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Significant learning in principles of economics: A module on the minimum wage

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ABSTRACT

The authors of this article make a case for using Fink's (2013) taxonomy of significant learning in the economics classroom to improve standard-based economics education and to continue transforming the discipline to reduce social inequality along multiple dimensions, including gender, race, and class. Fink's framework is defined by student engagement with six distinct kinds of learning. Changes in student attitudes, changes in what students know about themselves and others, and learning how to learn in different settings are learning outcomes that are incorporated explicitly alongside acquiring new discipline-specific knowledge and skills. The authors apply Fink's taxonomy to a module on the minimum wage for principles of economics. They discuss potential activities and reflect on the benefits and challenges associated with using Fink's taxonomy.

KEYWORDS

Fink; minimum wage; principles of economics; significant learning

JEL CODES

A20; A22

Fink's (2013) taxonomy of significant learning can provide economics instructors with a framework for designing course materials and a classroom environment that broaden the conception of learning, respond to diversity, equity, and inclusion (DEI) goals, and may also result in stronger learning outcomes along traditional metrics. Fink argues that, as instructors, “[w]e want that which students learn to become part of how they think, what they can and want to do, what they believe is true about life, and what they value—and we want to increase their capability for living life fully and meaningfully” (p. 7). Economics courses typically incorporate learning goals that would be categorized as foundational knowledge or application for Fink and other learning taxonomies (Bloom et al. 1956; Perry 1998). For example, Allgood and Bayer (2017) describe a framework where learning outcomes are designed at the intersection of “essential concepts” (foundational knowledge) and “essential competencies” (application). There are distinct benefits to *explicitly* incorporating other dimensions of learning in addition to foundational knowledge and application. Using Fink's (2013) taxonomy of significant learning has the potential to change how economics instructors design learning environments. Our purpose in this article is to illustrate the distinctive benefits of Fink's taxonomy of significant learning for teaching undergraduate economics.

For significant learning to occur, multiple kinds of specific learning, in addition to “understanding and remembering discipline-related information” (Fink 2013, 7), are required, and students must integrate what they are learning into their lives beyond the course.¹ Economics courses may benefit from the instructors' explicit consideration of all six dimensions of significant learning. The specific kinds of learning can be summarized as understanding disciplinary information and ideas (Foundational Knowledge), gaining skills in discipline-related activities (Application), connecting course content with other ideas, learning experiences, or realms of life (Integration), learning about oneself and others (Human Dimension), developing new feelings, interests, and values (Caring), and developing skills and experience

as a self-directed learner (Learning How to Learn).² We describe a four-day, backward-designed, “big-think” module on the minimum wage for a principles of economics course (hereafter “principles”) based on Fink’s significant learning taxonomy (see McGoldrick and Garnett [2013] for a description of “big-think” approaches; see Wiggins and McTighe [2005] for a description of backward design).

The minimum wage is a good topic on which to illustrate significant learning, particularly in principles, because college students likely have familiarity and interest in labor markets and because supply and demand models can be used to make predictions about the effects of the minimum wage that can be compared to observed outcomes. Additionally, the minimum wage is a policy that affects many low-wage workers, directly and indirectly, and it is high-profile in that politicians, community leaders, and scholars in other disciplines have expressed views that can be brought into the principles classroom alongside the research of economists. Learning designed around analyzing the effects of a particular historically implemented policy, such as the minimum wage, can be conceptualized as a series of “[c]ontext-rich problem[s] [that] provide a framework for developing ill-structured problems, grounded in personalized stories that do not identify the analytical tools necessary to develop a solution, which contain either too little or too much information and lack cues directing students to a specific target outcome” (McGoldrick and Garnett 2013, 391). Colander and McGoldrick (2009, 5) compare “big-think” questions that transcend disciplines and likely have no answers, to “little think” questions that often involve “uncritical acceptance of assumptions upon which the research is built” or problems that are underdetermined. By structuring classroom materials and activities around the lived experience of people earning the minimum wage, students can explore various aspects of economics, including the decentralized, optimizing logic of market interactions and the unequal power relationships that are expressed in how real-world markets themselves are structured (Appelbaum 2010). A focus on how labor markets function in real life, accompanied by disaggregated data exploration on low-wage workers, also helps students make connections between their own experience (“seeing yourself in the data”) and questions they have about the world around them.

