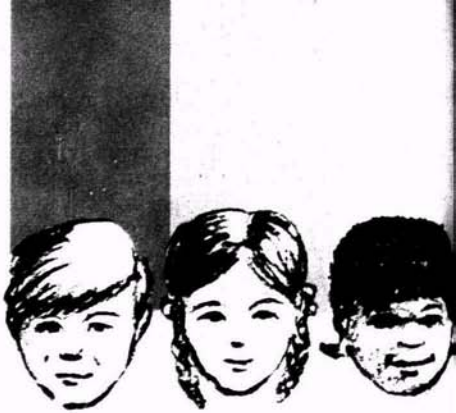
A Look at IPI



"TAKE the child where he is!"
"Provide for individual differences!"
"Teach the individual!"
"No two children are alike!"

Familiar phrases? Yes, to all teachers. For years educators have been advocating individualized instruction. Most teachers and administrators have found this easier to state than to carry out. Several attempts have emerged in the form of nongraded classrooms, multigraded classrooms, progression by levels rather than grades, team teaching, to mention a few of the recent efforts. Too often these have evolved into traditional procedures simply bearing a new name.

Development of IPI

An imaginative group of educators at the University of Pittsburgh and at the regional educational laboratory for Research for Better Schools, Inc. (RBS), at Philadelphia, Pennsylvania, has taken steps to put into reality the dream to which educators have been giving lip service for years. At Oakleaf Elementary School in Baldwin-Whitehall Township near Pittsburgh, Pennsylvania, a program of individualized instruction was initiated in the 1963-64 school year. This program appears to be manageable, effective, and practical, and hopefully it will eventually be economically feasible. This program, known as Individually Prescribed Instruction (IPI), is truly a "child centered" innovation in education.

Robert G. Scanlon, director of IPI at RBS, Inc., describes IPI as a program . . .

> . . . based on a carefully sequenced and detailed listing of behaviorally stated instructional objectives. Such listings are used in planning most aspects of the program. Each objective tells exactly what a pupil should be able to do to exhibit his mastery of a given content and skill—something that the average student can master in such a relatively short time as one class period. Objectives involve such action verbs as solve, state, explain, list, describe, etc., rather than general terms such as understand, appreciate, know, and comprehend.[1]

Continuing, Scanlon states,

> Within each area the objectives are, as much as possible, sequenced so that each one will build on those that precede it and, in turn, be a prerequisite to those that follow. The goal is to let the objectives constitute a "scale" of abilities.[2]

Six schools in the states of Pennsylvania, New Jersey, and Delaware have been serving as demonstration schools. These schools are open to visitation and are located at McAnnulty Elementary School, Pittsburgh, Pennsylvania; Downey Elementary School, Harrisburg, Pennsylvania; Richland Elementary School, Quakertown, Pennsylvania; West Elementary School, Dover, Delaware; Washington Elementary School, Trenton, New

[1] Robert G. Scanlon. "Innovation Dissemination." *Pennsylvania School Journal* 30: 375; March 1968.

[2] *Ibid.*

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Jersey; and Daniel Flood Elementary School, Wilkes-Barre, Pennsylvania.

In its beginning IPI was developed in the areas of mathematics, science, and reading. Handwriting and spelling have been added.

The enthusiasm with which IPI has been received throughout the nation is evidenced by the fact that, though it began as an experimental program at Oakleaf School in 1963-64, 290 schools representing 40 states are now participating in the field testing of the mathematics program. This year reading is being field tested in 40 schools, and RBS expects to add spelling to the list of academic subjects being field tested next year.

IPI is an instructional program which truly enables each child to progress at his own pace. Initially, a placement test is administered to determine "where he is" and place him in a general grouping. Thus, having determined the approximate level of the child's achievement, pretests are administered to determine specific skills on which further development is needed. From these the teacher is able to "prescribe" suitable assignments to strengthen the weak skills and move the child onward.

This prescription may assign the child to an individual project; he may work with another child or two; or he may become a member of a group temporarily exploring a common area. A variety of educational media is available to the child in the process of fulfilling his prescription. This consists of tapes, discs, records, movies, filmstrips, supplementary reading and research materials, worksheets constructed and assigned to cover specific skills, projects or experiments to be developed. Frequent curriculum-embedded tests tell the child and the teacher how he is progressing.

Close records are made of the individual's progress. As tests and exercises reflect the child's specific weaknesses, the teacher is able to diagnose trouble areas and prescribe additional appropriate assignments. His failure to score 85 percent or better on his post-tests indicates a child's need for additional work in specific skills. As post-tests indicate skills are mastered, a new advanced prescription is written.

Merits of IPI

The merits of any instructional plan are judged by its benefits to the child. The results of the placement tests, which are given at the beginning of each year, make it possible to know exactly the levels of development the individual has achieved in every area of mathematics. For example, an eight-year-old child who exhibits mastery of E level in the area of numeration in mathematics, but whose achievement in the area of frac-

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Photo courtesy of the author

Sponge blocks aid in solving mathematical problems.

tions places him on a B level, can be assigned an appropriate prescription immediately to continue his growth on these respective levels. No longer need he mark time while classmates acquire skills which he already uses proficiently; no longer need he struggle to "keep up" with classmates in areas in which he is not yet competent. IPI is designed to provide effectively for any child on any level and from any socioeconomic background.

