ABSTRACT
        The principal purposes of the preparation program at
North Central Technical Institute (NCTI), Wausau, Wisconsin, were to
provide opportunities for certain students to further their general
academic development and to explore various vocational fields.
Students intended for the preparatory program were those identified
by their high school records and by entrance examinations as needing
further development before admission to a postsecondary vocational
program. The program objectives were accomplished by: (1) assessing
the remedial education needs of students through diagnostic testing
in reading, English, math, natural science, and study skills; (2)
interviewing instructors for their reactions to the program; (3)
visiting other schools to examine methods and curriculum materials
used in their remedial education programs; and (4) developing
programs to meet the specific remedial education needs of individual
students. As a result of these efforts it was recommended that a
learning resource center be developed to provide an opportunity for
individualized instruction. Three-fourths of the document consists of
appended materials: a periodicals bibliography, program objectives,
school visitation and seminar report. NCTI structure and functions,
forms, and a followup study of students in the developmental program
(1970-73). (VA)

Final Report

Project No. 15.055.151.223 (b)

EVALUATION OF SELECTED INSTRUCTIONAL METHODS
FOR ACADEMICALLY DISADVANTAGED STUDENTS

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Wausau, Wisconsin

Lawrence B. Hoyt District Director

June, 1974

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# PREFACE

If we are indeed committed to providing vocational education
opportunities for all people, then the Developmental Program must
become a viable part of our curriculum. It is clearly evident that
the lower 25% of most high school graduating classes would experience
great difficulty in many or all of our existing programs. This writer
will be the first to recognize the fact that we cannot provide for the
special needs of everyone but past experience with the Preparatory
Program proves beyond a doubt that we can help many who might other-
wise end up as dropout statistics.

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TABLE OF CONTENTS

# INTRODUCTION

The North Central Technical Institute has since 1959 operated
a program for several years entitled "Prep" or under the official
state designation of Vocational-Technical Developmental

This program has operated under the traditional concept of
assigning students to specific classes, meeting at set hours with
a specified instructor. Recent results with this traditional approach
for this developmental program have been less than satisfactory.

The purpose of this study was to take a critical look at the present
methods and procedures utilized in "Prep" with the hope that an
alternative approach for the remedial education program at NCTI's
Wausau Campus could be recommended.

Objectives of the study, procedures used, activities conducted, and
conclusions and recommendations are included in the body of this report.

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North Central Technical Institute
Preparatory (Prep) Program

## Statements of Philosophy

1. Students enrolled in the Prep program are those who have indicated by high school achievement, entrance examinations, and interviews that their over-all scholastic achievement and/or maturity indicates a need for further training and development, prior to entrance into a desired vocationally-oriented program.

2. The primary purpose of the program is to provide an opportunity to the individual enrolled to further his general academic development. It must be noted that the Prep program is not intended to serve as a make-up program for deficiencies in pre-requisite high school classes.

3. A second purpose of the program is to give the student an opportunity to explore various vocational fields, so as to clarify his thinking in relation to his vocational choice.

## Curriculum

1. The curriculum should include an opportunity for the student to further his academic understanding in the fundamental studies of <u>mathematics</u>, <u>science</u> and <u>English</u>. Realizing that one of the most common factors contributing to low academic achievement is poor <u>reading</u> ability (both speed and comprehension) emphasis on reading improvement must be included in the cirriculum.

2. Another contributing factor to low academic acheivement which has been identified is poor study habits. It is therefore essential that the development of good study habits and procedures be a major objective of all classes in the Prep program and that a specific cirruculum for the teaching of good study procedures be included as an integral part of the Prep Forum.

3. Realizing that such a curriculum involves only familiar academic classes it is advisable that some other class be included which introduces almost all new concepts and information in order to create a feeling of expanding development. Also such a class would give the students an opportunity to indicate their ability to learn and comprehend new material. The emphasis in this Prep Forum class shall be to develop a growing awareness of the world and its people about us as well as to understand themselves as a growing maturing young adult. In short it becomes a group counseling atmosphere.

## Student Evaluation by Instructor

Since the prime intent of the Prep program is academic achievement and maturing the evaluation of the student's progress in the Prep program classes shall be as follows:

1. A pre-test and post-test shall be administered in each of the basic classes: science, mathematics English and reading.

2. Since the primary purpose of this program is self-improvement and not directed at the development of a specific vocational or technical

skill, and since the classes are non-credit, letter grades will not be used but rather an indication of progress or achievement in terms of the individual's level of attainment. This is to be expressed in terms of the grade level of achievement or in percentile scores based upon these specific standardized tests.

3. Mid-term evaluation is to be a written evaluation to the student in terms of his rate and extent of achievement.

    A. A copy of this evaluation is to be submitted to the Prep Advisor (Mr. Bursik) by Friday of the ninth week.

    B. The instructor shall take time to discuss this evaluation with the student, in private, so that the student fully understands his progress and potential.

4.     A. The CQT test is to be re-administered to the prep student two weeks prior to the completion of the semester by the Prep Forum instructor.

    B. The results of the CQT, along with the instructor's final written evaluation shall be utilized in counseling with the student to determine the disposition of the Prep student.

5. Any standardized achievement tests to be used in the Prep program (as the pre-test and post-test) must be approved for use by both the Student Personnel Services Director and the Prep Advisor.

6. As a result of the evaluation and interpretation of the test scores, and the instructor's observation during the semester, the instructor shall prepare a written final evaluation indicating the student's over-all progress and achievement in the particular class.

    A. This statement is to be in the Prep advisor's possession no late than the end of the 16th week of the semester.

    B. In order that this statement can be prepared accurately, it is recommended that the instructor keep an accurate record of the student's class behavior; such as absence, tardiness, promptness of assignments, other study habits, etc.

    C. An anecdotal record shall be maintained for each student.

    D. The instructor will also indicate, in his written evaluation, whether or not he feels the student is prepared to enter into a specific major course of study.

# METHODOLOGY

## Objectives of the Study

1. To identify the remedial educational needs of the students through appropriate evaluation testing techniques.

2. To obtain NCTI instructor reactions to present Prep program.

3. To see what others are doing in remedial education in terms of programs and curriculum materials.

4. To develop a program to meet the specific needs of individual students for remedial education.

## Activities and Procedures

Objective #1:

   1. Review present testing evaluation practices for entering students.

   2. Identify other possible tests.

      a. Review literature

      b. Talk to others (visit other programs)

      c. Correspond with ACT, etc.

