A Comparison of Two Approaches to In-service Education Based on Teacher Attitude Towards and Utilization of Techniques of Individualized Instruction

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A COMPARISON OF TWO APPROACHES TO IN-SERVICE EDUCATION BASED ON TEACHER ATTITUDE TOWARDS AND UTILIZATION OF TECHNIQUES OF INDIVIDUALIZED INSTRUCTION

A dissertation submitted to the faculty of the Graduate School of Loyola University of Chicago in partial fulfillment of the requirements for the degree of Doctor of Education

by

WILLIAM A. RIECK

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ABSTRACT

Title: A Comparison of Two Approaches to In-Service Education Based on Teacher Attitude Towards and Utilization of Techniques of Individualized Instruction.

Investigator: William A. Rieck

This experiment compared pre test and post test scores of teachers on the Minnesota Teacher Attitude Inventory and two tests designed by the investigator to assess teacher attitude toward and use of individualized teaching techniques. Three groups of teachers were used with one experimental group undergoing a traditional workshop session, one experimental group undergoing a learning packet approach and the third experimental group serving as a non-treatment group.

The data collected was statistically treated using analysis of variance. The hypotheses tested were: (1) There is no significant difference in teacher attitude towards techniques of individualizing instruction as measured by the change in mean scores on the Oak Forest Teacher Attitude Inventory among the three experimental groups; (2) There is no significant difference in teacher attitude toward the learning process as measured by the change in mean scores on the Minnesota Teacher Attitude Inventory among the three experimental groups, and (3) There is no significant difference in the use of individualized teaching techniques as measured by the change in mean scores on the Oak Forest Scale of
Use of Teaching Techniques. In each case the analysis resulted in non-rejection of the null hypothesis at the .05 level.
ACKNOWLEDGMENTS

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CHAPTER I
THE PROBLEM AND DEFINITIONS OF TERMS USED

In-service education for professional educators has been a part of the educational scene since the last century. During modern times, the whole concept and execution of in-service training has come under a high degree of scrutiny by all members of the profession.

Historically, in-service education has been organized and directed by the administration of a school or school district. Unfortunately, administrators frequently view the task of arranging in-service programs with displeasure. As will be seen in Chapter two many teachers and teacher organizations are speaking out loudly on the poor quality of in-service education and on the distinct lack of teacher participation during the planning stages.

Concurrent with, but independent of concerns related to in-service education, are problems relative to the improvement of instructional methods for maximizing student learning. In the view of many people, individualized instruction is one way to improve the overall quality of teaching in today's schools, while others maintain that the more traditional approaches serve their educational goals well enough.

It may be advisable to combine interest in in-service education with contemporary concerns in the area of individualizing instruction. It is possible that techniques of
individualized instruction could be successfully applied to in-service training programs. The individualized approach could then be compared with the more traditional workshop technique for the purpose of determining the relative effectiveness of the approaches to in-service training.

I. THE PROBLEM

Statement of the problem. It is the purpose of this study to determine the relative effectiveness, with respect to teacher attitudes towards the learning process and teacher planning of instructional activities, of two approaches to professional in-service education. The two approaches studied the traditional half-day workshop and individualized instruction.

Significance of the study. There are few areas within education which have had more management problems then that of in-service education. Teachers and administrators alike have lamented the wasted effort to provide important in-service activities, activities which have meaning to the teachers.

It is difficult to assign responsibility for the failure of in-service educational programs. Frequently one hears that a lack of appropriate topic is to blame, yet even where topics seem to be appropriate, the programs do not succeed. Critics of in-service programs frequently point to the time factor and ask how administrators can expect change
when a short period of time is provided to cover a vast and important topic.

Clearly, if an approach to in-service training which reduces the amount of released time necessary to complete the task produces satisfactory results the technique could be applied to many situations for improved training results. In order to ascertain if an approach is superior to the traditional workshop, this study was designed.

Assumptions. As a result of the literature review, several assumptions were formulated to delimit the hypotheses. It was assumed that:

1. In-service education programs were an effective means in effecting teacher behavior changes.

2. In-service education was in need of more effective approaches and methodology.

3. While the attitudes and backgrounds of specific individual teachers effects what they learn from an in-service program, when an entire faculty is considered these differences are minimized.

4. Teacher attitudes and actions can be measured by employing written assessment devices.
Hypotheses. This investigation was constructed to test the null hypotheses enumerated below.

1. There is no significant difference in teacher attitude toward techniques of individualizing instruction as measured by the change in mean scores on the Oak Forest Teacher Attitude Inventory among the three experimental groups.

2. There is no significant difference in teacher attitude toward the learning process as measured by the change in mean scores on the Minnesota Teacher Attitude Inventory among the three experimental groups.

3. There is no significant difference in the use of individualized teaching techniques as measured by the change in mean scores on the Oak Forest Scale of Use of Teaching Techniques among the three experimental groups.

Delimitations of the investigation. This study was limited to a comparison of a traditional half-day workshop approach to in-service education with a more individualized approach and a non-treatment group. Further, the study used only the entire 1974-75 faculty of Oak Forest High School as a population. Oak Forest is a middle class community on the socio-economic stratum.
This investigation did not attempt to relate results to the subjects educational, socio-economic or religious background. The sex and age of the subjects were not studied. Factors or variables other than the type of in-service training was not considered in any way.

II. DEFINITIONS OF TERMS USED

Based on extensive reading, the author has developed the following eclectic definitions for use in this investigation.

In-service education is defined as any training provided by the school district to improve or change the behavior or professional employees. The training experiences are provided at no cost to the teacher and all teachers are expected to participate.

Half-day workshop is defined as those experiences planned by the school administration and consultant for the teachers. The half-day workshop takes place in a two hour span of time during which teachers are released from classroom obligations to attend the program.

Individualized instruction for purposes of this research is defined as an approach to learning whereby the learner is permitted to select one or more of the following:

1. Objectives to be achieved.
2. Materials to achieve objectives.
In-service Approach A may be termed the traditional half-day workshop and may be operationally defined as meeting the following criteria:

1. The school administration identifies the topic and objectives of the in-service program with the assistance and participation of the faculty in-service committee.

2. The administration contacts the consultants who will conduct the workshop and communicates to her the topic and objectives of the program.

3. The administration sets a date, time and place for the workshop.

4. The administration informs the consultant and the workshop participants of the date, time and place of the workshop.

5. The administration asks the consultant what material the school should have for the workshop.

6. The consultant informs the school administration what materials the school should provide.

7. The consultant arrives with the materials she will provide and use during the workshop.

8. The workshop is conducted by the consul-
tant using a lecture-demonstration approach with time for questioning.

In-service Approach B employs individualized instruction and may be operationally defined as meeting the following criteria:

1. The school administration identifies the topic and objectives of the in-service program with the assistance and full participation of the faculty in-service committee.

2. The administrator in charge of the in-service program constructs a learning packet on the topic using materials available from the high school learning center.

3. Teacher participants are issued the learning packets and given instructions on how to use them.

4. Teachers use the learning packets.

In-service Approach C is a non-treatment approach and may be operationally defined as meeting the following criteria:

1. Non-attendance and non-participation in Approach A.

2. Non-participation in Approach B.

3. Instructions are given not to discuss the topics or objectives with teachers.
who are participating in any of the in-service approaches.

Learning packet for purposes of this research will be defined as a printed booklet having the elements listed below:

1. Rational containing the purpose and background the packet.
2. Objectives of the packet stated in measurable terms.
3. Pre-test for use by the participating teachers.
4. Learning activities offering wide choice for learner selection.
5. Post-test for use by the learners.
CHAPTER II
REVIEW OF THE LITERATURE

The professional literature is replete with works related to both in-service education and individualized instruction. Because this investigation into in-service training includes an individualized approach, the literature review will be divided into two major divisions such that the first pertains to in-service training while the second relates to forms of individualized instruction.

I. LITERATURE ON IN-SERVICE EDUCATION

In-service education is not a new concept. Tyler\(^1\) has pointed out that programs of in-service training were being used in the nineteenth century, though not as extensively as today. With the in-service need being recognized so early in the development of the public school system, it is only natural to anticipate a significant argument in favor of the practice.

Graduates of colleges who enter the teaching profession may not be ready for the task which awaits them.

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\(^1\)Ralph W. Tyler, "In-service Education of Teachers: A Look at the Past and Future," In Improving In-Service Education edited by Louis J. Rubin, (Boston: Allyn and Bacon, Inc., 1971).
Keller has pointed out that "... four and five year training programs are inadequate in preparing young men and women for the many adaptations expected of them in teaching."² Keller's observation has been supported in a study conducted by Savage who declared "... pre-service education can only hope to prepare teachers to begin to teach."³ In a more recent study on the continuing education of teachers, Rubin sounded the same theme as both Savage and Keller. Specifically, Rubin states, "In the making of a teacher, it is highly probable that in-service education is infinitely more important than pre-service training."⁴

The accumulated message seems to be that undergraduate schools simply cannot adequately prepare an individual for the multi-faceted experience we call teaching.

