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MTU–Pre-Service Teacher Enhancement Program

Final Report

for Period September, 1992 - May, 1995

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Michigan Technological University
Houghton, MI 49931

Prepared for

THE U. S. DEPARTMENT OF ENERGY
AGREEMENT No. DE-FG02-92ER75773

ABSTRACT

The MTU Pre-Service Teacher Enhancement Program was a two year extended project designed to introduce a select group of science and engineering undergraduate students, with good "people skills," to the teaching profession. Participants were paid for their time spent with area teacher/mentors and were involved in a variety of in school activities, projects and observations to illustrate the teaching profession. They were encouraged to consider the teaching profession as a future career option. The student participants, however, were under no obligation to enter the Teacher Education Program at the conclusion of the program.

DESCRIPTION OF PROGRAM

The goal of the MTU Pre-Service Teacher Enhancement Program was to familiarize select engineering and science undergraduate students with the teaching profession and ultimately encourage their enrollment in a Teacher Education Program.

Students were nominated by the academic advisors and department heads of the University's engineering and science departments, as well as self nominated. The co-investigators met with these administrators to describe the program goals and the stated selection criteria. Appendix 1 contains an information sheet describing the criteria. In addition, three minority student organizations (Black, Native American, and Hispanic Student Associations) were sent descriptions of the project and asked to self nominate. (This additional outreach resulted in the eventual participation of two Native American students.)

All nominated students who met the selection criteria were invited to an orientation meeting, and met individually with one of the co-investigators. Ten to twelve students were originally selected to participate each year. (Appendix 2)

Mentor teacher nominations were requested from the Intermediate School District. Each year twelve nominated teachers chose to participate in the program. They were then paired with the selected undergraduate students.

A table listing the students and their mentors can be seen as in Appendix 3. Several of the original student participants had to leave the program for a variety of personal reasons. In a few cases, student schedule's became more demanding as the quarter progressed, causing conflicts with their Pre-Service responsibilities. Alternate participants were chosen, however, it was difficult to fill all initial positions and a final total of ten and nine students and mentors, respectively, was achieved.

The teacher/mentors were located in schools within a 15 mile radius of Michigan Tech. Students who were assigned to the more rural schools had difficulty with transportation to and from the school. During the second year of the project, reimbursement for taxi cab fares was permitted in such cases. This allowed the students more freedom than carpooling to visit the classrooms as their own schedule permitted.

The students first met their mentors at the beginning of Michigan Tech's winter quarter. Each student received a handbook to assist them in focusing their regular visits to the schools (Appendix 4). The handbook also encouraged the student participants to record both their classroom and overall school observations. In addition, a journal was kept by each student to reflect upon classroom observations.

Each mentor/mentee pair planned a series of activities that met the student's needs in terms of learning about the teaching profession. Many of the students actually developed and taught laboratories, lectures or units, while some spent more time as assistants or tutors in various classrooms. Routine classroom business, department meetings, a board meeting, and

attendance at extracurricular activities are some of the assignments that all of the Michigan Tech students accepted.

Much of the spring quarter (March - May) interactions concentrated on project work with an elementary/middle school teacher. The students and their mentors identified an elementary/middle school teacher and a project that they focused on throughout the spring quarter. Some of the projects selected included teaching seventh graders basic statistics and probability, explaining to fifth graders the theory of magnetism and how it relates to electricity, and demonstrating what resistors are and how they apply to electrical applications to both fifth and sixth grade classes.

During the 1994-95 project year, three meetings were scheduled with the students and the program directors. These meetings helped the students become more familiar with their responsibilities and answered any questions they might have had throughout the program. Two meetings were held with the students, mentors, and the program directors in attendance. The primary focus of these meetings was to discuss individual experiences and group interaction in both the classroom and the school itself.

An in-service was also held in May, 1994 for the students and mentors of the Pre-Service Teacher Enhancement Program, the MTU Teacher Education Program student teachers, and other interested teachers. The seven hour workshop, *Discipline Problems In the Classroom,* discussed the topic of classroom discipline strategies and was presented to 41 participants by Mr. Ronald Friedman and Ms. Penny Altman. (Appendix 5)

In addition, Dr. Kathleen Jacobson, Professional Development and Communication Coordinator for the Michigan Statewide Systemic Initiative (MSSI), met with mentor teachers and other interested educators as part of an awareness for teachers of statewide projects in science education.

A Michigan Space Grant Consortium Workshop was also offered to the mentors. The workshop provided them the opportunity to test three (3) optics labs, and receive a binder that included revised versions of these labs and other activities for classroom use. (Sample binder included)

The students and mentors each completed evaluations at the end of the academic year. Student evaluations primarily discussed their opinion of the teaching profession upon completion of the program. Teacher evaluations elaborated on the aspects of the program which were thought to be of use to the students. An additional assessment of the program was completed by periodically collecting and reviewing the student journals. The student evaluations were primarily essay and some excerpts are included below:

> *During the structured school observations, I met many teachers who helped create the big picture of what teaching involves.*
>
> *The elementary school project was the most positive, creative part of my experience.*
>
> *In the last day, the students told me I'd make a great teacher!*

I also found talking with teachers informally one of the most enjoyable and educational experiences in the program - it showed teachers in a different light, and the bluntly honest, "unofficial" view of teaching.