   3. Suggest alternative methods of evaluation, if feasible, based on results in 1 and 2 above.

Objective #2:

   1. Interview present instructors teaching Prep classes.

   2. Interview selected instructors in majors (one each area).

   3. Interview Department Chairman.

   4. Interview student services.

Objective #3:

   1. Identify successful prep programs, VTAE schools and others.

      a. Select and visit - program design, curriculum materials

   2. Secure materials from other schools.

3. Contact publishing companies

4. Review literature

Objective #4:

1. Submit program recommendations with alternatives.

2. Report should show staffing needs, schedules, cost estimates, equipment and supply costs. Implementation might be in phases.

A PERT Chart outlining the overall plan of this report is contained in Appendix B

Specific objectives which were to be accomplished during the summer of 1973 are stated in Appendix C

## FINDINGS AND ANALYSIS

### Student Remedial Education Needs

Remedial education needs of students entering the developmental
program were identified through a series of diagnostic tests
given at the time of enrollment at NCTI.  All students were
pre-tested in the following areas:  reading, English (grammar
and spelling), math, nautral science and study skills.  Other
tests given were the Kuder Interest Inventory, Otis-Lennon Test
of Mental  Ability and the Minnesota Personal Problem Test.  In
addition, a math placement test was given to students who planned
to enter programs requiring a background in algebra.

The bibliography (appendix A) provides a list of materials read
revealing what others were doing in developmental programs.  Reports
of visits to other schools and participation in a learning resource
center workshop are included in appendix D.

Reactions from faculty members and counselors related to the concept
of doing more diagnostic testing so that instructors would have more
information about students individual problems, both educationally,
and medically follow.

### Instructor reactions

Interviews with instructors and department chairmen provided the
following comments:

> "We need more information about our students <u>before</u> or <u>as soon</u>
> as they enter our classes.  If we were more knowledgeable of
> their strengths and weaknesses, we might be better able to
> help them."

> "Fewer students per class.  There is no way that an instructor
> can adequately handle the same number of students in a remedial
> class as compared to a 'regular' class."

> "Instructor specialization.  Allow a few instructors to
> specialize in remedial programs.  Working with developmental
> students, one hour, associate degree majors the next, diploma
> program majors the next, etc. is difficult."

> "Strive for a better working relationship with student services."

> "Program assists in 'beefing up' program entrants for second
> semester."

> "Essential if we are to serve lower quartile of our high
> school graduates."

## Other Schools

Visits to several schools were made to study the approach and techniques utilized in their learning resource centers and other individualized instructional programs. Several sample packages were obtained from both Fox Valley and Waukesha Technical Institutes.

These materials were very helpful in that they were utilized to design the basic format for the NCTI instructional packages which were later used in NCTI's Learning Skills Center. Various students were interviewed at Fox Valley and their reactions to the individualized mode of instruction appeared to be very positive.

Two NCTI faculty members participated in the Learning Resources Seminar at Western Wisconsin Technical Institute on June 10-13, 1973. This seminar was very beneficial in that it was conducted by several key educators who had several years of experience establishing and evaluating learning resource centers. Many pitfalls were avoided as the result of attending this conference. See appendix D for a more detailed elaboration on these visits.

CONCLUSIONS AND RECOMMENDATIONS

A learning resource center (LRC) should be developed. It becomes
increasingly evident that the many varied individual needs of
students enrolled in the Developmental Program cannot be met
through the traditional classroom approach. There exists a strong
need for opportunities to individualize instruction.

It is a recognized fact that the extreme change to a "work at your
own pace," or "come in to the LRC whenever you want" concept will
not work with the particular segment of the student population we
are serving in the Developmental Program. With this in mind, it
is recommended that individualized instruction be incorporated
within a highly structured setting.

Students should be assigned to work in the LRC in blocks of time,
probably 3 or 4 hours. Within that block of time, the instructor
involved will have the flexibility to work with the student in various
areas for varying periods of time. For example, a student (in a 3
hour block of time) may spend 20 minutes working on Reading Improve-
ment, 40 minutes on English Review, and 120 minutes on Arithmetic
Review. This sort of flexibility provides for better meeting
individual needs as opposed to the present structure which would
provide for 1 hour in each of these areas.

The content of the following courses should be offered through
the LRC:

     1.  Arithmetic Review
     2.  English Review
     3.  General Physical Science (except lab)
     4.  Prep Forum
     5.  Reading Improvement

The course presently known as Prep Forum should be dropped from the
curriculum. The title is confusing and its content should be included
in the Reading Improvement and English Review courses.

Instructors working in this area should be totally committed to working
with this segment of the student population. Their work load should
be entirely within the developmental or remedial area. The "shifting
of gears" necessitated by having Associate Degree students, Diploma
Program students and Developmental students is highly undesirable.

It is recommended that one person have 25% of his work load in the
area of advising and counseling students in this program. Preferably
this should be someone who has experience in working with this type of

student.  An appropriate educational background should also be
required.  The 25% of one person's work load should be sufficient
for 40-50 students.

An alternative to this proposal might be to reduce the load of
all instructors in the program to a lesser degree.  This would enable
all to share in the guidance/counseling responsibility.  It may also
be the case whereby smaller numbers of students enable the instruc-
tional staff to accomplish this task in the normal work schedule.

The student/teacher ratio should be 15:1 or less.  It must be
recognized that more individual help must be provided for students
in remedial courses.  This cannot be compared to the Secretarial
Science ATL where students are highly motivated and in most cases
not from the lower quartile of their high school class.

It is recommended that para-professional staff not be employed in
this program at the present time.  Instructional staff working in
this area should make recommendations in the future as to whether or
not to employ para-professionals.

The primary responsibility of Student Services should be to identify
potential students and counsel them into the program.  Identification
should be based on the success-failure probability of the student in
his specific choice of major.  The decision to counsel a student into
the Developmental Program or permit immediate entry into his choice
of major should be based on an evaluation of test results, high school
record, and personal interview when necessary.