Since it is unlikely that any two children are on identical prescriptions, the individual competes only with himself. Not only does this eliminate the frustration of competing with a more able student, it removes the frustration of "catching up" on make-up assignments in case of extended absence. If a child's school attendance is interrupted by illness or the family vacation, he merely proceeds with his prescription when he returns.

Remedial classes should be nonexistent in an IPI program. Problems we associate with remedial teaching are attacked and mastered before the child moves on. Advocates anticipate discipline and dropout problems to be cut to a minimum, as students no longer face the disheartening effects of constant failure. The many varied materials and learning techniques available in addition to the wide range of interests on various levels remove the drudgery of learning often present in traditional programs. Teachers find themselves free to cross grade lines in their selection of materials without usurping the resources of their upper level colleagues.

Children are actively engaged in learning. The passive acquisition of knowledge presented by the lecture method is outmoded. In addition to acquiring academic knowledge, the children have opportunities for the development of desirable character traits. Active learning requires that the individual assume the main responsibility for his own learning. He is learning to do by doing. Improved study habits, greater independence, more self-confidence, more critical self-evaluation, greater initiative, increased acceptance of responsibility are outcomes to be expected.

Though there is no room in an IPI program for mass education, occasions arise when group instruction is advisable. Thus, not only does the child operate as an individual, but he also experiences the interaction of working with other people. As each masters his prescription, he meets with success, and though it may be a trite adage, the fact remains that in human behavior nothing succeeds like success.

Needs of IPI

The designers of IPI would be among the first to admit the existence of shortcomings in the program. Like any new invention, IPI must withstand the test of time and the pains of experimentation. Only through trial and error and practical use under the critical eye of astute educators can the imperfections be eradicated.

At its inception, the financial burden of IPI would have been a deterring factor to ready acceptance of the program. In 1968 the cost of the mathematics materials was $12 per pupil. This current year the cost per pupil has been reduced to $9 and next year it will likely be $6. As the cost of these materials approaches a more reasonable figure, it will be more compatible with the budgets

within which most school districts are forced to operate today.

Observations suggest there is a need to design ways of increasing student interaction. Though occasionally, as the need arises, children are called together to participate in group instruction and activities, there is a tendency for a student who is highly successful to be inclined to move rapidly and to resist being encumbered by association with other students. If this method is allowed to dominate the child's education, the only reward the child receives for achievement is another test or worksheet. He loses the benefits gained from personal contact, dialogue with other students, and the experience of debating the challenging statements of others which enhance one's education.

Early materials appeared lacking in color, variety, and depth, and also in open-ended thinking situations. It is plausible to assume that time and experimentation will overcome these deficiencies. Thought must also be given to the fact that IPI is a program heavily dependent upon tests for its operation. Careful attention must be given to the construction of these tests and to ensure that they are so structured as to be learning devices as well as evaluative tools.

To augment the basic materials of IPI, the establishment of a Learning Resource Center is essential. McMorrow Elementary School at Clayton, Missouri, presents an example of an efficiently operating Learning Resource Center. (A monograph outlining the development of Clayton's LRC has been issued by the University of Missouri-Columbia, Continuing Professional Education.)

Perhaps one of the more difficult adjustments to be made in incorporating IPI into an existing organizational plan is that of training or retraining teachers. A participating teacher must be "sold" on the product. He must be willing to accept a secondary role in a "child centered" program. No longer is the teacher a principal figure dispensing information; he must become a diagnostician, actively engaged in the learning process on a one-to-one basis with each child in his room. Effort must be made to devise means of allowing the teacher the freedom to become actively involved—and not reduce him to the role of a mere checker and writer of prescriptions. It is in this area that aides and resource personnel are most effective.

It is my opinion that teachers must remind themselves constantly that students do have varying abilities and will produce accordingly. As in all programs, the tendency to expect children to produce on grade level is sometimes present even though the program is specifically designed to eliminate this. For example, it would be disillusioning to hear any grade teacher in the IPI program say to a student who is having trouble mastering work at his level, "After all, you should know it, you are in this grade, aren't you?"

Open-minded, dedicated teachers are a must for, as in any educational plan, the program is only as good as the teacher. Herein lies the key to the final success of any instructional design.

As I have watched IPI unfold I firmly believe, as stated in my first critique of the program, that the idea is sound, but success depends greatly on the money available, and on the teachers' acceptance.[3]

Furthermore, I sincerely believe

> IPI is an organizational program which all modern educators can well afford to watch with an open mind and critical eye. Though it is in the early experimental stages, the idea appears sound and the results rewarding. Students are at last engaged in work they can do and have not done before. IPI does more than give lip service to the directive of "accept the child where he is and take him as far as he can go."[4] □

[3] Carl C. Fehrle. "Education Monograph, Individually Prescribed Instruction—A Critique." Columbia, Missouri: Continuing Professional Education, University of Missouri. p. 11.

[4] *Ibid.*, p. 15.