I spent a lot of time thinking about some of the philosophies of teaching - writing in the journal helped to sort them out - hence, I spent large amounts of time journal-writing.

The most valuable experience I had was preparing and giving a lecture on the brain to the advanced biology class. I assumed the role of the teacher and was able to experience what it would be like.

As for my future, I'm uncertain where my fate lies; however, I'm now considering increasing my class load to gain a teaching certificate!

ASSESSMENT OF PROGRAM

The Michigan Tech Department of Energy Pre-Service Teacher Enhancement Program achieved its intended goals. At the end of each year one of the pre-service students requested enrollment in the MTU Teacher Education Program. At least six others are seriously considering the teaching profession but have not formalized the decision. (They have indicated that they want to complete their engineering or science degree or military commitment first).

In March of 1995 a follow-up survey was sent to each student and teacher mentor that had participated in the past to see where they are and what they are doing. The results can be found in Appendices 6 and 7. One 1993-94 project participant is now working in a local school as a Mathematics teacher. She is a Native American and is teaching in a school that has a high percentage of Native American students. Many of the student respondents stated that they have future plans to teach, that the program helped them become better communicators, and showed them what the teaching profession is really like. One hundred percent (100%) of the teachers who responded indicated that they would definitely participate in the program again if funding were available.

In reading the journals' it was evident that all of the students have come to appreciate and respect the teaching profession. A better understanding of the time and patience required in K-12 education was gained by all the students. The teacher mentors themselves also learned from having an observer and assistant in their classroom and expressed interest in continued programs of this nature.

An effort will be made at Michigan Tech to address logistics problems and seek funding to enhance and refine this awareness program model. The model could certainly be duplicated by other Universities. Some of the logistic concerns would be negligible in urban areas where large high schools could accommodate several university students at the same time.

Finally, as indicated by the written and verbal evaluations, the student participants have come to view and appreciate K-12 education in a different light. This program provides valuable experience for students, no matter what their eventual vocational decision, especially in terms of helping them become informed voters, parents and, in some cases, policy makers.

PRODUCT DEVELOPMENT

The products developed as a result of the Pre-Service Teacher Enhancement Program at Michigan Technological University are:

1. A Handbook for use by other universities when developing and initiating teaching awareness projects.

2. A set of laboratory activities for teachers that have been made available to all teachers who participated in the Light/Color Optics Teacher In-Service and the Copper Country Intermediate School District. Future participants in awareness programs such as this will also receive a copy.

FINAL COMMENTS

In July, the co-investigator wrote to Cindy Musik and requested that the remaining $4,955 funds be used for a special Teaching Awareness Week. (Appendix 8) The request was late in the process (there was a confusion about the availability of the third year of funding) and clarification and/or granting of the request was not completed. The co-investigator is very interested in continuing this work and will seek out external funding sources. **Please send any applicable Department of Energy RFP's.**

Budget removed. ar

Michigan Technological University
Houghton, MI 49931

APPENDIX 1

Appendix 1

MTU PRE-SERVICE TEACHER ENHANCEMENT PROGRAM
STUDENT NOMINATION FORM

I nominate the following student to take part in the MTU Pre-Service Teacher Enhancement Program:

Student Name _____ SS# _____

Student's Department _____

Year at University _____

Does this student fit some or all of the following criteria: (Please mark)

_____ Currently a Science, Mathematics, or Engineering Major

_____ Is strong in, and enthusiastic about, her/his current major

_____ Might be interested in working with precollege students

_____ Has the potential of being a good teacher

Why do you think this student would be a good candidate for this Program?

_____

_____

_____

_____

_____

_____

_____

Advisor's Name _____ Date _____

PLEASE RETURN ALL NOMINATIONS BY MONDAY, DECEMBER 6

Return to: Educational Opportunity Department
c/o Chris Anderson

Appendix 1

ATTENTION
BSA MEMBERS

Career Awareness Opportunity to Investigate the Teaching Profession

The Education and Educational Opportunity Departments have received a grant for a second year of the Pre-Service Teacher Enhancement Project. Twelve Michigan Tech juniors or seniors who fit some or all of the criteria on the attached nomination form will be selected to participate in a Winter and Spring Quarter career awareness and learning experience that includes the following components:

1. Commit five (5) hours per week for approximately 15 weeks beginning mid-Winter Quarter and ending in Spring Quarter of 1994 to work with a secondary school teacher/mentor. ($5.25 per hour salary included.)

2. **Observe, participate in,** and **record experiences** in various classrooms.

3. Prepare a lesson(s) in your field of interest for an elementary or middle school teacher and assist the instructor in teaching the lesson(s).

4. Participate in a teacher inservice that addresses current educational issues (scheduled during Winter or Spring quarter).