The module on the minimum wage was taught in two separate contexts in the fall of 2021: a mid-sized public university in the Midwest (hereafter MPUM) and a private Northeast liberal arts college (NELAC).³ The student population within the college of business at the MPUM consisted mainly of students from middle-class Wisconsin families was approximately 30 percent first-generation, with a smaller proportion of women than in the university generally, and very few Black, indigenous, or students-of-color (92% white and 60% male). Principles classes at the MPUM consist of mainly noneconomics majors who are fulfilling their general education requirements. The student population within the NELAC is disproportionately from high-income families, with more than 20 percent of students from the top 1 percent of the national income distribution and only 12.2 percent from the bottom 60 percent (*The New York Times* [NYT] 2017). The economics classes in which the minimum wage module was piloted were disproportionately white (91%) and male (57%) relative to both the states where students come from and the student population at the NELAC.⁴

This article is organized around how Fink’s (2013) significant learning outcomes can be applied in a four-day module. Day 1 focuses on the Application of supply and demand to the labor market and the minimum wage. Day 2 prioritizes Foundational Knowledge, which, in our interpretation, corresponds to institutional details about the labor market and the minimum wage as a policy and Integration across multiple dimensions. Day 3 is used to compare theoretical models to empirical results and emphasizes Learning How to Learn. Day 4 incorporates multiple perspectives and highlights the Caring and Human Dimension of learning. A visual summary tool is provided by table 1, which lists the significant learning categories, the specific learning outcomes related to the minimum wage, and an abbreviated version of the activities described in the main body of this article.

Day 1: Supply and demand as Application

The minimum wage module starts with a big reveal. After several weeks of analyzing markets for goods and services using supply and demand concepts, the instructor draws the familiar diagram on the board but, for the first time, labels the horizontal axis “Quantity of Labor.” For this first day of the module, the faculty member guides a brief discussion by prompting students with the following questions:

Table 1. Summary of the minimum wage module learning plan.

Kinds of learning		Learning goals A year after this course is over, I want and hope that students will:	Activities
Day 1	Application	<ul style="list-style-type: none"> be able to analyze individual markets, including the market for labor, using a supply and demand diagram as a tool. understand the concept of “binding” for a price floor or similar economic policy. make predictions for the effects of a minimum wage (price floor) imposed on markets with different elasticities of supply and demand. 	Interactive lecture with clicker questions Real-World Investigation: Is the current federal minimum wage binding? Find anecdotal evidence from your life. Send-A-Problem: Price Elasticity of Demand Activity
Day 2	Foundational Knowledge Integration	<ul style="list-style-type: none"> understand that minimum wages are set through a political process. integrate an analysis of minimum wages with other fields, including the U.S. government, political economy, and labor studies. 	Readings: Bradley (2021), Luce (2017) Small group jigsaw discussion of readings; problem set short response questions
Day 3	Learning How to Learn	<ul style="list-style-type: none"> be able to read reports about multiple economic studies and make sense of why there may sometimes be seemingly contradictory evidence. be able to parse the relationship between theory and evidence in social sciences. 	Reading: Schmitt (2013) Small group jigsaw discussion of readings Tableau data activity: Who Earns the Minimum Wage?
Day 4	Human Dimension	<ul style="list-style-type: none"> see themselves as capable of developing their own perspective about economic policies or arguments, based on their own reasoning and values, without deferring to “the experts.” 	Readings: National Economic Council (NEC) et al. (2014), Strain (2019) Small group jigsaw discussion of readings
	Caring	<ul style="list-style-type: none"> be more interested in learning about economic policies or arguments and how they affect people differently. 	In-class debate Summative opinion paper

- What do you think we mean by the price of labor? (In other words, what should we put on the vertical axis?) Answer: wage.
- Who are the suppliers of labor? Answer: workers (“you and me”).
- Who are the demanders of labor? Answer: firms (“owners of capital”).

