

Using the R&D Approach in Improving Urban Education

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In Dallas, Texas, educators use context evaluation—an R&D concept—to help direct changes in instructional systems, materials, and methodology.

What can research and development (R&D) do for urban education or, for that matter, education in any setting? Simply put, it can provide foresight based on hindsight plus best estimates of what the future will hold. In other words, it provides foresight by blending hindsight with vision.

Without R&D and its systematic approach, a school district is left at the mercy of making decisions on a "flying blind" basis. In contrast, R&D uses an ordered series of steps to identify and solve problems and verify solutions. Basically, the following six things are done:

1. Needs are assessed;
2. Priorities are set;
3. Goals are charted;
4. Programs are planned;
5. Programs are evaluated;
6. Based on results, programs are eliminated, improved, or expanded.

Context Evaluation

Of course, a prerequisite to improvement must be a thorough knowledge of existing performance levels. Therefore, the backbone of any renewal system must be a comprehensive context evaluation program. D. L. Stufflebeam, who with his associates developed what is probably the most comprehensive evaluation model, defines context evaluation as:

... the provision of baseline information that delineates the environment of interest, describes de-

sired and actual conditions pertaining to the environment, identifies unmet needs and unused opportunities, and diagnoses the problems that prevent needs from being met and opportunities from being used.¹

Basically, context evaluation tells you how close you are to meeting your goals.

In order to provide this information to decision makers—board of education members and administrators—several investigations are conducted in the Dallas Independent School District on an annual basis. These include:

- *Measurement Profiles*: A summary of the results of the district's systemwide, norm-referenced testing program in addition to community socioeconomic data and a profile of the district's teaching staff.
- *Criterion-Referenced Testing Profiles*: A summary of the results of the district's criterion-referenced testing program.
- *Graduate Follow-Up Studies*: A series of studies of graduates of the district's schools, including their employment, education, attitudes, and life-status.
- *Dropout Studies*: A series of studies designed to provide descriptive data about dropouts, information about variables associated with dropouts, the interactions among such variables, and trends in the dropout phenomenon.
- *Input Variable Studies*: A continuous

¹ D. L. Stufflebeam et al. *Educational Evaluation and Decision Making*. Itasca, Illinois: F. E. Peacock Publishers, Inc., 1971. p. 218.

monitoring of input that provides cost data and data on schooling environment.

- *Measurement Studies:* A series of studies on the reliability, validity, and comparability of various tests used with district students.

- *Longitudinal Trend Studies:* A series of studies investigating achievement, enrollment, and community trends over a period of time for accountability purposes.

- *Teacher and School Effectiveness Indices:* A system that identifies teachers and schools that are doing better than expected as well as teachers and schools that are doing worse than expected, thus flagging those specific situations for additional study.

These studies are particularly effective in short-range planning of one year or less. Other studies, listed below, are of significant assistance with long-range plans.

- *Student Demographic and Enrollment Study:* A study designed to project and locate population and provide forecasts of future school enrollments within specified regions for the purpose of providing long-range planning information needed to determine trends, and expected demands on educational facilities, staff, and programs.

- *Faculty Flow Study:* A study to project the number and characteristics of teachers who will terminate, remain, or need to be hired.

- *Facilities Study:* A study designed to project the amount, type, and cost of required space areas to be used in construction and school-attendance zoning decisions.

- *Financial Study:* A study designed to obtain a projection of district financial needs; state-aid funding; debt-service analyses; and new bond requirements, revenue, and expenditure analyses and tax-rate-demand analyses.

In order to be effective, the research unit must operate independently of program managers. In essence, it must become a third party, auditing and reporting information realistically and without bias.

Based on the yearly context evaluation, the need for a particular program is ascertained. Preliminary program planning is done on the basis of previous product evaluation, basic research information on what has been done in

other school districts, applied research information, and any other additional information. If resources are available, the program then proceeds to operational program planning; if not, it is recycled to the enlightened persistence stage. In other words, "We know the need exists, but we don't have the money right now. Maybe next year."

Once a program is implemented, it is scrutinized through product evaluation and applied research. This information along with any additional feedback then determines the fate of the program. Of course, the decision may be to continue or to discontinue the program. A third option is to provide additional context evaluation that may call for revision or expansion.

Through this development process, changes in instructional systems, materials, and methodology are made. Let's look at an example.

Dunbar Community Learning Center

Context evaluation revealed that youngsters in low socioeconomic areas consistently scored well below children from middle-income families. During the 1969-70 school year, the Paul L. Dunbar Community Learning Center, located in Dallas' inner city, was charged with the responsibility of developing programs to turn the tide for boys and girls from low-income families. Efforts began with the critiquing of programs and materials developed elsewhere and the subsequent selection of several programs that appeared well adapted to the identified needs of Dallas children. Following is an outline of the way the center basically operates.

