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ECONOMIC INSTRUCTION

Symposium: Readings

Teaching controversial and contemporary topics in economics using a jigsaw literature review activity

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ABSTRACT

Most courses are taught almost exclusively using lecture and, despite gaps in textbook coverage of empirical economics, do not incorporate academic readings. The authors of this article present a "jigsaw literature review" cooperative learning activity to address these shortfalls. The jigsaw guides students through formulating a position by synthesizing key ideas from readings with diverse perspectives on a common topic. The authors provide detailed guidance on conducting the activity in upper-level economics courses, based on their experiences while teaching labor economics, public economics, urban economics, health economics, and econometrics. They argue that their activity provides a meaningful way to integrate recent research, policy topics, and diversity issues while promoting student-student interactions. Sample course materials and additional resources are provided for ease of implementation.

KEYWORDS

Academic readings; active learning: briefing note; cooperative learning; jigsaw

JEL CODES A22; A23

Over the past four decades, there has been a shift in economic scholarship from theoretical to empirical inquiry. Now, most published research in applied microeconomics and even macroeconomics is classified as empirical (Colander 2005; Angrist et al. 2017). However, most textbooks do not adequately cover empirical research findings (Girardi and Sandonà 2018), and textbooks that do include empirical applications often provide out-of-date ones (Colander 2005).

Moreover, many curriculum plans stress the importance of incorporating diverse perspectives regarding contemporary issues (Kuh and Umbach 2005; Denson 2009). Although there has been increased coverage of gender- and race-related material in introductory economics textbooks (Robson 2001), only 6 percent of professors teaching upper-level field courses report referencing these issues in their courses (Watts and Schaur 2011). This proportion did not change from 2000 to 2010. The lack of focus on diversity topics, particularly around race, has contributed to severe underrepresentation of economics students who are Black, Indigenous, or people of color (BIPOC): economics has lower BIPOC representation than most science, technology, engineering, and mathematics (STEM) fields (CSMGEP 2017; Bayer, Hoover, and Washington 2020). To reinforce the relevance of economics and boost interest by underrepresented groups, the Committee for the Status of Minority Groups in the Economics Profession (CSMGEP) recommends teaching policy applications relating to race and inequality (CSMGEP 2020).

Upper-level courses are intended to challenge students to expand their knowledge and apply core economic models to controversial and contemporary topics (Allgood, Walstad, and Siegfried 2015). To

Supplemental data for this article is available online at http://www.benharrellecon.com/jigsawappendix The student survey was approved by the Tulane University IRB (2020-1514 TU Uptown).

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reach this goal, economics professors must use recently-published, peer-reviewed papers or working papers to fill content gaps and add depth to the curriculum. Incorporating more than one perspective on economic topics is also essential because economists often lack consensus on key economic questions.¹ Yet, scholarly readings are rarely incorporated into econometrics courses and are used only occasionally in other upper-level courses (Watts and Schaur 2011).

Hence, we propose the jigsaw literature review as a cooperative learning activity that meaningfully integrates research developments with course content derived from standard textbooks.² The jigsaw literature review uses the jigsaw approach designed by Aronson (1978). It is a cooperative learning exercise in which students independently read one of a set of research articles on a given topic. Students are then placed in small groups to summarize their readings, first with peers who read the same article and then with peers who read a different article in the series.

Our overall goal in incorporating academic readings using the jigsaw approach is to enhance students' abilities to achieve core economic competencies: gathering and organizing information about economic phenomena, performing positive and normative policy analyses using economic concepts, and communicating economic ideas in diverse collaborations both orally and in writing (Allgood and Bayer 2017). Specifically, upon completion of the jigsaw literature review exercises, students will be able to:

- identify and summarize the main research questions, key findings, and implications of academic research papers;
- 2. contrast and explain competing arguments regarding the effects of controversial or contemporary economic policies; and
- 3. formulate a position or thesis by synthesizing multiple academic readings on the same topic.

We assess the extent to which students meet these objectives using worksheets or short writing assignments that students can complete individually or collectively.

Purpose and context

The purpose of this article is to provide instructional guidance for implementing a jigsaw literature review activity that may improve student learning outcomes in courses where introductory economics is considered a prerequisite. Although instructors may adapt the activity for use in principles courses by using nonacademic readings like news articles, we focus on upper-level undergraduate and master-level courses because much of the existing pedagogical literature in economics provides insight on student engagement in principles courses (McGoldrick 2014).

