journal, The New York Times, The Atlantic.</i> We also recommend checking authors' websites for press mentions if there is a specific academic research paper the instructor would like to incorporate in class.
Podcasts and Videos
<i>Planet Money, Think Like An Economist, Marketplace, Econimate, Freakonomics Radio, Economics Detective Radio, Economics in 10, VoxTalks, Pitchfork Economics, Probable Causation, Marginal Revolution University.</i> In our experience, students prefer podcasts and videos that are 20 minutes or shorter.
Blogs and Websites
AEA Research Highlights, Council of Economic Advisors blog, IZA World of Labor, World Bank blogs
Other Sources
Opportunity Insights, Think Tank websites such as The Brookings Institution and many others, individual chapters from books written by economists for a general audience, <i>e.g.</i> Goldin's <i>Career and Family</i> , Einav and Finkelstein's <i>We've Got You Covered</i> , Oyer's <i>Everything I Ever Needed to Know about Economics I Learned from Online Dating</i> , Miller et al.'s <i>Economics of Public Issues</i> , Oyer's <i>An Economist Goes to the Game</i>

Ideally, the instructor will use examples that both clearly demonstrate the relevant economic principle and provide interesting insight into the theme itself. While these kinds of examples may be harder to find, they are particularly effective since they are integral rather than tangential to the theme of the class. That is, they serve to truly unify the material into something more than a set of distinct economic concepts. For example, in the inequality-themed course, shortly after the chapter on externalities, the instructor reviews income elasticities and the

implications for the demand for health care and a clean environment. The rest of the class period uses those ideas to consider differences by race in environmental disamenities and the concept of environmental racism, as well as differences in life expectancy by race.. This can lead to an open-ended discussion on the various methods to reduce differences in life expectancies and environmental amenities across racial groups, through reducing economic and educational inequality and/or through reduced discrimination.

It is also useful to find examples that illuminate multiple economic principles. The market for Valentine’s Day roses was one such example in the dating themed course.. Students read news articles about this market and then practiced manipulating graphs when learning about supply and demand shifters. Later in the semester, the instructor referenced one of the same readings, which focused on the production and delivery of Valentine’s Day roses, to illustrate the concept of increasing marginal cost. Students often remember these insights quite readily because they have personal experience with the example and the example reappears multiple times during the course. Frequent retrieval of concepts through repeated referencing and finding an emotional connection to the material improve both long-term retention and understanding of the underlying economic principles, respectively (for example, see Miller, 2011; Brown et al., 2014; Lang, 2021; Toli and Kallery, 2021).

Table 2 describes examples we used in our themed courses and further illustrates the continuity benefit of the theme approach.² We compare the progression of our themed examples to those used in a popular introductory textbook, Mankiw’s *Principles of Microeconomics* (2024). Following the traditional Principles textbook, Mankiw introduces new concepts with a series of unrelated markets ranging from hotels, to barking dogs, to cups of coffee. While these examples are well suited to introduce concepts, their transitory use in the course and their limited relevance to most Principles students limit their usefulness in learning retention.

In contrast, consider the progression of examples for the crime themed course described in Table 2. Students begin the semester by brainstorming policies that could decrease adolescent vaping. They are then asked to consider research highlighting potential trade-offs: would such policies increase adolescent cigarette use? This introduces the idea of substitution between drugs,

² A full description of examples we use in our themed classes and relevant sources can also be found online at <https://melissakspencer.com/resources/>

which students again reference a few weeks later when considering the legalization of marijuana. Students read a news article and discuss whether marijuana and other drugs are substitutes or compliments. They then illustrate the predicted demand shifts for related goods on a graph. Similarly, early on in the semester students connect the idea of opportunity cost to how changes in wages might affect the decision to commit a crime. Later in the semester, students complete a reading about the labor market for formerly incarcerated people, learning that employment reduces recidivism. Students are better able to connect these topics, despite weeks between their introduction, because the cohesion of the example provides background knowledge with which to process the topic and the reappearance of the topic promotes retrieval. Together, increased connection and recall improve students' comprehension and retention (Karpicke, 2012; Roediger and McDermott, 2018).

