The **Jigsaw Classroom**

By Susan Reese

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THE HISTORY OF THE JIGSAW CLASSROOM TECHNIQUE CAN BE TRACED BACK TO 1971 IN AUSTIN, TEXAS, where it was used to defuse the potentially explosive situation resulting from desegregation of the city's schools. Elliot Aronson, then a professor at the University of Texas, and his graduate students created the strategy to help ease the hostility among groups of students who found themselves in the same classroom for the first time—whites, African-Americans and Hispanics.

Aronson and his graduate students saw that the competitive atmosphere of the typical classroom only served to fuel the fires of inter-group hostility, so the jigsaw technique was born of the need to change the atmosphere from one of competitiveness to one of cooperation. They began with fifth-graders, helping several teachers devise a cooperative jigsaw structure for the students to learn about the life of Eleanor Roosevelt. The students were divided into small groups—diversified in terms of race, ethnicity and gender—making each student responsible for a specific part of Roosevelt's biography. After only eight weeks, the success of the strategy was demonstrated through the attitudes of the students. They showed less prejudice and negative stereotyping, and more self-confidence when compared to students in traditional classrooms. They also showed greater academic improvement and were absent less.

Since its inception, the jigsaw classroom has been used across the nation, ranging from the elementary schools where it was first developed to high schools and colleges. According to the American Psychological Association (APA), the research demonstrating the effectiveness of the jigsaw technique is solid. "For example," APA notes, "in many cases, students in different classrooms who are covering the same material are randomly assigned to receive either traditional instruction (no intervention) or instruction by means of the jigsaw technique. Studies in real classrooms have consistently revealed enhanced academic performance, reductions in stereotypes and prejudice, and improved social relations."

Most fields of career and technical education (CTE) require students to learn how to work together cooperatively on teams consisting of diverse individuals. For example, construction projects require teams of carpenters, electricians and plumbers. Health care workers in hospitals and other clinical settings are members of a team that works together to deliver patient care. The hospitality industry includes a number of often diverse individuals working cooperatively. CTE educators understand this, so many are already implementing some or all of the steps involved in the jigsaw technique.

Ten Steps

According to Aronson's Web site, Jigsaw Classroom (**www.jigsaw.org**), here are the 10 easy steps for the jigsaw.

1. Divide students into five- or six-person jigsaw groups. The groups should be diverse in terms of gender, ethnicity, race and ability.
2. Appoint one student from each group as the leader. Initially, this person should be the most mature student in the group.
3. Divide the day's lesson into five or six segments.
4. Assign each student to learn one segment, making sure students have direct access only to their own segment.
5. Give students time to read over their segment at least twice and become familiar with it. There is no need for them to memorize it.
6. Form temporary "expert groups" by having one student from each jigsaw group join other students assigned to the same segment. Give students in these expert groups time to discuss the main points of their segment and to rehearse the presentations they will make to their jigsaw group.
7. Bring the students back into their jigsaw groups.
8. Ask each student to present her or his segment to the group. Encourage others in the group to ask questions for clarification.
9. Float from group to group, observing the process. If any group is having trouble (*e.g.*, a member is dominating or disruptive), make an appropriate intervention.
10. At the end of the session, give a quiz on the material so that students quickly come to realize that these sessions are not just fun and games.

The Advantages

Aronson notes that the jigsaw classroom technique has a number of advantages. First of all, most teachers find it easy to learn and they enjoy doing it. It can be used with other teaching strategies, and Aronson has found that it works even if it is only used for an hour per day. Finally, it is free for the taking. When children have been exposed to jigsaw in elementary school, Aronson says it is easier to maintain its benefits in middle school and high school, and although it may be more difficult to introduce the technique as a new experience to high school students, it is never too late to begin. His experience has shown that, although it generally takes a bit longer, most high school students participating in jigsaw for the first time display a remarkable ability to benefit from the cooperative structure.

Some Potential Problems

Aronson is realistic enough to know that things don't always work perfectly, and he offers a few things to watch out for when implementing the jigsaw strategy. For example, a dominant student may try to take over and control the group. Also, working with slower students may cause the more gifted students to become bored, and the slower students may affect the quality of the report produced by their group. He says that many jigsaw teachers find it useful to appoint, on a rotating basis, one student to be the discussion leader for each session. That leader's job is to call on students in a fair manner and try to spread participation evenly.

Aronson says that students quickly realize the group runs more effectively if each student is allowed to present his or her material before questions and comments are taken, and in this way, the self-interest of the group eventually reduces the problem of dominance. To address the problem of the slow students, Aronson notes that the jigsaw technique relies on "expert" groups. Before presenting a report to their jigsaw groups, each student enters an expert group consisting of other students who have prepared a report on the same topic. In the expert group, students have a chance to discuss their report and modify it based on the suggestions of other members of their expert group. He suggests that teachers may want to monitor the expert groups carefully in the early stages, just to make sure that each student ends with an accurate report to bring to her or his jigsaw group. He adds that most teachers find that once the expert groups get the hang of it, close monitoring becomes unnecessary.

As for the problem of the brighter students becoming bored, Aronson believes that if those students are encouraged to develop the mindset of "teacher," the learning experience can be transformed from a boring task into an exciting challenge. Not only does such a challenge produce psychological benefits, but the learning is frequently more thorough. The research suggests that there is less boredom in jigsaw classrooms than in traditional ones, and that holds true for the brighter as well as the less gifted students.

As our country has become an increasingly multi-ethnic tapestry, most technical fields now include professionals of different backgrounds, cultures and genders. Our students will need to become effective members of teams that include diverse groups of individuals reflective of today's workplace, and that may be one of the most important skills career and technical educators are teaching. According to the APA, the jigsaw technique has "the potential to improve education dramatically in a multicultural world by revolutionizing the way children learn," which gives teachers another piece of the puzzle to complete a 21st century education for their students. T

Putting Together the Puzzle

The Jigsaw Classroom Web site contains a wealth of information about the jigsaw classroom, including its history, initial success, and links to other articles. The 10 easy steps and how to deal with potential problems are discussed in more detail. You can also find out more about Elliot Aronson and the books he has authored. Visit **www.jigsaw.org**.

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