We conducted variations of our jigsaw literature review in seven economics courses: five courses at Tulane University, a small, private, research-intensive (R1) institution in New Orleans, Louisiana, and two courses at St. Cloud State University, a medium-sized, public, comprehensive institution (M1) in St. Cloud, Minnesota. Of the seven courses included in the study, three courses are electives with introductory microeconomics as a prerequisite (Labor Economics and two Urban Economics sections); three courses are electives with intermediate microeconomics as a prerequisite and are open both to undergraduate and master's students (Health Economics and Policy, Public Finance and Public Policy, and Introduction to Econometrics); and one course is an elective that is open only to master's students (Econometrics).

To better understand the background of students enrolled in these seven courses, their perceptions of academic readings, and how they have used readings in prior coursework, we conducted anonymous surveys.³ Table 1 provides details regarding the courses included in the study, course enrollments, and response rates for the pre-survey. Except for the two econometrics courses, all courses were medium-sized classes with typical enrollments ranging from 25 to 50.

Table 2 provides information on student demographics and background. Survey respondents were 21 years of age with a grade point average of 3.63 on a 4-point scale. Roughly 50 percent of respondents were women, while only 8 percent were non-native English speakers. In terms of educational background, most survey respondents were undergraduate economics or political economy majors or minors (56%)

Table 1.	Course characteristics a	nd response rates.
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Course title	University	Prerequisites	Number of students	Pre-survey responses (rate)
Labor Economics	Tulane	Intro. Micro.	46	29 (63.0%)
Urban Economics (Section 1)	Tulane	Intro. Micro.	50	25 (50.0%)
Urban Economics (Section 2)	Tulane	Intro. Micro.	26	11 (42.3%)
Health Economics and Policy	Tulane	Interm. Micro.	24	17 (70.8%)
Public Finance and Policy	Tulane	Interm. Micro.	27	6 (22.2%)
Intro. to Econometrics	St. Cloud State	Interm. Micro.	8	8 (100.0%)
Econometrics	St. Cloud State	Grad. Student	5	5 (100.0%)
		Total	186	101 (54.3%)

Source: Collins et al. (2021).

Notes: We taught all these courses in fall 2020. See the online appendix (http://www.benharrellecon.com/jigsawappendix) for the syllabi and other details for each course.

Table 2.	Student	demograp	phics and	backgrou	nd in eo	conomics.

Variable	Ν	Mean	Std. dev.	Min.	Max.
Age	98	20.65	2.14	18	31
GPA	95	3.63	0.30	2.70	4.30
Female	101	0.50	0.50	0	1
Not native English speaker	100	0.08	0.27	0	1
Freshman	100	0.01	0.10	0	1
Sophomore	100	0.28	0.45	0	1
Junior	100	0.33	0.47	0	1
Senior	100	0.31	0.46	0	1
Graduate student	100	0.07	0.26	0	1
Economics or Political Economy major or minor	101	0.56	0.49	0	1
Number of economics courses completed	101	4.68	2.09	0	1
Course workload expectation relative to other cours	es:				
Lighter	100	0.11	0.31	0	1
Similar	100	0.71	0.45	0	1
Higher	100	0.14	0.35	0	1
Other	100	0.04	0.20	0	1

Source: Collins et al. (2021).

Notes: Collins et al. (2021) and their online appendix for the entire pre-survey that includes these questions.

in their sophomore year (28%) or later (64%), and a small proportion were masters-level economics students (7%). Of the respondents, 93 percent previously completed two or more economics courses, with 35 percent having previously completed seven or more economics courses. Relative to their previous courses, most students held similar workload expectations for the classes included in this study (71%).

