THE K. PATRICIA CROSS ACADEMY

INSTRUCTOR'S GUIDE

Teaching Technique 04

Jigsaw

ACTIVITY TYPE	TEACHING PROBLEM ADDRESSED	LEARNING TAXONOMIC LEVEL
• Active/Engaged Learning	• Lack of Participation	• Foundational Knowledge
• Group Work	• Low Motivation/Engagement	• Application: Analysis & Critical Thinking
• Reciprocal Teaching		• Learning How to Learn
		• Caring

Jigsaw

In a *Jigsaw*, students work in small groups to develop knowledge about a given topic before teaching what they have learned to another group.

1 Clarify your teaching purpose and learning goals for *Jigsaw*

2 Identify the learning task's underlying problem and craft the prompt

3 Set assignment parameters

4 Develop a plan for learning assessment or grading

5 Communicate assignment instructions to students

6 Implement the technique

7 Reflect upon the activity and evaluate its effectiveness

Step-By-Step Instructions

In this section we provide you with guidance on each of the seven steps involved as you consider this technique.

STEP 1: CLARIFY YOUR TEACHING PURPOSE AND LEARNING GOALS

Jigsaw was initially developed in the early 1970s as a way to improve relations and collaboration among students in recently desegregated schools. It has since been used in classrooms, labs, and fieldwork across all educational levels, from grade school to graduate school. *Jigsaw* is a flexible technique as you can use it for almost any content that you can divide into equal parts. The technique is appropriate across disciplines and fields.

The *Jigsaw* technique allows students to achieve multiple learning goals. It helps students to cover and master foundational knowledge. It also prompts them to analyze information to see how a whole unit of content can be divided into component parts. This approach in turn also helps students learn how to learn. It motivates students to accept responsibility for learning something well enough to teach it to their peers, which promotes their caring about a topic. It gives each student a chance to be in the spotlight, which is also motivating.

You can assess student learning from a *Jigsaw*. You could choose, for example, to test individually for content knowledge prior to the discussion in the expert group and re-test after expert group discussion. Testing individuals also helps encourage preparation for *Jigsaw* group work.

STEP 2: IDENTIFY THE LEARNING TASK'S UNDERLYING PROBLEM AND PROMPT

Choose a body of content and divide it into an equal number of components for team assignments. Each team will receive a different assignment. Teams might have different readings, data sets, problems, issues, or other. The *Jigsaw* topic should be simple enough for students with a good grasp of the subject to teach it to their peers, but complex enough to require discussion and the design of interesting strategies for instruction.

STEP 3: SET ASSIGNMENT PARAMETERS

Determine how long it will take students to learn their parts and decide whether students will learn the content in or out of class. Also determine how long groups should meet to decide how to teach the content, as well as how long the *Jigsaw* groups will need for the experts to teach each other.

STEP 4: DEVELOP A PLAN FOR LEARNING ASSESSMENT OR GRADING

It is useful to have an individual assignment associated with the *Jigsaw*. Pre-test of knowledge on the topic work for this as does a post-jigsaw assignment such as a summary paper.

Moreover, you could choose to assess the group work process; for this, you could observe, have students self-assess, or have peers evaluate each others' contributions.

STEP 5: COMMUNICATE ASSIGNMENT PARAMETERS TO STUDENTS

How you communicate will depend on how complex the *Jigsaw* will be. If it is a simple one-class duration assignment, you might announce the activity orally. If more complex or over more time, you might choose to create a handout.

STEP 6: IMPLEMENT THE TECHNIQUE

- The instructor develops a learning module that can be broken into parts.

- Students form groups charged with developing expertise on a particular part.

- Students work in these "expert" groups to master their parts. They also determine ways to help others learn the material, exploring possible explanations, examples, illustrations, and applications.

- Students form new "jigsaw" groups in which each student serves as the only expert on a specific topic. In these groups, experts teach each other the material and lead the discussion on their particular topic.

- The whole class reflects on the group discoveries in a closure activity.

STEP 7: REFLECT UPON THE ACTIVITY AND EVALUATE ITS EFFECTIVENESS

When reflecting on the activity and how effective it was, consider the following questions:

- Did the technique match the course learning goals and objectives?

- Did it meet my goals for this learning module?

- Was it appropriate for the students?

- Did the technique keep the students engaged?

- Did it promote student learning?

- Did it provide me with information about student understanding?

If you answer yes to all or most of these questions, next consider how you might improve the activity for the next use.

Support Materials

The materials in this section are intended to help you with the process of implementing this technique.

