

## *Teaching the Law of Supply Using Karaoke*

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### ABSTRACT

This paper describes an active-learning strategy for teaching the law of supply using karaoke. Unlike the law of demand, which is second nature by the time students reach college, the law of supply is less familiar. If you are unsure about this claim, poll your class to see how many students have tangible experience running a business. Due to this lack of familiarity, we deploy karaoke to illustrate the fundamental nature of the supply curve, along with the difference between movements along the supply curve and supply shifters. We also provide extensions and a number of variations of this method for interested educators. This work is similar to Kraznoshon's (2013) use of Beyonce's *Irreplaceable* to help students learn the law of demand.

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### Non-Traditional Teaching Methods in Economics

Economics, as a discipline, has been conservative in adopting innovative approaches to teaching (Becker and Watts, 1996 and 2008). The traditional mode of 'chalk and talk' is still prevalent in many classrooms and often reinforces a teacher-centered, passive student-learning environment. The worst example of this is colloquially known as 'PowerPoint karaoke', where an instructor simply reads custom-made lecture slides (provided by a publisher) verbatim. "*Learning results from what the student does and thinks and only from what the student does and thinks. The teacher can advance learning only by influencing what the student does to learn.*" (Ambrose et al. 2010)

### Overcoming Perceptions

Economics has a (generally) well-deserved reputation for poor teaching and this has seeped into popular culture. Economists using 'chalk and talk' were immortalized in two films: *Ferris Bueller's Day Off* (1986) and *Back to School* (1986). In *Ferris Bueller*, Ben Stein plays a high school economics teacher who famously puts his class to sleep while droning on about macroeconomics. The teacher ends up pleading for student input, repeatedly uttering, 'Anyone?' to try to get a response. In *Back to School*, Paxton Whitehead plays a college lecturer (Dr. Phillip Barbay) who attempts to explain how firms operate by using a simplified model where widgets are sold. Then, an adult learner (Thornton Melon), played by Rodney Dangerfield, interrupts him pointing out that the lecturer's example is not very realistic. More recently the film, *Larry Crowne* (2011) features an economics professor, Dr. Ed Matsutani, (George Takai) who painfully teaches his classes with PowerPoint.

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More broadly, economists are seen as being embarrassingly dry. This perception was reinforced in a 2009 U.S. television commercial starring Catherine Zeta-Jones, where a group of economists in suits go door-to-door trying to sell new mobile phone coverage. People hide from the economists, squirt them with garden hoses, and slam doors in their faces. Then, we see Zeta-Jones approach a door and ask the homeowner if he would like a ‘mobile makeover.’ Startled by his good fortune, he responds: ‘I believe I do.’ The focus of this paper, using karaoke to teach the law of supply, is a small part of a classroom makeover. Like other active learning techniques, karaoke enhances learning and engagement.

### ***Promoting Learning***

Students have different learning preferences. While those with a background in science or mathematics may have a comparative advantage in understanding the quantitative aspects of economics, other students learn abstract, new and novel concepts more easily when they are presented in both verbal and visual form (Willingham 2009). A genuine interactive learning environment prompts two-way interaction between the lecturer and students, allowing students to take greater control over the direction of their learning (Bransford, Browning and Cocking 2000).

Another problem with introductory courses is that most try to cover too many concepts, with the result that insufficient time and attention is devoted to mastering the important threshold concepts (Frank 2007). The idea that less is better in the teaching of economics is not new (Becker 2004). One approach, favored by Frank, is to begin with a well-articulated short list of principles, and then illustrate and apply each principle in the context of simple examples drawn from familiar settings (Frank 2006).

In this paper, we provide a simple activity designed to inspire our students. If we succeed in motivating student learning, more students will take advanced courses, creating a positive externality in the form of higher retention rates and a greater pool of economic graduates. More broadly, the ultimate beneficiary is society, because students who develop an intuitive understanding of core economic principles make better voters. Even those students who do not take another economics course will, at the very least, have a stronger grasp of how economics works and applies to their lives. “What Do College Seniors Know About Economics?” (Walstad and Allgood 1999) is especially relevant reading on this subject.

