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### Learning Outcomes For Economists

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# Learning Outcomes for Economists<sup>†</sup>

By SAM ALLGOOD AND AMANDA BAYER\*

After attentively reading this paper, economists will be able to construct learning outcome statements that guide and enhance teaching and learning in their courses.

## I. The Basics

Scientific inquiry is the essence of economic research, yet explicit attempts to teach students what we actually do are sparse. Instead, as teachers we tell students what they need to know, with little attention to teaching them how to use economics to learn about the world around them. Economists may state that economics is a “way of thinking” but this vague description only hints that economics is an activity rather than a collection of static definitions and results. If “economics is what economists do,”<sup>1</sup> then we are not successful in our jobs as educators if we do not teach students how to do economics.

A learning outcome (LO) is a single sentence that combines content a student should know with what they should be able to do with this content. Once articulated, LOs provide direct guidance during course design, helping an instructor to decide what and how to teach, as well as how to assess students. Just as important, LOs guide student efforts, helping them understand and work toward what we expect of them.

Economists may be familiar with LOs because accreditation bodies often require departments to develop course- and/or program-level LOs (e.g., AACSB 2013, ACCJC 2014, MSCHE

2015). There is some research suggesting that the articulation of LOs enhances student learning; students may be more motivated and use more effective study strategies.<sup>2</sup> LOs may also reduce unnecessary cognitive load and allow students to plan and monitor their own progress.

Through this paper, we aim to provide a public good to our profession. We present a framework economists can use to construct LOs for their courses and programs, along with several specific examples. We also provide a complete set of course-level LOs, which instructors of introductory microeconomics can paste into their syllabi. While much has been written on how to develop LOs in the education literature, there is little if anything specific to economics.<sup>3</sup>

## II. Economists and Biologists

This section presents some observations about current LO practices of economists and compares them to those of biologists. Biologists have a long history of collective efforts to articulate LOs for undergraduates, in part due to national attention given to the importance of recruiting students to be science majors to expand the science and engineering workforce in the United States (Dirks and Knight 2016).<sup>4</sup>

Through web searches, we collect syllabi from introductory courses in economics and in biology. We read through each syllabus, recording whether it provides students with LO statements in some form and rating the quality of the statements when present. “Well-written” LOs go beyond course descriptions that list content or topics by describing specific abilities that

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<sup>1</sup>Jacob Viner offered this description as early as 1932 (Backhouse and Medema 2009, p. 222).

<sup>2</sup>For an overview, see Ambrose et al. (2010).

<sup>3</sup>We do not want to imply that economists make no use of LOs. Some departments, such as UC Berkeley, have developed program-level LOs and connected them to specific courses (<https://www.econ.berkeley.edu/undergrad/home/learning-goals>).

<sup>4</sup>*Vision and Change in Undergraduate Biology Education* (AAAS 2011) is one, but certainly not the only, prominent example.

TABLE 1—FREQUENCY OF LEARNING OUTCOME STATEMENTS ON INTRODUCTORY COURSE SYLLABI

	1999–2006	2015–2016
<i>Panel A. Syllabi mentioning “objectives” or “outcomes”</i>		
Biology	78.6	92.9
Economics	57.1	64.3
<i>Panel B. Syllabi with well-written LOs</i>		
Biology	64.3	85.7
Economics	35.7	35.7

*Notes:* We report the percentages of syllabi, 14 in each cell, 56 in total, displaying the respective attributes. “Well-written” LOs are those that identify specific competencies as well as content.

instructors wish students to acquire. Table 1 summarizes our review of 56 syllabi, presenting findings in each field in two different time periods.

The results in panel A indicate that a majority of instructors in both fields attempt to describe course “objectives” or “outcomes” of some sort in their syllabi and that the practice is becoming more common.

The difference in LO practices across the disciplines is striking and raises questions, though the results are of course subject to the influence of other factors for which we have not controlled. As seen in panel B, biologists are extremely likely to provide well-defined LOs to their students, while economists rarely do, and the gap appears to be growing over time. Economics syllabi most often describe courses only with lists of concepts or topics. When offering more guidance, syllabi offer vague advice such as “show an understanding,” “develop economic intuition,” or “learn how an economist thinks.” Syllabi can, and should, provide students more specific instruction on instructor expectations.

### III. Writing Learning Outcomes for Economics Courses

In *Improving Quality in American Higher Education*, we wrote a chapter titled “Measuring College Learning in Economics,” which provides a framework for developing LOs (Allgood and Bayer 2016). The chapter was the culmination of a project organized by the Social Science Research Council (SSRC) involving a dozen economists thinking carefully about what it means to learn economics. In contrast to the long lists of content that dominate many syllabi,

textbooks, and prior assessment efforts, the SSRC project defined and emphasized competencies fundamental to economics.