Success experiences are essential to these students.  With this in
mind, it is recommended that accurate records be maintained in the
form of progress charts, performance records, or task completions.
In this manner, the student will be able to quickly assess his achieve-
ment in a given area.  This will require the development of a systematic,
consistent evaluation procedure for each of the courses offered.  A
developmental record form (see appendix F) was developed to accomplish
this objective.  This form should help to facilitate information
retrievable for future research.  The follow-up study, for example, which
was completed in August of 1973 (appendix G) involved many hours of
researching microfilm in the Student Services office.  Questionnaires
also had to be mailed to 89 dropout students to gather pertinent data.
It appears significant to note that 148 out of the original 169 students
who entered the developmental program from 1970-1973 completed it.
Follow-up studies such as this need to be expanded so that NCTI can
keep an on-going tabulation on how many students enter the developmental
program, how many complete the developmental program  how many enter a
major, change majors and graduate.

In addition to regular courses in the Developmental Program, the student
should be permitted to take at least one course in his choice of major.
Major instructors should be contacted to determine which courses may be
appropriate.

With the implementation of the T and I Occupational Survey course, students would be able to explore a number of program offerings. These programs would include: electronics, electronic servicing, mechanical design, mechanical drafting, residential design, graphic arts, machine tool operation, agricultural mechanics, automotive technology and welding.

NCTI should also consider the development of a similar exploratory course in the area of business administration. This course would include exploration in the programs of: marketing, merchandising, data processing, accounting, secretarial science, clerk typist and insurance.

It is hoped that eventually the programs at the Antigo campus can also be included in this list.

An alternative plan, discussed with Mr. Battist, would be to provide observation and limited participation within the various major areas. A teacher-coordinator would work closely with major instructors in setting up these sessions concurrent with regular classes. This course might be titled "Occupational Exploration". Also included might be library assignments, field trips, and other planned learning activities.

It is recommended that all courses be offered as credit courses. With the implementation of the new grading system, the student would have the choice of taking these courses for credit or non-credit. Although the credits earned for Developmental Program courses would not count toward graduation in a major, it would aid in removal of the stigma of having to take non-credit courses of a remedial nature.

Provide for special summer employment of instructional staff each year for the purpose of evaluation of the program and further development of curriculum materials. A period of time where concentrated effort may be expended in this area will prove more effective than scattered hours throughout the year.

It would also be desirable to have the instructional staff meet with staff members of other schools with similar program, review their curricular materials, and view their facilities.

It is recommended that this be an open entry, open exit program to the fullest extent possible. The program should be designed to meet the immediate needs of entering students. It should also take into account the varied learning abilities and learning rates of the student population.

It is apparent that enrollments will fluctuate from time to time but this in no way should affect the continuity of the program.

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\* starred items indicate that NCTI Library has the magazine

Prep Program Study
Jan — May 25, 1973

Define Objectives

Timeline: March 1 | March 15 | April 1 | April 15 | May 1 | May 15 | May 22

Review Literature

Review Present Testing Program → Identify Alternate Tests → Test Consultants In? → Summarize Test Results

Interview Present Prep Instructors → Talk With Major Instructors → Talk with Department Chairman → Summarize Interviews

Identify Schools To Visit → Finalize Interviews Schedules And Agendas → Start School Visitations → Summarize School Visits

Contact Sales Representatives → Arrange On—going Demonstrations

Establish Prep Ac/Hoc Advisory Committee → Meet → Meet

Start Rough Draft → Review Draft → Revise and Submit Final Report → Report Presented To Board

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North Central Technical Institute
May 18, 1973

Objectives for Developmental Program
to be Accomplished During the Summer of 1973

Thomas Kerkes

1. Supervise and coordinate all of the activities of the program.

2. Establish a new pert chart for all summer work.

3. Interview Dr. Bens at Stevens Point.

4. Obtain additional information on the DACUM concept and help determine
   how this will apply to all areas of instruction in the learning
   resource center.  DACUM will not work in a traditional environment
   of tests, authoritarian instruction, and rigidly structured activities.
   I will work with the instructors to:

   A. Establish general areas of competence.
   B. Identify skills required in each area of competence.
   C. Sequencing skills.
   D. Structuring skills into a finished profile.
   E. Establishing rating scales for measuring skills.
   F. Selecting and developing printed materials.
   G. Help develop alternatives in media and modes of instruction.

5. Coordinate the development of the basic format to be used in
   developing individualized learning packages.

6. Check to see if tests (pre and post) are consistent with the
   behavioral objectives established for the various courses.

7. Help to assemble resources, providing situations through which the
   student can practice the behavior specified.

8. Coordinate the development of self-tests and performance tests.

9. Get a commitment on the part of every instructor to the learning
   philosophy used in the developmental program.

10. Develop an inventory sheet to be posted in the center.

11. Identify staff and their qualifications.

12. Develop an in-service training program to prepare new staff for
    the center.

13. Prepare the ground work for a public relations program.

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14. Start work on a meaningful budget.

15. Help to determine how career education fits into this program.

16. Work with student services to determine how our students will be identified and filtered into the program.

## Larry Kaffine

1. Develop alternate tests for arithmetic review. Students have differing completion times so Larry wants to develop a series of "A," "B," "C," tests to use as alternates.

2. Individualize the Algebra course. He will break this traditional course into packages and tapes.

3. Work with student services on developing some interview and counseling techniques appropriate for an approach to the DACUM concept. (All learning resource personnel will interview and establish a working relationship with each student on a one-to-one basis.)

4. Prep Arithmetic Curriculum Development.

   Materials to be developed will consist of:

   A. Tests for individualized instruction.
   B. Packaged materials for individualized instruction.
   C. Present programmed text has 38 units of work. He will be writing tests to correspond with these units. Each unit, or group of units, will require several tests. This will be necessary because on an individualized basis, any student who fails a test must review the materials and continue testing until an acceptable level of proficiency is obtained.
   D. Packaged materials should be developed in the following areas: Ratio and proportion, formula manipulation, metric system by ratios, powers of ten. He cannot possibly develop all the above packages in the allotted time of two weeks. He will concentrate his efforts on ratio and proportion for there is great need in this area.

## John Bauman

1. Redevelop sections of the old prep forum. John will integrate the use of Time or Newsweek along with the Milwaukee Sentinel into his reading program. John will also find some more appropriate short stories for his students to read. (Find relevant material.)

