

## Sidewalk Economics

**Sean E. Mulholland**

Western Carolina University

**Sherri Wall\***

University of Alaska Fairbanks

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### **Abstract**

This paper presents an innovative group project that uses experiential and collaborative learning methods to move students from the lower levels of Bloom's revised cognitive taxonomy to the higher levels of evaluating and creating. Using chalk as their medium and the sidewalk as their canvas, students answer a question or illustrate a concept or topic of their interest from material covered in the class (diminishing marginal utility, opportunity cost, demand and supply, etc.). We describe the multiple ways this flexible project can be used to expand comprehension of economic principles in a way that students enjoy and, more importantly, remember.

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*JEL Code:* A2

*Keywords:* sidewalk, chalk, outside, kinesthetic, experiential

### **I. "Can We Go Outside?"**

Not a semester goes by without at least one student asking: "Can we go outside today?" This is one reason why we have designed a quick and easy way to answer students' requests with an affirmative YES! The exercise requires a small amount of planning and preparation, but results in a learning experience that encourages teamwork and enhances retention (Emerson and Taylor 2004). Moreover, this flexible kinesthetic assignment can be designed for a wide range of students and types of learning. For introductory classes, where the goal is basic, less complex learning, the exercise can focus on the foundational levels of Bloom's revised taxonomy of learning: remembering, understanding, and applying (Bloom 1956; Anderson et al. 2000). For more advanced students, the exercise can be

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organized so that students move through or build on these lower, less complex levels of Bloom's revised taxonomy of learning so that students can engage with higher, more complex forms of learning: evaluating and creating (Bloom 1956; Anderson et al. 2000).

## **II. Items Needed**

To carry out this exercise, you will need just four or five items.

1. Sidewalk chalk in a variety of colors. These thick and sturdy chalk pieces are easy to find at craft stores and are usually available during the summer at most big box stores. They often go on sale just before the beginning of the fall semester. We recommend having at least two pieces of chalk per student.
2. A canvas. For these assignments, a sidewalk or other paved surface works well. Scope out a location beforehand. If you have any physically disabled students, make sure access does not require the use of stairs. Students will also appreciate locations that have some shade and a bench or wall that they can sit on. Be sure to give each group a space that is at least 6 feet by 8 feet, or 48 square feet.
3. An electronic copy of the students' artwork. One option is to bring your own camera or smartphone. Alternatively, you can require the students to take photographs with their smartphones. They can then email the photograph to the instructor or upload it to an online drop box.
4. For students who have physical limitations, you will want to bring paper and pen so that they can help draft the creation. Or, if you plan to use this exercise often, you can purchase a telescopic extension arm that holds chalk.
5. A set of questions prepared ahead of time. You can simply use a traditional quiz and assign each group one question.

## **III. Process**

Arrive to the classroom early. Place the container of sidewalk chalk out of view. Write, "Can we go outside today?" on the board and leave the room. Return to the classroom just before the class is scheduled to begin. Turn to the board as if you plan to outline that day's topics. Pause. Then ask: "Would you like to go outside?" (They will.) Then say, "Okay, let's go."

Lead the students to the sidewalk or paved area nearby. Have the students form a single line facing you. Ask the students to count off

to the number of groups that you intend to create. Instructors should plan to have three to four students per group. After the class has counted off, ask each group to come forward one at a time. Allow each group member to select two pieces of chalk and hand them either a specific question or a set of questions. Assign the first group question number one, assign group two question number two, and so forth.<sup>1</sup> Direct each group to an area on the sidewalk to ensure that each group has enough space to depict their answer. Instruct each group to label their design with their group number and the initials of each group member.

Suggest that they draft their design on a sheet of paper before they begin drawing on the sidewalk, so that they can discuss their possible creation with their fellow group members. This will allow the group to come to a consensus before they draw their final design on the sidewalk.

#### **IV. Example Assignment**

We have used a variety of questions in a wide range of courses. Below is an example Mulholland has used in his principles of microeconomics class:

Please label your graph with your group letter and the initials of each member of your group.

