Recently a colleague stopped me and asked, "What's going on in Room 6? Bill returned to my room the other day so elated I wondered what was going on. He's in my slow math group and doesn't seem to get anywhere. But he came from your room fairly shouting 'I made it. I made it. Twenty in one.' I've never seen such joy from Bill. What did he mean, 'Twenty in one?'"

All I could think of was that Bill had experienced success in math and was very happy when he left my room. He'd been having difficulties in math in the regular class and had been placed in my room for supplemental help.

"Let me tell you about Bill and some others who've felt the same way after doing what they thought impossible and what I at times thought impossible."

I proceeded to tell my friend about a new concept in teaching which Clay and Ann Starlin had brought from Eugene, Oregon and introduced to special learning difficulties teachers in the Bemidji, Minnesota area.

"Has this kind of teaching got a name?" she asked.

"It's called precision teaching. I'll tell you about it. Math is very difficult for Bill. When he came into my room, he could hardly add 2 and 3."

"I know," my friend agreed.

"I've begun an instructional program for children like Bill who have special learning difficulties. In his case we're working on math. We charted Bill's progress. Would you like to see his chart?" We went to my room to look at Bill's chart. I pointed to a star I'd penciled in on the 20 line.

"Every day we have 30 minutes of instruction in addition combinations and a 1 minute practice sheet. We chart practice sheet scores. For the past few days Bill's been trying to get 20 combinations correct in a 1 minute practice period. Friday, he did; that's why he was so excited. I praised him. He's getting a little more self-confident."

"Look at Bill's chart (Figures 1a and 1b). When we first started to do 1 minute practice sheets, he got only 9 or 10 addition problems a minute. By the following week, he could do 14 to 15 problems per minute. He was so motivated he asked to take practice sheets home to have his mother and sister help him."

"Bill's progress is shown on the chart in the form of dots for the number of problems done correctly and X's for errors. The dots on consecutive days are connected by short lines and show Bill how he's doing from day to day."

"Bill set his own aim to do 20 problems correctly in 1 minute by a given date. We penciled in the star to show his aim. The slope of the straight line drawn through all the dots shows that Bill's performance was increasing. He was excited Friday because he'd hit his aim. Now he'll set a new aim. In time I'll introduce more difficult problems. We've discussed how his chart profile may drop
Figure 1a Bill's Standard Daily Behavior Chart

Figure 1b A simplified version of the Standard Chart

Project began on Nov. 4, 1970

Dot = correct
X = error
Record Floor indicates number of
minutes performance was timed
Zero - charted directly below
Record Floor

STUDENT - BILL
TEACHER - EVELYN JOHNSON
SUPERVISOR - CLAY STARLIN

SUCCESSION CALENDAR DAYS
for a while. But he knows that by using different instructional materials and practice he can learn, improve, and meet his new aim.

My friend was quiet for a moment. "If it helped Bill, it must be good. I'd like to try it to help Sally with her spelling. Can it help with spelling?"

"It helps with anything that's measurable, anything on which you can keep a record of daily performance. You can work on any behavior—in this case, Sally's spelling. She misplaces letters, so you would record the letters she uses correctly and incorrectly and how long you watched her work (in minutes). You compute Sally's frequency of correctly placed letters by dividing these by the number of minutes you watched her work. Do the same to compute her frequency of errors. Then chart both on a Standard Daily Behavior Chart.

"There'll be a desired change to consider. For Sally, you'll want to decrease misplaced letters. If the first thing you try doesn't work, then 'try, try, and try again' until the desired aim is reached. The children learn to chart their own performance and get very excited about seeing their progress. It's amazing how they ask for 1 minute practice sheets each day and are disappointed if for some reason they can't work on them."

"Thanks. Can I have some chart paper for Sally?"

Later, I told my friend about the discipline problems she could work on. In my case, one of my third graders greeted me daily with yawns. For 8 days I counted Bob's yawns. I counted 18 to 24 an hour.

After a conference with Bob's father and mother, they agreed to see that he got to bed earlier and we decided on a plan. If Bob could keep his yawns down to 10 or less an hour, he would be given a colored chip. If at the end of a week he had 5 chips, he would earn a prize. The plan worked. He had 5 chips at the end of the week and was able to choose from a variety of inexpensive items—e.g., pads, pencils, story books, key chains (Figure 2).

The next week I said I would take back a chip if he yawned more than 10 times. Every day we charted his yawns, and they continued to decrease. After 3 weeks, I wanted to see if Bob would keep his yawning down without earning chips, so we simply counted. As you can see from his chart (Figure 2), his yawns increased in the beginning, but by the second week they were decreasing again.

For the next 2 weeks, we agreed that if he yawned less than 10 times an hour, he could read me a story he had written. The frequency of his yawning went down still further.

Although these techniques served to keep his yawning down in my class, a regular class teacher still complained about his yawning a lot in her class. There-
fore, she and I devised a plan for Bob to keep track of his yawns after he left my room. We placed masking tape on his wrist for him to tally his yawns himself in both classes. After a short time Bob was yawning less in both classes.

Charting June’s behavior was another interesting experience. June suffers from epilepsy but with medication is getting along quite well in a regular third grade classroom. June’s first year in school was unsuccessful. Therefore, last year it was thought that she might do better in a special class for educable retarded children. However, this year learning disabled students are being placed in regular classes with supplemental help in my room.

June hadn’t done much work in math last year, and I wondered how I could plan a successful math program for her this year. I decided that June was to begin math the precision teaching way.

I was not aware of June’s capabilities, so I did some inventory screening to see what her math performance was like. I began early in September. I used simple addition combinations. The first day she did only 3 combinations correctly in a 1 minute period and made 1 error (Figure 3). Each day after a 20 minute instructional period, I recorded her performance for a 1 minute period. She responded to the various educational games, techniques, and motivational devices used.
Charting also acted as a motivator, and as she progressed and increased her performance she gained more self-confidence. By the end of 4 weeks, June was doing 15 to 18 combinations correctly in 1 minute and was making 1 or no errors.

The beginning of the fifth week, I introduced more difficult problems. As her chart shows (Figure 3), her frequency of correct problems went down and her frequency of errors increased. After 3 weeks we went back to the simpler problems. Her performance went up again, and she surpassed her aim of 20 correct per minute. Three weeks later, we went back to adding + 3's, and she hit the aim she had set for herself. The chart helped me plan appropriately for June and showed her that she was learning.

By keeping accurate records of performance, the chart shows when a child is learning. If the chart shows that the student is not improving, instructional changes are made until learning does take place.

Several children in my room are benefiting from precision teaching. It provides the continuous records which make it possible to individualize instruction, to motivate students, and to help teachers evaluate their own teaching efforts. If a child is not responding, ways and means are sought to help him improve.

Precision teaching means preciseness about the learning-teaching situation. It is a way to show students, parents, and administrators that with the proper effort, learning can take place. And isn’t that the principal aim of education?

Figure 3 June’s progress in simple addition problems.