

# *Individualizing Instruction Through IPI*

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"THIS is exactly what I have been looking for to help me individualize my math class." The teacher who made this statement and many other educators are continually searching for ways to implement more fully their deep-felt beliefs about the educational process.

To bring stated and operationalized educational objectives closer together, the Daniel Boone Elementary School staff members unanimously agreed to introduce the Individually Prescribed Instruction (IPI) math program in the fall of the 1969-70 school year. This agreement was reached with varying degrees of enthusiasm as shown in the contrast between the introductory statement and the following comment: "I will give the program my complete support for this one trial year, but I have serious doubts about its success."

In the fall of 1968, the staff began to study the IPI educational and promotional materials which were being developed by the Learning Research and Development Center, University of Pittsburgh, and by Research for Better Schools, Inc., Philadelphia. From these materials it was obvious that IPI was an instructional system which was based on a set of behavioral objectives that were correlated with diagnostic instruments and curriculum materials and teaching techniques. Were the objectives of the IPI program congruent with the school district's philosophical frame of reference?

The philosophy of the University City Public Schools is expressed in a Statement of Beliefs which was refined and restated by the teaching profession during 1967-68. This statement provides the general objectives and evaluative criteria for planning the curriculum of the district. Its opening lines contain this rationale:

The schools of University City exist to serve the youth of this community and the society in which they live by aiding them to become responsible, perceiving, self-directing, self-educated individuals who are capable of making decisions and value judgments. School programs and teaching methods must be organized to allow for different developmental patterns.<sup>1</sup>

The stated objectives of the IPI math program seemed consistent with the more global objectives of the district and appeared to be more readily operationalized. They included the following objectives:

1. To enable each pupil to work at his own rate through units of study in a learning sequence
2. To develop in each pupil a demonstrable degree of mastery
3. To develop self-initiation and self-direction of learning

<sup>1</sup> *Planning the Curriculum*. School District of University City, Missouri, 1968. p. 1.

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4. To foster the development of problem solving through processes
5. To encourage self-evaluation and motivation for learning.<sup>2</sup>

The material further claimed that the following six elements distinguished IPI from conventional elementary school procedures:

1. Detailed specifications of educational objectives
2. Organization of methods and materials to attain these objectives
3. Careful determination of each pupil's present competence in a given subject
4. Individual daily evaluation and guidance of each pupil
5. Provision for frequent monitoring of student performance, in order to inform both the pupil and the teacher of progress toward an objective
6. Continual evaluation and strengthening of the curriculum and instructional procedures.<sup>3</sup>

As a result of these promotional claims, several faculty members visited an IPI school in Clayton, Missouri, to observe the program in action and to visit with the teachers concerning their intuitive evaluations. These visits and the resultant discussions within our faculty meetings were responsible for the aforementioned agreement.

An evaluation of the IPI math program, by the nature of our established objectives, was dependent upon the effect this program has had upon our ability to meet our educational objectives for each child. In order to evaluate these more subjective criteria, it was necessary to examine the educational process of a child within the IPI program to determine whether the four major components of our philosophy were being achieved.

**RESPONSIBLE:** Does the IPI program contribute to the objective that:

Youths need to develop an attitude of re-

<sup>2</sup> *Individually Prescribed Instruction*. Philadelphia, Pennsylvania: Research for Better Schools, Inc., n.d. p. 5.

<sup>3</sup> *Ibid.*

spect for others and accept the responsibility involved in freedom.<sup>4</sup>

Greater freedom and responsibility was a natural consequence of the program. For example, during an IPI period, a student's prescription may have required that he should do one or a combination of the following: obtain materials from the IPI materials center, perform an activity using manipulative materials within the room or the math-science laboratory, view an appropriate filmstrip in the library, listen to a tape recording which is correlated with his particular learning objective, report to the clerk who will score the skill tests, or engage in a peer-tutor relationship. This freedom gave a student greater responsibility for determining the pace and parameters of his learning environment.

**PERCEIVING:** Does the IPI program contribute to the objective that:

Each youth has capacities for learning which are not fixed; these capacities vary from individual to individual; thus, the inner nature of each student has some characteristics in common with others and some which are unique. School programs and teaching methods must be organized to allow for different developmental patterns.<sup>5</sup>

During the first days of school, whether it was in September for those within our school or any date when a new student entered our school, a placement test was administered to each student. The results of the placement test allowed us to place each child on the learning continuum which was consistent with his previous knowledge. The threat of failure, for the less adept student, was greatly reduced, since he was competing with himself rather than the sometimes unrealistic and damaging competition of the most advanced class member.