In some cases, examples used to further the theme may also serve as a vehicle for introducing ideas that are a little outside the usual topics for a Principles course. Presenting empirical research on a theme may provide the ideal opportunity to introduce more advanced ideas, such as distinguishing between correlation and causality with randomized control trials or natural experiments, as in a discussion of the links between street lights and crime rates and between geographical location and upward mobility. A discussion of efficiency may provide the setting for discussing different conceptions of fairness. Such examples are useful because they introduce some more complex ideas to students, which is especially beneficial for some of the more advanced students. It also gives all students a taste of the power of economics and asks them to think a little further, perhaps about ways in which the example does not fit so neatly into the fundamental theory they have just learned.

Themed examples are readily available for some of the fundamental topics such as trade-offs and opportunity cost (see Table 2 for examples). For other economic principles, themed examples are not as easy to identify. This is particularly true for the unit on production costs and market structures in a class that has a social issue as a theme. Learning about these topics entails studying a formal market that has at least the potential for competition, which may make them more difficult to translate directly to social issues. In such cases, when a themed example is not available, we recommend one of two courses. First, selecting a themed example that is related to the concept and will further student learning, even if it does not directly illustrate the economic

principle. For example, for the unit on production costs, the instructor in the crime theme assigned a reading on the costs of public versus private prisons. This reading does not necessarily help students understand how to calculate variable versus fixed costs, but it does help students better understand the inherent challenges in collecting high-quality data on firm costs. Alternately, choosing a market that is somehow related to the theme can serve to at least link the topic to the theme even if it does not provide particular insight into the theme itself. For example, this might mean using the market for Valentine's chocolates to review supply and demand shifters in a dating and marriage-themed section.

Finally, it is not necessary that every single topic introduced in the course has a corresponding themed example, rather that the theme is consistently used throughout the semester. A theme can still be effective even if it is not referenced in every single class meeting. In our experience, this keeps the cost of implementing a theme low and does not diminish the effectiveness of the theme in enhancing student engagement. If for a class that meets twice a week, we recommend that instructors reference the theme at least every third class, though ideally every other class, to maintain consistency throughout the semester.

Table 2: Themed Example of Microeconomic Principles

Concept	Mankiw	Crime	Inequality	Dating
Tradeoffs	essentially definition: society cannot produce everything people want	Policies to address adolescent tobacco use: vaping vs cigarettes	parking spots for disabled and unemployment comp. to contrast fairness versus efficiency	skewed sex ratios in China induce families with sons to increase savings, decrease consumption
Opportunity Cost	what is given up by going to college	Forgone wages and rational crime theory	what is given up by having a child	"The Power of the Pill" (Goldin and Katz, 2002), contraception reduces cost of premarital sex
Trade	imagine a family grows its food, sews its clothes, and builds its home	Specialization in online crime	household tasks (including childcare) and household earnings	specialization in housework within a household and happy marriages
Supply/Demand	weather and Caribbean hotels; war, gasoline, and SUVs; ice cream cones	Supply and demand effects of legalizing marijuana	demand for BMW's with constant per capita GDP but rising inequality	bride prices and dowries; the higher education gender gap and hookup culture
Elasticity	Elasticity of gasoline	The market for cocaine and illegal drugs	cigarettes (young versus old); income elasticity of different fast foods	the price of wedding venues varies based on weekday and time of year
Externalities	pollution, historic buildings, barking dogs, research, and education	Externalities associated with over and under policing	environmental disamenities by race and income disparities	apps that make it less risky to report a sexual assault
Production/Costs	cookies and cups of coffee; cars for long run	Cost structures of public vs. private prisons	AI radiology services as new technology and effect on costs and incomes?	increasing marginal cost is apparent when stores procure flowers for Valentine's Day
Labor Markets	cooks, teachers, physicians, CEOs; earnings by education and race	Labor market for formerly incarcerated people	Goldin's greedy work; economic mobility affected by location and historical discrimination	the motherhood penalty

Section 4. Instructional Implementation

After identifying relevant examples, the instructor must decide how to incorporate them into the curriculum. While a variety of creative pedagogies is possible, in order to keep the cost of implementing themes in our classes low, our approaches generally fell into the following categories: out-of-class reading, content presentation, in-class work, homework problems, and classroom discussion. Modifying the existing examples the instructor previously used in lecture or class is a particularly low-cost approach to incorporating themes, as it may require little more than changing the product or market named on slides, handouts, or notes. On the other hand, using these types of themed examples may not provide much insight into the topic of the theme itself, and it also may not highlight the flexibility and broad applicability of economics to a range of social questions.