Table 3 summarizes student experiences with academic journal articles. Respondents were typically assigned optional or required readings in only one course among the economics courses our students previously completed, a low number given that the average student previously completed about five economics courses. Moreover, of those students who completed a course with required readings, only 34 percent reported that they were ever assigned multiple readings on a common topic or research question in economics. On the other hand, of those that were assigned multiple readings on the same topic, most (78%) reported being asked to compare methodologies or conclusions. Overall, this

Table 5. Student experiences with academic journal articles.					
Summarized question	Ν	Mean	Std. dev.	Min.	Max.
# of completed econ. courses with optional reading	68	1.46	1.46	0	6
# of completed econ. courses with required reading	68	1.13	1.48	0	6
(Yes = 1/No = 0) Asked to compare readings. (Universe: econ courses with any readings.)	61	0.47	0.50	0	1
# of courses that assigned group readings with others (Universe: econ. courses with required readings.)	60	0.83	1.03	0	4
(Yes = 1/No = 0) Assigned multiple readings on the same topic. (Universe: econ. courses with required reading.)	68	0.34	0.47	0	1
(Yes = 1/No = 0) Asked to compare readings. (Universe: econ. courses with required multiple readings on the same topic.)	36	0.78	0.42	0	1

Table 3. Student experiences with academic journal articles.

Source: Collins et al. (2021).

background information suggests that most survey respondents have a significant economics background; however, their courses rarely incorporated academic readings. The jigsaw literature review helps fill this gap and serves as a complementary tool for facilitating student engagement.

Contributions to the literature

Although cooperative learning exercises such as the jigsaw and other active learning strategies are often touted, they are rarely used when teaching economics (Watts and Becker 2008; Watts and Schaur 2011). Traditional lecture, or "chalk and talk," is well-documented as the dominant teaching method within economics (Watts and Schaur 2011; Allgood, Walstad, and Siegfried 2015). The "chalk and talk" method is widespread despite evidence that well-structured cooperative learning exercises improve student outcomes (Yamarik 2007) and that variation in learning activities increases student motivation, which is positively associated with student achievement (Hänze and Berger 2007; Nilson and Goodson 2018). Based on results from a 2010 survey of economics professors, only 14 percent of those teaching upper-level field courses reported incorporating student-student discussions, and only 6 percent reported incorporating cooperative learning or small-group assignments (Watts and Schaur 2011).

Our approach to the jigsaw activity encourages student-led exploration and collaboration. The activity provides scaffolding to interpret and synthesize academic readings within the context of an overarching, general research question, thereby facilitating both student-content and student-student interactions. The activity also provides a flexible way for professors to incorporate various learning activities (e.g., individual readings, worksheets, discussions, and group writing assignments), regardless of whether the course is conducted in person or remotely. Moreover, the jigsaw method increases feelings of autonomy and competence (Hänze and Berger 2007) and improves attitudes toward peers (Walker and Crogan 1998).

The jigsaw literature review activity

Our jigsaw literature review activity is a group activity that facilitates student discussion of multiple academic articles on the same economic or policy topic (e.g., the effects of the Earned Income Tax Credit on labor supply). The activity allows students to hear a summary of multiple journal articles on the same topic while being assigned only one article to read.

Figure 1 presents the general structure and flow of the jigsaw activity. First, students form "focus groups" of two to five students. All students in the same focus group have the same assigned reading and collaborate to identify the reading's main ideas and arguments.

Next, students form "task groups" in which (ideally) each student has read a different article. Using the information gathered in the focus groups, students take turns presenting summaries of their assigned readings to peers within their task group. After everyone has summarized their readings, students in each task group collaborate on an activity that requires them to synthesize the varying conclusions drawn from the readings. This activity can range from answering a low-stakes question (e.g., do you think the minimum wage is a good idea or a bad idea?) to a more involved group assignment such as a one-page briefing note.

Preparation

The instructor first gathers between three to five readings on the same economic topic and assigns them to students. We used three to five readings for a few reasons: (1) we wanted to ensure that multiple perspectives were represented; (2) we did not want to overwhelm the students with too many perspectives to synthesize during the activity; and (3) we wanted to make the group sizes manageable. The readings can be peer-reviewed journal articles or working papers for more advanced classes or news articles for introductory courses. For topics without a clear consensus (see, e.g., Fuller and Geide-Stevenson 2014), we intentionally selected readings that provided different conclusions, contexts, or perspectives. As an illustration, for a jigsaw literature review activity in Urban Economics on racial bias in policing and criminal justice, we assigned the readings listed in panel A of table 4. These readings covered racial bias

JIGSAW



Source: This figure is from Vanderbilt University Center for Teaching (2019) and is used here under the Creative Commons Attribution license. See https://creativecommons.org/licenses/by/3.0/us/ for more information on this license. We have cropped the figure to provide a more detailed, numbered title, and we converted the figure to grayscale. Otherwise, the figure is identical. The jigsaw activity we describe and the jigsaw activity shown in this figure are both adapted from Aronson (1978).