5. Opportunity to teach or act as a residence hall counselor for secondary school students who attend the 1994 MTU Youth Programs (paid experience). Interviews will be held in February, 1994.

6. Attend at least three meetings with the Project Directors and Evaluator so they can record your perceptions and outcomes.

If you are interested, please complete the attached nomination form.

PLEASE RETURN NOMINATION FORMS BY MONDAY, DECEMBER 6, 1993

Return to: Educational Opportunity Department
c/o Chris Anderson

Michigan Technological University
Houghton, MI 49931

APPENDIX 2

Michigan Technological University

1400 Townsend Drive, Houghton, Michigan 49931-1295

Educational Opportunity and
Youth Programs
Phone: 906/487-2920
906/487-2219
FAX: 906/487-2468

Appendix 2

December 22, 1993

Dear Dave,

Your nomination to the Pre-Service Teacher Enhancement Program has been reviewed. You have been selected to participate in the program for the 1993-94 academic year. Please indicate below if you continue to be interested in exploring the teaching profession. Return the slip to the Educational Opportunity Department Office, Academic Offices Building Room G24 by Thursday, January 6. A meeting will be scheduled with you during the second week of January if you accept.

Sincerely,

Chris Anderson

Chris Anderson
Director, Educational Opportunity

☐ Yes, I accept the invitation to participate.

☐ No, my plans have changed and I am unable to accept.

Name:_____

Address:_____

_____

Telephone:_____Best time to reach me by phone:_____

We cannot guarantee your first choice school, however, it would help us in matching you with a mentor to know your schedule and your school choices. Please indicate by numbering 1,2,3, etc. which local school would be most accessible for you.

_____Chassell	_____Calumet	_____Dollar Bay
_____L'Anse	_____Houghton	_____Lake Linden
_____Baraga	_____Hancock	_____South Range

Please attach a class schedule for Winter Quarter.

In addition to the academic year experience, I am interested in applying to work with the Summer Precollege Programs.

☐ Yes ☐ No ☐ Undecided at this time

Michigan Technological University
Houghton, MI 49931

APPENDIX 3

Appendix 3

Student/Mentor Information

1993

Student	Degree	Mentor	School	Note	T.E. Enroll.*
Cynthia Benaglio	MA	Bruce Carlson	Dollar Bay		
Kelly Briguglio	ME	Walt Turino	Houghton		
Agatka Chmelar	BL	Rod Wakeham	Houghton		
Regina Daniels	EE	Jim Frantti	Calumet		
Michael Erickson	EN	John Mattson	Dollar Bay		
David Henderson	MA	Gary Binoniemi	Hancock		
Jon Kangas	ME	Al Niemela	L'Anse		
Cynthia Kniprath	MA	Sherry Grebenok	Calumet		
Ann McKnight	CHN	Lynn Lanala	Dollar Bay		
Sarah Smith	MA	Mark Smith	L'Anse		YES

1994

Student	Degree	Mentor	School	Note	T. E. Enroll.*
Beti Jo Aichner	Gen Eng	Mariann Boddy	Calumet	Left program for personal reasons (2-21-94)	
Lisa Bobrowski	Math	Diane Hocking	Houghton	Left program for personal reasons (3-21-94)	
Susan Bristow	Math	Lynn Lanala	Dollar Bay	Left program for personal reasons (2-23-94)	
Ray Chowning IV	EE	John Croze	Calumet	Left program for personal reasons (4-15-94)	
Martha Christensen	Math	Gordon West	Calumet		
Susan Cross	EE	Linda Ligon	Houghton		
Terrie Ellison	ME	Mariann Boddy	Calumet		
Joe Essenmacher	EE	Peter Haapala	Chassell	Left program for personal reasons (2-14-94)	YES
Charles Faunt	EE	Richard Salani	Hancock		
Tom Gablowski	ME	Jim Luoma	Houghton		
Carol Gerou	EE	Jim Frantti	Calumet		
Lori Klobucher	CE	Al Niemela	L'Anse	Left program for personal reasons (2-8-94)	
Monica Leonard	Math	Peter Haapala	Chassell		
Steven Ross	EE	John Mattson	Dollar Bay		
Susan Schwerin	BS	Lynn Lanala	Dollar Bay		
Renata Wassmann	STC	Gordon West	Calumet	Left program for personal reasons (2-21-94)	

*T.E. Enroll. - Teacher Education enrollment requested immediately following the program

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Michigan Technological University
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APPENDIX 4

MICHIGAN TECHNOLOGICAL UNIVERSITY

Pre-Service Teacher Enhancement Program

Student Guide

Teacher Education and Educational Opportunity

Table of Contents

Introduction

Purpose:

The Pre-Service Teacher Enhancement Program will provide you with the opportunity to:

A. Observe a school system in operation.

B. Observe the activities of selected faculty and administrators in a school.

C. Assist an elementary/middle school level teacher with curriculum development.

D. Self-examine your interest in education as a career.

E. Become a more informed citizen about K-12 education.

General Level of Observation/Activity:

During the first few weeks of the project, you will make observations and assist within your mentor teacher's classroom. You will also need to make observations on general functioning of the school and start to formulate the nature and type of assistance you can provide for one of the districts elementary/middle school level teachers.