While much has been written about economic instruction, the majority of this literature focuses on the macro landscape, or big-picture innovations that can transform a learning environment. Comparatively little has been written at the micro-level. One especially useful micro-level pedagogical article is Krznoshon’s (2013) use of Beyonce’s *Irreplaceable* to help students learn the law of demand. Interested readers looking for micro-level materials should also access the online resource called *Starting Point: Teaching and Learning Economics* (2011). This website contains 17 different teaching modules, each with a handful of micro-level examples to help instructors teach more effectively. Last, but not least, *The Ultimate Guide to Teaching Microeconomics* (Geerling and Mateer 2014) and *The Ultimate Guide to Teaching Macroeconomics* (Geerling et al 2014) contain over 800 teaching tips, including more than 70 demonstrations which could be used to transform any principles level Macro- and Microeconomics course.

An added implication for audience engagement is that introductory economics is typically comprised of non-majors. We concentrate on imparting the ‘big ideas’ for everyday life (Salemi and Siegfried 1999). To be sure, models, theory and problem solving play a crucial role in understanding economics, but for a non-major it is more important to provide exposure to the ideas and concepts that frame good decision-making.

## **Using Karaoke to Teach the Law of Supply**

### ***How the Activity Works***

Ask your students what it would take to get them to sing karaoke at the front of class. If you have not covered willingness to sell in your course provide a short definition. We prefer the following: “Your willingness to sell is the smallest amount that you would be willing to accept to sing karaoke.” After ten seconds or so ask: “Does everyone have a price in mind?” Then indicate that you are willing to pay someone to sing karaoke but that you want to find out who will sing for the least.

The hook here is offering a high price to start so that you can reveal the supply schedule. We like to begin at \$1M. Most students have a willingness to sell in the hundreds or thousands of dollars, so the extremely high starting price gets their attention. Ask anyone who is willing to sing karaoke for \$1M to stand up and remain standing as long as the price you are offering is above their willingness to sell. All students typically stand.

Now drop the price you are willing to pay. Use increments of \$100K until you reach \$100K. At that point, pause and note the number of students still standing. Most students will still be standing up. Now use \$10K increments until you reach \$10K. Again, pause and note the number of students still standing. A minority of the class will now be sitting. From \$10K, drop your price in increments of \$1K until you reach \$2K. By the time you reach \$2K, about half the class will be seated. From \$2K, drop your price in \$250 increments until you reach \$500. Now, the remaining students will be looking around at each other. From \$500, drop the price in \$50 increments until you arrive at \$100. Now, most of the students will be seated but anticipation will be high. From \$100, drop the price in \$10 increments until you reach \$20. Very few students will remain standing at this point. Continue your countdown until only one student remains standing and then stop. Invite the student with the lowest willingness to sell to the front of the room.

At this point, everyone wants to see the winning student sing karaoke so provide the student with a wireless microphone. It is up to you whether you reveal your song selection in advance but we recommend that you don't. Queue up your selection and ask the student to sing for 1-2 minutes. There are thousands of great karaoke songs available for free on the Internet. Our approach is to pick a song that is currently popular or a slightly older song that most students will immediately recognize. Here are some examples that we recommend: Carly Rae Jepsen, *Call Me Maybe*; Katy Perry, *Dark Horse*; Adele, *Someone Like You*; Pharrell Williams, *Happy*; Britney Spears, *Baby One More Time*; NSYNC, *Bye Bye Bye*; Drake, *Started From the Bottom*; Journey, *Don't Stop Believing*; Miley Cyrus, *Party in the USA*. We have had great singers, lousy ones, awful ones and everywhere in between. It's karaoke! Sometimes the worse it is, the better it is for the audience. Don't be surprised if students video the karaoke and distribute it through social media (e.g. Vine, Twitter, and Instagram), which ends up engaging students who aren't even in the class and even our former students. When the karaoke is complete, be sure to thank the student who participated, pay them, and ask the class to give them a round of applause.<sup>3</sup>

### ***The Supply Schedule and Supply Curve***

Be sure that you take note of the approximate number of students standing at each key price point noted in the previous section. To make the data collection easier and help the activity run smoother, you can ask a student or teaching assistant to collect the data for you or use a personal response system to collect the data. Enter the data into a spreadsheet to create the supply schedule. Use the graphing capabilities of your spreadsheet to illustrate the corresponding supply curve.