Figure 1. Diagram of jigsaw activity groupings.

in policing (motor vehicle searches and police use of force) and the criminal justice system (bail decisions, prosecutors, and judges) from multiple perspectives.⁴

Next, the instructor briefs students on the steps and deliverables for the upcoming activity. About one week in advance, we guided students on how they should approach their assigned reading. We explained that students would have two to four minutes to summarize their reading to their classmates in small groups, focusing on identifying the research question, the general methodology, the main results, and the conclusion. We also informed students that the most useful sections of the article on which to focus were the abstract, introduction, and conclusion because those sections summarize the main points of the paper and avoid the technical details.⁵

Jigsaw activities typically require at least 45 minutes to complete, including roughly 10 minutes for the focus group, 20 minutes for the task group, and additional time for providing instructions and

Table 4. Urban economics "racial bias in policing and criminal justice" jigsaw literature review activity worksheets.

Panel A: Assigned journal articles

- 1. Arnold, David, Will Dobbie, and Crystal S. Yang. 2018. "Racial Bias in Bail Decisions."
- 2. Hoekstra, Mark, and CarlyWill Sloan. 2020. "Does Race Matter for Police Use of Force? Evidence from 911 Calls."
- 3. Antonovics, Kate, and Brian G. Knight. 2009. "A New Look at Racial Profiling: Evidence from the Boston Police Department."
- 4. Sloan, CarlyWill. 2020. "Racial Bias by Prosecutors: Evidence from Random Assignment."
- 5. Eren, Ozkan, and Naci Mocan. 2018. "Emotional Judges and Unlucky Juveniles."

Panel B: Focus group worksheet questions

- 1. Provide some important background information (e.g., population under study, police or justice system interaction type, etc.).
- 2. What is the research question in this paper?
- 3. What are the key facts we learn from the research in this paper?
- 4. What is the paper's conclusion?

Panel C: (Optional) Task group worksheet questions

- 1. Brief summary of the first paper, other than yours, covered in your group.
- 2. Brief summary of the second paper, other than yours, covered in your group.
- 3. Brief summary of the third paper, other than yours, covered in your group (ignore if your group has only two other papers covered).

4. Brief summary of the fourth paper, other than yours, covered in your group (ignore if your group has only two or three other papers covered).

Panel D: Question for deliverable (for low-stakes activity, exam, or group briefing note)

- According to the readings your group covered, is there racial bias in policing and the criminal justice system, broadly defined?
- Notes: This table presents a generic outline of the worksheet components adapted from the "racial bias in policing and criminal justice" jigsaw literature review activity in Urban Economics. Note that detailed supplementary material on this jigsaw activity and others we implemented are available in the online appendix (http://www.benharrellecon.com/jigsawappendix).

Criteria	3 Points	2 Points	1 Point	0 Points
Introduction paragraph (out of 2) (Can you introduce and motivate the topic?)		Provides a useful, brief, and focused introduction to the issue. The paragraph provides a convincing and focused motivation for why the issue is important.	Provides a useful introduction to the issue but may lack focus or may not be as clear. The paragraph provides motivation for why the issue is important but could be more focused or more vivid.	Does not argue in any meaningful way why the issue is important. Does not introduce the topic well and creates confusion.
Content (out of 3) (clarity of purpose, quality of sources/ evidence, critical thought)	Central idea is well developed, and clarity of purpose is exhibited throughout the paper. Abundance of evidence of critical, careful thought and analysis and/or insight. Evidence is vivid and specific, while focus remains tight.	Central idea and clarity of purpose are generally evident throughout the paper. Evidence of critical, careful thought and analysis and/or insight. Evidence is relevant.	The central idea is expressed, though it may be vague or too broad. Some sense of purpose is maintained throughout the paper. Some evidence of critical, careful thought and analysis and/or insight. The evidence is not related enough to the question.	Central idea and clarity of purpose are absent or incompletely expressed and maintained. Little or no evidence of critical, careful thought or analysis and/or insight. Evidence is absent or irrelevant.
Structure (out of 3) (Organization, flow of thought, transitions)	The writing is logically organized and is easily followed. Effective, smooth, and logical transitions.	The writing has a clear organizational structure with some digressions, ambiguities, or irrelevances. Generally, easily followed and well-structured.	There is some level of organization although digressions, ambiguities, irrelevances are too many. Difficult to follow. Rambling format.	No apparent organization. Painful to follow.
Grammar and References (out of 2) (sentence structure, punctuation, mechanics, references)		No punctuation or mechanical errors of any significance, including in the references section.	Few punctuation or mechanical errors.	Too many errors, to the point that they are distracting, or it is not possible to determine sources in the references section.