Even if undergraduates do prepare students for the task awaiting them as teachers there would still be a need for extensive in-service education. Instructional improvement should be an ongoing process and one where in-service train-

ing plays an important role. Harris has simply defined the purpose of in-service education as "... planned activities for the instructional improvement of professional staff members." The need for continued improvement has been recognized by the professional associations as well. O'Keefe reports that, "The philosophy behind teacher centered in-service education as defined by the National Education Association (NEA) is to serve the need of the teacher so that the teacher can respond effectively to the educational demands of the students and society." This view was also expressed by Rice when he said, "The professionally minded teacher earnestly seeks to improve the skill, methods, and materials used in instruction."

If it is accepted that instructional improvement should be the goal of in-service education, it must follow that the personal improvement of teachers from a professional point of view is the only way instructional improvement can take place. According to Arthur W. Combs, "But


the really important changes will come about only as teachers change."\(^8\) The changes that Combs speaks about frequently relates to the ever expanding curriculum and approaches to learning. Simpson believes that "Sound participation in curriculum innovations demands new knowledge on the part of the teacher."\(^9\)

If new knowledge in all areas of education is the prime cause or motivator for in-service education, one could argue that close scrutiny of the various professional journals would solve the problem without formal in-service programs. The basic problem with the view outlined above lies in the dubious assumption that teachers keep abreast of what is going on in their field. Gorman has found that "Teachers do not keep up on the professional literature, they do not read."\(^10\) Even if teachers did read extensively, however, the task of sifting through all of the material available today would be a Herculean task that most teachers would simply not have time to do. Without keeping up on the literature teachers would be "... bound to fall farther and farther behind

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Even if we assume that teachers have the time and inclination to keep up on the literature and the advances reported therein, we may not be correct in assuming that the total in-service need has been fulfilled. Reading can certainly be used to fill a need as far as cognitive learning is concerned, but higher levels of cognition as well as the affective and psychomotor domains may require more than the printed page. According to Openshaw, "The key to the problem of teacher growth is not lack of knowledge, rather it is inadequate application of available knowledge to the problems relating to in-service programs."12

The need for in-service education has been recognized by certifying agencies who have started to exert pressures on school and teachers to insure that members of the profession have exposure to self-improvement sessions. Branter reports "The need for additional education to increase competencies and keep abreast of new knowledge as evidenced by raised standards for permanent licensing of teachers ... and financial rewards for continued professional growth."13


Some states require a set number of credits be earned every year or number of years, while others only suggest continued growth but, the need for in-service has been clearly established.

The professional and certificating agencies are not the only sources indicating a need for in-service training. The contemporary concern over educational expenditures and the accountability movement within communities have signaled a need for upgrading teachers via in-service education.

Moffitt relates social changes to the need for improved teaching when he states, "The growing insistence on more effective teaching has paralleled the increasing complexity of our changing society."14

In-service education may be linked with the modern movement in accountability. According to Lopez "Accountability refers to the process of expecting each member of an organization to answer to someone for doing specific things according to specific plans and again certain timetables to accomplish tangible performance results."15 Bowers has applied the concept of accountability to students when he intimates


what is needed is "... accountability in terms of what the student needs in order to realize his fullest potential as a person ..." If teachers and administrators are to be held accountable for student growth, it is clear that some form of in-service continuing education be used to maintain a high level of professional competency which is necessary to increase the probability of success.

It is difficult to precisely identify what traditional in-service education is like, in fact it is easier to indicate what it has not been. In discussing in-service programs, Gregorc has stated, "An analysis of our supervisory behavior toward teachers seems to indicate that we do not subscribe to a developmental stage theory of development for adults." The implication from his conclusion was that professionals develop in stages from entrance to the profession through a high level of professional competency but, such development is ignored by supervisors and in-service programs.

Ott and Erickson examined traditional approaches


18 Otto, Wayne and Lawrence Erickson, "In-Service Education to Improve Reading Instruction," (Newark, Del.: International Reading Association, 1973).
the evils of the existing system, just waiting to escape. Brighton, for example, points out that the administrator must take a large share of the responsibility for not "helping the teacher to succeed, to improve his performance and advance his profession."

To be sure, administrators must share some of the blame for the failure of in-service programs. Buskin has made the observation that "Administrators have long known that teachers can undergo intensive in-service training, designed to change attitudes in the classroom and to increase understanding of the problems of poor children and be totally unaffected." That administrators tacitly accept the failure of programs and continue to produce more activities destined to follow the same road is difficult to understand.

Administrators alone, however, cannot shoulder the total weight of responsibility for the failure of continued professional education of their teachers. The teachers must take part of the responsibility for, as McCleary points out "The experience of secondary school administrators indicates that many barriers need to be surmounted if in-service programs are to become important and productive avenues to school improvement and effectiveness. Teacher apathy and

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22 Martin Buskin, "Putting the Screws to In-Service Training," School Management, XIV (September, 1970), p. 22.
resistance to change are often major obstacles." 23

Apathy and indifference toward in-service programs can cause good, well developed programs to fail. Too frequently teachers view the entire in-service program with contempt and see the activities as "... extra chores foisted upon teachers by administrators." 24 The natural outcomes from considering activities as an imposition are "... resentment ... often sufficient to insure low level motivation, enthusiasm and participation." 25

Perhaps one reason why administrators fail in their design of in-service program is an unrealistic expectation with respect to probable outcomes. A program of continuing professional education as it is traditionally done is not a solution to the ills of the school. As M. A. White says in his study of in-service education, "An ineffective teacher will not suddenly become effective..." 26

While both teachers and administrators agree that the whole concept of in-service education is good, their atti-


24 Ibid., p. 292.

25 Ibid.

tudes do not reflect this position. Generally, teachers are more negative about in-service training than are administrators. A higher degree of teacher satisfaction has been shown by Brander\textsuperscript{27} in his study and also by Savage who states, "The finding suggest that teacher preceptions of the effectiveness of in-service education as indicated by their attitudes, is one of indifference. Administrators apparently view in-service education as being significantly more effective than do the teachers."\textsuperscript{28}

It is difficult to diagnose why there is such wide spread teacher negativism. Archer\textsuperscript{29} has suggested that first year teachers are turned off because they do not get the help and assistance they need from supervisors but from their peers. Barry asserts that a cause of poor attitudes is that teachers "... feel no personal need for the activities in which they are engaged."\textsuperscript{30} Matheny has even suggested that "Just as a child kept after school as a form of punishment, so is mandatory attendance at training programs regarded by

\textsuperscript{27}Brander, op. cit., p. 57.

\textsuperscript{28}Savage, op. cit., p. 43.


teachers. Savage points to five specific causes for the failure of in-service programs: (1) poor administrative leadership, (2) differing perceptions on the part of the participants, (3) poor qualifications of those conducting the experience, (4) teachers failure to see the need and (5) teachers lack of security. Clearly the points made by Savage would lead to poor attitudes towards in-service training and hence a breakdown of the system. It is interesting to note that recent studies by Peeler and by Waynant are very supportive of the view that poor preparation or lack of ability on the part of the workshop given is a prime reason for in-service failure and the nurturing of highly negative attitudes towards in-service education.

While it is usually the administrators who design the in-service program, it is the faculty that the program is supposed to help. This arrangement leads to mistrust and a high degree of negativism toward the program which develops. Campbell et al. have stated that "Programs planned by admin-

33 Peeler, op. cit., p. 58.
This view is shared by Lano as he laments that "No one asks the teacher much about anything -- and about professional development even less."36

As we face a situation whereby in-service is not doing its job, as administrators and teachers are burdened with a negative attitude and ill-prepared presenters give their talks to teachers crammed in rooms for workshops, the words of Savage come to mind: "It (in-service education) holds many different meanings. Teachers often feel they are subjected to it. Administrators often feel the burden of planning for it. Professors feel the need to speak in favor of it. An authors of professional literature feel constrained to mention it."37

As the literature points out the many faults with in-service education, it also sheds some light on contemporary trends in providing improved in-service training. Hodges has observed that "Research indicates that one of the most

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37 Savage, op. cit., p. 6.
promising development towards improving instruction is the rapidly increasing nation-wide interest in in-service education. There is now scarcely a school district without some organized plan for professional growth. Many of the plans talked about by Hodges have been reported in the literature and show some contemporary solutions to the problem of continued training for teachers.

