

Have You Tried This?

With Repetition, Rhythm, and Rhyme Classroom Drill Becomes Fun-Time

Barbara Elaine Bernstein

Repetition is the mother of learning, goes the adage, and our schools at present use drill work to good advantage. Here are kernel ideas for using repetition to acquire knowledge in a variety of subjects.

I am always pleased to see movies picturing one-room schools where youngsters sing-song the multiplication tables in unison. Today we too readily look askance at this kind of drill. Repetition is not only an effective teaching device, but surprisingly, pupils enjoy it greatly.

I discovered the virtues of this teaching device when I was describing the heart's action to a sixth grade science class. Blood first goes to the right side of the heart and is pumped to the lungs. It then returns to the left side of the heart where it is pumped forcefully to various body parts (head, arms, legs, etc.). This facilitates oxygen exchange. I had the children repeat the sequence to memorize it:

Right—heart lungs, Left—heart body
Right—heart lungs, Left—heart body
Right—heart lungs, Left—heart body

Soon enough the lines became a chant full of evangelical fervor. Those pupils can never forget the sequence of the blood's circulation.

My next experience with sing-song drills was equally unplanned. I was tutoring a fourth grade pupil who had difficulty with multiplication tables. We had discussed the meaning of multiplication in terms of repeated addition. I had many times passed out imaginary candy—two pieces each to two people, then three people, then four people, etc. in order to illustrate the 2's tables. Three pieces of candy were given to each person to illustrate the 3's tables, and so on. Joey did grasp the principles; he just didn't know the facts. So I had him recite some troublesome ones:

Six times seven equals forty-two.
Seven times seven equals forty-nine.
Eight times seven equals fifty-six.
Eight times nine equals seventy-two. . . .

Yet he continued to confuse the answers until, in desperation, I put the facts to the tune of the verse

from "Jingle Bells." By learning the words to this "new verse," he mastered in three days the facts that he understood but that had given him trouble all year.

Mastery of more sophisticated computational rules is aided by verbal repetition in the same way. Practice in adding and multiplying signed numbers is a natural place for such drill. For example, whenever my class multiplies a series of numbers (such as $-2 \cdot -3 \cdot -8$), I reiterate the rule for determining the sign of the answer, letting the class fill in the "punch line."

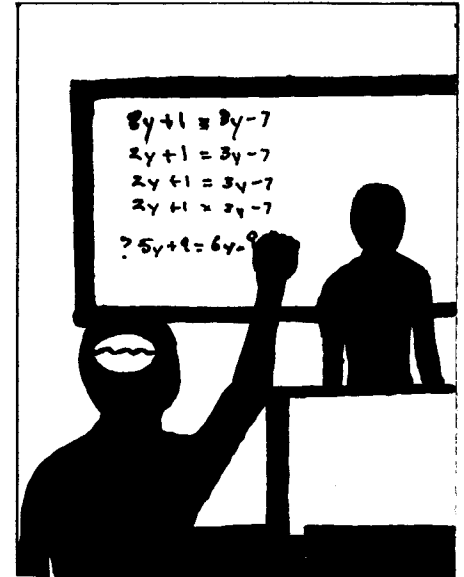
I ask, "How many negative numbers are we multiplying?"
 The class answers in unison, "Three."
 I ask, "Is three an even or an odd number?"
 The class responds, "Odd" on cue.
 I continue, "So the answer is . . ."
 "Negative," the class responds, completing the thought.

Of course, such drill follows careful teaching of the concepts.

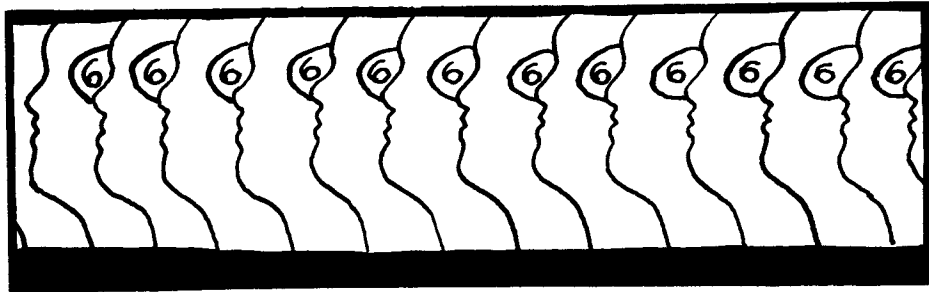
Drills and repetition can also be adapted for use with high school material. For example, my classes follow a systematic pattern to graph the line $f(x) = 2x + 3$.

I begin by prompting the class, "The y-intercept is . . ."
 The class responds "Three," and so at the board I locate that point on a graph.
 Then I continue, "The slope is two, which is the same as two divided by . . ."
 The class answers in unison, "One."
 Next we apply the definition of a slope.
 I start, "Two over one (2/1) equals the change in . . ."
 The class fills in "y over the change in x." Hence the formula for slope:
 $2/1 = \Delta y / \Delta x$.

Finally, I graph a second point by starting at the intercept and moving up two units and forward one unit. These two points determine the line. This systematic procedure also creates a comfortable pattern, making the problems approachable even to slow students. Hence rote procedures have their place even in sophisticated material. They consolidate the gains that have been made by previous teaching. In this way they act as mnemonic devices.



Repetition and drill at this level need not be limited to verbal work. Writing things repeatedly is also excellent practice. It is more "comfortable" to re-write one math problem three times than to think through three different problems. Yet solving $2y + 1 = 3y - 7$ three times can be more educational than solving $2y + 7 = 4y + 1$, and $7y + 6 = 8y - 2$, and $y - 6 = 27 + 5$ one time each. Moreover, a child may feel discouraged if he cannot do a flood of problems; one such



problem is easier to “get a handle” on and will, at the same time, provide an equally valid educational experience.

If a child solves one problem several times (and *thinks* while he does it), he may retain the procedure better because it becomes more deeply ingrained in his memory. Ironically, this repetition enables him more readily to transfer the understanding to similar problems. We try to instill some comprehension of the material; that is our job as teachers. Yet we do not hesitate to test on the sheer facts: dates of key events and the equations of important scientific formulas, etc. As long as we require that these facts be committed to memory, we may as well make learning them as easy and pleasant as possible. Indeed, if students memorize

lines from Shakespeare by drill and repetition, why not memorize in a similar fashion facts of science, history, etc.?

For younger pupils, especially, chant-like drills are fun and musical. As a result they stimulate extraordinary retention. Drills are pleasant for older children, too, and they make difficult work less fearsome. What more could a teaching technique provide?

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PEN SWIPES

● All women should learn how to protect themselves. Most of them will marry someday.—“It Takes All Kinds,” *Quote*, Apr. 6, 1975

● Nothing improves a man’s hearing like a little praise.—“Quotable Quips,” *Quote*, Apr. 6, 1975

● Farming remains a simple occupation requiring only the abilities to plough a straight furrow, milk a cow, and decipher a computer readout.—Burton Hillis

● The fool who’s soon parted from his money is hard to detect among the rest of us having the same problem.—“It Takes All Kinds,” *Quote*, Apr. 13, 1975