We have found that assigning a supplemental out-of-class reading, audio recording, or video is a particularly good way to incorporate themes and introduce students to economic research. Each of us regularly assigned a popular press article, podcast, or video clip that demonstrated a themed example of the microeconomic concept. We incorporated these assigned readings or recordings into class in a variety of ways.

One approach is to ask students to complete a guided reading assignment prior to the first class covering an economic concept. The reading includes both the textbook reading for upcoming material and an additional source related to the theme. The textbook reading formally introduces the microeconomic concept while the additional source provides an example related to the theme of the class. After reviewing the new economic concept in class, the instructor facilitates a brief discussion about how the supplemental reading or recording relates to the economic concept. During this discussion, it is useful to display a summary of the main points of the reading and one or two quotations from the reading as well as the discussion question on a slide or whiteboard.

For example, when students in the crime theme read the textbook chapter on determinants of wages, they also read a blog post on employment opportunities for formerly incarcerated persons. The associated guided assignment prompts them to identify those wage determinants described in the textbook that are present in the blog post reading. The assignment is checked for completion and a class discussion later in the week focuses on the blog post and its relation to economic theory of labor markets.

This forward-looking approach, where supplemental readings or recordings are assigned before covering a concept in class, is useful because it aids in motivating new concepts and their real-world relevance. Students also tend to develop better intuition about concepts since their first focus is on application rather than on mathematical solutions. This approach also ensures that students are prepared for in-depth class discussions on the themed examples. The challenge with this approach is the same challenge that every instructor has with out-of-class work: some students do not complete the readings or do not read them thoroughly and so they are not prepared to engage in class discussion. One instructor encourages preparation by beginning each class with four relatively basic multiple-choice questions that the CMS (Classroom Management System) grades automatically.

Alternatively, the instructor can assign a supplemental reading or recording after covering a concept in class. The reading serves as the foundation for both in-class problem solving and discussion in the next class meeting. This approach is particularly well suited to an active learning environment. In the dating and marriage-themed section, after reviewing the concept of equilibrium and supply and demand shifters in class, the instructor assigns an article about why flowers are so expensive on Valentine's Day. When the class next meets, the students first work in pairs on an in-class exercise based on the article. Since the article references multiple different supply and demand shifters, this allows the students to review and apply their understanding of what causes supply and demand to shift and how these shifts impact equilibrium in a market. The last question on the exercise asks about two simultaneous shifts which leads to an exploration of cases when equilibrium impacts are ambiguous and what can resolve the ambiguity. Finally, the instructor poses a question to students: while flowers are more expensive on Valentine's Day, why are chocolates usually on sale before Valentine's Day? After first trying to answer the question in small groups, the students often engage in a lively discussion as they share their ideas and apply ideas and supply and demand shifters.

In addition to the usual benefits of active learning pedagogy, this approach to incorporating a theme has two benefits. First, if the instructor has already incorporated active learning techniques into their class, then little additional time is required. Indeed, only the additional discussion question at the end demands additional class time; the themed in-class exercise simply replaces a different in-class problem. The literature on active learning informs us that asking students to recall

and apply a concept after it is introduced in class is beneficial for comprehension and retention (Lang, 2021); doing so in the context of a real event that is familiar to them helps them with that application because they can focus on how to apply the economic concept rather than on understanding the event itself. In other words, the themed example reinforces the benefits of both active learning and follow-up work.

Still another way to incorporate out of class readings or recordings is to thoroughly cover one or more economic concepts over the course of a few classes and then assign a small set of themed readings that relate to all of the concepts. The concepts can initially be taught either through a traditional lecture or using active learning techniques. The instructor then facilitates a discussion that is based on the readings and lasts for the entire class meeting time. For the inequality theme, after covering externalities and health care markets, the instructor assigned selections from work by Deaton and Case (“In America Not Having a College Degree Can Take Years Off Your Life”), Einav and Finkelstein (*We’ve Got You Covered*), Opportunity Insights (“Association Between Income and Life Expectancy in the United States, 2001-14”), and Fryer (“Disparity Doesn’t Necessarily Imply Racism”). These readings prepare students to discuss the mix of factors leading to different outcomes across groups in health and environmental amenities which incorporates income elasticity, normal and luxury goods, and externalities.