One modification of the traditional approach to in-service education is altering the time factors. In an effort to increase humanization of instruction in Tennessee, Khanna conducted an in-service program which involved a two week concentrated summer school and fourteen successive Saturday sessions with the result being a higher degree of humanization of teachers. Regretfully, the Khanna study did not compare his approach to the traditional which leaves questions pertaining to the relative effectiveness of his technique compared to others unanswered.

Also in an effort to increase humanistic qualities in teachers, Johnson conducted a study at Wheeling, Illinois.

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High School. The project involved breaking the high school faculty into seminar groups of from 7-10 members each. The groups were structured based on teaching experience and were inter-departmental in nature. Media was used extensively as the groups worked on the topics considered. The Minnesota Teacher Attitude Inventory was the primary instrument to judge humanistic attitude and based on scores on the test, the project succeeded in increasing teachers humanistic attitudes toward instruction and students.

The seminar type approach described above was also used by Goldmeier in a non-structured attempt at providing better in-service training. Goldmeier structured seminars to include teachers of varying experiences to enable the more experienced to assist the less experienced. Topics were mutually selected and the seminar groups met to discuss and share ideas. It must be pointed out, however, that this approach was not used to introduce totally new concepts nor was it statistically evaluated.

In an attempt to improve instructors in special education, a Michigan project involved training consultants in the use of cassettes. The consultants, according to Walline,

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were giving training kits containing tapes and were then dispatched to schools in the area to provide in-service education to teachers of special education students, using techniques of individualized instruction.

Carmichael and Kallenbach\(^{43}\) have reported on a California approach to continued professional education whereby the traditional workshop format was adapted to cover aspects of individualized instruction which was the goal of the in-service training. Teachers were allowed to select areas within individualized instruction and then were provided workshop experiences coinciding with their pre-selected area of interest.

Perhaps the most elaborate and unusual approach to in-service training was that reported by Dupis\(^{44}\) to the 1974 International Reading Association Meeting. Dupis reported that in Pennsylvania a program had been developed which used portable vans with computer terminals providing computer assisted instruction for the in-servicing of teachers in remote areas of the state. The program was labeled CARE which is an acronym for Computer Assisted Renewal Education Program.

In searching for more or less common threads which


\(^{44}\)Mary M. Dupis, "We CARE About In-Service Education," (Paper presented to the International Reading Association, May 19, 1974).
bind modern approaches to in-service education together one must invariably consider the media. Tapes, printed programs and other forms of media seem to play an important role in today's program. Peeler has gone so far as to say that "Unfortunately, many in-service efforts neglect to take advantage to media, instead they concentrate on traditional lecture type presentations." Clearly, Peeler's fears are not warranted in the newer approaches being reported in the literature though countless other programs may still be guilty of non-use of media.

Harris has stipulated that for any program to be a success it must be cooperatively planned. Teachers and administrators alike must have a voice in the in-service program. This view toward a more cooperative planning stage is, as we shall see shortly, shared by others as well.

Th innovative approaches to in-service have seemed to differ from traditional in that times are selected other than on a special day for workshops. Either released time or additional compensation seems to be necessary for today's programs to be successful. Frost and Roland say, "... time for in-service education is during school hours." 47

45 Peeler, op. cit., p. 68.

46 Harris, op. cit., pp. 257-60.

It is worthwhile to try and distill the essence of good in-service education as seen through the eyes of those people who are involved with it. Westby-Gibson identifies four major characteristics of a good program: (1) teacher determined topics (2) clear justification for topics selected, (3) existing programs should be re-modeled rather than new models being brought in and (4) some programs should differentiate between the new and experienced teacher. Buskin, on the other hand, lists other factors, namely: (1) programs must be flexible, (2) teachers must be paid for their time, (3) statistical testing for results is essential, (4) programs should not interfere with the style of the teacher and (5) teachers should conduct some sessions themselves. Clearly, Buskin's suggestions could raise some fine questions over interpretations with regard to what is interference with the style of a teacher. Along the same lines, Wilson echos concerns over teacher input and flexibility and adds a suggestion that graduate credit be offered teachers participating in in-service programs.

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50 Marian L. Wilson, "In-Service Needs of Teachers," (A report published by the author, November, 1974).
A 1956 HEW report makes a very important point when it states, "... to conclude, (1) that activities planned to bring about teacher growth should be scrutinized closely to make sure that they meet a real teaching need, that the work is expertly organized, so that each teacher may benefit, and (2) that effort should be taken to translate what is learned into professional practice." If the advice given in this report is added to that mentioned elsewhere in this chapter, a good picture of in-service today and yesterday may be conceptualized.

Predicting what will or should happen in the future with respect to in-service education is not easy. Certainly, the innovative approaches used today will undergo change and become standard tools of the future and the subjects to consider will be dictated by the needs of society and the schools. Tyler may have said it best when he concluded, "In-service training of the future will deal with real problems in the system both directly and by simulation. The training program will build in feedback as teachers work on problems, so

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that a basis for correction and revision is possible."  

II. LITERATURE ON INDIVIDUALIZED INSTRUCTION

Because this investigation utilizes techniques of individualized instruction within the in-service program it is important to examine the nature of individualized instruction.

Norton has indicated that in any program of individualized instruction "... specific effort to focus attention on the learner and the learners unique personal characteristics be attempted." Naturally, there will be degrees of success in the outcome of the effort but that does not excuse the teacher from making the effort to start with.

In conceptualizing a program of individualized, personal learning experiences for future teachers, Fuller identified four stages or phases necessary for any personalized approach: (1) assessment by teacher and student as to current status, (2) awareness of the needs of the student and setting of goals, (3) arousing motivation in the learner and (4) movement towards the goal with continual assessment for status reporting.

Not everyone agrees as to the nature and ingredients which make up individualized instruction. For example, according to Coppedge there are six elements in an individualized instruction program: (1) student expectations are based on student ability and previous learning, (2) evaluation is based on student ability, (3) teacher contact must approach a tutorial situation, (4) students must become a full partner in the learning process, (5) the learning process must be a cycle of diagnoses, prescription and evaluation and (6) continuous progress should be the goal of instructional planning. The points raised here are all within the ball park of individualized instruction yet issue can be taken with some of the points because individualization is not universally conceived in an identical fashion by all educators.

It is essential that we recognize there are degrees of individualization. Individualized instruction is not generally looked at as being accomplished when a "class" of three thousand take Biology via a television system. Neither, however, are tutorial sessions the only way of individualizing. Young and Baird summed it up eloquently when they said, "... individualizing should be conceived as a function of the

degree of structure of the learning activities.\textsuperscript{56} It is within this framework of varying degrees of structure that most teachers must function. It should be accepted that most educators strive to attain total individualization but that compromises with practicality probably makes the goal an unattainable limit, not a realistic objective.

Individualized instruction should not be looked at as the great panacea for educational ills of every description. The Finch,\textsuperscript{57} Cook\textsuperscript{58} and Project 80\textsuperscript{59} reports all show individualized instruction in favorable light but simultaneously caution that not all students nor all teachers can function using an individualized approach to learning. Slower students and those with low motivation are not prone to do well with the technique according to those reports.

One of the more ambitious projects relating to the construction of learning packets and their use in public


\textsuperscript{57} C. R. Finch, "Individualized Instruction: What Can Your Learn From Research"? \textit{American Vocational Journal}, XLIX (September, 1974), p. 28.


schools was the federally funded "Project 80," Project 80 was initiated in 1967, four years before the opening of the school. The idea behind the project was to teach instructors how to produce and implement learning packets in their program so the school would be totally individualized. At the opening of the school nearly 90% of the work was individualized. It was found that using packets created a positive attitude in students and teachers but that there were some students who did not successfully use the program.

Individualized instruction is not restricted to the elementary and secondary levels; collegiate sources have also used the techniques. Cook has reported on the Keller Plan used in college psychology. According to the report, the Keller system is a Skinnarian approach to teaching psychology. The plan has five principle elements: (1) it is student self pacing, (2) satisfactory completion of one unit is mandatory for advancement to the next, (3) lectures and demonstrations are motivational rather than instructive, (4) there is a stress on written work for teacher-pupil communication and (5) proctors are used extensively for re-testing and tutoring. The report clearly indicates that the Keller Plan is less costly than other systems of individualized instruction and that it can work well with all but the less

\begin{footnotes}
\item[60] Ibid.
\item[61] Cook, loc. cit.
\end{footnotes}
talented students.

Teaching psychology via the Keller Plan is not the only collegiate use of individualized instruction. Young and Baird, as mentioned earlier, designed a program in education for prospective teachers. In a similar fashion Wass and Combs have reported attempts designed to increase the humanization of teachers. According to Wass and Combs individualized instruction did in fact help humanize education students. Unfortunately there was no statistical treatment of the experiment which makes the conclusion open to discussion.