From a teaching standpoint, it is very important to do two things: (1) Note that the supply schedule and supply curve are two different ways of representing the data every student observed firsthand. (2) There is a fundamental relationship between the price being offered and the number of individuals willing to supply karaoke. In other words, the best time to define the law of supply is after students have observed it firsthand. Reflecting on the karaoke demonstration, they easily see the law of supply as the direct

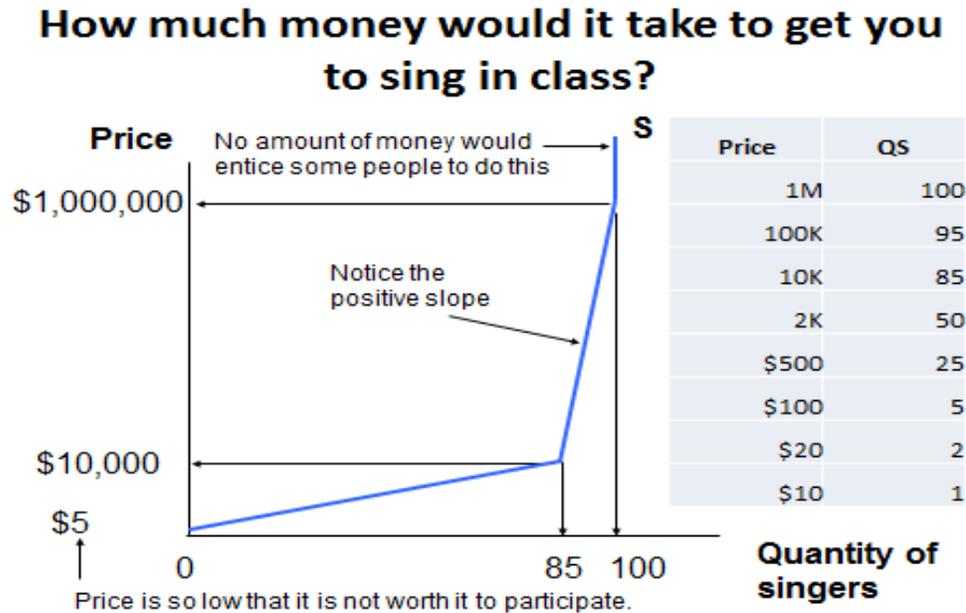
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<sup>3</sup> Sometimes students want to volunteer so badly that they will pay you to sing. More generally, expect to pay the student somewhere \$5-10. The most we have ever had to pay is \$20 (and that was in a small class). Finally, it is worth noting that if the lowest willingness to supply is still more than you'd rather pay that you can sing the karaoke yourself!

relationship between the price and the number of individuals/firms willing to sell at that price. This relationship is captured by the positively-sloped supply curve.

We have utilized this activity over a dozen times. What follows is a representative supply curve and corresponding supply schedule, so that you can get a sense of what to expect.

**Figure 1**



You should stress that the increasingly steep nature of the supply curve reflects that the fact that the quantity supplied is quite insensitive to price at high prices but quite sensitive when the price is lower. Since you probably don't want to directly introduce the concept of price elasticity here, you can do what we do and note the three regions described in the figure above.

Using karaoke is quick, memorable and provides a hook. The entire activity requires less than 10 minutes and it can be run in any class size. We have run this experiment in large classes of up to 700 students, small classes of less than 50 students and in a professional workshop at the National Conference on Teaching and Research in Economic Education. Our personal experience is that bigger classes work best since very small classes (< 20 students) may lack sufficient size to guarantee that you will find a volunteer willing to sing in front of the class at a low price.