At the other end of the spectrum, each student who had previously mastered the material for his "traditional grade level" was placed on the learning continuum at a level which was challenging to him. The placement test provided us an opportunity to plan

<sup>4</sup> *Planning the Curriculum*, op. cit., p. 1.

<sup>5</sup> *Ibid.*



Photo courtesy of the author

#### Special devices foster development of problem solving.

a program for each child which contributed to the development of his positive self-image, a necessary condition for learning.<sup>6</sup>

After a profile was developed for a child, the teacher prescribed a pretest for the lowest level unit which was not mastered. The student took the test, the clerk scored and recorded the results, and the teacher analyzed the results. From this diagnosis and all of the previous data the teacher had concerning the student's uniqueness as an individual learner, the teacher prescribed the appropriate learning experiences. The student may have accomplished, with appropriate monitoring and tutoring from the teacher, the objectives by just using the Standard Teaching Sequence (STS) booklet. However, this booklet may have been replaced or augmented by a variety of other activities such

as working with manipulative devices, tapes, filmstrips, games, small group instruction, or tutors.

The program was consistent with our knowledge of the importance of immediate reinforcement. It was not uncommon to have a student respond to a pretest, have it scored and recorded by a clerk, and have a diagnosis and prescription made by a teacher during the same class period. After a prescription was given for a certain page or pages within the STS booklet, the more self-directed student was immediately responsible for monitoring his own work by scoring and recording his responses.

Within each STS booklet, a Curriculum Embedded Test (CET), a diagnostic and monitoring test, was given. This tested in depth a specific skill within the unit and was scored and recorded by the clerk. The post-

<sup>6</sup> *Ibid.*, p. 2.

test was prescribed to verify the teacher's diagnosis that the student had mastered the unit. The unit was designed so that any student qualifying for the unit would be capable of mastering it in a relatively short time period, thus enhancing his self-concept. As one teacher so aptly wrote: "The light in their eyes and the smiles on their faces when a unit is conquered quickly are a joy to behold."

**SELF-DIRECTING AND SELF-EDUCATING:**  
Does IPI contribute to the objectives that:

Youths need increasing opportunities to become self-directing and self-educating. Pupils advance in this direction at varying rates. Appropriate environmental situations must be provided to allow for the emergence and nurture of self-directing traits.<sup>7</sup>

The opportunities for a student to have self-directed activities ranged from limited and tightly structured freedom to the freedom to diagnose and prescribe his own program. An observable outcome related to the teacher's diagnostic and prescriptive approach to teaching was that the student also became prescriptive and diagnostically oriented; thus, the student developed tools which were and will continue to be useful for his independent learning.

Since the IPI math program was evaluated with reference to its contribution to our general philosophy, brief attention will be devoted to the following question:

Did and will the IPI math program possibly have broader implications by contributing to a greater congruency within our total programs and philosophy?

The concept of individual differences in

<sup>7</sup> *Ibid.*, p. 1.

mathematics with the resultant differences in the diagnosis and prescription was helpful as we evaluated our philosophy and methods of discipline, and also as we demonstrated and related these factors to our students and parents. Thus, discipline became viewed more as an individual learning experience and less as an imposed control system.

The concept of individually prescribed instruction certainly will be evident in the Daniel Boone Elementary School for the 1970-71 school year. The staff unanimously voted to continue the IPI math program, and has plans to implement the concept in other curriculum areas. (Money was not available to buy additional IPI programs.) All teachers from primary two through grade six will be using an individualized spelling program, as contrasted with only three teachers during the 1969-70 school year. Also, greater attempts will be made to individualize our reading program.

Programmed materials, to many, have carried the connotation of being a cold and dehumanized approach to education; however, I am firmly convinced that, through the utilization of a variety of individualized learning materials, through the use of a multi-media approach, and through a greater utilization of paraprofessional or volunteer personnel, the teacher will become more personally involved with the learning of each child.

Through this personalized learning approach, I believe that the teacher will more effectively help each student learn to become more responsible, perceiving, self-directing, and self-educating, thus enhancing his success with both his present and future learning. □

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