1. A curriculum development component is housed at the school and works directly with classroom teachers at the school.

2. The development staff is trained through participation in analysis of needs and the several steps in program design and development.

3. Curriculum development specialists write lessons that are tested by the classroom teacher with students. The classroom teacher then makes recommendations for improvements to the curriculum development specialist. After improvements are made, the lessons are once more tried with students.

4. Once a package has been tested and has



A student in the Arts Magnet High School (Dallas, Texas) prepares for a dance class.

proven successful, the program is then made available to other schools.

5. Staff development procedures are also packaged for widespread dissemination.

6. Evaluation is directed at determining the cost-effectiveness per unit of achievement gained, and the budget is designed to separate development from operating costs.

Dunbar has curriculum development centers in science, art, early childhood education, mathematics, social studies, communication skills, physical education, and music. The school principal also serves as director of the development programs and coordinator of staff development. Working closely with the principal are the coordinators of curriculum design, staff development, parent involvement, research and evaluation, and pupil personnel.

One of the identified needs at Dunbar was to involve low-income parents in a significant

way with their child's learning. Several programs have been developed that successfully accomplish this goal. A good example is the Success Through Strings Program in which students and at least one of their parents take violin lessons together. The purpose is not to make a violinist out of the parent, but rather to involve the parent with the child's learning. Evaluation of the program has shown exciting results. Parents, as a rule, not only become interested in the development of their child's musical ability, but also in all phases of his or her learning.

A variety of other programs are also offered to involve parents with the school program. Special classes, such as sewing, typing, income tax preparation, and drug abuse, are offered for adults. Input from parents is also important in the design and monitoring of school programs. A parent advisory committee plays a key role in planning the educational and community programs.

Special programs are available to children as young as three years old to provide early enrichment experiences designed to stimulate learning readiness.

A home-and-family-life education course is taught through the use of work units, home visitations, and conferences. The aim of this program is to aid people in coping with the daily problems of living. The Dunbar Center has employed sociologists, from the inception of the program, to make social surveys, accumulate demographic data, and serve as consultants to the staff regarding sociological implications of particular events and situations.

Each of the Dunbar² programs is carefully evaluated each year. Refinements and improvements are continuously being made.

Skyline Career Development Center

Another major development project is the Skyline Career Development Center. Students from all over the school district may apply to study at the school, which provides a regular academic program, plus three hours of study each day in one of 24 different career clusters or fields. Students are selected on the basis of motivation,

² A similar approach has been taken in developing bilingual education programs at the William B. Travis School.

past achievement, emotional maturity, self-discipline, and intellectual potential. Eleven of the clusters were developed through a performance contract with RCA and the remainder by the staff of the Dallas schools.

Each cluster has an advisory board of professionals in the field who assist in keeping materials, equipment, and approaches current with actual practice. They also serve as resource persons in the classroom and provide, in many cases, real work experiences for students.

The goal is to provide every graduating senior with a marketable skill, as well as a diploma. Numerous students have gone into well-paying jobs immediately upon graduation, while others use their acquired skills in furthering their education.

Clusters are developed, tested, and refined and are then spun off to other Dallas high schools.

Four clusters were pulled out of Skyline at the beginning of the 1976-77 school year to form the basis for four centrally located "magnet" high schools required by a desegregation order. Magnets for the arts, health professions, business and management, and transportation are off to an excellent start—thanks to the painstaking research and development effort in these fields in the past few years. Otherwise, it would have been impossible to have developed quality programs in the four-month period between the court order and the beginning of school.

Long-Range Goals

The long-range goals of research and development in the Dallas Independent School District are to:

1. Stimulate the development and implementation of strategies and plans to facilitate desirable changes within the institution and among selected cooperating institutions;
2. Stimulate the systematic evaluation and the continuous assessment of the school district's programs and services;
3. Develop internal capability to utilize information from basic and applied research in the solution of priority educational problems;
4. Provide usable information along with alternatives and criteria for informing policy and management decisions concerning long- and short-



Father and four-year-old son learn to play the violin together in the Success Through Strings Program.

range planning of programs and services of the school district;

5. Stimulate the development of innovative programs and services, which are in response to the priority needs of the school district;
6. Provide technical assistance and service to operation departments.

Thus, R&D assists the Dallas Independent School District in setting goals and in systematically addressing how they are being attained. In other words, it tells us where we've been, how we're doing, and where we're going. *EL*



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