2. Develop packages from some of the adult basic education materials we have on hand. He will first identify the basic units and objectives as related to DACUM.

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3. Work on developing a suitable student progress report sheet.

4. Obtain copies and reading levels of all textbooks used at NCTI, and determine how these texts can be used in the Learning Res. Center.

   A. Inventory, catalog, and evaluate materials presently in possession of NCTI which are relevant to our program.

   B. Study and evaluate the ever increasing wealth of new materials and methods now in use or recommended for use by authorities in the field.

   C. Evaluate two aduio-visual package programs (Learn, Inc., and _____.) Purporting to have achieved measurable success in attaining education objectives through individualization of the learning process in reading and English; formulate and evaluate a battery of diagnostic instruments which will indicate a student's level of proficiency on any given point in time.

   D. Formulate and evaluate pre- and post-tests which will yield a substantive measure of a student's progress.

   E. To discourse and exchange ideas by visiting Marathon Center Campus and other local agencies dealing with developmental deficiencies in students.

   F. Design a flow-chart of furnishings, materials and activity centers to ensure an orderly interplay of students and resources.

   G. Devise and write a tentative curriculum which may be implemented in the fall quarter of 1973.

   H. Devise or recommend the acceptance of commercial programmed English Skills Packages which will be utilized by an experimental group as its sole instructional experience. It is hoped that post-testing the experimental and control groups may provide meaningful data upon which a reliable generalization as to relative effectiveness of innovative and traditional classroom methodology.

## Jake Bursik

1. He is assigned the responsibility of teaching the basic science course in the Dev. Pr. curriculum; primary emphasis would be placed in developing materials for this course.

   A. Existing materials would need to be collected and reviewed.

   B. Some materials should be developed for independent study.

   C. Pre- and post-tests should be found or developed.

   D. Lab experiments should be set up along with a schedule for conducting them.

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2. Some time should be spent with John Bauman in incorporating portions of the old Prep Forum Course into the course content of English Review or Reading Improvement.

3. Time permitting, he would like to work on the development of a diagnostic testing program to be used with all students entering the Dev. Pr.

4. The DACUM concept should be given consideration and some aspects may be incorporated into our program.

School Visitation

and

Seminar Conference Report

Submitted by:   Thomas Kerkes
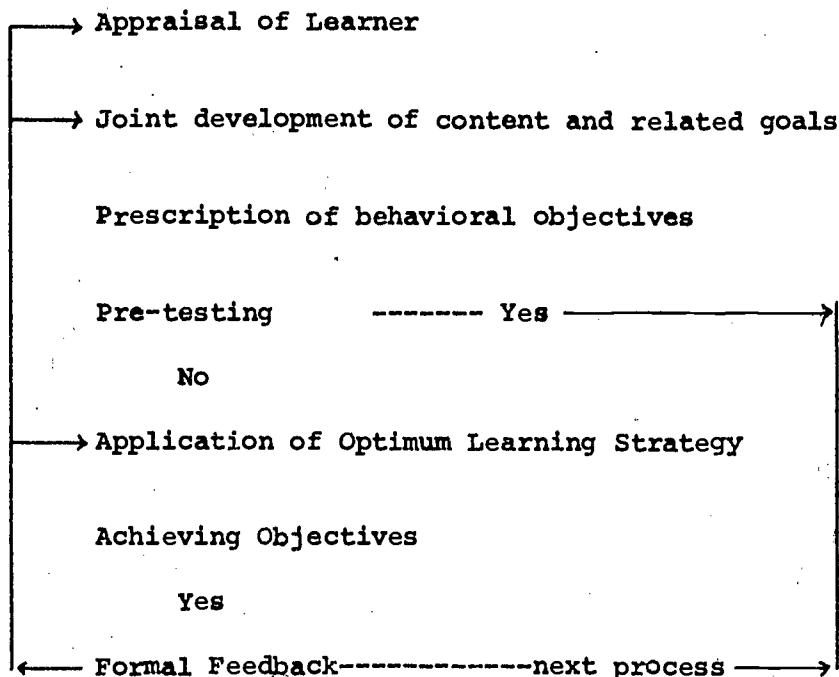                John Bauman

Learning Resources Seminar

June 10-13, 1973

Western Wisconsin Technical Institute

This Seminar was conducted by several key people who have had several years of experience in the field of learning resource centers. All of the people however were either from Junior Colleges or four year Universities.

Individualized instruction was defined as self pacing instruction using different modes to accomplish individual objectives. The traditional system presupposes failure and normal probability in a lock-step approach. Under this system time and instruction remain constant whereas in individualized instruction time, instruction, and assignments vary. Theoretically under this system, each student can learn by modes best for him. The following basic model was offered as an example:

Instructional System

Appraisal of Learner

Joint development of content and related goals

Prescription of behavioral objectives

Pre-testing ――――――― Yes ―――――――――――――――――――――→

    No

Application of Optimum Learning Strategy

Achieving Objectives

    Yes

←―― Formal Feedback――――――――――next process ―――→

The first step in individualizing instruction might be to break the present courses down into mini courses. The first data to be packaged should be lecture material covering terms and definitions. The student can easily learn these things on his own. He can later demonstrate his understandings at seminar sessions. This is where the teacher plays his most important role. Students can be graded on their seminars and recycled if they fail.

LEARNING RESOURCES SEMINAR

Under individualized instruction the student is allowed to stretch knowledge out. There is a danger in this in that if you stretch it out too far the student cannot keep current in applying his knowledge. Deadlines must be set. When Waukesha first tried individual instruction, hardly anyone completed the courses.

Dialogue is important in setting up the program. Committees should be established to get some cross-sectional input.

One session was devoted to computerized data in a developmental program. This would be relevant if we ever established a testing center.

Some new functions which a developmental center could serve were mentioned. Small groups could use it to "brush-up" on some skill they need to get a job or a promotion. A meal ticket approach might be used where a student buys a ticket for $12 and is allowed to choose any twenty lessons.

Programs should be set up so that they can be easily updated. This means that all hardware should be closely examined. The following hardware was recommended:

1. COXCO (slide, sound)
2. Telex tape recorders for good audio reproduction
3. Ducayne filmstrip projectors
4. Video tape cassettes

The following recommendations were given on the lab operation.