Any instructor or department can create a set of LOs using this framework, as our approach accommodates differences in content and difficulty level across courses and programs. In this section, we show instructors how to combine content and competencies to create LOs in economics.

#### A. Five Essential Competencies in Economics

We first summarize five essential competencies for students of economics.<sup>5</sup> The competencies can be developed in courses at all levels and across the major as a whole.<sup>6</sup>

*The Ability to Apply the Scientific Process to Economic Phenomena.*—Students should be able to ask good questions about economic phenomena and have a sense of how to gather and organize information to answer them. Instruction in economics should develop students’ ability to practice inquiry and to learn about the world.

*The Ability to Analyze and Evaluate Behavior and Outcomes using Economic Concepts and Models.*—Students should be able to use economics to explain, predict, and evaluate choices made individually or in a group. As students advance so should their ability to use positive and normative analysis to examine and propose choices, allocations, and policies.

*The Ability to Use Quantitative Approaches in Economics.*—Students should be able to use mathematical reasoning and empirical methods. Beyond knowing how to take a derivative or run a regression, students should learn when it is appropriate to employ a given method and how to interpret results.

<sup>5</sup>Our book chapter (Allgood and Bayer 2016) provides more in-depth discussion of these competencies, as well as a set of essential concepts for undergraduate economics majors and additional examples of LOs. The chapter also provides background on prior efforts to assess learning and identify what students of economics should know.

<sup>6</sup>Teaching the five competencies may require alterations to some courses as currently taught. In addition, some instructors may wish to supplement this set of five with an additional LO focusing explicitly on the development of ethical judgment.

TABLE 2—COURSE-LEVEL LEARNING OUTCOMES FOR INTRODUCTORY MICROECONOMICS

Microeconomics provides a set of tools for understanding, predicting, and evaluating individual choices and collective resource allocation. By achieving the following learning outcomes, you will be able to make better decisions with the resources you control, be better equipped to explore policy issues, be prepared for further study in economics, and discover how the study of economics can enhance your intellectual exploration of the world. By the end of the course, you should be able to:

- |       |   |
|-------|---|
| LO 1. | Explain how economists use the scientific process to expand understanding of individual decision-making, market outcomes, and government policies, and apply the process by practicing curiosity and hypothesis testing   |
| LO 2. | Choose and use appropriate concepts and models to analyze and evaluate choices, outcomes, and policies in diverse settings  |
| LO 3. | Develop quantitative reasoning skills by working with equations and graphs and by explaining the need for empirical methods that distinguish causation from correlation   |
| LO 4. | Identify the assumptions underlying models, and connect the assumptions to particular theoretical results and/or observed conditions  |
| LO 5. | Discuss economic issues in ways that promote mutual understanding and inquiry, demonstrate fluency in basic economic terminology and tools, and explain economic reasoning to and incorporate insights from noneconomists |

*Note:* The text in this table can be copied and pasted into the syllabus of an introductory microeconomics course.

*The Ability to Think Critically about Economic Methods and their Application.*—Students must be able to choose appropriate models and empirical methods. They need to connect models to real events, identify assumptions, and explain how the choice of a model or method may influence results. Advanced students should develop an ability to evaluate and integrate the strengths of different approaches.

*The Ability to Communicate Economic Ideas in Diverse Collaborations.*—Students should become fluent with economic terminology, including the mathematical representations used in economic discourse, and should be able to communicate with economists and others through writing, listening, and speech. Students with greater competency can discuss more complex ideas and methods and incorporate more nuance.

Courses and majors built on well-defined sets of LOs derived from these five fundamental competencies teach students how to do economics.

#### B. Learning Outcomes—Intersecting Competencies with Content

To articulate LOs for a particular course, these competencies can be intersected with relevant content. LOs typically have the simple form of “Students {action verb} {concept}.” or “Students {action verb} {object} using {concept}.” A list of possible action verbs can be pulled from Anderson and Krathwohl’s (2001)

revision of Bloom’s taxonomy and includes: explain, list, describe, apply, calculate, compare, analyze, and evaluate. For example, “Students will calculate the profit-maximizing quantity for a monopolist, using graphs (and/or tables and/or calculus).” This example may seem trivial, but statements of this nature explicitly inform students what they need to know (profit-maximization decision of a monopolist) and how to demonstrate that knowledge (calculate using a particular tool).

Writing a good LO is not necessarily easy. If the statement is too specific, it might amount to teaching an example. If too vague, it will not provide the guidance the student and teacher need. For this reason, we provide examples for a course in introductory microeconomics.