During this introduction, students apply supply and demand to analyze the labor market. Having adapted the model to a new market and with no further explanation, students are asked the following clicker questions:

- In the market for labor, the minimum wage is an example of (a) a price ceiling, (b) a price floor, (c) a subsidy, (d) a tax, (e) other. Answer: (b) a price floor. Seventy-nine percent answered correctly.
- In the market for labor, supply and demand analysis predicts that the minimum wage will cause (a) a decrease in wages, (b) a surplus of labor, i.e., too few jobs relative to workers, (c) a shortage of labor, i.e., too few workers relative to jobs, (d) an ambiguous change in wages. Answer: (b) a surplus of labor. Ninety-two percent answered correctly.

Why begin the module with Application? In particular, many instructors design learning that begins with key definitions or background information (Foundational Knowledge). Instead, we begin with Application so that students can contribute immediately. Freire (2000) critiques the banking model of education, in which students are seen as empty vessels to be filled by the context that faculty provide. We operate within this mode of teaching when we begin lessons by introducing a new idea or question and emphasizing what students do *not* know about the subject. There is little reason not to begin with what students know in this module because students likely have labor market experience,⁵ and they have already been exposed to the foundational supply and demand model. By beginning with Application, we emphasize how students can independently achieve insights in new settings using economics as a method or tool for analysis, not just a set of facts. Part of the lesson, then, is that everyone in the class has something to contribute from the beginning.⁶ For students in a significant learning context, the source of truth and insights is not just the faculty member at the front of the class.⁷ Each student can

draw on their own experiences, their knowledge, their values, and their own reasoning mind, and they can draw on similar resources from their peers, especially when learning is explicitly designed to take advantage of these resources.

Cooperative learning activities such as Send-A-Problem (Barkley, Major, and Cross 2014; McGoldrick 2007) can be designed to emphasize Application learning. One such activity is employed at the MPUM. Students apply the concept of elasticity of demand and supply to the labor market in order to analyze the potential effects of the minimum wage. Students are assigned inelastic or elastic labor demand and supply curves and are asked to evaluate the extent to which elasticity mitigated or exacerbated the predicted unemployment effects of the minimum wage policy. They then “send” their answers to another group with a different elasticity of demand or supply in order to compare and contrast their solutions. This activity enables students to see a real-world application of elasticity, use the concept in a hands-on way to analyze the issue, and discuss explanations as to why labor supply or demand might be elastic or inelastic.

As mentioned earlier, Application is not unfamiliar to economics faculty, but it is worth exploring further how even this dimension of teaching can be informed by Fink’s (2013) taxonomy. The focus on significant learning shifts attention to what the instructor hopes the student will be able to do and how the student will be able to think *one or two years after the class*; that is, lasting change for the student. Using supply and demand curves to analyze price, quantity, and sensitivity to prices in a market is just this sort of lasting skill. Fink argues that performing skills requires understanding, and this is where repetition in new markets or settings, and problems about which students care, helps students understand supply and demand analysis as a mode of inquiry.⁸

Day 2: Institutional background as Foundational Knowledge and Integration

In the context of a minimum wage module for principles, we interpret Foundational Knowledge to mean understanding important concepts and institutional details about the minimum wage, such as:

- What was the impetus behind the minimum wage as a federal policy in the United States?
- How many people earn the minimum wage?
- Who are minimum wage workers? In what industries do minimum wage workers primarily work?
- How high is the minimum wage in your state?
- What is the gendered and racialized history of the minimum wage in the United States?
- What are the differences between nominal and real wages?

Institutional details about the minimum wage can be explored through readings and class discussion using these questions.

