IMPROVING TIME-ON-TASK IN INSTRUCTIONAL GAMES

William H. Kraus
Wittenberg University
Springfield, OH 45501

Because they increase motivation, instructional games can be very useful in the classroom (Bright, Harvey, and Wheeler 1985). However, some games provide more effective instruction than others. This article will contrast the popular game, *Around the World,* with two games that provide higher time-on-task.

Around the World is most often played using the basic facts. One student is chosen to stand up next to a seated student, then the teacher asks that pair of students a question. If the student who is standing is the first to give a correct answer, then he moves to stand beside the next seated student. If the student who is seated is first to give a correct answer, then he changes places with the standing student and moves to stand beside the next seated student. Another question is asked, and this process continues during the time allotted for the game. If a student can go completely around the room without having to sit down, that student has "gone around the world."

This game is easy to manage, and most students enjoy playing it. However, time-on-task is very low in the game. Only two students are actively involved at any point in the game, and the students who get the most practice in the game are the ones who need it the least. Some passive learning may occur, but research (e.g., Lasley and Walker 1986; Brown and Saks 1986) and common sense both tell us that students learn more when they are actively involved in the learning process rather than just sitting and listening to others give answers.

Fortunately, it is possible to find or design games that are easy to manage, that students enjoy playing, and that provide higher time-on-task. For example, *Bingo* can be used for practicing basic facts and a variety of other mathematical skills. In *Bingo*, every student is engaged in every problem, every student has a chance to win, and time-on-task is high. The following examples of *Bingo* cards and problems show some of the variety of content that can be practiced with this game.

27	30	12	45
36	15	54	8
24	42	18	64
81	14	56	48

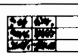
6x8= □ 4x6= □ 2x9= □

FIGURE 1

3 x 8	9 x 8	45 ÷ 9	8 x 4
54 ÷ 9	6 x 8	4 x 9	2 x 4
18 ÷ 3	40 ÷ 5	36 ÷ 4	7 x 7
7 x 2	5 x 5	4 x 6	28 ÷ 4

□ x6=30 5x □ =40 8x3= □

FIGURE 2

	$\frac{1}{6}$	$\frac{2}{3}$	$\frac{4}{12}$
$\frac{6}{24}$	$\frac{12}{15}$	$\frac{5}{6}$	
$\frac{8}{12}$		.75	$\frac{4}{9}$
$\frac{4}{18}$	.5		.80

Find equivalent factions for:

$\frac{3}{4}$ $\frac{4}{5}$ $\frac{10}{12}$

FIGURE 3

Math Lotto is an example of a simple team game that can provide effective practice in computational algorithms and other tasks that require 30 or more seconds to complete. (The game does not work well with basic facts and other instant recall questions.) For a class of 29 or 30 students, the teacher prepares three sets of the numbers 1-15 written on slips of paper. One set is given to the members of each team (in a class of 29, one student receives two numbers), and the third set is put into a small box. The teacher picks a number from the box, but does not immediately announce the number. A problem is given to the class, and the students are allowed time to start working on it. The teacher waits until students have had enough time to get a good start on the problem, then announces the number. The first of the two students with that number to show the correct answer (e.g., by raising his paper) scores a point for his team. The slip of paper is put back into the box.

In *Math Lotto*, each student works on every problem because he knows that he might be called on. Since the slip of paper is put back into the box, even a student who has just been called on might be called on again. One additional procedure can further improve the game. When the teacher hands out the numbers, some of the pairs of students can be matched on ability. (This can be done for four or five pairs of students without having it become obvious to the class.) During the playing of the game, the difficulty level of the problem can then be adjusted to the abilities of the pair of students whose number has been drawn.

At a time when our society is expecting more from our schools, we need to find ways to provide more effective instruction to our students. By more careful selection and management of instructional games, teachers can ensure that all students are actively engaged in learning.

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