In order to implement this approach, the instructor does not need to change anything about how course concepts are presented during the semester but merely adds an extra day or two for discussion and develops the discussion questions, although this may require eliminating one or two topics from course coverage. Nevertheless, it requires the least modification of existing lesson plans. This approach also lends itself particularly well to complex concepts, as it is not focused on applying just a single economic concept but rather on how multiple concepts interact. As such, it provides students a very good way to understand how concepts learned throughout the semester are related to each other, which is precisely one of the principal benefits of a incorporating a theme. In other words, this approach provides students with a broad framework on which to build their understanding of economic concepts. Similarly, the instructor could help students connect topics from throughout the semester with a project focused on the theme. In the globalization-themed sections, students worked in groups to create a podcast episode on globalization at the end of the semester.

While implementing these approaches is straightforward in small classes or sections, instructors may well question how suitable they are for larger classes. In large lecture classes, discussion with the whole class is either not feasible or only allows for active participation by a small share of students. Small group discussions combined with a classroom response system (CRS) such as Kahoot!, Jotform, Socrative, or Poll Everywhere can serve as a substitute for whole class discussions. In order to minimize administrative burden, three to five students sitting next to each other form a small group. The instructor poses a question, which the small group first discusses and then uses the CRS to record their response.

It is however sometimes difficult to find an accessible and relevant reading or recording. This can be particularly true with complicated examples and applications. In these cases, the instructor can take a different approach to implementing the theme by simply presenting a themed example to the class. After introducing opportunity cost and cost-benefit analysis in class, the instructor in the crime-themed section presented students with the following two facts (with citations): one year after Italy released 22,000 incarcerated people, many of whom were non-Italian foreigners, Romania and Bulgaria joined the EU; economists subsequently found that recidivism rates among Romanian and Bulgarian immigrants were lower than among other immigrants. Students then tried to figure out how these facts are related to each other, first in small groups and then together as a class. The instructor guided the students to recognize that whether people choose to commit a crime depends on the opportunity cost of crime, which in turn depends on a person's legal status and work authorization. It is worth noting that this particular example not only provides insight into the crime theme but also into other topics of interest, such as international migration. It is likely to be of particular interest to students because of its relevance to current events, specifically undocumented immigration.

The benefit of this approach is that students are not required to read academic literature that may be too advanced for a principles class. On the other hand, because students are listening but not actively applying their knowledge of economic concepts, they are less likely to think deeply about the example and the economic principles it relates to and thus less likely to recall them readily in the future. To address this challenge, it is useful to either incorporate some class discussion of the example, as described above, or to incorporate the example into an in-class exercise or an assessment exercise.

Indeed, incorporating themed examples into homework and test questions is yet another way to integrate a theme into a principles class. Such questions may be based on a themed example that the instructor reviews in class or they may introduce a new themed example. In the crime-themed section, as a way of assessing students' understanding of marginal cost-benefit analysis, the instructor asked students what factors people consider when deciding whether to violate the speed limit and by how much. In the dating-themed section, one problem set question about consumer choice asked students to analyze the choice between taking a date to the movies or to a restaurant. In the inequality-themed sections, the instructor asked students to write about whether the differences in life expectancies between men and women and the differences between Black and white people are due to sexism and racism, respectively. This example invites students to consider how differences in outcomes could be attributable to many factors, among them discrimination.

Yet another pedagogical technique for incorporating a theme into a principles class is asking students to supply themed examples of their own of a new concept. Rather than simply asking students to think of examples of monopolistically competitive markets, the instructor can ask them to think of such markets that are related to the theme of the class. Similarly, students can brainstorm examples of externalities that are related to the theme of the class.

One might wonder about how to choose between these various pedagogical approaches. Each of us tends to choose a few different approaches for use in our classes, although not so many as to confuse students or lead to a feeling of disjointedness or chaos. Class size and the availability of accessible supplemental materials are important to consider when deciding which pedagogical approach to use. Two other factors are also relevant to the choice of pedagogical approach. The first is the actual themed examples that the instructor plans to use. Straightforward applications lend themselves more to assigning students an out-of-class reading and then asking them to apply economic concepts to the example in the reading. More complex examples are often more suitable for presentation by the instructor. The second factor is instructor preferences, both for how much to change their existing lesson plans and curricular materials and how they like to run their classroom.