Integration, as applied to a principles of economics course, can involve learning about the minimum wage across different models or schools of thought within economics, different academic disciplines, and across different realms of life. Fink’s approach to Integration encourages the instructor to start with what students know already, but, unlike Day 1, the focus is on building a holistic understanding and revising knowledge that may come from misconceptions.⁹ Integration also provides a rationale for discussing institutional details and cultural specificity: integration across disciplines and areas of life requires nonreductive thinking. Models in principles are abstract and simplified—the methodology of using models to think or make predictions is a key learning outcome for most versions of the course—but Integration requires that we address the ways in which real people have diverse social identities, living conditions, and motivations that can be understood using multiple models at once and methods and theories from outside economics. This kind of context-rich approach to the topic encourages students to understand the minimum wage in a holistic manner rather than the sorts of underdetermined problems often provided in separate “boxes” in textbooks that point to a single correct solution. In our experience, principles students are hungry to learn about the real world, and they enjoy variety in reading sources that connect economic content to the other disciplines they are studying. The minimum wage is an appropriate topic with enough richness that students can grapple with different models while still having

enough tractability that they can get up to speed on policy and implementation adequate to compare models with real life.¹⁰

Integration involves working across disciplinary boundaries. But, putting the topic (here, the minimum wage) at the center of the class has risks. The lesson is no longer limited to the formal model as presented in the textbook or the faculty member's own discipline-specific expertise. Course materials may incorporate insights from academic articles, professional sources, or even information outside of the discipline. In some ways, this may seem to make things harder for faculty, creating more work, but the specific perspective drawn out by Fink's Integration dimension is doing nothing more than surfacing what is already there: faculty help students understand the real world, and they build the case for why economics is helpful for that project along with and in relation to other ways of knowing.

In order to integrate knowledge around the minimum wage, students at NELAC worked through professional documents in addition to the textbook and other academic sources. For this activity, small groups read and discussed government reports meant for a general public audience from Congressional Research Services (Bradley 2021) about the minimum wage as well as a labor history article on the fight for living wages (Luce 2017).¹¹ Small groups were required to work through prompts requiring creative thinking and some outside research to arrive at a thorough understanding. Importantly, one question on enforcement required consulting the Department of Labor (DOL) Wage and Hour Division website to learn about DOL investigators. Group discussion about DOL investigators led to an exploration of possible public sector career paths that would benefit from a familiarity with social science research. In class, student awareness that enforcement is a responsibility of the executive branch through a federal agency headed by a political appointee can lead to discussions about how, in practice, enforcement may differ depending on who holds the Office of the President of the United States.

Another example of an exercise to target Integration learning is a small group discussion focused on the connection between modeling markets in economics and real-world life experiences. For this activity, the students are provided a prompt that asks them to reflect on real-world labor markets and the model of labor markets that emerges using supply and demand analysis. This exercise was designed with student socioeconomic class diversity in mind. Examples of real-world labor market experiences come from recent news stories that contain interviews with minimum-wage workers. Short excerpts are provided to students in class, and thus Integration learning can be achieved in a way that allows working-class students to learn about and engage with their experiences and to share their insights with their peers of whatever class background, while not being required to disclose any particularities of their own background. By choosing short excerpts that reflect a wide range of identities, all students can participate in the discussion centering on working-class perspectives.

In an outside-of-the-classroom activity, students at MPUM are asked if the current federal minimum wage is binding and to find anecdotal evidence to support their conclusion. This activity integrates the concepts in the classroom with students' real-lived experiences (and establishes Foundational Knowledge: what does it mean for the minimum wage to be binding or not binding?). Students meet in small groups to brainstorm what kinds of evidence would be required to show that the minimum wage is binding. Examples included advertisements in local gas stations for no-experience, entry-level jobs starting above the minimum wage or levels of unemployment in the region. Students discuss what it means to be skilled or unskilled, and, outside of class meeting time, they are encouraged to interview friends and family members, evaluate skill levels, and explore want ads in local newspapers. Students meet again in small groups to compare and contrast their anecdotes. This activity enables students to integrate concepts learned in the classroom with their own community and their own experiences.

In sum, Day 2 offers the opportunity to build Foundational Knowledge around institutional details about the minimum wage and to integrate multiple disciplinary and personal perspectives. This is achieved by providing students with rich context surrounding a real-world problem. Building knowledge around institutional details and integrating information and sources from outside of economics are important for building knowledge in economics, and Fink's significant learning taxonomy provides a framework for explicitly designing learning and learning outcomes to incorporate these types of learning.

