Making Outcome-Based Education Work

Joan D. Abrams

Six years after implementing an instructional delivery system based on grade-level objectives and the use of formative and summative tests, basic skills scores in Red Bank, New Jersey, have risen to substantially above national norms.

Six years ago I convinced the Red Bank Board of Education and the community to use Outcome-Based Education as our instructional delivery system. The need was clear:

- I had been hired as superintendent with a specific mandate to improve pupil achievement as measured by higher standardized test scores.
- Many youngsters graduating from 8th grade were two or three years below grade level on standardized tests and in their ability to function in the classroom (see Figure 1).
- For the three years I had been in Red Bank, I had worked with teachers to introduce other programs designed to improve pupil literacy and numeracy, but which had widened the gulf between middle-class and minority youngsters.
- Teacher expectation was low for our minority population—over 60 percent of the students.

Figure 1. Metropolitan Achievement Test Scores of 8th Graders in Red Bank, New Jersey

National Norm = 8.8

Area	Average 1979 Score	Average 1984 Score
Math	8.0	12.2
Language	7.6	11.0
Reading	7.3	10.3
Science	7.6	10.0
Social Studies	7.3	9.9

Two editions of the Metropolitan Achievement Test were used; 1970 edition in 1979 and 1980 edition in 1984.

- Per-pupil costs were in the 93rd percentile statewide, but Red Bank's achievement was among the lowest.

Today we have a school system in which basic skills scores are substantially above national norms (see Figure 1). Although the strategies described here reflect our efforts to improve basic skills, they were equally powerful in other curriculum areas.

Implementing Outcome-Based Education

In 1979 Benjamin Bloom suggested that we use a teach-test-reteach-retest instructional cycle. He assured me that if teachers would continue to instruct youngsters in the usual way, but then, after formative testing, recycle instruction for those who needed it, achievement would rise significantly. Statistics tend to bear him out; improvement by as much as one-sigma is not unusual. However, in order to have as few children as possible in the "corrective" group, we decided to modify our instructional delivery system. Our model is reminiscent of Madeline Hunter's work but designed for an entire unit; it could take from three days to two weeks rather than the single lesson for which her materials are targeted (see Figure 2).

We determined that all children would be instructed using grade-level objectives, regardless of where they had been placed before. For example, 7th graders who were working in 4th grade readers were given 7th grade reading objectives. We knew that once a child fell behind, it was almost im-

Figure 2. Unit Plan

1. Mental set
2. Objective
3. Rationale
4. Input
5. Model
6. Guided practice
7. Independent practice
8. Evaluation
   - Formative Testing
   - Mastery Testing

possible for that youngster to catch up to grade level. We decided to hold teachers accountable for teaching grade-level materials in the belief that when they saw that children were achieving on a higher level than they had anticipated, their expectations for pupil achievement would change considerably.

Identifying the Objectives

We developed a series of objectives for communications and computation that reflected exactly what we believed the children should learn. We drew our objectives from:

- Skill specifications of state-mandated tests.
- Skill specifications of the nationally normed test used annually in Red Bank.
- Instructional objectives endorsed by the community.
- Curriculum areas that teachers felt children should know.

Our aim was to identify about 20 grade-level objectives for each curriculum area; there was insufficient time to develop more objectives. Occasionally, we had to make hard decisions about what to keep and what to eliminate from the program. We were guided by the philosophy that whatever we taught had to be important enough for us to require that all children learn it as evidenced by their passing mastery tests.

Objectives were matrixed from grade to grade to maintain continuity in building skills and prevent overlap or duplication. The process of curriculum alignment—teaching what was to be tested and testing what we taught—proved to be a significant factor in improving instruction.

Because no single textbook or series of basal texts could satisfy our requirments, we had to develop our own supplementary materials. For each objective we did a task analysis, identifying the prerequisite skills needed to master the objective and the component skills that would be taught as part of the objective. Plans to help children acquire prerequisite skills were incorporated into the instructional units, which addressed component skills.

A Description of Outcome-Based Education

Once we identified the objectives, teachers received inservice instruction in using the system. Briefly, we defined Outcome-Based Education as:

- Establishing instructional objectives.
- Developing a plan for teaching to those objectives.
- Using whole-class instruction.
- Administering formative tests to determine which students need additional instruction. Formative tests are not used as part of the children's grades.
- Using formative test results to separate children into two groups: those who have mastered the objective and those who have not.
- Providing additional instruction ("correctives") to those who have not shown mastery.
- Providing those who have mastered the objective with enrichment activities ("extensions").
- Using summative or mastery tests to establish pupil grades.

Organizing for Implementation

We organized classes heterogeneously in an effort to break the cycle of low teacher expectations for minority children. We reasoned that if all students were expected to master the same objectives, then teachers could hardly differentiate their expectations from one group to another. Parenthetically, we hypothesized that the concept of individual readiness had been abused; all too often, readiness appeared to be an excuse for slowing pupil progress. All teachers on a grade level were to use the same objectives, unit materials, and formative and mastery tests. The teachers identified objectives and developed the units. I believe our results could not have been so positive if this had not been the case.

Remedial Basic Skills Program

Next we revised our Remedial Basic Skills program to integrate it more closely with our developmental program. Today, teachers of Remedial Basic Skills emphasize the same objectives that are taught in the classroom. Remedial Basic Skills teachers and regular classroom teachers make every effort to ensure that all youngsters have the skills prerequisite for achieving mastery. After several years of implementation, most pupils have mastered the objectives of the preceding grades. When children exit from the 4th grade of our elementary division and from the 8th grade of our intermediate division, we know they are ready to advance.

In addition to the regular developmental program, our curriculum is enriched by special pull-out programs for the talented and gifted. Projects are limited only by the teachers' imagination and skill. Because extensions are used in every class, we believe that each regular class also provides for the talented and gifted.

Our efforts provide a solution to the two-sigma challenge—that is, the problem of achieving for large numbers of public school students the kind of academic growth accomplished previously only by one-to-one tutoring (Bloom, 1984; Spady and Jones, 1984). We consider the difference between a one-sigma and two-sigma improvement to be the result of:

- Curriculum alignment—we teach what we test and test what we teach.
- Task analysis—we ensure that prerequisite skills are in the child's repertory and that component skills are taught in a specific fashion as part of each instructional unit.
- The use of formative tests to provide early feedback and early opportunities for correction.
- Grade-level objectives that ensure high standards for all students.
- A strong, continuing inservice program.□

References

Bloom, Benjamin S. "The Search for Methods of Group Instruction as Effective as One-to-One Tutoring." *Educational Leadership* 41 (May 1984): 4–17.

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