Canvas is used to make sails for sailboats. Fiberglass is used to make the hulls of sailboats. Consider this additional information about canvas:

Canvas is a normal good.

Mylar is a substitute for canvas.

Canvas is made using cotton, labor, and computers.

Suppose a technological change reduces the cost of producing canvas. Using supply and demand, show what will happen to the equilibrium price and quantity of canvas and consumer spending on canvas, respectively. Be sure your graph matches your answer.

As students are working, walk around so that you can answer any questions they may have about their assignment. Give the students twenty to twenty-five minutes to complete their sidewalk creations.

Students often begin drawing their designs on the sidewalk only to discover that they would like to change them. Encourage them to

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<sup>1</sup> Alternatively, you can have students count off while they are still in the classroom. This way you can hand out the questions and chalk before heading outside.

start over. Failure and repetition are important parts of the creative learning process. When the work is complete, photograph the creation or have the students email you a photograph of their design. When every group is finished, ask each group to describe their creation to the entire class.

For the question above, one group's sidewalk answer is shown in figure 1. These traditional types of assignments test students' ability to use supply and demand curves to analyze a particular change in *ceteris paribus* conditions. Using Bloom's revised taxonomy, this exercise is designed to test students' ability to remember, understand, and apply.

**Figure 1. Sidewalk Answer**



## V. Twists

The flexibility of these sidewalk assignments enables instructors to design more creative exercises that require higher-order thinking. For instance, when all groups have finished, the instructor can ask each group to switch places and grade another group's answer. Moving up to the analysis and evaluation rungs of Bloom's revised taxonomy, each group can then be asked to provide reasons for why the other group's answer is correct or incorrect. The grading group can then submit their assessment electronically. By using email or an online

drop box, the class can then go back inside and discuss each question, each group's answer, and the assessment of each group's answer. This class discussion also enables the grading group to clarify why the answer was graded as correct or incorrect.

Another extension of the assignment asks each group to create a question or short story that would match the graph or design created by another group. This backward induction requires students to more thoroughly understand how the sidewalk graphs depict human action. It also brings out the students' creative side as they craft and air their question or story.

If you desire a greater level of creativity, unleash the students by asking them to design an artistic composition that relates to the material recently covered in class. The assignment brings together collaboration, creativity, and economic knowledge. These higher rungs of Bloom's taxonomy can be especially helpful in survey classes. Some creative designs from Professor Wall's classes are shown in figures 2, 3, 4, and 5. Students can then write short paragraphs describing their composition and what they are attempting to portray. If you are concerned that students may not have enough time to complete the creative assignment in one class meeting, you can assign the creative compositions as group homework so that the students have more time to brainstorm and create a draft of their design. Once the art is on display, the class can also vote on which design is the most creative or thought provoking.

## **VI. Spillover Effects**

Provosts and deans love these temporary murals showing learning in action. Directors of enrollment management do as well. Therefore, we often administer these assignments the day before an open house event. Be sure to label it "Economics" in large letters. For an even greater return, invite your communications director to take official pictures of the assignment for the school's website. Professor Wall's department uses the sidewalk art and oral presentations as part of their learning assessment for accreditation.

There are often smaller, yet just as important, spontaneous spillover effects as well. The large figures and creative designs frequently attract student attention. Students walking across campus will often pause out of curiosity. Creators actively bring their classmates to see their compositions. Many students post pictures of their work on Facebook, Instagram, and Snapchat along with short explanations.