1. Allow the student about 40 minutes to master a 20 minute tape.

2. Allow plenty of time for orientation.

3. Teach the student how to properly operate the equipment (no more than two pieces at a time).

4. Use student aids (work study) especially the first week of operation.

5. Give complete directions on everything or they will ask a million questions.

6. Make the first packages simple so the student can experience success.

7. Pass out evaluation sheets every week. Students can leave them in a box.

8. Don't get bogged down with make-up work.

9. Make the lessons self sufficient (lower learning levels).

10. Correlate tapes with equipment (Sony with Sony).

11. Avoid the vending machine idea.

12. Buy ready made packages if you can find them suitable to your needs.

13. Show the student the relationship between the packages.

14. Avoid having the students wait for equipment.

15. Break large segments into smaller segments.

16. Use a lot of humor and vaudeville tactics, especially in the early packages.

17. Keep the "meat" in the package. Don't have the student running around the school.

We were able to bring back several samples of learning kits and packages and established some good contacts. This was a very worthwhile seminar.

## SCHOOL VISITATION REPORT – FOX VALLEY

·John Bauman and I visited Fox Valley Technical Institute on June 18. The physical plant which was designed for individualized instruction is divided into several subject matter areas. This arrangement appeared to work well with a limited number of students. I was told that there is a noise factor during the regular school year. They plan to add a few movable partitions soon to separate some of the areas. Each subject area has its own check-out area which utilizes a mass retrieval system. Fox Valley uses the concept approach rather than a sequenced approach to instruction. This means that the various subject areas can draw freely upon each other for concepts. A student who is having trouble understanding the occurance of blond hair and blue eyes in Psyc unit for example can pull a package·in math on probability.

Fox Valley has an impressive array of hardware and software. I checked out some learning packets and found the quality of cassette tapes to vary from poor to excellent (according to audio production standards). The tapes appeared to have both written and oral identifications to facilitate student use. The tapes are played on AVIDI players equipped with headsets.

Fred Timm was very generous in supplying us with master lists of all of their materials. We can secure cassette tapes by sending them some 60 minute blank cassettes. They will record the material and send it back to us. We could then sort the material out on separate cassettes (10-30 minute sections).

·Timm contends that they have encountered some success with visualizing their listening tapes. This is an example of the type of innovation which must accompany individualized instruction. Individualized instruction is not just "packaged learning." The instructor should not be a vending machine who says: "here kid, take this package and get lost," or "are you back again!" I would not recommend individualized instruction until the following conditions were met:

1. Objectives are properly written.
2. Traditional courses are validated so comparisons can be made with individualized instruction later.
3. A delivery system is developed.
4. Agreement on course content among all the instructors teaching the course. Allow the major instructors to have some input of ideas. Allow advisory committees to have some input of ideas.
5. Have enough packages so that students will not run out of material.
6. Have at least three forms of every test.
7. Allow for different modes of instruction. Avoid too much print oriented material. Different modes will be needed to recycle students who might fail the first time.

Fox Valley is using colored video tapes which have made quite an impression upon the students. (something new). Some of their most heavily used tapes in the social studies areas are the propaganda tapes. Their Collier Macmillan program has been successful in communications.

I interviewed several students to get their reaction to individualized instruction. One said that: "I have been away from school for fifteen years, I feel confident that I can get started without competing with recent high school grads." Another said: "I feel like an adult and yet I can get all of the personal help I need." One student however said: "I think that sometimes we get too many packages."

Most testing and record keeping functions will eventually be handled through a 370 computer. Test items can then be randomized. All tests are presently locked up at the subject area counters. One of our long range goals might be the development of a testing and mass retrieval center.

I had an opportunity to talk to a Psycology instructor who supplied me with several units (individualized in psyc. and soc\). These units appeared to be in a workbook type format and offered little variety to the student.

Fox Valley has worked on this system (with the aid of Federal money) for four years and have committed over 4000 man hours to the development of their general education programs. One section of shelves alone contained over $11,000 worth of tapes.

I feel that we should attempt to write some Federal projects (something with a new emphasis) which would utilize individualized instruction to help get us moving in general education toward individualized instruction.

# School Visitation - Waukesha

We visited Waukesha Tech. on June 19. Mr. Catania talked to us about the pros and cons of individualized instruction at Waukesha. They originally had a "come when you feel like it" policy which was disasterous, attendance dropped off eighty per cent. They now have mandatory attendance for a minimum number of sessions.

Waukesha too has found that they have too many open areas, they also have a noise problem which they have attempted to remedy by extending their partitions and covering them with carpeting. The cost factor in individualized instruction for them is astronomical. They went to individualized instruction with a traditional load formula and have ended up paying virtually all of their instructors for overloads.

Waukesha does not like to give out their materials. (They have found that most people take and do not reciprocate.) We did manage to obtain a few sample packets with the understanding that we would send them something. We talked to instructors in all areas of general education. Several were working on Summer projects to individualize various courses. We could consult with the following people if we seek any help:

1. Gerry Baily                   Math and Data Proc. Math

2. Jim Clark
   Bill Devlin                   Science

3. Leigh Barker
   Liane Dolezar                 Communications

4. Jim Tegtyeyer                 Curriculum Specialist

5. Ken Race                      Economics

6. Larry Stegall                 Social Studies

It appeared that Fox Valley was better equipped than Waukesha (offered different modes of instruction.)

Adult basic education is separate at Waukesha. They operate in a store front downtown. They have a heavy concentration in their reading program grades 1-8. They get a cross section of people into their program. Handicapped, slightly retarded, immigrants, and a variety of drop-out cases. They use three basic types of hardware: the autotutor, Audix, and tastistiscope. They like to recycle successful people back as tutors. Their lab runs in shifts from 9:00 a.m. to 9:00 p.m.

They are also moving to shifts in their regular programs. Econ, Psyc, etc. with each having one instructor working from 4:30 p.m. to 9:30 p.m.

It appears that we could utilize out present facilities for individualized instruction. This could be initiated in a three classroom complex in one subject area at a time.

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We should and are surveying our present materials. They must be placed out in the open on shelves where students see and use them. We could easily develop our own coding system for these materials in each subject area.

We feel that this trip was very worthwhile and has equipped us with the knowledge necessary to implement changes in the developmental and regular programs.