 Table 5.
 Rubric for briefing note exercises.

transitioning between groups.⁶ However, for jigsaw activities with more extensive or higher-stakes deliverables, the instructor could allocate up to an additional hour to the task group. For courses that are shorter than two hours, the instructor could assign the focus group and task group exercises on separate class days or have both groups meet on the first day and allow additional time, if necessary, for the task group to continue their work on the second day.

Facilitating the focus and task groups

Before students transitioned to their focus groups, we reviewed the jigsaw process and reminded students of what we expected them to accomplish in each stage. Presenting a figure like figure 1 is useful when explaining the process and helps the jigsaw activity run smoothly. After explaining the activity, we helped students move into focus groups.

The focus groups' primary goal is for students to reach a consensus about key points in their assigned article. This step is beneficial for the few students who do not finish the assigned reading before class and must catch up to be successful when summarizing the reading in their task groups. To add structure to students' summaries, the instructor can provide students with a worksheet to guide them through the process. Panel B in table 4 provides examples of these worksheet questions.

After students review their assigned readings in focus groups, the instructor helps students switch into task groups, which usually have three to five students who, ideally, have each read a different paper. For in-person classes, there are different ways that the instructor can help the students form groups. For small classes, while students are working in focus groups, the instructor could create the task groups based on who is in the classroom and then present these task groups on the whiteboard or projector. For large classes, the instructor could instead tell the students to form their own task groups so long as their groups meet specific requirements.⁷ When facilitating the activity online, we formed groups by assigning students to breakout rooms in Zoom.⁸

The primary goal of the task groups is for students to collaborate on a synthesis activity. Task groups synthesize the main ideas of the readings covered in their group to answer a broad question about the research literature or topic. To prepare for this synthesis, each student will take three to five minutes to summarize their assigned reading for their peers. To give students some structure and incentive for taking notes while listening to summaries, the instructor could provide students with a worksheet like table 4, panel C, and grade it as a low-stakes activity.⁹

Assessment

We assigned two or three jigsaw literature review activities in our courses. We assessed the first jigsaw activity as a low-stakes activity. This low-stakes approach allowed students to learn how the jigsaw works and practice reading and synthesizing academic papers before doing so in a higher-stakes assessment. As the deliverable for the first jigsaw activity, students collaborated on a one-paragraph answer to a broad question about the assigned readings. For our activity on racial bias, students collaborated on an answer to the question: "According to the readings your group covered, is there racial bias in policing and the criminal justice system, broadly defined?" (table 4, panel D).

For our second and later jigsaw activities, we assigned higher-stakes assessments called Group Briefing Notes. We weighted the Group Briefing Notes to count for 5 to 15 percent of the final course grade, sometimes allowing students to drop their lowest Group Briefing Note score if we assigned at least three. For this assignment, students collaborated on a one-page briefing note in a Google document to answer a similar or identical broad question about the literature. For the racial bias briefing note example, we used the same question stated above.

We graded each briefing note out of 10 points using the rubric in table 5. Students were assessed based on the quality of the introduction (out of 2), content (out of 3), structure (out of 3), and grammar and references (out of 2). We allowed students the option to revise and resubmit their briefing notes once. This option was beneficial for the first briefing note since grades on the first draft were often lower (between 4/10 and 8/10) because students made many common mistakes.¹⁰

Additionally, for all jigsaw activities, we recommend requiring students to submit summaries of their assigned reading beforehand, with the summary being their "ticket to participate" (McGoldrick 2011). Requiring these summaries before class was something that we neglected to do at first, and, according to student feedback, some students reported frustrations with peers not being prepared (Collins et al. 2021). In our current courses, we are assessing these summaries in a low-stakes way.