In some cases, it is beneficial to employ a combination of pedagogical approaches. In the dating and marriage-themed class, the instructor used two different examples and three different

instructional techniques to illuminate the concept of opportunity cost. Through a think-pair-share exercise, students first engaged in discussion about whether it is a good idea to meet someone virtually before going on a date. This discussion was based on a podcast about online dating that students listened to prior to class (forward-looking out-of-class recording). This discussion provided a basis for introducing and formally defining the idea of opportunity cost. The instructor then demonstrated a complex example of cost-benefit analysis by explaining the main argument in “The Power of the Pill” (Goldin and Katz, 2002). The basic claim is that when oral contraception lowered the risks of unintended pregnancy, more women were willing to engage in premarital sex. Women chose to pursue a professional degree and career since the marginal benefit (higher wages and preferred career) now outweighed the marginal cost of delaying marriage, which now no longer required delaying sex. Because the paper itself is both long and technical in places, the instructor described the main idea in a mini-lecture rather than having students read the paper themselves. Finally, students read a short five-page section of the paper and answered three focused questions about the reading on their first problem set. The instructor thus used class discussion, lecture, and assessment (via problem set) to introduce the concept of opportunity cost through examples focused on dating, sex, and marriage.

Section 5. Results

In this section we present qualitative results from a student survey, as well instructor perceptions and experiences with themed sections. Students generally liked the theme and reported a high level of interest in the course. Instructors also enjoyed the experience of teaching themed-sections and found that student engagement was higher.

5a Instructor Experience and Observations

In our classrooms, we observed that the themes did increase student engagement relative to our prior experiences teaching Principles of Microeconomics. Students were more active in discussing themed-examples and more likely to ask follow-up questions about the concept, the related economic research, and applications to real-world problems. Themes also seemed to increase student engagement and learning outside of class, as we often assigned themed readings or materials for homework assignments.

Further, developing on-theme examples for the entire course often requires that instructors use examples that are more complex than what would be used in the absence of the theme. For example, through discussing the costs of private versus public prisons in the crime themed sections, it becomes apparent to students that obtaining data and measuring firms' costs is often not as straightforward as presented in the textbook. This provides an opportunity to discuss how governments and firms can apply economic decision-making in the absence of complete information. Using these types of examples can promote students' critical thinking skills and introduce real-world complications into their study of economics. These types of examples also further serve to counter the idea that economics is solely theoretical.

We also found that implementing a theme required us to think more carefully about what topics to highlight in our courses. Adding a theme encourages instructors to go more in-depth on certain topics as opposed to briefly covering the full range of topics that could be included in a Principles of Microeconomics course. This approach slows down the pace of our courses to the benefit of student learning. Students had more opportunity for critical thinking, and classroom discussions improved.

It is worth noting that these benefits of the theme could be attained by consistently incorporating economic research across a wide range of topics into Principles of Microeconomics. As noted in Section 3, however, themed examples may be more effective pedagogically as they connect across models instead of presenting a collection of random topics. This can aid in learning retention – students may be more likely to recall Principles concepts when they can reference the framework provided by the theme. In addition, the theme also serves as a commitment device for instructors to incorporate economic research and news articles consistently throughout the semester. Our use of these types of materials increased when we implemented themes in our courses. We also thought more carefully about how to incorporate supplemental materials as a means not only of providing students with examples but also of furthering their learning of economic principles.

We did not observe any salient effects of themes on student academic performance. However, we did not systematically assess academic performance as an outcome measure.

In addition to increases in student engagement and interest level, we also note that there are several benefits to the instructor. First, adding a theme to an existing Principles of

Microeconomics course is low-cost relative to the time needed to prep a new course. In our case, themes can also be added and changed without a formal curriculum review and approval that would be required for a new course. Second, adding a theme can serve as an opportunity for the instructor to learn more about an area of economics that may be outside their main research area. Third, refreshing themed examples or adopting a new theme every few years could be a fun and low-cost way to keep course material updated and add variety into the instructor's teaching experience over time. Finally, the higher level of student engagement and interest level in the themed sections created a more enjoyable classroom experience for instructors as well as students.

5b Student Survey Analysis

Prior to the beginning of the first class of the semester, we asked all Principles of Microeconomics instructors to share with their students a link to a voluntary survey. This survey included both qualitative and quantitative questions regarding students' interest in economics and their intended major and minor. We also asked about the factors that influenced them to enroll in a Principles of Microeconomics class and why they selected their specific section of the course. We repeated the survey in the second to last week of the semester. In the post survey, we additionally asked students in themed sections to share their perceptions of the theme and whether it was helpful to their learning. Pre and post survey questionnaires are included in Appendix A.