Day 3: Testing theory with data as Learning How To Learn

Day 3 is devoted to Learning How to Learn by exploring the relationship between theory and evidence. While this is a central concern for economists, and for many, “thinking like an economist” has come to mean applying the scientific method to economic phenomena, students in principles rarely see more than a brief mention of how modern economists test models with data. This issue is compounded by textbook references to real-world policies like the minimum wage.¹² Principles textbooks, if they use the minimum wage as an example, treat the labor market like any other market for goods and services and almost exclusively predict, using supply and demand graphs, that the minimum wage creates unemployment (a surplus of labor). In contrast to this approach, there are theoretically significant differences between the markets for nonessential goods and labor, and empirical research on the minimum wage has found unemployment effects close to zero (Card and Krueger 1994; Dube, Lester, and Reich 2010). On Day 3, we demonstrate how economists consider a variety of models and how they make sense of a range of empirical results. The main learning outcome is that students will gain greater independence in learning about new models and gain confidence in seeing the connection between models and empirical evidence. As faculty, we hope that the economic literacy that students gain in principles will persist for years after the course is finished, with students able to read news reports or research summaries about multiple economic studies and be able to make sense of why there are sometimes contradictory results. That is, students will be familiar with the relationship between theory and evidence in the social sciences.

For Learning How to Learn, the emphasis is on guiding students to develop the skills that they need to develop questions, find relevant information, process that information, express what they make of it, and make decisions (Fink 2013). Students at NELAC were assigned to read Schmitt (2013), a report written by a labor economist with the goal of informing the public and policymakers about minimum wage research. The class discussion focused on two parts of this report. In the first part, Schmitt presents a thorough literature review with details about individual papers and a meta-analysis. In the second part, Schmitt describes 11 possible channels of adjustment to minimum wage hikes *other than* lower employment and the associated evidence for each of the channels. The main goal of reading the first section is to describe how economics research relates to the ideal of the scientific method. That is, the instructor describes how economists conduct research by using observational data in settings where treatment and control are plausibly randomly assigned. This is precisely a discussion of how economists today learn about the world. Students are being introduced to one of the main modes of inquiry from the economics discipline. The main goal of reading the second section on 11 alternatives to the mainstream prediction of disemployment effects is to present students with a range of alternatives and to practice the reasoning process that economists use to adjudicate among different predictions. It is clear that many of the predictions are not mutually exclusive. Cognitive load is reduced for students by presenting a fill-in-the-blank method for thinking through the different alternatives. In small groups, students read short sections and complete the following prompt for each possible channel described in the reading:

The simple supply and demand model for labor predicts that a binding minimum wage will cause unemployment, but an alternative model may generate other predictions. For example, if a minimum wage is imposed, it could be that

An example response is, “If a minimum wage is imposed, it could be that hours for employees are reduced while simultaneously their wages were increased, resulting in higher take-home pay. Of course, the reverse could also be true where workers only get their hours cut.” Each of the different channels is described briefly, sometimes in as little as one paragraph. Schmitt (2013) adds welcome pluralism to the principles curriculum by offering discussion of models that allow for market power, firms earning positive profits, and institutional details about the labor market that will be familiar to students (shift work at restaurants, worker training days, etc.).

Working with economic data—exploring relationships, creating comparisons, and interpreting summary statistics—is a key skill that students can use to learn about the world around them. Students at the MPUM engaged with curated data from the Bureau of Labor Statistics via Giddings’ Public Tableau Dashboard.¹³ The goals of this activity are to address misconceptions about the number of

minimum wage workers in the United States (Goffe 2013) and to disaggregate data by race, education, sex, region, and other categories to allow students to see exactly who earns the minimum wage (Sharpe 2020). This is meant to increase students' empirical literacy and to give students the freedom to explore their own questions with data. After instructions on how to use Tableau, students explore at least two group categories (for example, education and gender) and their relationship to the minimum wage. They then create a three- or four-graph "story" within Tableau about the relationships they explored and who earns the minimum wage, accompanied by a paragraph describing what they learned.