GROUP FORMATION

Select a subject and divide it into four to six subcategories—these are your puzzle pieces. Have students form a group for every puzzle piece. Each group is responsible for becoming an expert on their piece of the puzzle.
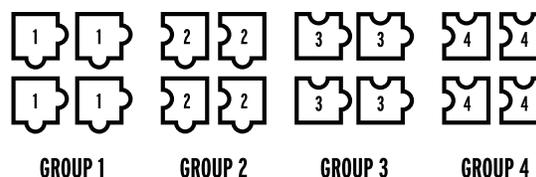
Give groups time to master their pieces. Then organize the class into *Jigsaw* groups composed of one expert from each of the original groups. Once sorted into *Jigsaw* groups, students take turns teaching their piece to each other.

GROUP 1   GROUP 2   GROUP 3   GROUP 4

JIGSAW GROUP 1   JIGSAW GROUP 2   JIGSAW GROUP 3   JIGSAW GROUP 4
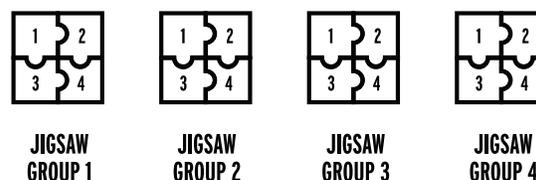
VARIATIONS AND EXTENSIONS

- Use the technique for complex problem-solving tasks and have expert groups learn a skill necessary to solve the problem.

- Increase student interest in this exercise by asking students to help generate the lists of topics.

- Instead of calling students "experts," call them "teachers."

- Instead of asking students to work in two different groups (the Expert one for mastery, and the *Jigsaw* one for teaching), have students work with only one group, with pairs forming and breaking off to develop expertise on a specific topic, and then rejoining the full group for teaching. This variation is called "Within Team Jigsaw"

- Give students a list of the key points that represent your initial thinking on how you would teach the topic and invite students to critique your approach and then either go beyond it or think differently and come up with an alternative way to teach the topic.

- Ask groups to choose a spokesperson for an all-class review. The spokespersons make a presentation to the whole class, and remaining group members can elaborate or contribute additional views.

- Give students an individual quiz on the topics. Consider grouping individual scores into teams. This variation is called "Jigsaw 2"

Technique Template

Following are two templates to assist you as you think through how you might implement this technique in your own class. The first is a completed template, providing an example of how Claire Major adapted *Jigsaw* in her course, *College and University Teaching*. The second is a blank template for you to fill out to tailor this technique for your course.

Technique Template

Sample *Jigsaw* Completed Technique Template:

Content from Claire Major

College and University Teaching
Course Name

COURSE CHARACTERISTICS

What are the situational factors that impact this course? For example, is it on campus or online? How many students? Is it lower division or graduate? Are there student attributes such as attitudes, prior knowledge, reasons for enrolling, and so forth that should be taken into account as you consider this technique?

My course meets four times during the semester, for eight hours at a time. Because of this, I try to incorporate many different activities in each class session to keep it interesting and lively.

STEP 1: CLARIFY YOUR TEACHING PURPOSE AND LEARNING GOALS

Why are you choosing this technique? What do you hope to accomplish?

I used to do a lecture on the history of college teaching in American Higher Education. I didn't enjoy it, and the students didn't enjoy it. But they needed the content as context for the rest of the course. I decided to use Jigsaw so that they could work together to develop important foundational knowledge.

STEP 2: IDENTIFY THE LEARNING TASK'S UNDERLYING PROBLEM AND PROMPT

What is the question you want learners to address, or problem you want them to solve?

The underlying question is how did we get to where we are in college teaching in US institutions of higher education. I derive a prompt that asks students to divide the history of teaching in higher education institutes into 4 time periods.

STEP 3: SET ASSIGNMENT PARAMETERS

What are the assignment logistics? For example, will this be assigned individually or is it group work? How long will the assignment take? Will students be submitting a product? What materials, resources, or additional information do you anticipate needing?

Students work in original/expert groups to develop base knowledge. They then reform groups with one member from each of the original expert groups. The experts teach the non-experts on their topic.

STEP 4: DEVELOP A PLAN FOR LEARNING ASSESSMENT OR GRADING

If you decide to assess learning, how will you determine that learning has occurred? For example, will you use a simple +/check/- grading system? If you use a rubric, will you use an existing one or create one? What will be your criteria and standards?

I use this activity as a demonstration of student participation, and it goes into their course participation/engagement grade. Students are always active and engaged in this assignment.