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NORTH CENTRAL TECHNICAL INSTITUTE
STRUCTURE AND FUNCTIONS

```
                 HIGH SCHOOL CREDIT
                      PROGRAM
                    /LEARNING\
   DEVELOPMENTAL   ( SKILLS )  CAREER
     PROGRAM       \ CENTER /  SELECTION
                 ADULT BASIC EDUCATION
                      PROGRAM
```
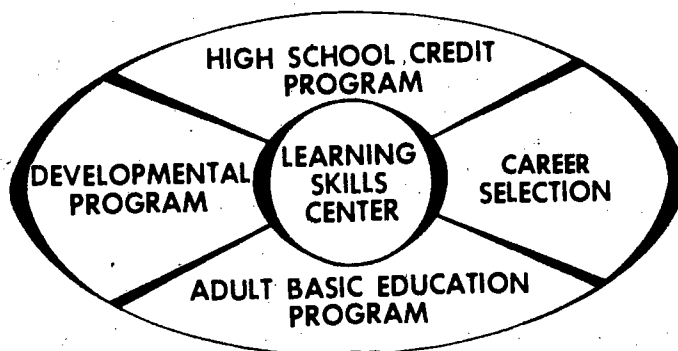
The developmental program is designed with built-in student flexibility to meet the needs of all students full or part-time who can benefit from one or more of the developmental experience offered.

The developmental program is housed in a newly remodeled Learning Skills Center. This will serve as a home base not only for the developmental subjects but also for the High School Credit and Adult Basic Education programs.

The Learning skills Center is also open to students enrolled in regular programs who just want to "brush up"on study skills or reading, for example.

Other students may come in to survey and explore a variety of career opportunities.

Student Services will evaluate each student entering NCTI through the use of entrance examinations, interviews and evaluations of over-all scholastic achievement.

The students who appear to have scholastic deficiencies or who appear to need special help to achieve his vocational goals is counseled into that part of the developmental program which will best meet his needs.

Some students will have low basic academic levels and not be able to use arithmetic, reading, writing, speaking, spelling and listening skills constructively. These students could be below or above the eighthgrade level of achievement.

Those below the eighth grade level of achievement will be assigned to the developmental program as Adult Basic Education Students. These students may elect to study for and take the high school equivalency examination. The only requirements are that the student must be 16 years of age to enter, and he must be 19 to write the high school equivalency examination. (The age limits are state law requirements.)

Students above the eighth grade level of achievement who have not completed their high school education can enroll in high school credit classes

and eventually receive a diploma from their home town high school. A student
however, who has more than two years of high school work to take may also
elect to study for and take the high school equivalency test.

Many of the lower ability Program students will be enrolled in the
heart of the program which consists of the following subjects:

### Study Skills

Purpose:

A great many students find themselves battling for survival in the world
of post-high school education. Countless others achieve their express
academic goals but fall short of their potential for success. Deficiencies
in the basic learning skills - reading, writing, listening, remembering,
note-taking, and test-taking - are responsible for a substantial number of
academic failures. Yet these skills can be mastered.

The purpose of this module is to assist students in both acquiring the
effective study habits and developing the positive attitudes that lead to
fruitful learning experiences.

General Goals: Upon completion of this module, the student will

(1) Have increased confidence and a better attitude toward classroom
learning.

(2) Be more effective at listening and note-taking in a lecture situation.

(3) Understand the importance of organizing and reviewing classroom notes.

(4) Have increased confidence in his ability to use the library.

(5) Have learned how to apply systematic procedures for more effective
test-taking and be able to score higher on both objective and essay
exams then previously.

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Specific Objectives:  Upon completion of this module, a student will

    (1)  Adopt an organized approach to listening.

    (2)  Adopt an organized approach to note-taking.

    (3)  Outline and organize his classroom notes.

    (4)  Use memory aids when they are needed.

    (5)  Recognize the verbal signals used in lectures.

    (6)  Locate and use correctly the following library resources.

        (a)  Card catalog

        (b)  Reader's Guide to Periodical Literature

        (c)  Open and closed stacks

        (d)  Dictionary of Modern English Usage

        (e)  Periodical collection

        (f)  Various encyclopedic references

        (g)  The librarian

    (7)  Distinguish between the Dewey Decimal and Library of Congress

        classification systems.

    (8)  Be able to schedule his time before beginning work.

    (9)  Be able to search for and recognize the important word clues in exam

        questions.

    (10)  Adopt a strategy of answering easier questions first.

    (11)  Be able to use guessing as a technique of answering objective

        questions when it is profitable.

    (12)  Review answers before considering exam finished.

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### Reading Improvement

</div>

Purpose:

    We live in an age when the sheer quantity of reading material which

confronts us everyday is overwhelming.  It is claimed that the growth of

television and other media reduces the need to read, but the fact remains
that success in most lines of endeavor is very closely related to the ability
to read.

The purpose of this course is to assist individuals in learning how to
improve their reading skills and habits - how to read more rapidly and with
greater comprehension.

General Objective:

To lead any ordinary, inefficient reader step by careful step to the
place where he learns to comprehend the printed word rapidly, with efficiency
and flexibility. Flexibility in reading consists of the ability to vary the
reading processes in accordance with one's purpose while achieving a desirable
level of performance.

Specific Objectives:   Upon completing the course, a student will
   (a)  Attack unfamiliar words not in his sight vocabulary.
   (b)  Develop an effective plan for continuous vocabulary improvement.
   (c)  Demonstrate his ability to grasp the meaning of a word by its
      context in the sentence.
   (d)  Provide, when requested by instructor, the meaning of twenty
      prefixes which aid in identifying word meaning.
   (e)  Demonstrate his grasp of reading techniques by
      1.  Surveying reading selection
      2.  Skimming
      3.  Scanning material
      4.  Studying reading material.

(f) Be able to compute reading rate.

(g) Be able to define and explain "lip reading," "sub-vocalization,"

   "regression," "word-by-word reading."

(h) Demonstrate his understanding that all his reading must have a

   purpose.

(i) Be able to pick out the main idea in a paragraph.

(j) Be able to identify and organize supporting details in a paragraph.

(k) Be able to read graphs and illustrations which an author includes

   in his selections.

(l) Be able to draw inferences from reading selections.

(m) Be able to demonstrate critical reading habits and understand

   propaganda, advertising, and articles appealing to emotional reactions.