The last few weeks of the project will be primarily devoted to implementation of a laboratory/assistance project for the elementary middle school teacher in cooperation with your mentor teacher.

Time Requirement:

You will be responsible for <u>at least</u> five hours per week of preparation for and participation in a school system program. This time will need to be logged and reported to the Educational Opportunity Department.

Initial Contact With School Personnel:

Report to the Principal's Office when entering a building. In some instances you will be asked to report to another administrator if he/she is the educational leader of that building and is responsible for the management of that building. Dress and personal appearance should be appropriate for the local setting. First impressions are important.

In spite of much uniformity in public education, local conditions vary greatly. Size of school systems, their location, and centralization of administration are factors that influence procedures, dress standards, and attitudes of school faculty and staff. Be sure to conduct yourself so that your visits are as unobtrusive as possible.

Required Activities

You are required to conduct, complete, and report the following activities.

A. Study the feature of the school and complete the "Report on Building Operations". (blue)

B. Interview one person from each of the following categories: (yellow)

1. administrator (superintendent, principal, other);
2. support person (counselor, reading specialists, other);
3. your teacher/mentor;
4. another teacher (in a different subject area);
5. the elementary/middle teacher with whom you will work and;
6. a university (MTU) level instructor.

C. Observe at least three class sessions at your school and one university (MTU) class session per quarter. Complete the "Report on Classroom Observations" on each of these class sessions. (pink)

D. Observe, or preferably lead, a group activity such as: laboratory exercises, demonstrations, student committee work, or class discussion. You may participate in more than one group activity but need only submit one "Report on a Group Activity." Report the others on activity logs and/or in your journal. (green)

E. Observe at least one extra-curricular/instructional activity and complete the "Report on Extra-Instructional Activity Observations". (purple)

F. Complete one "Student Activity Log" for each activity you have completed; interviews, classroom sessions, etc. (orange)

G. Keep a summary of your experiences and impressions in a journal.

H. Elementary/Middle School Project: connect with an elementary or middle school teacher and work with them to develop a lab that allows the students to study a science or math concept. You will develop, teach and evaluate the lab with direction from the teacher. *GOAL: To provide the teacher with a lab to use in the future.*

Observations in Class

The most profitable observations occur when students are sensitive in their role as observing guests and understand what constitutes "acceptable behavior" while visiting in schools. The following points, therefore, should be kept in mind:

A. Make plans to visit a building only after arrangements through appropriate channels have been made well in advance.

B. Report to the Principal's Office when arriving at a building, even though arrangements have been made.

C. Enter rooms before classes begin. The teacher should be notified in advance that you will be present.

D. Select a place to sit that does not interfere with class activities. You should remain in the background unless otherwise directed by the teacher.

E. Observe reactions and work of pupils. Study them at every opportunity but do it unobtrusively.

F. Be alert. Sleepy or bored observers convey rudeness and make poor impressions on teachers and pupils alike.

G. If student shows a special interest in you for an extended period rather than paying attention to the work at hand, do not encourage the distraction by returning their attention.

I. Avoid any distracting conversations with students or other observers who may happen to be on hand.

J. Do not discuss classroom incidents with anyone outside of the classroom.

K. Exercise judgment in your dress and personal appearance so that your presence will not create unnecessary distractions.

L. REMEMBER! You are a guest of the school and the persons with whom you are working. If the school administration requests your removal, because of inappropriate or disruptive behavior, you will be removed from that school and dropped from the program.

Teacher Mentor
Responsibilities

It is important for each teacher mentor to remember that the student is entering this assignment as a learner and not an expert. Students should be introduced through observations, interactions, and involvement to the teaching profession and encouraged to consider enrollment in the Teacher Education Program.

The responsibility of the teacher mentor is to:

1. Develop a schedule for regular visits and consultations with the student in order to plan for observations and instruction;

2. Acquaint the student with the school policies, procedures and classroom management strategies (such as record keeping, seating arrangements, etc.);

3. Help the student become aware of the needs of students and special instructional plans for individuals or groups;

4. Introduce and orientate the student to the faculty, support services personnel and the necessary school-community agencies;

5. Work collaboratively with the Educational Opportunity staff in guiding the progress of the student;

6. Provide the opportunity for the student to participate in a variety of activities;

7. Provide the opportunity for the student to observe and visit classes of other teachers in related as well as unrelated subject areas or grade levels;

8. Guide the student as he/she initiates a lesson for the students in their area of study;

9. Conduct evaluations of the student's performance and provide assistance in developing ways for improvement of program;

10. Complete the survey provided by the Department of Educational Opportunity following the end of the program.

11. Possible activities in which the student mentee could participate:
    * Helping to make up tests
    * Grading homework/tests
    * Preparing short teaching units and teaching them
    * Helping to set up laboratories
    * Helping to search out resource material
    * Reviewing the textbook used in class
    * Discussing various teaching styles and approaches
    * Assisting in answering questions during labs and homework assignments
    * Tutoring
    * Putting together bulletin boards/information centers
    * Working with other teachers with whom you have arranged interactions
    * Any additional ideas are also encouraged

12. The most important aspect of the mentor role is the sharing of ideas, information, and examples that you can offer. By observing the techniques employed by the mentor and observing and discussing the activities in his/her school/classroom, it is our hope that the mentee will leave this position with a good understanding of what the teaching profession can offer them.