One of the more interesting approaches to individualizing instruction for teachers was accomplished by Cruickshank, designed a simulation game. In the game, the teachers are divided into groups representing parents, board members, administrators and teachers. Each participant is given a role with a starting viewpoint. Each participant is also given a number of power cards. The issue to discuss is individualized instruction, or some other topic. Participants must argue their point and then reach a consensus on each point. Whenever a consensus cannot be reached partici-

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62 Young and Baird, loc. cit.


64 Donald R. Cruickshank, "Individualization, The Impossible Dream Come True," Theory Into Practice, XIII (April, 1974).
pants can use their power cards. Since power cards have varying intensities it is the person willing to use their highest power card who wins the point but, once a card of particular value is used, it cannot be used again which weakens the bargaining position of that person. The authors reported that the simulation has promoted rational compromising.

III SUMMARY

From the literature it can be seen that in-service education of teachers has long been in the minds of professional teachers. The problems with traditional approaches are being repeated today by uninspired administrators but, there are some innovative approaches which deserve not. In addition, writers have spoken out strongly on ways of improving the in-service process, if only administrators would listen.

Individualized instruction is a more recent movement in the United States but it has gained significant momentum against high teacher resistance. Some form of individualized instruction has been used with students on every level through the in-service teacher. Further, individualizing instruction for the purpose of teaching individualization has also been attempted.

What the literature has not uncovered is an attempt at comparing an individualized approach to teacher in-service
with a traditional workshop approach. The time has come for such a comparison to be made.
CHAPTER III

RESEARCH DESIGN

A modified version of the randomized group design described by Peatman has been employed by this investigation. The specific modification involved altering the group selection process in such a way as to insure that the investigator did not know the identity of individual group members.

Three pre-tests and posts-test were administered and the difference between pre and post test scores recorded. The tests were designed to measure three things: (1) teacher attitude towards the learning process, (2) teacher attitude towards individualization of instruction and (3) teacher use of techniques of individualized instruction. All three tests were administered to each of the experimental groups, with the third being a non-treatment control group. Analysis of variance was then used to statistically treat the data.

I. THE POPULATION

The subjects for this experiment were all but two of the faculty members of Oak Forest High School, Oak Forest, Illinois. The two individuals excluded were those absent at

the start of the experiment. The sample was thus one of con­　venience and did not necessarily represent a random or repre­　sentative sample of the entire population of the teaching pro­　fession. The subject school is one of four High Schools in 　the Bremmen District #228. To secure cooperation on this 　study, anonymity was assured to the individual participants.

In order that total anonymity be preserved and guar­　anteed each teacher drew numbers from a bowl during a faculty 　meeting. Using a table of random numbers the teachers were then assigned to an experimental group based on the number they drew and which they did not communicate to the investi­　gator.

The faculty was divided into three groups as explained above. The three groups coincided with the three workshop approaches to be employed as explained in Chapter One. Group A experienced the traditional half-day workshop, Group B experienced an individualized approach and Group C received a school visitation program not related to the topics covered in Groups A and B.

Each of the subject groups contained twenty-four teach­　ers thus giving a total of seventy-two participants. Two other members of the faculty did not participate due to ab­　sence and there was no data collected on these individuals.

II. MATERIALS

Subjects exposed to Approach A were not provided any
The responsibility for providing materials rested with the paid consultant, Sr. Mary Stephenette, Ph.D. The consultant displayed sample learning packets and used overhead projection transparencies but no material was given to the faculty for their personal retention.

Subjects in Group B were supplied with a learning packet written by the investigator. The packet dealt with the topic of individualized instruction, as did the workshop. A copy of the packet is in Appendix A.

Subjects in Group C were denied access to the workshop conducted by the consultant and to the material in the learning packet. On workshop days Group C members were not permitted in the building, instead they were assigned to other schools for other purposes.

III PROCEDURES

Initiatory stages. In July of 1974, Mr. P. H. McBain, Principal of Oak Forest High School asked this investigator to plan an in-service education program for his school which would serve to make teachers aware of and use techniques of individualized instruction. With the permission of the principal and the schools faculty in-service committee it was decided to transform the regular in-service program into this research study.

During the summer of 1974, the learning packet to be used by subjects undergoing individualized instruction was
prepared. The packet was constructed in such a way that only materials then available in the Oak Forest High School professional library would be used. The complete packet, designed to increase awareness of individualized techniques and their use is in Appendix A.

A letter was sent to Sr. Stephenette asking her assistance as a paid consultant and conductress for a program on individualized instruction. Sr. Stephenette agreed to participate.

A program was then developed whereby the faculty would undergo pre-testing prior to October, 1974 and would undergo post-testing no less than two months after completion of the learning packet by Group B participants.

Instruments had to be designed or selected for use in gathering data relative to attaining objectives. Three instruments were used: (1) The Minnesota Teacher Attitude Inventory, (2) The Oak Forest Scale of Use of Teaching Techniques and (3) Oak Forest Teacher Attitude Inventory. The two latter instruments were constructed by the investigator with advice and input from Dr. Barney Berlin and Dr. John Penick of Loyola University. The school principal also provided guidance and retained the right to delete any item he believed was not appropriate for the school.

The "Oak Forest Teacher Attitude Inventory" (OFI) was designed to ascertain individual teachers attitudes towards individualized instruction as it is encouraged at Oak Forest
High School. Items on the instrument consisted of statements describing a particular activity or technique of teaching. Teachers were then asked to respond relative to the desirability of the statement. In each case the statements represented practices used within the classroom in the teaching process. All items were constructed keeping the school philosophy in mind and the school principal had the authority to delete any item he deemed inappropriate for his school. The completed test was then submitted to Drs. Berlin and Penick for examination and suggestions. Based on the feedback from the reviewers the instrument found in Appendix B was developed and used in this research.

The "Oak Forest Scale of Use of Teaching Techniques" (OFS) is designed to determine what techniques of individualization teachers are actually using, and to what degree the techniques were being used. The items on the OFS were constructed by listing the various teaching techniques associated with individualized instruction as well as traditional instruction. The various methods represent a composite of those gleaned from the literature search and from input from members of the school administration. To make certain that each technique was understood a brief definition constructed by the investigator was also included. After the device was constructed it was examined by Drs. Berlin and Penick who made suggestions which were incorporated into the final form which appears in Appendix C. It was accepted that not all
techniques were appropriate for all subject areas but that a high score on the inventory was desirable over a low score.

The "Minnesota Teacher Attitude Inventory" (MIAI) is an established test used to determine how humanistic a teacher is with respect to his attitude towards students and the learning process. A high score on the MIAI was judged desirable for individualized instruction.

Statistical treatment. Since this research design uses a randomized group technique as outlined independently by Peatman and Van Dalen and was employed by Weiss, it was decided to employ analysis of variance as the test for the null hypothesis. Analysis of variance was used in this experiment because the sample sizes were equal, the samples were randomly determined and they represent a normal distribution of the sample population.

The data collect was analyzed only on the basis of one experimental factor, workshop approach. The mean differences from pre-test to post-test for each group can then be treated by analysis of variance.

2 loc. cit.


4 Sydell Weiss, "A Comparison of Two Approaches to One-Exposure In-Service Workshops Based on Questioning in Classrooms," (Loyola University Unpublished Doctoral Dissertation, 1974).
The following null hypotheses, as first enumerated in Chapter One, are accepted or rejected at the .05 level of confidence.

1. There is no significant difference in teacher attitude toward techniques of individualizing instruction as measured by the change in mean scores on the Oak Forest Teacher Attitude Inventory, among the three experimental groups.

2. There is no significant difference among the three groups in teacher attitude toward the learning process as measured by the change in mean scores on the Minnesota Teacher Attitude Inventory.

3. There is no significant difference among the three groups in the use of individualized teaching techniques as measured by the change in mean scores on the Oak Forest Scale of Use of Teaching Techniques.
CHAPTER IV
RESULTS OF THE STUDY

The data generated by the study were analyzed in accordance with the procedures outlined in Chapter Three. The findings are reported in the same sequence.

I. NULL HYPOTHESIS ONE

Null hypothesis one states that "There is no significant difference in teacher attitude towards techniques of individualizing instruction as measured by the change in mean scores on the Oak Forest Teacher Attitude Inventory among the three experimental groups."

The analysis of variance for null hypothesis one provided, as can be seen from Table One, an F-ratio of insufficient size to allow rejection. Specifically, an F-ratio of

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares (SS)</th>
<th>Degree of Freedom (d.f.)</th>
<th>Mean Squares</th>
<th>Estimate of Variance</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>48.04</td>
<td>2</td>
<td>24.02</td>
<td></td>
<td>0.52</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3,190.63</td>
<td>69</td>
<td>46.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3,238.67</td>
<td>71</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE I
ANALYSIS OF VARIANCE FOR NULL HYPOTHESIS ONE
3.15 would be required for rejection at the .05 level and the data provided an F-ratio of only 0.52, thus mandating non-rejection of the first null hypothesis.