(n) Have developed the ability to analyze, synthesize, and organize

   ideas.

(o) Be proficient in techniques of reading newspapers and magazines.

(p) Have developed a realization that reading can be fun.


## Introduction to Communications

Course description:

The basic purpose of this course is to help students develop a background
of writing and oral skills which will enable them to successfully complete
the course work in their major fields.


Upon completion of the course, a student will be able to demonstrate a
proficiency in writing sentences that show a coherent sequence of thought,
are free of ambiguity, and meet accepted standards of punctuation, spelling,
and capitalization.

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He will be able to write paragraphs that show a logical organization of introductory, supporting, and concluding sentences.

A student will further be able to seek, process, and organize information for use in the development of a written and orally-presented report or thesis.

## T & I Occupational Survey

This course will provide students with the opportunity to explore various occupations in the T & I area. Students who are not sure of what program to enter will be able to try various areas and thereby make a better choice. Students who have already decided on an occupational choice will have their interest and ability put to the test through the experiences afforded through this course. The course will provide for classroom study of occupations, shop and laboratory observation, shop and laboratory experience (when feasible), interviews with major instructors, and other activities which may be arranged.

## Science

Emphasis will be placed on preparing the student for entry into the Technical Science or Applied Science courses required for his major. A basic knowledge of physical science and problem solving techniques will be the primary components of the course. Laboratory experiences will be provided.

All of the courses listed above with the exception of the T & I Occupa-
tional survey course will be taught in the learning skills center located
in the old reading lab in room 177 where most of the teaching will be done
on an individualized basis.

## Principles of Mathematics

This course is designed primarily for the student who has a weak back-
ground in basic arithmetic and is planning to enter a diploma program. Topics
include whole numbers, decimals, fractions, percents, ratio, proportion and
the metric system. Emphasis is placed upon the application of basic arithmetic
in business and industry.

Major objectives include proficiency in the use of fundamental operations,
with emphasis on speed and accuracy, and the development of good problem solving
techniques.

## Algebra

This course is designed primarily for the student planning to enter an
associate degree program. In general, such a student has only a basic arithmetic
background or has not successfully completed a single high school algebra course.
Topics include linear equations, factoring, exponents, radicals and quadratic
equations.

A major objective of the course is to raise the proficiency level of the
student to a level whereby he can enter his major field and successfully complete
the related math courses.

Students are given pretests upon entering each course and post tests
at the conclusion of each course to measure overall progress. In addition,
reading machines, cassette recorders and other up-to-date audio visual
equipment is used to provide the student with optional modes of instruction
in an attempt to personalize each course.

Students will enroll in all or some of the subjects listed above, de-
pending on their needs. A student with an IQ of 110 who had a "D" average
in high school for example may need to spend much of his time working with
study skills packages.

Other students will be in the lower quarter of their high school class
or will have been out of high school for a long period of time. These
students might enroll as part-time developmental students to brush up on
reading and study skills while enrolled in a major. Special arrangements
can be made for a student who decides to try a course in a major either for
audit or credit.

High school graduates with excellent academic ratings might come into
the learning skills center to scan the dictionary of occupational titles
or participate in some occupational surveys.

As these examples show, the educational experience possibilities are
numerous and flexible and will meet the needs not only of the "low-ability
students" but also the average and above average student in a highly
personalized manner.

## Student Evaluation

A Mid-term evaluation is to be a written evaluation to the student in
terms of his rate and extent of achievement.

A.  A copy of this evaluation will be submitted to the developmental
    advisor by Friday of the ninth week.

B. Instructors shall take time to discuss this evaluation with the
student in private, so that the student fully understands his progress
and potential.

C. CQT test is to be readministered to the developmental student two
weeks prior to the completion of the semester by the developmental
instructor.

D. The results of the CQT, along with the instructor's final written
evaluation shall be utilized in counseling with the student to
determine his future educational direction.

As a result of the evaluation and interpretation of the test scores,
and the instructor's observation during the semester, the instructor shall
prepare a written final evaluation indicating the student's over-all progress
and achievement in the particular class.

A. This statement is to be in the developmental advisor's possession
no later than the end of the 16th week of the semester.

B. In order that this statement can be prepared accurately, it is
recommended that the instructor keep an accurate record of the
student's class behavior; such as absence, tardiness, promptness
of assignments, other study habits, etc.

C. An anecdotal record shall be maintained for each student.

D. The instructor will also indicate, in his written evaluation,
whether or not he feels the student is prepared to enter into a
specific major course of study. The final decision will be reached
after a case conference on each student is held with Student Services
and the developmental instructors. A date will be set each semester
to accomplish this task.

NORTH CENTRAL TECHNCIAL INSTITUTE

## VOCATIONAL-TECHNICAL DEVELOPMENTAL

## INDIVIDUALIZED COURSES

Many of the developmental program courses have now been individualized. Individualized courses have the following grading guidelines:

1. A student who does not complete an individualized course at the end of the semester will have up to six weeks to complete the requirements and will receive a grade of IP - In Progress (see new grading policy.) The student who receives an IP has the responsibility of initiating arrangements to complete the work by pre-enrolling in the same course the following semester.

2. A student who does not complete the course after the nine week period will receive the final grade of NC.

3. The student shall be granted credit for each developmental course (see new catalog.) The credit granted, however, shall not reduce the number of required credits that the student will eventually take in his major. The credits shall be figured in the grade point average for that grading period but not in the accumulative grade point average.

### Course Auditing

A developmental student wishing to audit a course in a major will meet the attendance requirements established by his developmental instructor which will be commensurate with the length of the audit.

Auditing students will have the privilege of attending classes but will not be required to take examinations and will receive no grade credit.

A course that has been audited does not appear on the student's official transcript unless he participated for the entire semester.

In this case, the audit does appear on the student's offical transcript but does not imply any degree of achievement.

A student may change from credit to audit anytime by following the standard procedure for schedule changes.

After two weeks, a student may not change from audit to credit except with permission from his advisor and instructor.

When a student has changed to audit, he may not at a later date change back to credit status.

## Withdrawal

Students finding it necessary to withdraw from the developmental program should contact Student Services and their developmental instructor immediately. Every effort will be made to counsel the student and mutally arrive at options which may be considered by the student at a future date.