Finally, we occasionally assessed the jigsaw activity's student learning outcomes (e.g., synthesizing different sources) during regular exams. On our exams, we included broad, short-answer questions like those used for the jigsaw literature review deliverable or questions that allowed students to compare or contrast any two readings from the jigsaw literature review activity.¹¹

Conclusion

We present a literature review jigsaw activity to help instructors integrate recent research findings in small- to medium-sized upper-level economics courses. The activity helps students synthesize the sometimes competing perspectives, conclusions, and methodologies found in academic journal articles that address important economic policy or diversity topics. Instructors can adapt our jigsaw literature review activity to any context in which there are multiple readings on the same topic.

While our jigsaw literature review has benefits, there are also costs. One fundamental limitation is opportunity cost: our jigsaw literature review activity is more time-intensive than other active learning strategies. Also, the activity is best suited for courses with enrollments no larger than 60 students, given the requirements for classroom setup and the need to switch groups.¹² Although potentially at the cost of reducing the number of topics that may be covered, our jigsaw literature review activity improves the depth of knowledge on covered topics. Moreover, the activity promotes class discussion and allows students to build self-efficacy (Collins et al. 2021).

Notes

- 1. For example, the "Consensus Among Economists" survey indicates that many economic questions lack consensus among economists. Out of all 44 of the questions asked, 31 have a lack of consensus (measured as at least 0.9 in entropy score, where a value of zero means complete agreement and a value of one means a uniform distribution of responses). The three economic questions with the least consensus (entropy ≥ 0.99) in 2011 were "Changes in aggregate demand will affect real GDP in the short run but not in the long run," "The Earned Income Tax Credit program should be expanded," and "A minimum wage increases unemployment among young and unskilled workers" (Fuller and Geide-Stevenson 2014). The latter two economic questions are addressed in our literature review jigsaw activity examples in the online appendix.
- 2. Please see the supplementary materials provided in the online appendix at http://www.benharrellecon.com/ jigsawappendix for examples. These materials are also available from the authors upon request.
- 3. Collins et al. (2021) goes further and uses the survey data to assess students' overall experiences with the jigsaw activity and students' perceptions of general self-efficacy and task-specific self-efficacy regarding summarizing academic readings and participating in group exercises, both before and after completing the jigsaw literature review assignments. In open-ended questions, students also provided feedback on the jigsaw activities and provided suggestions for improving them.
- 4. While we use the racial bias in policing and criminal justice jigsaw example for illustration, please see the online appendix for detailed examples of http://www.benharrellecon.com/jigsawappendix for all our jigsaw activities, including worksheets for the reading summaries in focus and task groups as well as student introductions.
- 5. See Lee (2017) for more advice for students on how to read academic sources. The degree of technicality for summarizing the paper's methodology depends upon the purpose of the exercise and the level of the course.
- 6. Transition time may be longer for remote-learning courses because the instructor assigns the breakout rooms and must ensure each group comprises students who read the appropriate article. In-person courses may require less transition time because students can sort into their own groups.
- 7. Instructors will need to be more flexible if the students make their own groups. When we did this in person (pre-COVID-19), we required that the focus groups be between three and five students, covering at least three readings, with only one duplicated reading. Usually, only one or two groups (in a class of between 40 and 50 students) needed to deviate from this setup in a minor way, which was fine.
- 8. As of this writing, it is not possible to save two different breakout room formations on Zoom for one session. So, if breakout rooms were created for the focus groups, as recommended, then breakout rooms will need to be made manually for the task groups if the focus and task groups are done during the same Zoom session. This process will take a few minutes, depending on the size of the class. While manually making the breakout rooms for the task groups, the instructor could tell the students that the class will be taking a three-to-five-minute break and could provide the students with instructions to read in the meantime.
- 9. However, these graded worksheets have the potential to distract some students from fully engaging their classmates in discussions of the assigned readings.
- 10. In the online appendix, we provide a handout that includes a discussion of these common mistakes. This document is provided to students when we first assign the briefing note. We also reference these common mistakes and point students toward the document when we grade their briefing notes.
- 11. For example, a possible exam question for Urban Economics for content on racial bias in policing and criminal justice is: "Briefly summarize the conclusions of two papers on racial bias in policing or criminal justice: one that finds racial bias and one that does not (or one that does not find it in a particular circumstance)."
- 12. This suggested maximum of 60 students depends on the physical or virtual classroom location and if the instructor has the support of a teaching assistant who can help facilitate the activity.

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