Incorporating Fink's (2013) Learning How to Learn dimension in instructional design can allow faculty to make explicit the ways that they are providing students with the tools to be lifelong learners. In an economics classroom, this means focusing on economics as a mode of inquiry, discussing what counts as evidence in economics, and allowing students to confront open-ended questions productively where multiple models and possibly conflicting or insufficient evidence exists. While Day 3 is focused on learning as a process, it leads into the last day, where students are asked to make commitments about what they have learned.¹⁴ Drawing on language from Perry (1998), we can understand this sequence as helping to guide students from dualistic thinking ("Is this model right or wrong?"), through multiplicity ("There is no right answer, everyone is entitled to their own opinion"), to ultimately a position where they can master skills and literature while developing their own perspectives based on their reasoning skills and values.

Day 4: Understanding multiple perspectives as Human Dimension and Caring

The learning goals for Day 4, Caring and Human Dimension, are perhaps the least familiar to faculty teaching economics. The Caring dimension recognizes affective goals of teaching: faculty are not just interested in encouraging new understandings, according to Fink (2013). We should also be interested in helping students develop new values and interests. This is to say that the goal of significant learning is to change the student's life through deep engagement with a subject in the context of evaluating problems using one's reasoning and value systems. For example, faculty may hope that, one year after taking principles, students have a greater interest in economic issues and that they care about the outcomes of different policy debates or economic problems. Students will have developed their own substantiated opinions on various real-world topics.

Caring, for Fink, is closely related to what Belenky et al. (1997) term "voice" in their influential book on feminist pedagogy. Voice refers to a person's ability to express their thoughts, whether to themselves or to others, with conviction that originates from that person's own reasoning mind and values. The purpose of the last day in our module is to help students make sense of the different models and bodies of evidence, to help students understand the different positions people in society take, and to help students incorporate these new understandings into their existing knowledge and value systems. This is the process of helping students find their voice.

The Human Dimension involves learning about oneself and others. These two areas are closely interconnected, according to Fink (2013); when students reflect on their own experiences and thoughts, they also gain appreciation and curiosity about others' experiences and thoughts. When students learn about people or perspectives that they perceive as different from theirs, they can be prompted to reflect on what their reactions or interpretations reveal about themselves and their values.

While many of the activities already described in the module promote Caring learning and Human Dimension learning, we explicitly target these areas by employing a jigsaw activity (Aronson 1978). A jigsaw activity is a cooperative learning exercise in which student work is interdependent and ultimately achieves a common goal. In part one of the activity, students are assigned to an "expert group" in which, prior to class, each member reads the same article on one perspective of the minimum wage policy. It is helpful to provide one or more articles with varying perspectives. For example, in this exercise, one expert group focuses on testimony before the U.S. Congress made by Strain (2019), in which he argues that raising the minimum wage would cause more harm than benefits to low-wage workers. A second group reads a paper published by the White House under President Obama that advocates for raising the minimum wage as a policy that would benefit low-wage workers and especially women (NEC et al. 2014).

These readings are curated to provide two or more perspectives produced by real-world actors intending to shape public opinion with evidence. Through the lens of Fink's (2013) Human Dimension, we can see the readings as helping us to understand arguments articulated by people associated with different constituencies or political philosophies.

In class, the "expert groups" meet to discuss the work with the goal of creating a group response that summarizes the main ideas and develops a way to explain the material to other students. In part two, students are reassigned to new groups that comprise students from different "expert" groups. Once in the intermixed groups, each "expert" teaches the other group members about their prompt. The exercise is efficient in that students are exposed to a wider range of materials after having focused on just one topic. This activity prepared students to engage in an informal "low-stakes" debate on the minimum wage.

The activities on this day are intended for students to revisit and consolidate information and activities of the module and to use them to form their own reasoned opinions about the minimum wage. Students present both economic and social arguments for and against the minimum wage. Many students change their opinion about the topic based on information presented over the course of the module, and, in post-module assessments, they expressed appreciation for the thoroughness of the module, which allowed them to consider many aspects of the policy.

Discussion

In this article, we document and describe one example of a module for principles of economics designed to reflect all six dimensions of learning in Fink's taxonomy of significant learning. This four-day module on the minimum wage using Fink was implemented in two different settings and across two very different student populations. As such, the module provides important lessons for many different classroom settings.