There are several advantages in using karaoke to teach willingness to sell and the law of supply. First, as noted above, the activity takes less than 10 minutes to run, so the opportunity cost is not that high. Second, in contrast to a traditional lecture where the flow is one way, karaoke offers both a memorable teaching moment and a low cost visualization which will stay with students beyond the course. As an alternative, a combination of lecture with a think pair share to test comprehension, would take up more class time without necessarily providing students with a practical example of how willingness to sell and the law of supply work in the real world.

***Shifts Versus Movements Along the Supply Curve***

Another advantage of using this approach is that it allows the instructor to also discuss shifts versus movements along the supply curve. A change in the quantity supplied occurs when the price changes but all

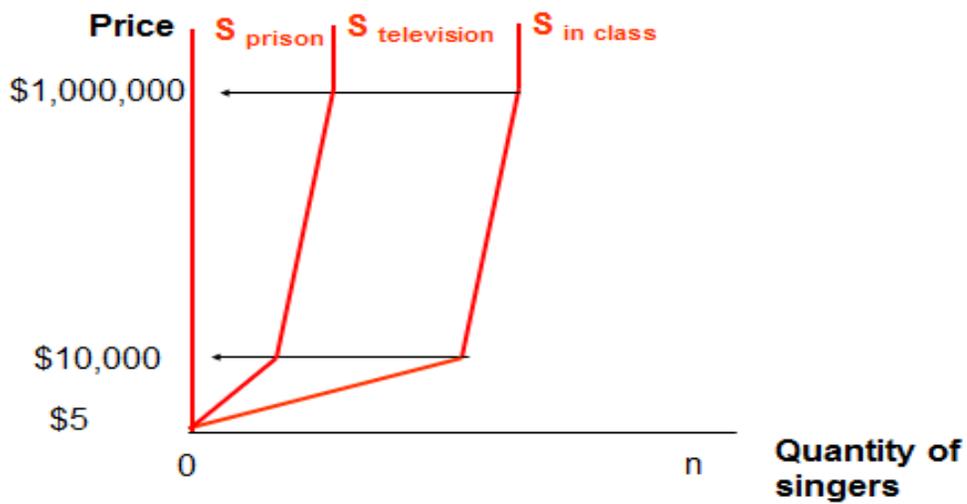
other variables are held constant. This is exactly what the demonstration is designed to show. Students will immediately recognize that lower prices result in fewer people standing up and that more people stood when the price offered was high. In econ-speak, we see that there is a movement along the supply curve resulting in a lower quantity supplied when the price falls and a higher quantity supplied when the price rises.

Many students fail to appreciate what causes the supply curve to shift. Now we hold the price constant and allow other factors that influence the quantity supplied to vary. Our demonstration is designed to make this point in a memorable way.

Consider places other than class that would raise the willingness to sell of most students. This is a great place to solicit answers. The next figure shows two popular answers that are often mentioned. While singing karaoke in class is embarrassing for all but the most extroverted students, the idea of singing karaoke on television is downright terrifying. Changing the location has the effect of shifting the entire supply curve inward. In other words, at every price fewer students are standing. Invariably someone will respond with “jail” or “prison.” This answer draws a few laughs but it allows you to show a circumstance where there is essentially no willingness to sell.

**Figure 2**

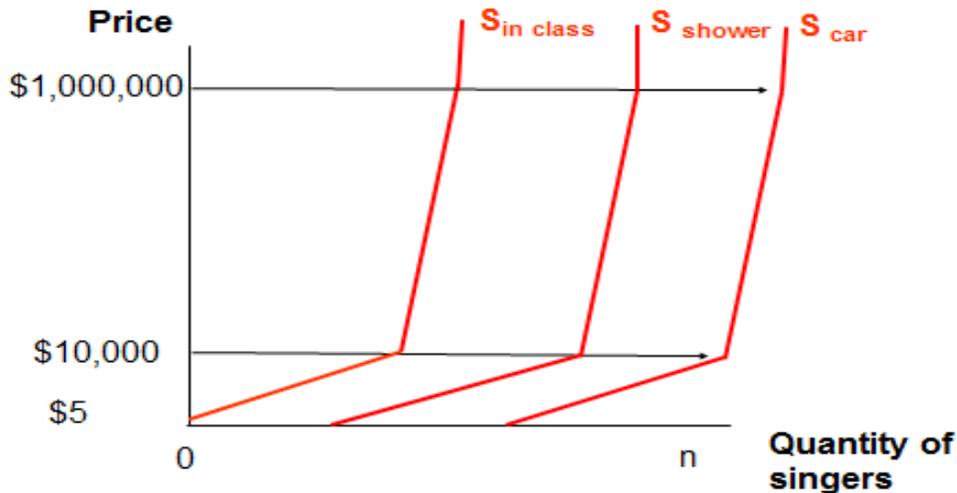
**Changes That Make It More Difficult to Sing**