II. NULL HYPOTHESIS TWO

Null hypothesis two states that "There is no significant difference in teacher attitude toward the learning process as measured by the change in mean scores on the Minnesota Teacher Attitude Inventory among the three experimental groups."

Analysis of variance for this hypothesis led to non-rejection of the hypothesis. The calculated F-ratio of 0.41 is far less than the 3.15 required for significance at the .05 level. A summary of the data may be found in Table Two.

### TABLE II

**ANALYSIS OF VARIANCE FOR NULL HYPOTHESIS TWO**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares (SS)</th>
<th>Degree of Freedom (d.f.)</th>
<th>Mean Squares of Variance</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>995.98</td>
<td>2</td>
<td>497.99</td>
<td>0.41</td>
</tr>
<tr>
<td>Within Group</td>
<td>84,597.67</td>
<td>69</td>
<td>1,226.05</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>85,593.65</td>
<td>71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III. NULL HYPOTHESIS THREE

Null hypothesis three states that "There is no signifi-
cant difference in the use of individualized teaching techniques as measured by the change in mean scores on the Oak Forest Scale of Use of Teaching Techniques among the three experimental groups."

As with the first two hypotheses the data were treated using the analysis of variance techniques described in Chapter Three. A summary of the analysis can be found in Table Three. According to the analysis the F statistic is only

**TABLE III**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares (SS)</th>
<th>Degree of Freedom (d.f.)</th>
<th>Mean Squares of Variance</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>310.08</td>
<td>2</td>
<td>155.04</td>
<td>0.56</td>
</tr>
<tr>
<td>Within Groups</td>
<td>19,151.92</td>
<td>69</td>
<td>227.56</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19,462.00</td>
<td>71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0.56. Because a sample having this degree of freedom would require an F-ratio of 3.15 for significance at the .05 level the null hypothesis was not rejected.

With the non-rejection of the third hypothesis, it has been made clear that with none of the measures has there been a significant difference among the groups.
After the results of this investigation were determined in accordance with the experimental design outlined in Chapter Three, an additional step was taken. The data was blocked into two groups based on pre-test scored on the MTAI. Analysis of variance using the blocked data was conducted with the result that there was a lack of significance.
CHAPTER V

CONCLUSIONS

I. SUMMARY

The results indicate that there was no difference in test scores among the three groups. The major implication is that workshop, individualized and non-treatment procedures have equal effectiveness on teacher behavior and attitude. The lack of improvement may suggest that some modification in design and approach may be needed and, therefore, may serve as a basis for future research.

II. IMPLICATIONS OF THE RESULTS

The fact that all three null hypotheses were not rejected indicates that there was no significant difference in the three approaches to in-service training at Oak Forest High School.

One factor which may have adversely affected the study was that of teacher attitude. The faculty in-service committee had approved the project from the beginning but the faculty as a whole seemed suspicious of any research which collected data on items as personal as attitudes toward teaching and methods of teaching. While no data was collected on this factor, there were several instances when faculty members expressed their concern to members of the administration other than this investigator. Based on talks with members of the administration it
seems that the faculty was most concerned over the possible use of results in the evaluation of teachers. Repeated disclaimers and the guarantee of anonymity did not seem to dispel teachers fears. When teachers feel unsure about a venture it may effect the results of that venture and this researcher would suspect that teacher insecurity was one factor which adversely affected the results of this study.

Coupled with the teachers concerns was an administrative decision over which this researcher had no control forced an alteration in the basic design of the program. As originally conceived the group undergoing the individualized approach was to be divided into seminar groups for meetings after school. At the first sign of teacher concern, the teacher seminar groups were canceled thus eliminating the opportunity for interaction among group members. It should be pointed out too, that this interaction was to take place on a more or less voluntary basis and that the sessions were designed to be motivators to the participating faculty members.

Another major problem with the investigation was the inability to assure teacher accountability. Although there were packet pre-tests and post-tests it was not possible for the investigator to require that they be submitted and this greatly reduces the probability of all teachers in the individualized group working to their fullest, if at all. Future experiments along similar lines must have a concrete system of accountability if they are to be successful. Based solely
on hearsay it may be that a large number of teachers did not even go through the packet and hence could not be expected to show any gain in scores.

The fact that teachers had to go through the packet on their own time may have had a negative influence on the research. This investigation seems to support the opinions of those cited in the literature search that in-service programs can work only if released time or additional pay is provided. While this investigator would tend to support the concept of released time for in-service education, he would also suggest a plan whereby the school district could issue credit for satisfactory completion of a program. The credit thus earned could be applied to placement on the next higher lane of the salary schedule.

The composition of the various experimental groups could be another reason why there was no significant difference in results. The experiment used a randomized group technique which requires assignment to experimental groups based on chance and chance alone. It is conceivable that the experimental data may have been different had the teachers had opportunity to select the group of their choice. In surveying the literature on individualized instruction, it was discovered that the technique is not for everyone; permitting free choice of approach may have been a better tactic, followed by a different statistical treatment. It is also possible, given the small sample, that the groups were not truly random.
Whenever one considers the composition of an experimental group, it is important to keep in mind that personality, philosophies, subject background and other variables will be a part of the way in which a participant reacts and learns. The variables mentioned here and elsewhere were not controlled in this investigation so their effect on the outcome cannot be determined. It is possible that grouping the teachers according to department would have been more desirable and this may be one option for future investigation.

The packet itself may be a reason for the results. It is possible that the packet design was deficient. There could be fault in the selection of material or in the sequencing of that material.

It is possible that developing a learning packet using a cooperative process between administration and faculty would have been a better approach than that followed. Without active teacher participation in the actual design of the packet the probability of teacher immersion in the project may have been reduced.

Co-existant with the possibility of a faculty packet must be the realization that references for the packet were limited to those available at the Oak Forest High School Library. The limitation thus imposed resulted in a severe restriction as far as source material is concerned. It is possible that utilization of a wider range of material may have caused changes in the outcome of this investigation.
to detect a difference it is necessary to have test instruments of high sensitivity. It is possible that the test instruments utilized in this experiment were not sensitive enough to detect the changes which took place as a result of the in-service program.

The results cannot be fully explained but they can serve as an indication of need for future work in the field so that future investigators do not retrace the unsuccessful steps of their predecessors.

III. SUGGESTIONS FOR FURTHER RESEARCH

It would be advisable to expand and revise this experiment thus making it more comprehensive and more meaningful. Several changes in the design would be needed and, if done, may alter results.

First, it would be desirable to use a larger sample from differing schools. The sample should not be totally random but each group should be randomly selected from those teachers requesting placement in that group. Teachers should not be placed in a group he does not feel comfortable with. By doing this there will be a greater probability that the various subjects will be active participants.

The future investigator may want to conduct twin studies whereby one uses the total randomization of subjects as was done in this paper and the other study utilizing the free choice design described in the paragraph above. A comparison
of results of the two studies would be both very interesting and informative.

Every effort should be made to gain released time for all participants. The released time should be sufficient for the subject to do what is asked of him. The premise here is that people are more likely to perform when they are not being asked to give of their own time.

It may be desirable to expand the number of groups to include other forms of in-service education. Formal classes, professional reading and the like may be used as alternative forms of in-service training.

Some form of teacher accountability is essential. Teachers need to know that they will be expected to do certain things in connection with the project. It is important that teachers also know that someone else will know if they are not doing as they are asked to. To guarantee accountability while maintaining participant anonymity would not be an easy task, but it is one which may need to be accomplished if more meaningful data is to result. If the investigator could avoid the necessity of keeping the identity of the subjects from his knowledge the task of insuring accountability would be easier.

The future researcher may also want to consider an experimental design which permits in-service education to be organized on a departmental basis. Departments may want to select their own general topics for consideration and each department could be evaluated based on how they progressed
with respect to their objectives.

Finally, as far as the current investigation is concerned, it would be a good idea to rewrite the learning packet to include a wider selection of source materials. As part of the rewriting process it may be advisable to seek input from the faculty in-service committee. The faculty contribution will make the packet more a collaboration and this may be a significant factor in performance. If the packet is rewritten and different school populations are used in the sample, it is further suggested that locations of the sources be clearly identified for ease in using the packet.

If the suggestions on the last three pages are taken, this investigator is of the opinion that the basic experiment performed for this paper will be improved in design and in the results obtained. There are, however, other new areas worthy of investigation as well.