Name _____

REPORT ON BUILDING OBSERVATIONS

Directions:

This form will assist you with your observations. Read it before you make your observations. (This is NOT an evaluation of the quality of a school or school system.) Either check (✔) the response(s) or comment as necessary.

School Name _____

Physical Plant: Check the appropriate items that help describe the building you visited.

_____ designed with fixed walls, self contained classrooms
_____ designed with many partitions to permit larger rooms for team teaching, etc.
_____ designed with an "open concept" with few partitions
_____ has an independent auditorium
_____ multi-purpose room used for large group functions or whole student body
_____ stage facilities available
_____ seating capacity of auditorium or multi-purpose room sufficient for entire school population
_____ cafeteria or lunchroom a separate facility
_____ multi-purpose room serves as cafeteria
_____ separate gymnasium
_____ gym may be partitioned for use by separate groups
_____ spacious and/or adequate athletic fields and playgrounds in close proximity to building
_____ locker rooms and showers present

Special Facilities: Check the special facilities present in the building.

_____ computer laboratory
_____ art room
_____ music room
_____ individual music practice room(s)
_____ home economics facility
_____ science laboratories (circle: physics, chemistry, biology, general science lab)
_____ industrial arts room or complex
_____ audio-visual equipment room
_____ central supply facility
_____ teachers' lounge
_____ counselors' office(s)
_____ health clinic
_____ football field or stadium (Check if it has track_____)
_____ swimming pool
_____ other (describe)
_____ _____
_____ _____

Name _____

REPORT OF INTERVIEW

(Complete after the interview)

Directions: Interview one person from each of the categories listed below and complete one of the forms for each interview.

Interviewee's Name: _____

Interviewee's Position: Check (✔) and describe the position.

_____ Administrator

_____ Support staff

_____ Teacher/Faculty (circle precollege or postsecondary)

A. List the three (3) major tasks identified by this individual. How does the interviewee rank them ?

B. List and describe at least two (2) main problems the interviewee faces. (Do not try to elicit information which may be regarded as overly personal or "privileged")

C. List and describe at least one solution the interviewee is considering (or has employed) to solve one of the problems cited above.

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C. List and describe at least one solution the interviewee is considering (or has employed) to solve one of the problems cited above.

Name _____

REPORT ON CLASSROOM OBSERVATIONS

Directions: This form will assist you with your observations. Read it before making the observations. (This is NOT an evaluation of the quality of a teacher's instruction.) Either check (✔) appropriate responses or make comments when necessary.

Teacher's Name : _____

General Information:

A. Nature (name) of Subject _____

B. Grade Level(s) being Taught _____

C. Goal(s) of Instruction _____

Classroom Environment: Check the item(s) that help to describe the class.

_____ class size (circle: < 20 20-25 25-30 35-40 >40)
_____ classes constitute on the basis of ability grouping
_____ certain subjects or classes based on ability
_____ ability grouping employed within classes
_____ classes tend to represent broad range of pupil ability or age
_____ multi-level materials available
_____ bulletin board used to support the learning of the climate
_____ classroom has their own library collection
_____ laboratory facilities available (when applicable)

Instructional Format/Organizational Pattern: Check the appropriate items.

_____ "Self-contained" classroom
_____ team teaching
_____ lecture
_____ large group (whole class)
_____ combination (explain below)
_____ other (describe below)

_____ "open" classroom
_____ individualized instruction
_____ discussion
_____ small group(s)
_____ laboratory

Multi-Media/Resources (in room): Check the appropriate items.

_____ computer/s
_____ overhead projector
_____ slide/filmstrip projector
_____ motion picture projector
_____ record player
_____ television
_____ other (describe)

_____ calculators
_____ VCR
_____ textbooks
_____ library books
_____ maps
_____ chalkboard
_____ outside resource person(s)

Name _____

REPORT ON CLASSROOM OBSERVATIONS

Directions: This form will assist you with your observations. Read it before making the observations. (This is NOT an evaluation of the quality of a teacher's instruction.) Either check (✔) appropriate responses or make comments when necessary.

Teacher's Name : _____

General Information:

A. Nature (name) of Subject _____

B. Grade Level(s) being Taught _____

C. Goal(s) of Instruction _____

Classroom Environment: Check the item(s) that help to describe the class.