In a similar manner you can ask students what locations would make them more willing to sing. We have highlighted two common responses—in the shower and in the car—in the next figure. In both cases, the entire supply curve shifts outward along the horizontal axis. Note that the price is held constant here, so the only thing that makes students more willing to sing is that both locations are less embarrassing. In addition, we now have many students who are willing to sing without receiving any compensation. In other words, they enjoy singing in the shower and car and they do not require any extra payment to do so.

**Figure 3**

## Changes That Make It Easier to Sing



The use of karaoke provides a memorable way of learning the law of supply, differentiating between movements along the supply curve and shifts in the curve, and elasticity of supply. More importantly, it provides students with a hook that they can recall when they begin to get confused.

### Feedback

Still not convinced? You don't have to take our word that this works. Here are comments from faculty who have decided to deploy the karaoke demonstration in their courses:

“Using this demonstration is a great way to get the entire class involved in creating and visualizing a supply curve. It's easy for them to look around and see that fewer and fewer students are willing to sing as the price goes to zero. Afterwards, they have a lot of fun watching their friends sing in front of the class. Many pull out their phones and record the performance to share with friends later. Those volunteering to sing for the lowest price (often \$0) usually belt out the song, regardless of their ability, while the whole class cheers. This is the most simple, effective method I've come across for getting students interested in and excited about the concept of supply.” *Charity-Joy Acchiardo*, Lecturer, University of Arizona

“In the past I used a different demonstration which was effective but not as hands on. What I liked about the karaoke demonstration is that it connected the law of supply to an activity most students are familiar with. It was easy for them to determine the price they would accept in return for singing in class. I also found that the classroom environment changed after the demonstration. Students were excited and eager to find the connection between the karaoke activity and economics. I had a captive audience. It couldn't have worked any better.” *Abdullah Al-Bahrani*, Northern Kentucky University

The karaoke demo is perfect because I actually get students to perform and actually pay them money. This helps me build credibility through the rest of the semester that my students can believe what I tell them when I play other in-class demos with them. I also see a lot of enjoyment in the class when we do the karaoke. People pull out their phones and start taking video. Sometimes it can be very enjoyable and the whole class starts singing along. This environment makes students more comfortable in the classroom and

seems to increase their willingness to participate and ask questions as the semester moves on. *Austin Boyle*, Penn State University

"I had a student approach me after the karaoke experiment today and thank me for making the class fun and memorable. I think my sincerity meter is pretty accurate and I am quite confident this was a sincere sentiment. This is the first time I can recall students recording my lecture for Instagram or Vine or something like that! Both of my classes had a fun and memorable experience that I think will really reinforce the difference between a change in supply and a movement along the supply curve and it only cost me seven bucks total! Money well spent, I'd say." *Dan Kuester*, Roger Trenary Chair for Excellence in Economic Instruction, Kansas State University