Motivation has been recognized by many as an important key to success or failure. A research study aimed at determining the value of specific motivational techniques used in in-service education would be a valuable asset to the educational community. Educators might consider comparing the effect of released time vs. non-released time on performance. One may also want to consider the possibility of issuing credit for work completed or paying teachers for in-service activities. A study comparing such motivational techniques as described here or other types of approaches to in-service
training may be a valuable addition to the professional literature.
APPENDIX A
AN INTRODUCTION TO INDIVIDUALIZED INSTRUCTION

A LEARNING PACKET DESIGNED FOR USE AT OAK FOREST HIGH SCHOOL
INTRODUCTION AND TABLE OF CONTENTS

For ease of utilization, this packet has been divided into two major divisions. Division A is printed on white paper and contains all information of a directional nature, tests, objectives and instructions. Division B, called the resource pack, is printed on pink paper and gives bibliographic information essential for completion of this unit.

INTRODUCTION AND TABLE OF CONTENTS ........................................ A-1
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OBJECTIVES .............................................................................. A-2
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A-1
RATIONALE

Oak Forest High School has a stated philosophy supporting individualized instruction. In support of the school philosophy, this learning packet is designed to provide professional staff members with a wide variety of materials which may serve as a broad introduction to individualization. Subsequent to this packet there will be others covering various aspects of individualizing instruction in considerable detail.

OBJECTIVES

After completion of this packet the teacher should:

(1) Identify measurable objectives from a list of objectives with 90% accuracy.

(2) List in sequence, elements present in a learning packet.

(3) Identify and explain at least five techniques of individualization.

(4) List and describe steps in constructing an individualized instructional program.

(5) Employ a greater number of individualized techniques within his teaching, or use individualized techniques more frequently as demonstrated by the teaching technique inventory.

(6) Have a more positive attitude towards individualized instruction as measured by the Oak Forest attitude inventory.

(7) Have a more humanistic and cooperative attitude towards students and education as measured by the Minnesota Teacher Attitude Inventory.
PRE-TEST

Directions

1) Objectives 5-7 of this packet have been pre-tested by the inventories and scales we took as a faculty.

2) Complete this pre-test on a separate sheet of paper and hand in for scoring. Scores will be published by teacher code, but are not part of the research project.

Items

1. Below are a list of objectives. Indicate on your answer sheet which are measurable and which are not.

   a. To know action verbs.

   b. The student will gain an appreciation of Chaucer.

   c. The student will be able to construct models of atoms based on quantum theory with 75% accuracy.

   d. The student will understand football.

   e. The student will be able to correctly match Chinese gods with their responsibilities.

   f. The student will be able to master a vocabulary list.

   g. The student will know how to use a lathe.

   h. The student will be able to complete 5 of 7 free throws with a basketball from the free throw line.

   i. The student will be able to apply the binomial theorem in solving word problems with 90% accuracy.

   j. The student will be able to collect data on mass and volume and then analyze that data to determine density.

   k. The student will be able to indentify Arnold Toynbee and describe his influence on history.

   l. The student will know the characters in Hamlet with 90% accuracy.

2. List in sequence and describe elements present in a learning packet.

3. List and explain five techniques of individualization.

4. List and describe steps in constructing an individualized instruction program.
LEARNING ACTIVITIES

DIRECTIONS

The activities which follow are designed to help you reach the objectives of this packet. The activities will be divided into sections which relate to specific objectives. At the start of each section, there will be general directions and suggestions which you are asked to read before doing any of the activities.

OBJECTIVE ONE

Objective one of this packet relates to being able to identify measurable objectives. If your pre-test score indicated that you have met this objective, you may either (a) go on to objective two, or (b) select parts of objective one to do as enrichment. If you have not accomplished objective one, start with activities in I below.

I. To acquaint yourself with the general nature of measurable objectives, follow the instructions below.

A. Read at least one of the following, consulting your resource pack for detailed bibliographic information.
   1) Monograph on "Objectives."
   2) Pages 2-5 from Book A in the selected annotated bibliography.
   3) Page 12 from Book B in the selected annotated bibliography.

B. Look at filmstrip A and listen to the tape which accompanies it.

C. To check your progress, identify the three major parts of a well written measurable objective. If you can not do this, return to IA above and select another source. If you can answer the question, move ahead.

II. To gain skill in recognizing behavioral objectives and in evaluating objectives in general follow the instructions below.

A. Read at least one of the following.
   1) Pages 28-101 in Book A from the selected annotated bibliography.
   2) Pages 1-59 in Book B from the selected annotated bibliography.

B. As an activity do at least one of the following:
   1) Examine objectives you have used in the past to see if they are behavioral in nature.
   2) Exchange objectives with a fellow teacher and evaluate each others objectives for measurability.
C. Check your progress as follows:

1) If you used Book A, do the self checks at the end of each chapter.

2) If you used Book B, complete the self test starting on page 54.

D. If you did not perform satisfactorily on the self checks return to II A and select an alternate source.

III. To gain experience in recognizing objectives in specific academic areas you may, at your option, do as instructed below.

A. Read selectively from one of the following:

1) Book C if you are interested in Language education.

2) Book D if you are interested in Mathematics education.

3) Book E if you are interested in Science education.

4) Book F if you are interested in Social Studies education.

5) Any of the above books if your interests are not covered specifically by a listed title.

B. Consult any published list of objectives available from a professional library.

IV. To go beyond the specific objectives of this packet, but within our overall goals for the year you may, at your option.

A. Do any of the activities below.

1) Write measurable (behavioral) objectives for a specific lesson and have a fellow teacher evaluate them.

2) Write objectives for a unit and submit them with your code number to the administration for examination.
OBJECTIVE TWO

The second objective of this packet relates to the elements which make up a learning packet. If you did not succeed in meeting objective two in your pre-test, start with I A below. If you did meet the second objective, you may either (a) go on to objective three or (b) start with II below for enrichment purposes.

I. To learn what a packet contains, follow the instructions below:

A. Do at least one of the following:

1) Listen to tape E from the tape inventory.

2) Read the monograph on Learning Packets from the resource pack.

B. To check your progress, answer the item below; if you can not answer the item return to A and select the other source. If you can answer the item, continue with this objective.

1) List in sequence with descriptive explanations, the elements present in a learning packet.

II. To expand your information on learning packets and to start considering various techniques of individualization, you may, at your option, follow the instructions below.

A. Listen to one or more of the following.

1) Tape C from the tape inventory.

2) Tape R from the tape inventory.

B. Do any of the activities below:

1) Plan an outline for a outline for a packet in your academic area.

2) Examine a packet, which has been prepared by a department and stored in the learning center.
OBJECTIVE THREE

The third objective of this learning packet pertains to various methods, used to individualize instruction. If your score on the pre-test indicated that you have met this objective, you may either (a) go to the next objective or (b) start with I B as practice and enrichment. If you did not satisfy objective three, start with I A below.

I. To become familiar with some of the techniques of individualization, follow the instructions below:

A. Complete one or more of the following assignments.

1) Listen to tape C from the tape inventory.
2) Listen to tape G from the tape inventory.
3) Listen to tape R from the tape inventory.
4) Listen to tape T from the tape inventory.
5) Watch filmstrip B and listen to the accompanying tape.

B. Do at least one of the following:

1) Using any text on teaching methods or individualized instruction, identify one or more techniques of individualization, its uses, advantages and disadvantages. Hand in your critique citing sources and giving your teacher code.
2) Use, in one or more of your classes, a technique of individualization you have never used before. Submit a description of the experience and your evaluation of it to the administration.
3) Observe a colleague using individualized instructional techniques and summarize what you saw and your evaluation without mentioning names. Submit the summary to the administration.

C. As a self check, see if you can identify at least five different techniques of individualization. Explain each of the techniques giving strengths, weaknesses and how they serve the individualizing process. If you can do this, go on to the next section; if you can not, return to I A and make an alternate source selection.

II. To delve into selected techniques and problems within individualized instruction, select from the topics and sources below at your option.

A. Tapes which relate to techniques of instruction and the use of study guide include:

1) Tape E from the tape inventory.
2) Tape V from the tape inventory.
B. Tapes which deal with evaluation and record keeping, include:
   1) Tape A from the tape inventory.
   2) Tape I from the tape inventory.

C. Tapes which deal with the general nature of individualizations, its pro's and con's as well as physical facilities necessary include:
   1) Tape J from the tape inventory.
   2) Tape L from the tape inventory.
   3) Tape M from the tape inventory.

OBJECTIVE FOUR

Objective four deals with being able to identify steps in the development of an individualized instruction program. There is not one correct way, though there may be some that are definitely not recommended. If you have already met objective four as evidenced by the pre-test, you may go on to another objective if you desire but, because there are many ways to set up a program, we encourage you to go through the instructions below. If you were not able to meet objective four on the pre-test, start with I below.

I. To become acquainted with various methods of setting up a program based on individualization.

A. Listen to at least two of the following tapes from the tape inventory.
   1) Tape B.
   2) Tape D.
   3) Tape F.
   4) Tape G.
   5) Tape P.
   6) Tape R.