Table 3 describes the enrollment and response rate to the student surveys across themed and control sections. Response rates were high in themed sections, with 93.5% of students completing either the pre or post survey, and 66.5% completing both. Response rates were low in control sections, with only one student completing both the pre and post survey. We attribute the differential response rate to differences in how individual instructors shared and promoted the survey link, as well as low interest in completing the survey for students in control sections. In comparison, students in themed sections may have been more motivated to provide feedback on the themes.

While the low response rate in control sections prevents an analysis of the effects of themes relative to a counterfactual, non-themed class, we note that this analysis would have had substantial limitations regardless. One of the key characteristics of our approach is that students can select into themed sections based on topical interests. Thus, even with a higher response rate in control sections, it would not be possible to analyze the causal effects of themes on outcomes such as

student major, as these effects could be driven by selection. Further, different sets of instructors taught themed and control sections. Nonetheless, qualitative analysis of student responses in themed sections can provide additional insight into the benefits and costs of offering themed Principles of Microeconomics sections.

Table 3: Survey Response Rates

	Themed Sections	(% of enrollment)	Control Sections	(% of enrollment)
Number of students Enrolled at end of semester	215		269	
Completed survey at any point	201	93.5%	58	21.6%
Completed both pre and post survey	143	66.5%	1	0.4%
Completed pre survey only	33	15.3%	52	19.3%
Completed post survey only	25	11.6%	5	1.9%

Notes: Response rates to a pre- and post- survey given to students to elicit perceptions of themes, interest in economics, and intended major.

In the post survey, students in the themed section responded to the question, “Do you feel the theme was helpful to your learning this semester? Explain why or why not.” About two-thirds of students responded positively to this question. Students generally found the theme helpful as it provided a “real-world focus” and “real life examples” that made the concepts more relatable and easier to understand. It helped them develop a better understanding of economics, gain perspective, and engage in discussions about real-world problems. About a quarter of students stated that they found the theme interesting but did not elaborate further or say whether the theme helped their learning. The remaining students indicated that they did not think the theme helped their learning. Among these students, some said they found the examples interesting, but unrelated to their learning. However, though students may not have perceived that themes helped their learning (“I do not think it really helped me process and retain the concepts,” their higher interest in the topic (“the most interesting parts of the course to me and I enjoyed it”) likely aided with learning regardless of whether the students themselves identified this. Others commented that the theme could be used more consistently throughout the semester. We interpret this comment positively – students liked the theme enough to want more themed examples in the course, e.g. “I think they could be [helpful] if there were more of an emphasis put on them.” This comment is relevant to

implementation of themes and the importance of incorporating themed examples regularly. Table 4 shows a selection of student responses to illustrate these three common pieces of feedback.

Table 4: Student Perceptions of Themes

Do you feel the theme was helpful to your learning this semester? Explain why or why not.
<i>Positive</i>
<p>“Yes, I do, for sure. I think it was helpful because it turned the class which was filled with theoretical problems into a real-world ones. It made it relatable. I think the real-world focus was great at making the class easier to understand.”</p> <p>“Yes, I thought this theme was helpful in understanding the economic concepts because it brought them into perspective. I had an easier time learning about these topics when I could visualize how they would be applied in real life.”</p> <p>“Yes. I thoroughly enjoyed this theme because it related to real world issues to help deepen the concept that economics is not just about money.”</p> <p>“Yes, it kept class interesting and made it easier to be engaged to do problems on topics I was interested in.”</p> <p>“Yes, because it provided real life examples which helped me to understand concepts that are hard to understand just through theory.”</p> <p>“Yes! The theme made it easy for me to apply the concepts to the real world, and be able to understand them more personally.”</p> <p>“I do feel it was helpful because it gave more consistency to my learning.”</p>
<i>Theme Interesting, but Unhelpful</i>
<p>“Not really here nor there. Thought the examples were interesting, but they didn’t necessarily help my learning.”</p> <p>“I think it made it more fun to put it in a relatable context, but I don’t know if it helped me learn that much more about economics.”</p> <p>“I do not think the theme was particularly impactful to my learning in either direction, while it helped me understand material presented I do not think it did so any better than any other topic would have.”</p> <p>“I do not think it really helped me process and retain the concepts of Microeconomics, but it was the most interesting part of the course to me and I enjoyed it.”</p>
<i>Theme Inconsistent</i>
<p>“Not really because we didn’t talk about it much.”</p> <p>“I feel like this topic is very interesting, however besides articles we did not discuss this in class very much. Using more real-world examples surrounding this topic may have actually helped me to understand the topics more.”</p> <p>“No, I felt that the theme was not consistently used, so I was unable to apply it to a variety of different economic concepts/topics.”</p> <p>“I wish we spoke more on the articles that we read that connected economics more to the real world (I know that economics is already heavily connected to the real world, but I would like to talk more about the interesting articles) So because of that I don’t think the themes were that helpful, I think they could be if there were more of an emphasis put on them.”</p>