STEP 5: COMMUNICATE ASSIGNMENT PARAMETERS TO STUDENTS

How will you communicate assignment parameters to students? For example, through a handout? A prompt on a presentation slide? Assignment instructions in your online course?

I provide the base content for each of the four time periods in a handout. Students can supplement this information with their own Internet searches. As far as instructions go, I communicate these orally to students.

STEP 6: IMPLEMENT THE TECHNIQUE

How will you adapt steps/procedures for your students? Are there any additional logistical aspects to consider?

I follow the steps for this procedure fairly closely. Groups do tend to like to spread out, and they can get loud, so when I can, I secure a second nearby classroom to give students space. I don't always have this option though; students seem to manage even with the additional noise level.

STEP 7: REFLECT UPON THE ACTIVITY AND EVALUATE ITS EFFECTIVENESS

Note: This step will be completed after you have implemented the technique.
Did this technique help you accomplish your goals? What worked well? What could have been improved? What might you change if you decide to implement the activity again?

After I use this technique each semester, I write down what went well and what could be improved. I often find myself adding information students find to the base content handout.

Technique Template

This template is intended for use when planning to implement *Jigsaw* in your class. Fill in the blanks below, and use the information provided elsewhere in the Instructor's Guide to assist you in your thinking.

Course Name

COURSE CHARACTERISTICS

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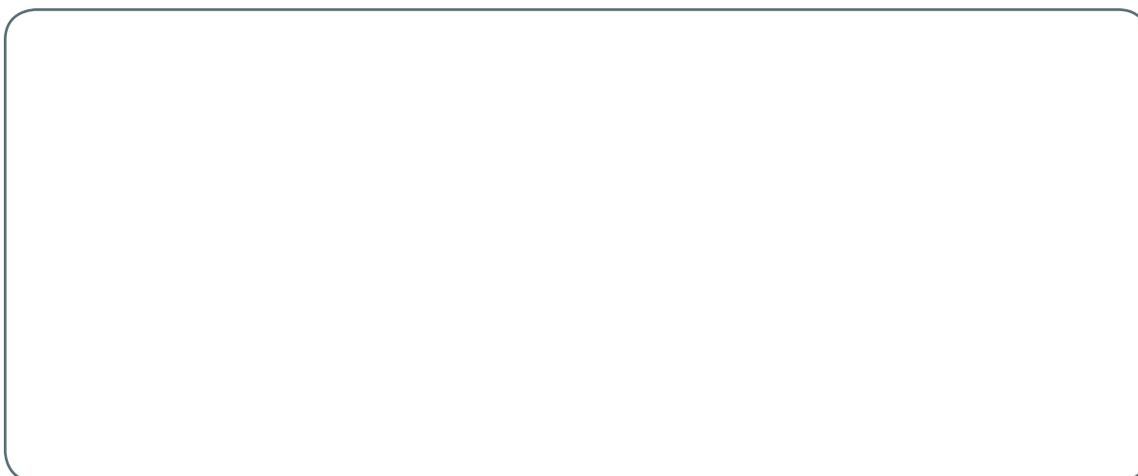
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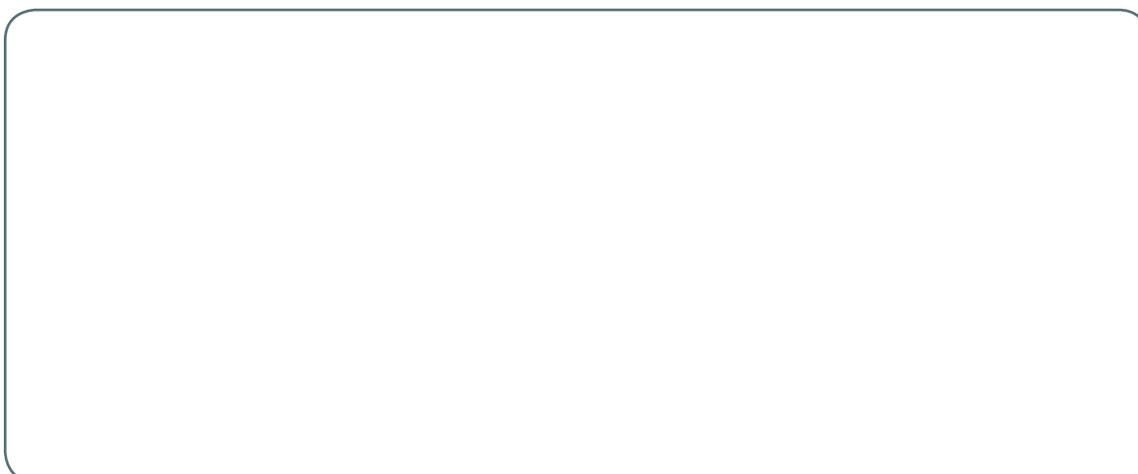
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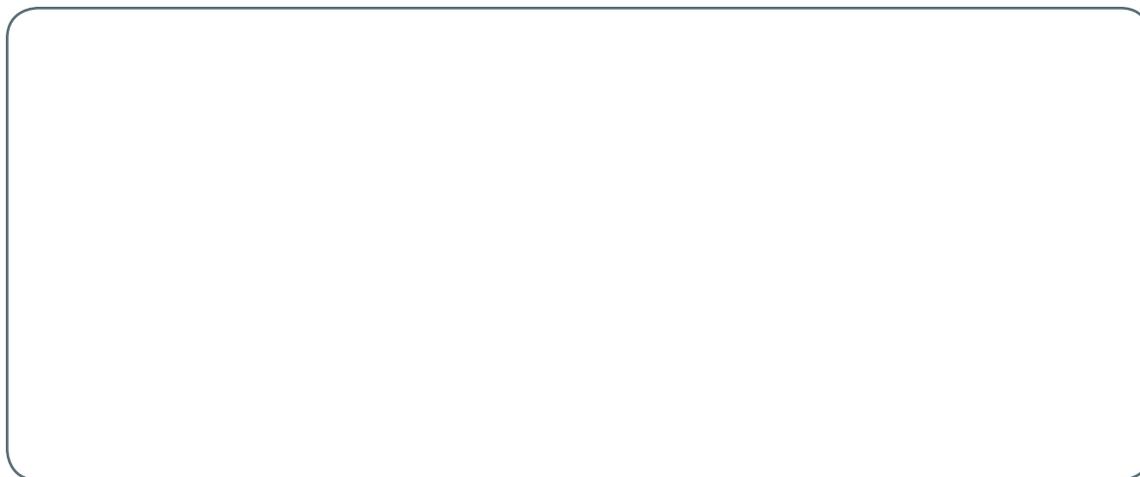
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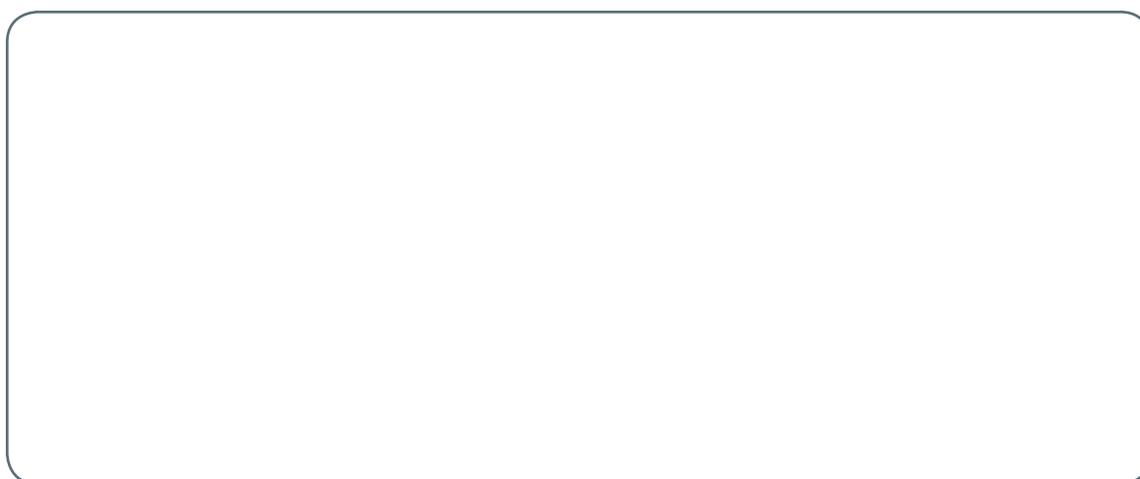
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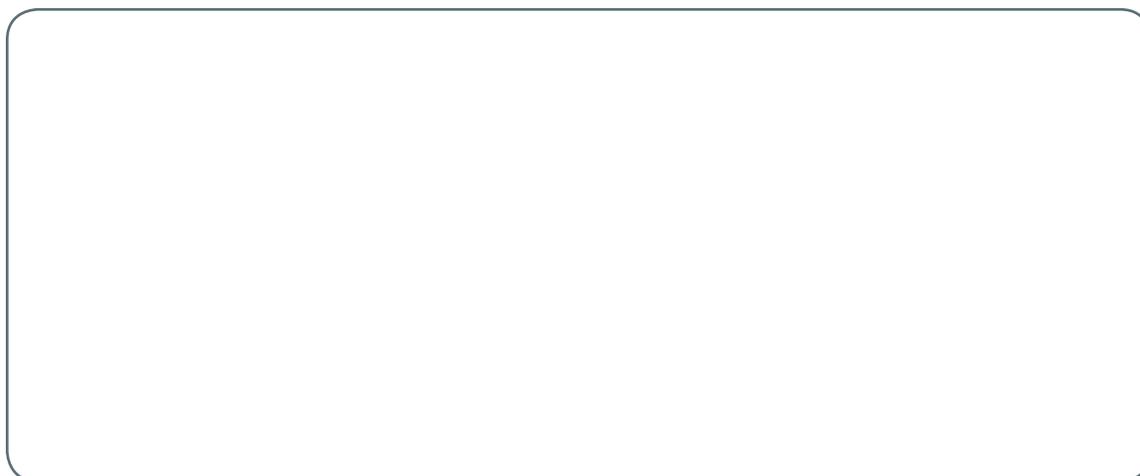
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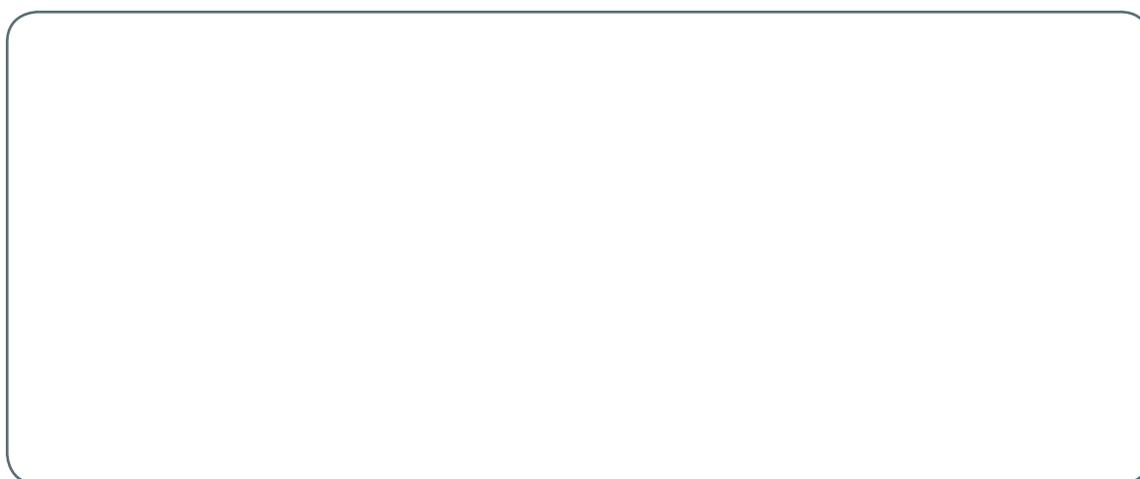
References and Resources

PRIMARY SOURCE

Content for this download was drawn primarily from "Student Engagement Technique 33: Jigsaw" in Student Engagement Techniques: A Handbook for College Faculty (Barkley, 2010), pp. 289–295 and "Collaborative Learning Technique 11: Jigsaw" in *Collaborative Learning Techniques: A Handbook for College Faculty* (Barkley, Major, & Cross, 2014), pp. 212–218. It includes material that was adapted or reproduced with permission. For further information about this technique, including examples in both on campus and online courses, see the primary sources:

Barkley, E. F. (2010). *Student Engagement Techniques: A Handbook for College Faculty.* San Francisco, CA: Jossey-Bass.

Barkley, E. F., Major, C. H., & Cross, K. P. (2014). *Collaborative Learning Techniques: A Handbook for College Faculty.* 2nd ed. San Francisco, CA: Jossey-Bass.

CITATIONS AND ADDITIONAL SUGGESTIONS FOR FURTHER READING

- Aronson, E. (2000). The jigsaw classroom. http://www.jigsaw.org

- Johnson, D. W., Johnson, R., & Smith, K. (1998). *Active learning: Cooperation in the college classroom.* Edina, MN: Interaction Book Company. Pp. 224–225

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