_____ class size (circle: < 20 20-25 25-30 35-40 >40)
_____ classes constitute on the basis of ability grouping
_____ certain subjects or classes based on ability
_____ ability grouping employed within classes
_____ classes tend to represent broad range of pupil ability or age
_____ multi-level materials available
_____ bulletin board used to support the learning of the climate
_____ classroom has their own library collection
_____ laboratory facilities available (when applicable)

Instructional Format/Organizational Pattern: Check the appropriate items.

_____ "Self-contained" classroom
_____ team teaching
_____ lecture
_____ large group (whole class)
_____ combination (explain below)
_____ other (describe below)

_____ "open" classroom
_____ individualized instruction
_____ discussion
_____ small group(s)
_____ laboratory

Multi-Media/Resources (in room): Check the appropriate items.

_____ computer/s
_____ overhead projector
_____ slide/filmstrip projector
_____ motion picture projector
_____ record player
_____ television
_____ other (describe)

_____ calculators
_____ VCR
_____ textbooks
_____ library books
_____ maps
_____ chalkboard
_____ outside resource person(s)

Name _____

REPORT ON CLASSROOM OBSERVATIONS

Directions: This form will assist you with your observations. Read it before making the observations. (This is NOT an evaluation of the quality of a teacher's instruction.) Either check (✔) appropriate responses or make comments when necessary.

Teacher's Name : _____

General Information:

A. Nature (name) of Subject _____

B. Grade Level(s) being Taught _____

C. Goal(s) of Instruction _____

Classroom Environment: Check the item(s) that help to describe the class.

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_____ classroom has their own library collection
_____ laboratory facilities available (when applicable)

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_____ combination (explain below)
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_____ "open" classroom
_____ individualized instruction
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_____ laboratory

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_____ other (describe)

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Name _____

REPORT ON CLASSROOM OBSERVATIONS

Directions: This form will assist you with your observations. Read it before making the observations. (This is NOT an evaluation of the quality of a teacher's instruction.) Either check (✔) appropriate responses or make comments when necessary.

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_____ classroom has their own library collection
_____ laboratory facilities available (when applicable)

Instructional Format/Organizational Pattern: Check the appropriate items.

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_____ team teaching
_____ lecture
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_____ combination (explain below)
_____ other (describe below)

_____ "open" classroom
_____ individualized instruction
_____ discussion
_____ small group(s)
_____ laboratory

Multi-Media/Resources (in room): Check the appropriate items.

_____ computer/s
_____ overhead projector
_____ slide/filmstrip projector
_____ motion picture projector
_____ record player
_____ television
_____ other (describe)

_____ calculators
_____ VCR
_____ textbooks
_____ library books
_____ maps
_____ chalkboard
_____ outside resource person(s)

Name _____

REPORT ON CLASSROOM OBSERVATIONS

Directions: This form will assist you with your observations. Read it before making the observations. (This is NOT an evaluation of the quality of a teacher's instruction.) Either check (✔) appropriate responses or make comments when necessary.

Teacher's Name : _____

General Information:

A. Nature (name) of Subject _____

B. Grade Level (s) being Taught _____

C. Goal(s) of Instruction _____

Classroom Environment: Check the item(s) that help to describe the class.

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_____ television
_____ other (describe)

_____ calculators
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_____ textbooks
_____ library books
_____ maps
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_____ outside resource person(s)

Name _____

REPORT ON CLASSROOM OBSERVATIONS

Directions: This form will assist you with your observations. Read it before making the observations. (This is NOT an evaluation of the quality of a teacher's instruction.) Either check (✔) appropriate responses or make comments when necessary.

Teacher's Name : _____

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Instructional Format/Organizational Pattern: Check the appropriate items.

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_____ team teaching
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_____ combination (explain below)
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_____ individualized instruction
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_____ small group(s)
_____ laboratory

Multi-Media/Resources (in room): Check the appropriate items.

_____ computer/s
_____ overhead projector
_____ slide/filmstrip projector
_____ motion picture projector
_____ record player
_____ television
_____ other (describe)

_____ calculators
_____ VCR
_____ textbooks
_____ library books
_____ maps
_____ chalkboard
_____ outside resource person(s)

Name _____

REPORT OF A GROUP ACTIVITY

Directions: Describe a group activity that you observed in which you actively participated.

Name (Nature of the Activity) _____

Date _____ Time of Day _____ Length of Activity _____

Meeting place _____

What was the group's apparent objectives?

Role of the Teacher: How was the group activity initiated? What part did the teacher play (if any) throughout the duration of the group activity?

Methods and Materials Employed: (Answer all questions) Who led the group? To what degree were the various group members free to participate? Describe your participation. Were contributions of students specialized, or were all students doing the same thing? What materials, techniques, equipment, resources, etc ..., were used?

OVER

Name _____

REPORT OF A GROUP ACTIVITY

Directions: Describe a group activity that you observed in which you actively participated.

Name (Nature of the Activity) _____

Date _____ Time of Day _____ Length of Activity _____

Meeting place _____

What was the group's apparent objectives?