An important aspect of the themed classes in our setting was that students could select into courses with themes (i.e., they observed when they registered that a section had a theme). As such, it could be that the positive response to themes is due to selection and that perceptions of themes would be less positive if students were randomly assigned to courses. However, in our pre-survey we asked students their motivation for registering for their particular section of principles. 54.3 percent of students picked their section because it fit well in their schedule, 26.3 percent picked based on the instructor, and only 10.9 percent picked because they were interested in the theme. In our conversations with students, we also learned that many students were unaware of the themes at the beginning of the semester despite the registration note. However, our observations in subsequent semesters indicated that word spread among students about the themes and led to increased selection into themes over time. Thus, it seems unlikely that the positive student response to in our initial pilot year was due to differential selection into themed sections.

Section 6. Conclusion

An instructor for a Principles of Microeconomics course has the responsibility to introduce students to a certain number of key economic concepts and conclusions (e.g., how buyers and sellers interact in a market, when markets work well and when they do not work well, the effects of government intervention, and how firms make decisions). Students in an introductory course are often focused on mastering the individual concepts and may have difficulty seeing how these concepts relate to each other; a course with a coherent story or theme can be both more inviting and effective. Consider as an example the case of introductory-level history classes. These courses would likely look quite different if students were taught key methods, tools, and generally accepted conclusions of historians without any focus on a particular region, era, or group of people. Instead, most introductory history courses choose a specific area of focus, while still conveying foundational tools for historical analysis. Students are then free to select into history classes that match their interests. We conjectured that a similar approach in economics might better attract students to the field.

We have described one such approach that connects topics in Principles of Microeconomics by using a cohesive set of themed examples throughout the semester. This approach is low-cost to the instructor and can be fun to implement. Existing evidence on the importance for long-term learning suggests that consistent themed examples throughout the

semester may improve students' retention of economic principles. In our experience, students were more engaged and better able to connect economics to their lives, policy issues, and social questions.

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Appendix A: Survey Instruments

Pre-Survey

Full Name:

Residential College:

Is this your first year at University of Richmond? If not, what year are you in?

What is the main reason you are taking Econ 101?

- a) Required to major in economics/mathematical economics
- b) Required to major in business
- c) Required for PPEL
- d) Required for Global Studies
- e) Satisfies general education requirement
- f) I'm curious about economics

What is the main reason you are taking this particular section of Econ 101?

- a) It fits into my schedule/I wanted a class at this time
- b) I heard good things about the instructor
- c) I was interested in the theme
- d) I couldn't get into any other section

Have you previously taken any economics classes? If yes, please describe the type of class (micro vs macro, AP vs IB, etc.).

On a scale of 1 to 5, rate your current level of interest in economics (1=not at all interested, 5=extremely interested).

What major(s) and minor(s) are you leaning toward right now?

Besides this class, how many more economics classes do you think you'll take in college?

0 1-2 classes 3-4 classes 5 or more classes

Based on your current understanding of economics, list two problems, challenges, or puzzles that economics can help us understand and perhaps solve.

Post-Survey

Full Name:

On a scale of 1 to 5, rate your current level of interest in economics (1=not at all interested, 5=extremely interested).

What major(s) and minor(s) are you leaning toward right now?

Besides this class, how many more economics classes do you think you'll take in college?

0 1-2 classes 3-4 classes 5 or more classes

Based on your current understanding of economics, list two problems, challenges, or puzzles that economics can help us understand and perhaps solve.

Themed sections only: Throughout this course, your instructor used a consistent theme (state theme here for each section) to demonstrate economic concepts. Do you feel the theme was helpful to your learning this semester? Explain why or why not.