Figure 2. Diminishing Marginal Product of Labor

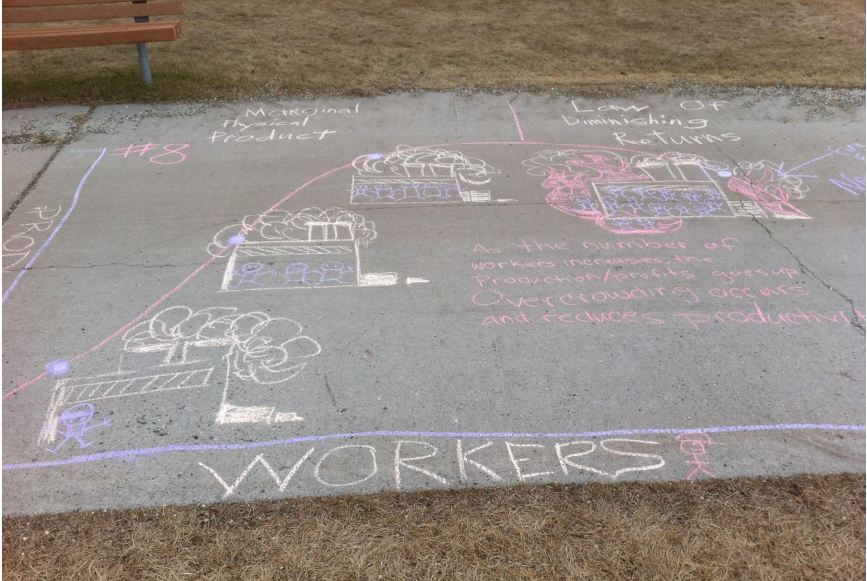
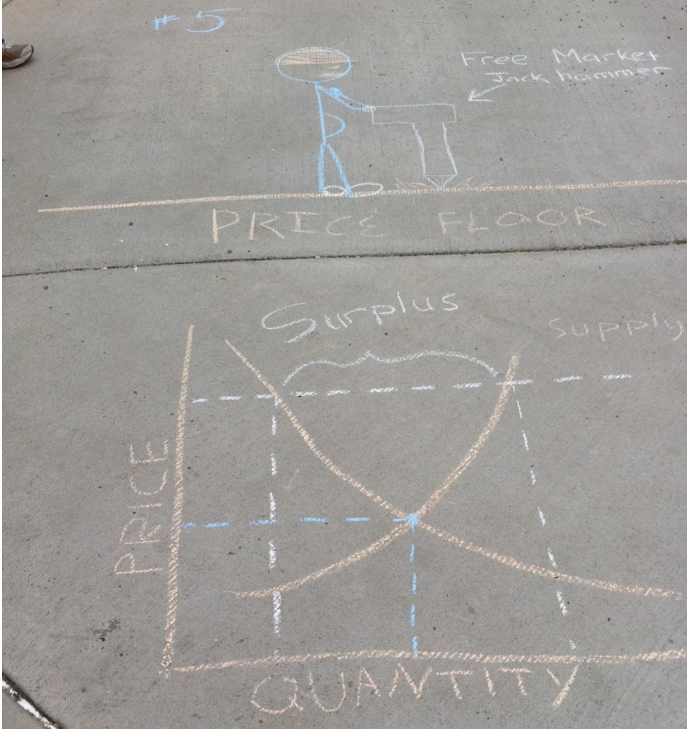


Figure 3. Minimum Wage





**Figure 4. Battle of Ideas****Figure 5. I, Pencil**

## VII. Final Thoughts

Economics is everywhere and, therefore, the opportunity to learn economics is all around us. We view sidewalk economics as complementary to a wide variety of innovative teaching methods that include the use of literature (Watts 2003; Hammock, Mixon, and Patrono 2000), film (Mateer and Stephenson 2011; Mateer and Li 2008; Sexton 2006; Mateer 2005; Dixit 2005; Becker 2004; Leet and Howser 2003), and music (Hall, Lawson, and Mateer 2008; Hall et al.

2008; Mateer and Rice 2007; Tinari and Khandke 2000). Through these short and simple sidewalk assignments, students move through Bloom's taxonomy of economic understanding. Students creatively present their knowledge and comprehension, use their economic way of thinking to analyze behavior, and evaluate the strengths and weaknesses of their economic understanding. This creative learning assignment is one that students enjoy and remember.

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