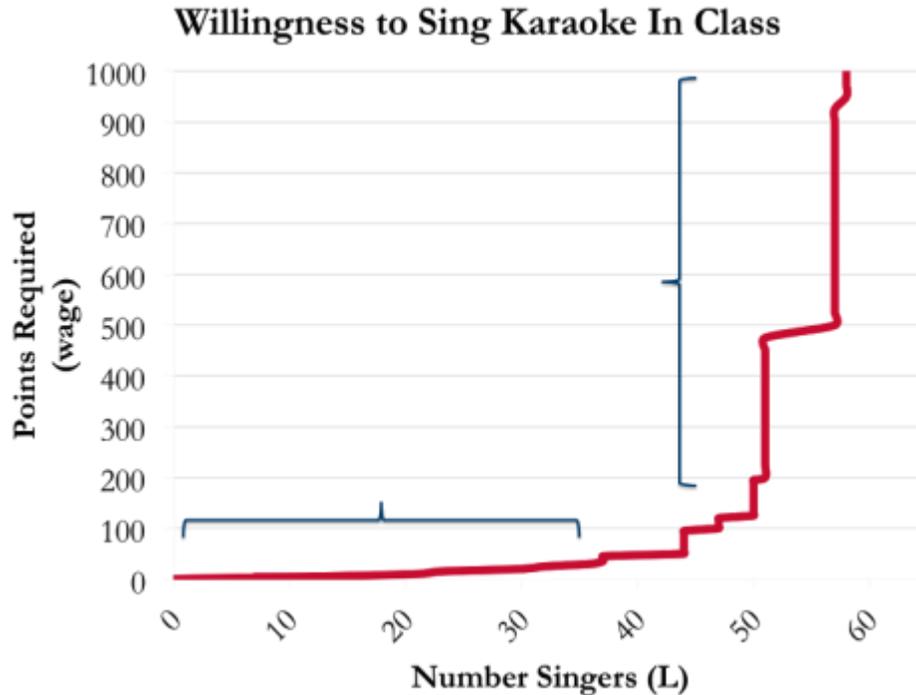
Another faculty member teaching an online course modified the demonstration by collecting data beforehand:

"It went very well. I asked them to answer a simple Survey in ANGEL or on a Google Form with the question:

*This weekend, a single student will sing karaoke and post a video on YouTube. They will sing a portion of one of the following songs (their choice): Taylor Swift's new song "Shake It Off," Meghan Trainor's "All About That Bass," Carly Rae Jepsen's "Call Me Maybe," or Journey's "Don't Stop Believing." What is the least amount of bonus points on the exam you would need to receive to sing karaoke in front of a webcam and post it to YouTube?*

The nice thing about using the survey first was that I could take their responses and construct a supply curve before the actual auction in class. Both classes had large elastic portions followed by very inelastic switch. In case you're curious, see Figure 4. This really sank in with them." *Jadrian Wooten*, Lecturer, Penn State University

#### **Figure 4**



### Variations

The use of karaoke to teach supply is a variation of “What’s Your Price?” (Geerling and Mateer 2014). The point we wish to make here is that the real magic of this active-learning approach involves having students stand up when they participate. We are instructors who are quite uninhibited when we teach and instead of using karaoke, we have asked students in the past: “What price would you require to strip in front of the entire class?” The demonstration works exactly the same way that karaoke does, but you get a much livelier audience...and the students do not *actually* take off their clothes.

Likewise, standing up can be used to reveal the law of demand. Here the question we prefer to ask is: “What is the most you would pay to see your favorite musical artist perform and you had front row seats?” Here, we reveal the willingness to pay and the law of demand. The only difference is we start with a low price in order to get everyone standing and then we slowly raise the price and observe how quickly students sit down. It is not common for at least a few students to be willing to pay \$500 or more – a fact that surprises the majority who think \$100 is an outrageous price for a ticket.

The point is that you can choose to utilize karaoke, or be creative and choose a question that suits your personality. Either way, the key to making any active learning strategy work is owning whatever decision you make and having fun facilitating the learning environment.

### Conclusion

We encourage you to use karaoke to teach the law of supply. Employing karaoke is an active-learning approach that emphasizes the intuition behind the supply curve, differentiates between shifts and movements along the supply curve, and also provides a memorable learning experience. It is also especially gratifying to use a technique that transforms passive student-learners into advocates who leave the class wanting to share what they learned in economics with their friends.