The most important lesson, across both contexts, was that students are better served when multiple kinds of learning are pursued. In addition to Foundational Knowledge and Application, we explicitly pursued learning objectives that moved students beyond understanding and remembering discipline-specific concepts and applications. The activities described encourage students to integrate knowledge across disciplinary perspectives and areas of life, to learn about one's self and others, to reflect on economics as one mode of inquiry among many, and to develop new values and commitments. This broader conception of learning seems to strengthen, rather than subtract from, the goals of Foundational Knowledge and Application learning. When students apply the supply and demand model to a new context, they build on their understanding, and they begin to integrate this knowledge with other aspects of their life and other subjects they are learning. Students contribute insights from their own lived experiences to better understand real-world problems in economics, the models that explain those problems, and observed economic phenomena.

In post-course evaluations, some students gave unprompted reflections on their evolving perspective on the minimum wage. One student mentioned that, prior to the module, they had adopted their parent's opinion; the parent was a small business owner. The student calculated the cost of increasing the minimum wage for his family's business and initially concluded that the cost was too high. After participating in the module, the student recognized the larger social gains that could be accomplished by raising the minimum wage. While he maintained opposition to a \$15 minimum wage, his opinion was more nuanced after the module.

The second lesson was that Fink's taxonomy provides a unifying framework from which to build confidence in our students as learners. Pedagogical practices that are consistent with Fink also may be consistent with feminist pedagogy (Lefebvre and Giddings 2023), DEI-focused pedagogies, high-impact teaching practices, or just plain good teaching (Ladson-Billings 1995). Fink's (2013) taxonomy joins this set of frameworks that warrant further attention by economics instructors. As one example of the overlap, many readers will note that we preferred active learning over lecturing in the module. While we recognize that we are not reinventing the wheel, we do find that Fink's framework has changed how we approach teaching and assessment of learning. The distinctive features of this module—the use of resources not specifically written for principles, the ample opportunities for students to make connections between

their outside knowledge and values, and the encouragement that students receive to develop new feelings and values throughout the learning process—correspond to Fink’s framework for significant learning.

One unique aspect of this module is its length. We dedicate four teaching days to the minimum wage in order to pursue learning outcomes that span all six dimensions of learning in Fink. The range of learning outcomes around one topic both reinforces and expands traditional learning goals for the principles classroom. We frequently hear objections that particular pedagogical strategies result in a trade-off between depth and breadth. Perhaps instructors may choose to cover fewer topics in the principles course in order to accommodate a module such as the one described in this article. We argue that the apparent trade-off between learning material in greater depth and learning a greater number of topics may be misleading. Research indicates that literacy-targeted principles courses have been able to reallocate class time by reducing the number of topics covered. In these courses, students were able to achieve higher-order mastery of retained material (Gilleskie and Salemi 2012).

Another apparent trade-off is that (re)designing a module for an economics class or module based on Fink’s (2013) taxonomy does require more time and effort on the part of the instructor. This is eased by using materials that have already been developed. Additional time is also required because the focus is shifted from a core economics theory to real-world situations, in this case, the minimum wage and low-wage labor markets. Centering the topic or subject, rather than the instructor’s disciplinary expertise, better serves our students but requires us to seek resources outside of the familiar textbook.

We experienced some student resistance to the nontraditional module in that it was a departure from lecture and textbook-based learning, but we both also informally noted improved learning outcomes and greater student appreciation for the course. Students also resisted what they perceived as the greater effort required for the module and sought to fall back into more familiar ways of learning, in which they are told answers to black-and-white questions. Students voiced frustration about the work outside of class and that they were required to integrate information from many sources. In contrast, at MPUM, one female student emailed to say:

“In my business law class today we started talking about the minimum wage, and I just felt very educated already ... That is the first time in a long time where I’ve been in another class and thought to myself, ‘wow, I actually completely understand what is being discussed and feel that I could make a solid argument.’”

This student may not have recognized her own transformation had she been exposed to only one model of the minimum wage and not examined the topic from multiple perspectives. Her quote exemplifies the Caring dimension of learning in that she recognizes her own informed opinion on the topic as well as her own voice.