B. Listen to tape 8 in addition to the two you selected from above.

C. Do one of the following:
   1) Write a plan for innovation at Oak Forest High School, including a realistic time table.
   2) Consult other sources available at a college or university, libraries and critique, one different approach to implementing an individualized approach.
II. To expand your knowledge relative to planned changes in curriculum, such as individualization, follow the instructions below, at your option.

A. Listen to the following tapes dealing with individualization in general.

1) Tape A from the tape inventory.
2) Tape N from the tape inventory.
3) Tape O from the tape inventory.
4) Tape Q from the tape inventory.

B. Listen to tape K from the inventory which discusses two specific plans now in operation.

OBJECTIVE FIVE

Objective five relates to actual teaching using individualized techniques. To meet this objective, you are encouraged to try as many techniques as you feel comfortable with from all those techniques you have learned about in this packet.

OBJECTIVE SIX AND SEVEN

Objectives six and seven are clearly in the affective domain. The two attitude inventories administered to the entire faculty, gave an indication of how you feel towards education and individualized instruction. Our goal is to have a significant change in scores on the post-tests. Attainment of objectives six and seven are made possible through completion of objectives one through five. In addition, wide reading and tape listening will assist in reaching our objective. There are, however, some activities which relate directly to attainment of objectives six and seven as indicated below.

I. To aid in developing a positive outlook towards education and individualization, you may:

A. Listen to at least one of the following tapes from the tape inventory.

1) Tape H
2) Tape I
3) Tape U
4) Tape W
5) Tape X
B. Do one of the following:

1) Visit a school using individualized instruction and talk to the faculty or administration.

2) Discuss individualized instruction with colleagues who have used it in their classes.

POST-TEST

Directions

Complete this post-test on a separate sheet of paper and hand it in for scoring. Scores will be published by teacher code, but are not part of the research project.

Items

1. Below are a list of objectives. Indicate on your answer sheet which are measurable and which are not.

   a. The student will know how to use a lathe.

   b. The student will be able to identify Arnold Toynbee and describe his influence on history.

   c. The student will understand football.

   d. The student will be able to construct models of atoms based on quantum theory with 75% accuracy.

   e. The student will be able to complete 5 of 7 free throws with a basketball from the free throw line.

   f. The student will know the characters in Hamlet with 90% accuracy.

   g. The student will be able to correctly match Chinese gods with their responsibilities.

   h. To know action verbs.

   i. The student will be able to collect data on mass and volume and then analyze that data to determine density.

   j. The student will be able to master a vocabulary list.

   k. The student will be able to apply the binomial theorem in solving word problems with 90% accuracy.

   l. The student will gain an appreciation of Chaucer.
**RESOURCE PACK**

This resource pack contains a listing of tapes, books and filmstrips used in the learning packet. In addition, two very brief monographs are also included. Please keep this pack with the balance of the learning packet.

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IV. OAK FOREST MONOGRAPHS

A. Instructional Objectives

Teachers are quick to admit that controversy exists as to what type of objectives are best for any given instructional program. The general non definitive objectives such as "appreciate literature" are preferred by some, while others would rather use objectives such as "...be able to explain the plots of five contemporary plays." Clearly, the second of the quotes is more measurable then the first, though it may not be as important and objective as the first. A brief study of objectives may help teachers find a realistic path to follow.

An objective is, after all, a goal. Goals are desired ends, which we hope to achieve. In the case of instructional objectives, it is important that teachers know what desired ends they are seeking in as specific terms as possible. Only if specific objectives are known, can a teacher intelligently plan learning activities to reach those ends and valid evaluative instruments to determine if the objectives were in fact attained.

The anatomy of a good objective is subject to little dispute. Generally, good objectives have three common characteristics: (a) they state the specific behavior desired, (b) they indicate the conditions under which the behavior should take place and (c) they mandate what the minimum level of performance would be. A problem with anatomically complete objectives is the difficulty of writing them. Many areas in the affective domain are difficult, but not impossible to behavioralize in a measurable way. In addition, if each days instructional objectives were written containing all three elements, the verbiage would be considerable and not totally necessary.

Consider the case of a chemistry teacher who sets up unit objectives. A few of the anatomically correct objectives could be:

(1) The student will be able to determine the molarity of a solution given the volume and moles of solute to one decimal place, 90% of the time.

(2) The student will be able to determine the molarity of a solution given the volume and mass of solute, 80% of the time.

(3) Given the molarity of a solution, the student will be able to find the mass of dissolved solute 80% of the time.

If our list of unit objectives were to continue, it would probably include over one hundred objectives for a unit on solutions. The question can be asked if it may not be easier, for testing purposes, to forget the desired level of competency for each specific objective and instead use an overall level of competency for the total unit. Suppose, for example, objectives are listed with the competency level omitted other then to say, "that the A student will achieve at least 90% of the objectives, a B student 80% and so forth. This approach is more within the realm of reason for many
teachers, because:

1. Most unit tests contain only one or two items per objective so finding 80% accuracy for any specific objective has no meaning.

2. Student evaluation as it is now done in schools, is on an overall basis and not an objective by objective basis.

All of this does not mean, however, that you should totally forget the idea of competency level for a specific objective. While instructing a class you can expect 90% accuracy on one type of problem before you go on to another type as a means of determining readiness.

What has been suggested here is that teachers use behavioral or measurable objectives, but that they need not necessarily contain all three anatomical parts so long as an overall level of competence is assigned for the units set of objectives. Anatomically complete objectives may be used, but remember to design the test accordingly.

Finally, in writing objectives, remember that the affective and psycho-motor domains are important learning outcomes. Too frequently, all objectives are lower level cognitive where we should try to get high order cognitive, affective, and psycho-motor objectives as well.

B. Learning Packets

Learning packets are a means of individualizing instruction. The rationale behind them is that learning can be improved if we, as teachers, make allowance for pupil differences. Learning packets allow the teacher to (1) vary rate of learning, (2) vary objectives (3) vary modality of learning. All packets may not vary all the factors mentioned here, but they make an attempt.

Learning packets contain various elements. Many people feel that all packets should contain a rationale, objectives, pre-test, learning activities, and a post-test. There must be some degree of flexibility in determining what a packet contains, because teachers are different and are desirous of different items in their packets.

The rationale for a packet is usually given after the title page. In the rationale, the author tells the student in general terms what he will be learning and why he is to learn it. In many cases, the rationale looks some what like the old type, nebulous objectives used by so many teachers for so many years. From a student point of view, the rationale will tell him where he is going and why he needs to get there.

Objectives as specific and measurable as possible are given. These objectives list the cognitive, affective, and psycho-motor outcomes desired by the end of the packet. Each of the objectives will be taught and student achievement determined. The objectives for this packet, as an example, covered all domains are being tested by several different means.
The pre-test is designed to test each of the desired objectives. Based on student performance, the teacher can decide what objective or objectives each individual student needs to pursue and which he already has met. In using learning packets it is rarely assumed that the student starts from a total absence of learnings.

The learning activities must show variety. Each objective should have at least two different routes so that students have the option of selecting which is best for them. In this packet, you may have noticed activities, such that you could select one tape from several or elect to use a text or monograph or even to use a filmstrip. In this packet you were also given the opportunity to supplement your studies with expanded information at your option. In addition to the types of activities used in this packet, the astute teacher will see countless others such as video tape, laboratory experiments, manipulative devices, programmed instruction and so forth. Remember, you are preparing several alternative routes to the same destination or, in some cases, different destinations.

Once the learning activities are complete, a post-test is administered. It is acceptable to use the same test as both pre-test and post-test. Teachers can evaluate both the students and the instruction by test results.

Factors such as time, imagination and resources will dictate how good a learning packet will be. Take as much time as needed to do a good job, but do not expect to include every possible approach to learning, only a reasonable variety so students have a better chance of attaining learning goals.
APPENDIX B
THE OAK FOREST TEACHER ATTITUDE INVENTORY

DIRECTIONS

1. Do not write on this booklet.

2. Place your coded number and department designation on the answer sheet.

3. Place an "X" over the initials which best represents your feeling toward the statement given. Use the following code:

   A= Agree
   U= Undecided
   D= Disagree

4. When you have completed the inventory, hand the response sheet and the booklet to the proctor and leave the room.

5. There is no time limit.

6. Thank you for your cooperation.
1) Computers used for instructional purposes reduce teacher effectiveness.

2) Other teachers should not be consulted when faced with a professional problem.

3) Good students if they desire, may be used within classrooms to help the slower students.

4) Overhead projectors are useless except in very large group instruction.

5) Using video taped programs can enhance the learning situation.

6) Firmstrips are devices designed to reduce teacher work load.