## References

- Ambrose, Susan A., Michael W. Bridges, Michele DiPietro, Marsha C. Lovett, and Marie K. Norman. 2010. *How learning works: Seven research-based principles for smart teaching*. San Francisco: Jossey-Bass.
- 'Back to School'. 1986. <http://www.youtube.com/dmateer#p/f/7/YIVDGmiz7eM>
- Becker, William E., and Michael Watts. 1996. "Chalk and Talk: A National Survey of Teaching Undergraduate Economics." *American Economic Review: Paper and Proceedings* 86: 448–54.
- Becker, William E. 2001. "How to Make Economics the Sexy Social Science." *Chronicle of Higher Education* 7 December: B10–B11.
- Becker, William E. 2004. "Economics for a Higher Education." *International Review of Economics Education* 3 (1): 52–62.
- Becker, William E. and Michael Watts. 2008. "A Little More than Chalk and Talk: Results from a Third National Survey of Teaching Methods in Undergraduate Economics Courses." *Journal of Economic Education* 39 (3): 273-286.
- Bransford, John, Ann Brown, and Rodney Cocking. 2000. *How People Learn: Brain, Mind, Experience and School: Expanded Edition*, Washington, DC: National Academy Press.
- 'Ferris Bueller's Day Off'. 1986. YouTube. 'Boring Economics Teacher'. <http://www.youtube.com/watch?v=dxPVyieptwA>
- Frank, Robert. 2006. "The Economic Naturalist Writing Assignment." *Journal of Economic Education* Winter: 58–67.
- Frank, Robert. 2007. *The Economic Naturalist: In Search of Explanations for Everyday Enigmas*, New York: Basic Books.
- Fryer, Roland, Jacob Goeree, and Charles Holt. 2005. "Experience-Based Discrimination: Classroom Games." *Journal of Economic Education* 36 (2): 160–70.
- Geerling, Wayne. 2012. "Bringing the 'Dismal Science' to Life: Teaching Economics through Multimedia." *International Review of Economics Education* 11(2): 81-90.
- Geerling Wayne and G. Dirk Mateer. 2014. A Spoonful of Sugar Helps the Medicine Go Down: Why Good Content is Never Enough, *New Developments in Economic Education*, Edited by Franklin G. Mixon Jr and Richard J. Cebula, Edward Elgar: Cheltenham: 1-20.
- Geerling, Wayne and G. Dirk Mateer. 2014 *The Ultimate Guide to Teaching Microeconomics*, W.W. Norton & Company: New York.
- Geerling, Wayne, Lee Coppock, Kim Holder, and James Tierney. 2014 *The Ultimate Guide to Teaching Macroeconomics*, W.W. Norton & Company: New York.
- Greenlaw, Steven. 2003. "Using Writing to Enhance Student Learning in Undergraduate Economics" *International Review of Economics Education* 1 (1): 61-70.
- Hall, Joshua C. 2005. "Homer Economicus: Using The Simpsons to teach economics." *Journal of Private Enterprise* 20: 166-77.

Hall, Joshua C., Rodney A. Lawson, G. Dirk Mateer, and Andrew Rice. 2008 "Teaching Private Enterprise Through Tunes: An Abecedarium of Music for Economists." *Journal of Private Enterprise* 23 (2): 157-166.

Larry Crowne. 2011. [http://www.youtube.com/watch?v=Cg2WOb4\\_kVo](http://www.youtube.com/watch?v=Cg2WOb4_kVo)

Pashler, Harold, Mark McDaniel, Doug Rohrer, and Robert Bjork. 2008. "Learning Styles: Concepts and Evidence." *Psychological Science in the Public Interest* 9: 105-119.

Salemi, Michael K. and John J. Siegfried. 1999. "The State of Economic Education." *American Economic Review* 89 (2): 355-61.

*Starting Point: Teaching and Learning Economics*. 2011. <http://serc.carleton.edu/econ/index.html>

'T-Mobile Commercial'. 2009. <http://blogs.wsj.com/digits/2009/05/20/t-mobile-brings-catherine-zeta-jones-back/>

Walstad, William and Sam Allgood. 1999. "What Do College Seniors Know About Economics?" *American Economic Review* 89 (2): 350-54.

Wheelan, Charles. 2002. *Naked Economics: Undressing the Dismal Science*, New York: W.W. Norton & Company.

Willingham, Daniel T. 2009. *Why Don't Students Like School?* San Francisco: Jossey-Bass.