Notes

1. Fink (2013, 7) uses a file directory metaphor when he describes this aspect of significant learning: “students connect what they learn in our courses with their ‘life file’ rather than just with their ‘course file.’”
2. We capitalize the six dimensions of significant learning in order to clearly refer to the specific descriptions that form Fink’s (2013) taxonomy of significant learning.
3. Both instructors attended the 2021 Expanding Diversity in Undergraduate Classes with Advancements in the Teaching of Economics (EDUCATE) workshop hosted by the American Economic Association. This work draws on the backward-design module, where Fink’s taxonomy was presented as an important component of the development of learning outcomes. For more information about EDUCATE, see <https://www.aeaweb.org/about-aea/committees/economic-education/educate-workshop>.
4. In both settings, we worked to navigate the hypervisibility of students of color, particularly Black students, in the classroom (Davis et al. 2004).
5. Students’ experience with labor markets may be direct as workers, managers, or employers, or indirect through relationships with others who occupy these roles.
6. From Belenky et al. (1997, 193): “A woman, like any other human being, does need to know that the mind makes mistakes; but our interviews have convinced us that every woman, regardless of age, social class, ethnicity, and academic achievement, *needs to know that she is capable of intelligent thought, and she needs to know it right away.*” (Emphasis added.)
7. See Aerni et al. (1999) for a discussion of learning environments, including “Sage-on-the-Stage,” “Guide-on-the-Side,” and “Co-Learners” or “Learning Communities” in the context of feminist pedagogy in economics.
8. Fink’s (2013) full description of Application incorporates several types of thinking, including managing complex

projects, the general concept of thinking (“learning how to think” [p. 45]), creative thinking, and practical thinking. Because a focus on application comes on Day 1 of the module, and, in order to balance the rest of the course objectives, we did not pursue a complex project, although one can imagine a project based on minimum wage analysis of the state where the university is located or the students’ home states. Our approach does reflect the “general concept of thinking” in that we take advantage of a new setting (the labor market) to illustrate “thinking like an economist,” which is a goal of many faculty (Siegfried et al. 1991). Thinking like an economist is a contested goal and term (Shanks 2019), but, generally speaking, part of what economists mean when they say this is thinking with models and interpreting the predictions and implications of models and their assumptions. Drawing graphs and performing calculations to solve traditional supply and demand questions satisfy Fink’s (2013, 48) criterion for critical thinking, which is defined as a mode of thinking where students have “criteria for assessing the quality of interpretations, explanations, and predictions.” Creative thinking could be achieved by an exercise around the question, “What is different about the labor market, compared to the market for a nonessential good or service, and how is this related to some of the rationales for minimum wages?” or “how might the end-goal that is pursued with minimum wages be accomplished in a different way?” Practical thinking, which involves big-think style questions and making decisions, can be represented in the exam question, “What would be the most likely effects of raising the federal minimum wage in a state like Pennsylvania, which currently uses the federal minimum wage of \$7.25? Compare this to the effects of raising the minimum wage in a more populated, higher-cost geographical area such as New York City.” As with other dimensions of significant learning, Fink provides useful criteria and examples for generating specific learning outcomes and designing learning environments to achieve those outcomes.

9. See Goffe (2013) for a study about principles students and common misconceptions they have about economic topics, including their misconceptions about the minimum wage.
10. Similar information around policy history, implementation, and political economy can be imagined for policies other than the minimum wage. If the lesson were structured around a theoretical concept rather than a policy, e.g., the Phillips curve or GDP and alternative measurements, the intellectual history and philosophical critiques of the theoretical concept could be substituted.
11. Luce (2017) discusses the people, movements, and organizing strategies behind the fight for a higher minimum wage.
12. Krugman and Wells (2021), for example, have one small box describing the minimum wage in a unit on price controls.
13. <https://public.tableau.com/app/profile/lisa.giddings/viz/GiddingsMinimumWageProjectJune2021/GroupMembershipbyEarningsAtorBelowMW>
14. Commitment is described by Perry (1998) as one of the most developed stages of cognitive and ethical development, and the idea of progressing from dualistic thinking to commitment used in this paper comes from this work.

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