Role of the Teacher: How was the group activity initiated? What part did the teacher play (if any) throughout the duration of the group activity?

Methods and Materials Employed: (Answer all questions) Who led the group? To what degree were the various group members free to participate? Describe your participation. Were contributions of students specialized, or were all students doing the same thing? What materials, techniques, equipment, resources, etc. ..., were used?

OVER

Name _____

REPORT OF A GROUP ACTIVITY

Directions: Describe a group activity that you observed in which you actively participated.

Name (Nature of the Activity) _____

Date _____ Time of Day _____ Length of Activity _____

Meeting place _____

What was the group's apparent objectives?

Role of the Teacher: How was the group activity initiated? What part did the teacher play (if any) throughout the duration of the group activity?

Methods and Materials Employed: (Answer all questions) Who led the group? To what degree were the various group members free to participate? Describe your participation. Were contributions of students specialized, or were all students doing the same thing? What materials, techniques, equipment, resources, etc. ..., were used?

OVER

Name _____

REPORT ON EXTRA-CURRICULAR ACTIVITY OBSERVATIONS

Directions : Select one activity for observation from the list of suggestions below. Attend this activity to observe its proceedings and record your impressions.

School Board Meeting
PTA or PTO Meeting
School Faculty or Staff Meeting
Meeting of Student Organization
Athletic Team Practice
Musical Group Practice
Play Practice
Community School Program
Teacher In-Service Training Workshop
Teacher Professional Organization Meeting
Major School Event (e.g., interscholastic sports contest, play, concert, dance, forensic contest, music contest, debate tournament, etc.)

Name of Activity Observed _____

Date _____ Time of Day _____ Length of Activity _____

Meeting place _____

Describe and evaluate (comment on purpose, organization, student interest, effectiveness, etc., as appropriate) the extra-curricular activity.

Pre- Service Teacher Enhancement Program

Student Activity Log Week # _____

Use checks (✔) or write information/activities below as appropriate.

Your Name _____

School Name _____ Date _____

Time log:

	HOURS
Classroom observation	_____
Interviews	_____
Instruction	_____
Planning	_____
Conference	_____
Journal Entry	_____
Other (please describe)	_____
	_____
Total	_____

Pre- Service Teacher Enhancement Program

Student Activity Log Week # _____

Use checks (✔) or write information/activities below as appropriate.

Your Name _____

School Name _____ Date _____

Time log:

	HOURS
Classroom observation	_____
Interviews	_____
Instruction	_____
Planning	_____
Conference	_____
Journal Entry	_____
Other (please describe)	_____
	_____
Total	_____

Michigan Technological University
Houghton, MI 49931

APPENDIX 5

PRACTICAL DISCIPLINE STRATEGIES FOR THE CLASSROOM (K-12)

WORKSHOP/SEMINAR FOR

DISCIPLINE PROBLEMS IN THE CLASSROOM

MONDAY, MAY 9, 1994

3:00 PM - 10:00 PM

Memorial Union Building - Ballroom B

DINNER: 6:00 PM - 7:00 PM

Presenters: Ronald Friedman, Ph.D. & Penny Altman

UPON COMPLETION OF THIS PROGRAM, PARTICIPANTS WILL BE ABLE TO

Identify six major causes of behavior/discipline problems

Set clear focused goals for behavior change

Distinguish "discipline" from "punishment"

Implement a behavior modification program to control behavior

Know how to select behavior modification reinforcers

(To name only a few)

Register by calling Mary at 487-2263 (MTU)

Michigan Technological University
Houghton, MI 49931

APPENDIX 6

Appendix 6

Pre-service Teacher Enhancement Project
Educational Opportunity/Department of Energy

Student
Follow-up Survey
Summary

(approx. 50% return for two years of participation)

1. ***Thinking back on what you learned during the pre-service teacher experience, do you have a better appreciation of the teaching profession or did it not make a difference?***

➢ I certainly do have a better appreciation for teaching. It was an enlightening experience to see and hear the concerns of teachers, the problems in modern schools and the rewarding experiences teachers have in seeing a student develop and succeed.

➢ At the time of my participation, I was struggling with a decision of a new major. Education was one of my top choices and this program helped me decide against it.

➢ I learned so much about the teaching profession, that I want to learn more. The experience, even though it has been a few years since the job, sticks in my mind. The feeling of helping young minds grow and expand and comprehend beats most any feeling in the world. The knowledge that as an individual you are making a difference is the attractiveness of the profession. Teachers have a great amount of influence because they are whom students spend most of their waking hours with. A good teacher that is an effective communicator can make all the difference in the world. The skill of communication is underrated in our society. Most often, effective communication is hardest to achieve. That is the difference between just being an instructor and a TEACHER.

➢ I gained valuable insight about teaching as a profession. I now have a better understanding as to what the job entails.

➢ I now feel that teaching is a lot more work than I had thought, but it is also more fun, rewarding and stimulating than I thought.

➢Yes, the program helped me to appreciate teachers even more. It is a difficult job, however, I think it could also be exciting.

