

JANET RANKIN: Another active learning technique that can be very, very effective in supporting student learning is the jigsaw. And it gets its name from the activity involved when you do a jigsaw puzzle.

And usually, most people when they do a jigsaw will look for the-- they'll find all the edge pieces, or they'll find all the blue pieces, or they'll find all the pieces that have a certain image on them. You do the homogeneous aspects of the exercise. So you get all the edge pieces, the blue pieces, the particular image pizzas.

But eventually, you have to take those pieces and put them together. You have to link them up with pieces that don't look quite like those pieces, so that's the heterogeneous component of it.

And so what you do in a jigsaw is you ask students to become experts, if you will, homogeneous experts, in a particular area, on a particular topic. And you can do this by giving them a reading in class, or you can do this by asking them to reflect on something that you've addressed in a previous class or that they've addressed in a previous homework.

But they sit together, or they group together in this, what I call, homogeneous group, where everyone is talking about the same particular topic. And they just discuss that topic and they become experts in that homogeneous topic.

And then you can have three or four different topics, whatever, depending on the size of the class. And you have these local groups of experts, like the edge pieces, and the blue pieces, and the picture pieces.

And then after giving them a period of time, maybe five minutes, 10 minutes, depending on the class, you break them up into heterogeneous groups. So you get one with one representative from Group A, goes with one representative from Group B, and one representative from Group C, and one representative from group D. And now you have a new heterogeneous group that has an A, a B, a C, and a D in it.

Or if we use the puzzle analogy, you have a group that has some person that's the edge expert, some person that's the picture expert, and some person that's the blue piece expert. And they're all in a group.

And now they share what they know individually with each other and then they combine that

expertise, they synthesize that expertise, to make something bigger to come up with a more global understanding of the problem.

And then each group does that in their own way. So the heterogeneous groups then form a more holistic, or a more heterogeneous, solution to the problem, as if they're putting together the different kinds of puzzle pieces.

And then again, as with the other activities, we ask them to then report out. Before that I usually will circulate in the room the same way I do with the pair share to hear what each of the groups are saying, to see if any groups are having particular issues, or if they have some particular breakthroughs that I want to make sure they share with the class as a whole.

There are some logistical issues. One, you want to make sure that the students really can become these homogeneous experts. So that if you have a group of four people, that they've all really come up to speed on the topic.

So ideally, you would give a pre-class assignment and you'd say, yes. I need everybody to read this article and to be able to explain this point, this point, and this point, and you would assign that to that particular group of students. And then you'd do the same with a few other topics.

You're assuming then that the students have read the paper, or have read the article, whatever it is you want them to read, and that they understand it to the level that you hope they understood it.

Sometimes you don't have time for that or it just doesn't work out, so you give them something to read within class. And again, that can be tricky. Students may not have the same level of understanding, so groups may be a little bit spotty.

The other thing that can happen with the jigsaw, which is a really silly problem but sometimes it just trips you up, is if you have, depending on the number of students, you have to kind of think on your feet about how many students are in the homogeneous group versus how many students are in the heterogeneous group.

If it's a perfect square, it works fine. So if you've got nine students, or 16 students, or 25 students, you know you have five groups in one situation and then five groups in the other, that means you have to have the same number of groups as heterogeneous topics.

So if I went A, B, C, D, I have to then have four groups because I had to have four A's, four B's, four C's, and four D's. So sometimes just the number of topics and the number of students that you have in your class makes it kind of hard to make groups that don't have extra people or aren't short a particular expert. And that's just something you want to plan beforehand.

And if somebody doesn't come to class, if you know you have 25 students in your class and someone doesn't show up, then you have to kind of deal with it on the fly. But that can be the trickiest thing with the jigsaw, is just getting the number of students right.