

# Teams of Four Are Magic!

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At a number of recent workshops and on the Kagan web page, teachers have been questioning the best team size and team composition. There is a national trainer who is advocating cooperative learning teams of seven, with a student strong in each of the multiple intelligences on each team. Teams of seven, though, violates the basic principles of cooperative learning, and classrooms do not break evenly with regard to the intelligences!

Let me say why I feel teams of four are magic.

I continue to recommend teams of four, based on two of the four basic principles of cooperative learning.

The first of the two principles is the Simultaneity Principle. The Simultaneity Principle has us ask a simple but powerful question: What percent of our students are overtly active at any one moment? Or, to phrase it another way, How much simultaneous interaction is there? The Simultaneity Principle not only tells us why cooperative learning is so much more powerful than traditional whole-class interaction, it tells us also that teams of four are the best. Here is why: If a teacher asks a question of the class and uses the whole-class question-answer structure, calling on one student to answer, one of his/her thirty students are active at that moment, articulating their thoughts. If the teacher in the same moment asks the same question of the class, but rejects the whole-class structure, instead having his/her students discuss the question in teams of four, in the same time-frame at least one of every four students is actively engaged, articulating their thoughts. It is this increased active participation in cooperative learning that is partially responsible for the greater gains shown among students in cooperative learning. It is far better to have a quarter of the class overtly active than just one student!

As we increase team size, we cut down active participation. In a team of seven, only one seventh of the class is verbalizing at any one moment during a group discussion, cutting the active participation almost in half compared to teams of four. Another way to demonstrate the superiority of the smaller team size is to ask how much time it takes to obtain a learning objective. Imagine that we have a very limited objective, say, that each student in the class states a personal reaction to a poem or current event, for one minute each. If students are seated in teams of seven, we reach our objective in seven minutes. The same exact outcomes for students are obtained in four minutes if students are seated in teams of four! Thus, teams of seven are about half as efficient as teams of four. Further, in teams of seven because on the average each student must wait six minutes to share for a minute, students seeking more active involvement will form sub-groups and the team will lose focus.



The second basic principle of cooperative learning which applies to team size is the Equality Principle. The Equality Principle has us ask a second powerful question: How equal is the participation among students? In the traditional classroom the equality principle is violated because the same subgroup of highly motivated students always has their hands up, while another subgroup of less motivated students almost never does. The participation is very unequal. That is why in cooperative learning we use strategies carefully crafted to equalize participation. For example, in a Timed Pair Share, A speaks for a minute then B speaks for a minute. Or in a RallyRobin A shares, then B shares, then A, then B, and so on. There are quite a number of these pair-based structures. For example, in Pairs Compare, one pair in the team works on a problem capable of many solutions while the other pair (out of contact with the first pair) also works on the problem. Later, the two pairs

compare their solutions. In teams of three or five, these pair-based structures do not work nearly as well because the team breaks into a pair and a triad, creating unequal participation. In a Timed Pair Share with a team of three or five, someone is left out.

That is why we say **Teams of Four Are Magic!**

Teams of four maximize and equalize active participation compared to any other number. The only other team size which does as well is a team of two! But a team of two does not provide enough diversity of points of view for many cooperative learning activities. The simultaneity principle, however, does tell us that within our teams of four we would do well to very often have pair work. Pair work creates more active participation than square work.

Having, at least to my satisfaction, settled the question of team size, there remains the question of team composition. There is a great deal that can be said about team composition; we may select students for teams differently for different purposes. There are heterogeneous teams, random teams, multiple intelligences teams, interest teams, topic-specific teams, homogeneous teams, sponge groups, and a variety of ways to form each. In a future newsletter I will write a piece on team composition, covering types of teams and when to use each. For now let me say that the heterogeneous team -- a team mixed in academic ability level, with two males and two females, mixed in racial or ethnic composition for most purposes, is the best.