



# Delta-k

Volume XVI, Number 3, February 1977

## The Theology of Individualization

*George B. Shirk*  
The University of Toledo

The teacher seeking individualization is not unlike the Christian seeking Salvation. The Believer is buffeted on all sides by the pre-scribers who preach of the True Path which must be followed to Everlasting Glory.

Thus, the teacher, whose every step is fraught with the dangers of temptation, contemplates the various efforts to reform the educational process. The Promised Land is described in glowing terms, where the perdition of unrealized Salvation will come to those who persist in maintaining within their repertoire of educational techniques such superannuated procedures as Large-Group Instruction-Ability Grouping-Tracking-Lectures....

Instead, the teacher is exhorted to Reform her efforts, to Individualize ... to Task Group ... to ....

From Penn.C.T.M. Newsletter, Nov/'76:

### **ELECTRONIC THEORY WITH HAND CALCULATORS**

The July, 1976 issue of "Popular Electronics" begins a three-part series by Edward M. Noll, titled "Learning Electronic Theory with Hand Calculators." This course requires a great deal of computational work and frequently proves boring or even repellent to many students because of this. Powers and roots are encountered, angles and vectors are used, and both very large and very small numbers are a part of it all. The hand calculator offers a quick and easy approach to avoid the drudgery of long, laborious calculations.

This first lesson discusses series and parallel resistances, Ohm's Law, and formulas for resonance and power and voltage gain. The next installment will discuss impedance and ac formulas.

Certainly this series of lessons offers an excellent opportunity to see interrelationships between science and mathematics. Also, although some of it is quite elementary mathematics and science, opportunities will be afforded for some extremely advanced work in both areas.

See editor's report on  
calculator questionnaire, p.24.

### **IN THIS ISSUE**

- 1 THEOLOGY OF INDIVIDUALIZATION
- 4 COMPUTER - A FACILITATOR OF LEARNING
- 8 EVALUATION OF MANITOBA SCHOOLS COMPUTER NETWORK
- 15 NCTM ADOPTS POSITION STATEMENTS
- 16 SUMMARY OF NCSM POSITION PAPER ON BASIC MATHEMATICAL SKILLS
- 17 OUTDOOR MATH ACTIVITIES
- 19 METRE MATTER - MEASUREMENT
- 22 TRAVEL METRE
- 22 STETTLER MINI-CONFERENCE
- 23 TAKE NOTE ...
- 24 EDITOR'S REPORT ON CALCULATOR QUESTIONNAIRE
- 26 "METRICATE!" SONG
- 27 MCATA ANNUAL CONFERENCE

One Evangelic recently described the scene as she entered the Promised Land through the Pearly Gates: Let us swing open the door so that you can see what is going on in this second-grade classroom. The children are sitting in groups of four at each of eight tables. In each group, a child who easily grasps mathematics concepts has been appointed as monitor for two average achievers and one is having trouble with mathematics at the moment. This arrangement provides for peer learning and interaction among the children - they learn from one another.

The youngsters are playing with mathematics games. At one table near the front of the room the children are working with equivalent sets as they construct Indian villages and compare the number of members in each. To one side, the students drill subtraction with five as they line up their rockets and blast them off as the monitor directs the countdown. Another group practices counting by odd numbers, and a group nearby compares and contrasts larger and smaller sets as cardboard animals are manipulated. These children are achieving through a systematic skill development program. Each group of four works through each skill. Notes are made by the teacher as to each child's performance. Periodically new grouping takes place: the children work in groups of two members, then they are directed in individualized program. (*Arithmetic Teacher*, January 1972, p.35)

Individualization is taking place here, there can be no dispute of that. All of the properly prescribed components appear to be present - regrouping, task groups, peer teaching, etc. What does not appear in this article, and what is rarely dealt with, is the path by which this Promised Land is reached.

Thus, it is easy for the teacher to begin to doubt and question her own efforts as she compares the scene within her own classroom with the scenes described by writers such as this. As these comparisons are made, it becomes very easy to develop guilt feelings, for as the practitioners of the True Belief are extolled, the doubts increase. Yet there is no enlightenment as to how the Promised Land is to be reached, so the teacher is rarely given more than vague prescriptions and descriptions of what that classroom should be like.

Rather than reinforcing and improving upon what is being done well now, teachers are encouraged to believe that Individualization of a Mathematics Program will require a complete revamping of their educational efforts. Rarely do these descriptions refer to the role of large-group instruction; instead it is ignored, and implications are made that its use is to be cast out. The textbook's role is generally ignored, the Reformers implying that the mathematics curriculum is somehow made anew by each teacher, that the teacher who relies on the textbook is Sinful and should be consigned to the Purgatory of Unrepentant Traditionalists.

Admittedly, most Reformers will deny these implications, but these impressions are what is being transmitted to classroom teachers. This being the case, where do we go from here? The answer does not lie in rejecting these visions of Glory; rather, they should be accepted for what they are - an endpoint, and Ultimate Goal. We should strive for them; but we must accept them for what they are, we must begin to build on what we have, realizing that Salvation is individualized, both for the student and for the teachers. We must accept the fact

that what worked best for one teacher and for her students will not necessarily be right for other individuals.

If a program of individualizing is to be viable, we must begin with the fact that both teachers and students are individuals, that they differ, and any successful program must meet the needs of all. From this point it becomes the task of the teacher to provide teaching strategies which meet the needs of her students as they arise. The form these strategies take are, therefore, dependent upon the context in which they are used.

But before these strategies may be devised, a basic course of study must be outlined; without this the mathematics program would have no direction, no continuity, and it is quite likely that the program would shortly flounder. The best source for this outline is the textbook. It can serve as the guide, the basic resource from which the teacher may then chart a course of Individualization for her students. Although their place may not be prominent, or even apparent within programs such as that described earlier in this paper, most teachers who have developed programs of their own began with a basic textbook series. Because textbooks have been used improperly does not mean that they have no role in an Individualized Mathematics Program. Their role is to aid in providing objectives, sequencing objectives, and formulating strategies for attaining these objectives. Thus, if you dig far enough, you will find that in all programs similar to that which was described earlier, there is a basic underlying course of study and its most likely source is a basic textbook series.

The teacher's task is to devise strategies other than those which appear in the textbook, in order that the individual needs of the students are met. It is also her task to alter the sequencing, to vary the amount and the difficulty of the objectives, as she perceives the needs of her students.

The excerpt from the article describes *a* version of the Ultimate Goal, not *the* version. Each teacher must work out her own version, and there are many paths for attaining this end; but for the individual teacher, there is a unique path, and it is one which she must find for herself. As long as the teacher has a goal which accounts for the individual needs of her students, and she is wisely choosing those activities and characteristics which will aid her in attaining that goal, she need not be overly concerned about the preachings and prophecies of the oracles of educational change. Indeed, if her program is soundly based, it will accomplish that which it is intended to do, even though it might not have a form outwardly consistent with current educational theology.

Thus, it is incumbent upon each teacher to determine what her goals are, and to outline and implement strategies which will enable her to attain these goals. She will reach the Promised Land as long as these goals consider the individual need of her students, as long as these goals are implemented through a program which is approached in a rational manner and which allows each student to advance in a manner best suited to himself.