7) The only printed material of value are textbooks.

8) Using more than one text in a class is a waste of teacher time and effort.

9) Measurable objectives are a good way of setting specific goals.

10) Grouping students based on ability may facilitate learning.

11) Dividing a class into groups based on their learning style is not a worthwhile practice.

12) Teacher made achievement tests can be good diagnostic tests.

13) Pre-testing followed by instruction and post-testing is not possible in the high school situation.

14) Learning packets are usually a waste of time.

15) Teachers should allow students to select their own objectives but the teacher may determine the means to reach those objectives.

16) It is best to keep community members from having an active role in the instructional program.

17) Role playing can help a student develop empathy for a particular type of individual.

18) It is frequently good to let students select problems to solve and to let them use their own approach.

19) There is no purpose to letting students investigate an area of knowledge without coming to a predetermined end.

20) It is frequently profitable to allow students to make class presentations.

21) It is a good idea to allow students to progress at their own rate and take as long as they need to learn.
22) If teachers are faced with a time deadline for completing a course, they may still be able to allow students to pace themselves within that framework.

23) A teacher lecturing is the best way to teach most academic subjects.

24) When a teacher lectures, questions or interruptions should not be permitted.

25) It is sometimes advisable to let small groups make presentations to the class as a whole.

26) Drill exercises are old fashioned and should not be used.

27) It is sometimes advisable for the teacher to select a problem and techniques for solving it and then mandate the students to complete the assignment.

28) Games simulating real life situations are of little value in the classroom.

29) Dividing a class into several groups, each involved in a different discussion, makes a class that is too noisy.

30) Some students may benefit by being able to select materials and methods which best suite him in reaching goals established by the teacher.

31) Independent study leads to a lowering of academic and behavioral standards.

32) Filmstrips, tapes and other media can sometimes be more beneficial if students use study sheets made by the teacher.

33) Teacher made achievement tests are poor review instruments.

34) Grouping students in accordance to interest may increase the motivation of the students.

35) Grouping based on learning problems only serves to perpetuate ignorance.

36) Dividing a class into groups such that all abilities are present within each group serves no educational purpose.

37) Course objectives should vary to the point that students of greater ability can have objectives in excess of those required for minimum completion of the course.

38) Workbooks should be the same for all students and have the same difficulty level of items.

39) Films are valuable learning aids only when discussed or used with instructional objectives and integrated into the instructional program.
40) Audio tapes of class discussions or professional presentations are valuable in and out of the class situation.

41) Laboratory equipment should be used by the students as much as possible when the material fits the topic or the student.

42) The self contained classroom is the best environment for learning to occur.

43) Students can help the teacher by taking over clerical roles thus freeing the teacher for more important work.

44) Programmed instruction self made or purchases; increases the effectiveness of the teacher.

45) Individual tutoring is not the function of a classroom teacher.
THE OAK FOREST SCALE OR USE
OF TEACHING TECHNIQUES

DIRECTIONS

1. **DO NOT** write on this booklet.

2. Place your code number and department designation on the answer sheet.

3. On the response sheet circle the number which corresponds to the degree to which you utilize the individualized technique or procedure identified by that item. The scale is:

   1= Never use the technique

   2= Use less then 10% of the time

   3= Use more then 10% but less then 50% of the time

   4= Use more then 50% but less then 75% of the time

   5= Use more then 75% of the time

4. When you have finished the scale hand the response sheet and booklet to the proctor and leave the room.

5. There is no time limit.

6. Thank you very much for your cooperation.
1) SELF PACING
Allowing students to pace their own learning with deadlines established by the teacher or by teacher-student conference.

2) SELF PROGRESSION
Allowing students to progress at their own rate without any specific time deadline.

3) TEACHER LECTURE/DISCUSSION
Teacher presentation with opportunity for pupil interaction during the presentation on a student need basis.

4) TEAM TEACHING
Two or more teachers planning and working with the same group of students simultaneously.

5) GROUP PRESENTATION
Student groups study a particular topic or area and make presentations to the class.

6) INDIVIDUAL STUDENT PRESENTATION
Individual students make reports, perform demonstrations or make other presentations to the class.

7) DRILL
Teacher provides activities for students to reenforce skills recently learned by doing examples of varying difficulty.

8) INQUIRY
Class or individual investigations involving problem finding tentative conclusions and testing of hypothesis.

9) PROBLEM SOLVING, UNIFORM
Teacher selected problem whereby all class members solve the same problem with the same or similar techniques.

10) PROBLEM SOLVING, INDIVIDUAL
Teacher or students selected problems which may be different from student to student in their nature, approach or both.
11) SIMULATION GAMES

Using games or activities which simulate actual real-life situation. These activities have structure.

12) ROLE PLAYING

Students assume particular roles in a given situation which is not highly structured. A higher degree of freedom than simulation games.

13) GROUP DISCUSSION

Class divided into groups with each group carrying on an independent discussion.

14) OUTSIDE PRESENTATIONS

Utilization of people from outside the normal school environment to make presentations.

15) SELF-DIRECTED INSTRUCTION

The school or teacher sets the objectives for the student but the individual student selects the materials and methods to reach the objectives.

16) PERSONALIZED INSTRUCTION

Students establishes objectives based on his interest but once selected the objectives are reached by means determined by the teacher.

17) INDEPENDENT STUDY

The student determines the learning objectives and the means by which to achieve them.

18) LEARNING PACKETS

Packets of materials to reach a stated objective or objectives. These packets offer different methods of getting to the same objective and permits total student selection of activities within the packet.

19) ACTIVITY ELEMENT

A part of a learning packet such as a study guide for a particular filmstrip.
20) PRE-TEST/POST-TEST

Use of pre-tests to assess student level and post-tests to determine gain.

21) USE OF TEACHER MADE ACHIEVEMENT TESTS FOR REVIEW

Using scored tests as review exercise for class or individuals within the class.

22) USE OF TEACHER MADE ACHIEVEMENT TESTS AS A DIAGNOSTIC TOOL

Using achievement tests to find student weaknesses for the purpose of correcting pupil failure.

23) INTEREST GROUPING

Dividing the class into groups based on pupil interest in various aspects or approaches to a subject.

24) LEARNING STYLE GROUPING

Dividing a class into groups based on types of teaching or learning techniques most preferred by individual students.

25) LEARNING PROBLEMS GROUPING

Dividing a class into groups based on common learning difficulties.

26) ACHIEVEMENT GROUPING, HOMOGENEOUS

Dividing a class into groups for homogeneous achievement such that all bright students are together, all average and so forth.

27) ACHIEVEMENT GROUPING, HETEROGENEOUS

Dividing a class into groups such that all abilities are present in each group.

28) UTILIZATION OF MEASURABLE OBJECTIVES

Stating clear objectives which can be measured easily.

29) OBJECTIVE FLEXIBILITY

Allowing different students to have different objectives. This technique does not preclude minimum objectives to be met for satisfactory completion of the course.

30) MULTIPLE TEXTBOOKS

Use of different textbooks for different people based on student need.
31) WORKBOOKS

Use of workbooks of varying difficulty and complexity for drill.

32) NON TEXTBOOK PRINTED MATERIALS

Using periodicals, pamphlets and other printed material which is not considered a text.

33) FILMS

Use of movies within the program with specific objectives in mind.

34) FILMSTRIPS

Use of filmstrips with specific objectives in mind.

35) TAPES, AUDIO

Use of tapes for students with specific objectives and student needs being considered.

36) TAPES, VIDEO

Use of video tape to record a class or to show taped programs with specific objectives in mind.

37) LABORATORY EQUIPMENT

Use of science, math, industrial arts or other lab equipment which the students may manipulate with specific objectives in mind.

38) OVERHEAD PROJECTOR

Use of overhead projector as an aid to visualization.

39) VARIABLE LEARNING ENVIRONMENT

Altering the learning environment during class time. This could include use of learning centers, study corals and so forth.

40) HELPER STUDENTS

Using more advanced students to assist students having difficulty.

41) CLERICAL HELPERS

Use of student or paraprofessional helpers for secretarial or clerical duties.
42) TEACHERS AS HELPERS

Use of fellow teachers as resource people in helping plan learning activities or in helping supervise activities.

43) PROGRAMMED INSTRUCTION

Learning broken into carefully sequenced steps such that the answer to one frame dictates the next step.

44) COMPUTER AIDED INSTRUCTION

Use of a computer to guide or monitor students on a path toward objectives.

45) TUTORING

Teachers working with students on a 1 to 1 basis as part of the regular activities for a course.
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The final copy has been examined by Dr. Berlin and his signature appearing below signifies that any necessary changes have been made and that the dissertation has gained final acceptance with respect to content and form. The dissertation is therefore accepted in partial fulfillment for the Degree Doctor of Education.

[Signature]
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