These options might include:

1. Seeking immediate employment.

2. Enrollment at another Technical institute or four year university.

3. Military services.

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STUDENT SERVICES DATA

Name_____
         (First)                    (Initial)              (Last)

                                                          Phone_____
Address_____
         (Number & Street)                  (Community)

Date Enrolled_____, 19_____

Full-Time_____

Part-Time_____

High School Credit_____

Adult Basic Education_____

Date Officially Withdrawn_____

Reason for Withdrawal_____

| | Test Scores | Date Tested | Courses Enrolled In | |
|---|---|---|---|---|
| Mechanical Score | _____ | _____ | Reading Improvement | _____ |
| Verbal Score | _____ | _____ | Introduction to Communications | _____ |
| Numerical Score | _____ | _____ | Study Skills | _____ |
| Reading Score | _____ | _____ | Principles of Mathematics | _____ |
| | | | Algebra | _____ |
| | | | Introduction to Physical Science | _____ |
| | | | T & I Occupational Survey | _____ |

Developmental Diagnostic Tests

| | Pretest | Post Test |
|---|---|---|
| Reading | _____ | _____ |
| Communication Skills | _____ | _____ |
| Basic Math | _____ | _____ |
| Algebra | _____ | _____ |
| Physical Science | _____ | _____ |
| Study Skills | _____ | 45_____ |

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I-9-73-D

Comments:

1. Student's desire for career goal:

Student's Career Goal                    Date              Instructor's
                                                           Initial

_____          _____      _____

_____          _____      _____

_____          _____      _____

_____          _____      _____

_____          _____      _____

2. Student's overall progress:

3. Faculty prognosis:

A Follow-up Study on Students in the Developmental Program

(formerly the Prep Program)  From 1970-73

Submitted to:

Mr. Russell Paulsen

by

Thomas Kerkes

NORTH CENTRAL TECHNICAL INSTITUTE

August 1973

Follow-up Study
1970-1973


INTRODUCTION AND PURPOSE


This report was prepared with the assistance of Mr. Russell Paulsen, Administrator of Research and Development, to determine the number of developmental students (formerly called preparatory, from 1970 to 1973 who:


1. Entered the developmental program.

2. Completed the developmental program.

3. Dropped out of the developmental program.

4. Entered a full-time program.

5. Completed a full-time program.

6. Dropped out of a full-time program.


This study was also designed to determine the present status of students who dropped out of the developmental program or entered a major and then dropped out; and to obtain comments from drop-outs on the strengths and weaknesses of the developmental program.


PROCEDURE AND POPULATION


This study initially involved 169 students who entered the developmental program from January of 1970 through January of 1973. The names and basic data for this study were taken from student records during the summer of 1973.

A number of students who left NCTI were not counted as drop-outs, they were:


1. Two students who received certificates of training.

2. Four "job-outs" (found employment).

3. Three NCTI students who switched to the Antigo branch campus.

A follow-up questionnaire (see appendix C, figure I), along with an explanatory letter (see appendix figure II), were mailed to the 89 drop-out students.

Twenty-one of these students were drop-outs from the preparatory program and 68 had enrolled in a major and dropped out.

ANALYSIS OF DATA

Seventeen of the original 89 questionnaires were returned for a 15 % return. Nine of these seventeen are presently employed. Their average monthly salary before deductions is $559.22 (see table I).

TABLE I

Present Monthly Salary Before Deductions - Occupations, and Locations of Developmental Program Drop-Outs.

| Locations | Salaries | Occupations |
|---|---|---|
| Wausau | $1100.00 | Truck Driver |
| Park Falls | $900.00 | Paper Mill (Backtender) |
| Spencer | $540.00 | Cheese Factory (Wrapper) |
| Antigo | $488.00 | Supermarket (Produce Department) |
| Mosinee | $450.00 | Spare Hand Worker |
| Wausau | $440.00 | Cabinet Assembler |
| Wausau | $410.00 | Roofer (Mop, Lay Paper) |
| Marshfield | $380.00 | Surgical Aid |
| Merrill | $325.00 | Dental Assistant-(Receptionist) |

9 | 5033.00  =  $559.22

Average Monthly Salary

As table I indicates the highest paid individual earns $1100/month. This person is employed as a truck driver. The second highest is a paper mill worker earning $900/month. The remaining salaries tend to be clustered closer together and represent a variety of occupations.

Six of the above respondents stated that the most effective factor in obtaining a job was friends and relatives. Two returned to a previous employer and one found a job on her own. It was interesting to note that none listed someone working at this school as being most effective in obtaining their job.

The locations listed in table I, show that all nine respondents showed a preference for central and northern Wisconsin.

An analysis of the remaining eight students reveals the following: one is still seeking employment, two female students are now married homemakers, one is attending Northeast Wisconsin Technical Institute, one is attending the University of Wisconsin at Stevens Point, two have re-enrolled at NCTI for the fall term and one is disabled and unable to work.

ANALYSIS OF STUDENTS ENTERING A MAJOR

148 out of the original 169 students completed the developmental program. Nine of these students terminated their education at this point and 139 entered a major. Twenty-two of these entering a major have completed the program... as indicated in table II.

TABLE II

Number of Students Completing Specific Majors.

| Major | Number of Students |
|---|---|
| Welding | 1 |
| Marketing | 3 |
| Nursing | 4 |
| Residential Design | 1 |
| Merchandising | 3 |
| Home Economics Assistant | 2 |
| Automotive | 3 |
| Electronic Servicing | 1 |
| Clerk Typist | |

Forty-two of the original population of developmental students in this study are still working to complete their majors sometime during the 1973-74 school year.
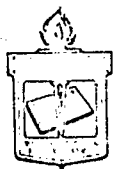
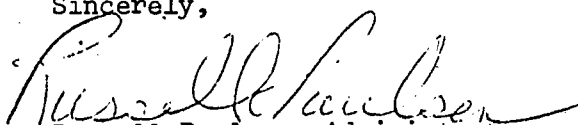# North Central Technical Institute

July 11, 1973

Dear Former Student:

North Central Technical Institute is re-evaluating the
preparatory program and would appreciate your cooperation
in completing the enclosed questionnaire.

Please feel free to list the strengths and weaknesses
of the preparatory program on the back of the enclosed
card.

Thank you for your cooperation.

Sincerely,

Russell Paulsen, Administrator
Research and Development


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