#### IV. Learning Outcomes for an Introductory Microeconomics Course

To illustrate the application of this method, we present examples of course-level and lesson-specific LO statements. Table 2 provides a complete set of course-level LO statements, which instructors of introductory microeconomics courses can put in their syllabi.

All five of these course-level LOs, one for each of the competencies recognized by the SSRC committee, are necessary for students to be able to develop and present relevant and logically consistent economic analyses. They should be provided to students at the start of the semester and referred to repeatedly.

TABLE 3—EXAMPLES OF LESSON-SPECIFIC LEARNING OUTCOMES FOR INTRODUCTORY MICROECONOMICS

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Some lesson-specific LOs building to Course LO 1:

- Ask an “I wonder why” question comparing the prices of two different goods, and suggest a model that might provide insight on why the prices differ.
- Collect data on changes in US federal income tax rates and on the distribution of income over the last 40 years.
- Explain how economists use the scientific process to explore the effects of government programs such as Head Start.

Some lesson-specific LOs building to Course LO 2:

- Analyze and make decisions using concepts of opportunity cost and sunk cost.
- Apply the concept of comparative advantage to various situations, including those that involve international trade or occupation choice or the allocation of household chores.
- Evaluate allocations of resources using specific concepts of efficiency and equity.

Some lesson-specific LOs building to Course LO 3:

- Compute and use elasticity to analyze the impact of a change in a price floor or price ceiling.
- Compare equilibrium allocations in markets involving externalities to efficient allocations, using graphs, and use the graphs to explain why these markets are wasteful.
- Construct examples of empirical observations that illustrate that correlation does not necessarily imply causation.

Some lesson-specific LOs building to Course LO 4:

- Contrast the assumptions behind models of perfectly competitive markets with those of monopoly models, and explain how the different assumed conditions lead to different prices, quantities, and profits in the short and long runs.
- Examine conditions in a market and decide whether a model of perfect competition or a model of monopoly is more appropriate.
- Identify a behavior you have observed that is consistent with economists’ findings that many people display preferences for fair allocations.

Some lesson-specific LOs building to Course LO 5:

- Ask family members about decisions (such as whether to use private vehicles or public transportation), identify factors that influence the decisions, and write a short explanation of a relevant economic concept (such as externalities).
  - Summarize, using economic terminology and graphs, an article from the business section of a newspaper.
  - Read an article from the popular press and identify which statements are consistent with economic reasoning, and which are not, along with any unstated assumptions the author may be making.
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*Note:* This table presents just a few representative examples of the many different lesson-specific LOs that instructors can use throughout the semester to build to the course-level LOs.

To build to these course-level LOs, instructors can articulate lesson-specific LOs throughout the semester. Table 3 provides several possible lesson-specific LOs, with examples for each course-level LO in introductory microeconomics. Each example reflects an outcome an instructor would expect from a given assignment or day in class, and in this way students work toward achieving the course-level LOs. Providing the LO statement to students at the start of the lesson allows them to focus their efforts more effectively as they encounter the material.

Each LO aims to identify and practice a discrete component of economic skill. A particular lesson-specific LO may seem almost simplistic to an instructor, but straightforward and measurable LOs provide critical guidance to the student and help the instructor assess learning. More challenging courses might use different verbs (e.g., “design” rather than “explain”) or have a larger set of lesson-specific LOs in a given class meeting or assignment.

Not only do we encourage instructors to convey course LOs to students, but ideally textbooks should provide LOs for each chapter. We reviewed four popular textbooks and all of them end chapters with some type of review or summary of important concepts and a list of key terms or concepts. However, only one of these texts begins each chapter with an explicit statement of LOs to guide student reading.

## V. Conclusions

Course-level and lesson-specific LOs can lead to better instruction and assessment by instructors. We expect that formulating LOs forces the instructor to answer the question, “What should the student do to demonstrate that they have learned economics?” and, as such, leads the instructor to ask, “What and how should I teach to help the student achieve this outcome?” We also expect that providing students with LO statements, whether in the syllabus or in

supplemental materials, allows students to focus their study more effectively instead of having to guess what the instructor wants them to learn. We advocate for broad and rigorous discussion of LOs in our profession, both to promote wide adoption in economics courses across colleges and universities and to produce more research on how to maximize the efficacy of our courses.

The framework provided here bases LOs on the competencies economists want students to attain and retains great flexibility in allowing instructors to discuss concepts, models, and topics of their choosing. Economists believe that almost any topic falls in the purview of economics, whether lending or taxes or marriage or health care or famines, because economics is about how to approach a problem using specific sets of tools and skills. If students leave even an introductory economics course without this knowledge, we have undersold economics to them.

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