➢ I learned to appreciate what teachers do, but simply observing and interviewing wasn't quite enough. More interaction would be beneficial.

➢ I appreciate teachers more and I understand their constant pursuit to gain new material for their students.

➢ I gained an insight to teaching and discovered things about it that I had never thought about such as arranging a field trip.

➢Lots more appreciation! I really observed the difference between teachers who truly loved what they were doing - - made me want to choose a profession where I too would have that much enthusiasm.

(over)

2. ***Upon reflection, have you thought about going into teaching, or have you started classes toward your certification? (including post secondary teaching)***

➢ I have thought about teaching but at the college level. I am currently a graduate student in environmental engineering, working on an M.S. degree.

➢ As already mentioned, I chose not to go into education. However, it is still possible in the future.

➢ Actually, I have thought heavily upon going into teaching. I am currently a professional officer in the US Air Force. I manage an office of 6 people. The current plans are to begin my masters of science in Mathematics-Statics and then proceed working my way into a teaching profession, hopefully at a university. Preferably, older children or adults are most ideal.

➢ I am at some point in the future going to get my certificate and teach.

➢ I am attending graduate school for my PhD which will probably result in teaching college level classes.

➢ As of now, my major is math and education. No, I haven't started any of the education classes yet.

➢ I would love to be a teacher, but I'm going to try my hand at engineering first.

➢ I was thinking about teaching when I retire.

➢ I have not started classes, but I am not discounting the possibility.

➢ Yes! It's too late with my ROTC scholarship, I couldn't get the certificate (I plan to get a masters in education when I get to my active duty assignment).

3. ***Is there an aspect of teaching that the program didn't cover that you would have liked to have investigated?***

- I would like to have been allowed to prepare and present a lecture on a certain topic, to see how students of that age (9th grade) would respond to it.

- I learned enough through the program to make the decision I did. (to not teach)

- The program covered most of what it could with the limited time and resources we were given. Winter driving conditions in the upper peninsula of Michigan did not make for possible trips to a local school district often. I craved for more time and more to learn, but in general, the program was very effective as a tool to investigate teaching. Also, the job was what you made of it. I chose to get involved with as much as I could.

- Special education and at risk students.

- No.

- None I can think of.

- It can't be planned, but I would have like to see how teachers handle abuse from students and discipline them. This is a major concern for me.

- No, I think the program covered most aspects.

- I wish the experience had lasted longer. I was just getting into the swing of it.

- No.

(over)

4. ***We would like to see this project expanded to other universities as a tool to encourage students in Science and Math curriculums to get certified in teaching. With this in mind, do you have any suggestion on ways that the project could be improved so that students get the most out of their experience.***

➢ I think more communication between the teachers and the university is necessary so that the teachers fully understand the purpose of the program.

➢ As a participant in the first year, these were a lot of questions that didn't seem to have been answered. However, I think they were properly answered and/or corrected through our meetings.

➢ It would have been most beneficial if transportation were available. I did not have a car, and had to borrow my roommates. It was sometimes difficult to coordinate transportation which resulted in missing a week at the school every now and then. Also, with a heavy school load, it was difficult to find time to fit it into the workday. Maybe it could have some sort of class credit attached to it with a time designation in the week; it would work better for busy schedules.

➢More hours in the classroom!

➢I think there should be one main person in charge that meets with the student every two weeks to talk about their progress. There also needs to be specific duties and deadlines for the student to meet.

➢The year I was in the program wasn't extremely organized. The teachers/mentors we worked with were as confused about what to do as we were. I received more help and guidance from my elementary teacher than secondary teacher. In fact, my secondary teacher did not help at all in the project for the elementary. He gave me no ideas and no guidance at all. I think the Pre-Service program is a great idea and informative. I'm also sure it is a bit more organized now than it was the first year. Being in the classroom observing gave me somewhat of an idea how it would be as a teacher. It made me realize I will go on and get my elementary certification because I enjoyed the children so much up to about 7th or 8th grade. (especially the 1st through 4th grades) To be honest I do not want to teach high school.

➢I gave a presentation to one class and I think having the participants actually try their hand at teaching a certain part of a lesson would help them to experience first hand what a teacher experiences everyday.

➢I think you should select freshman for the program, since they have more time to obtain a teaching certificate.

➢Although structure is needed for the project there should be more freedom to maneuver. The experience should also be longer.

➢ Yes! It would be nice if it was an all year program.

5. *We would like to know what you are doing now and in what way, if any, your participation in the pre-service helped you get there.*

➢As earlier stated, I'm in graduate school, and the pre-service program was another building block along the way. All of my college experiences have contributed in some way toward getting me where I am and my participation in the program helped make me less ignorant if nothing else.

➢ My participation was the biggest influence in what I am doing now. It helped me decide that Civil Engineering was the choice of my future instead of Education.

➢Currently, I am the Chief of Manpower, 319th Air Refueling Wing, Grand Forks AFB, North Dakota. I work directly for the base commander. The job includes attending staff meetings, building awards packages, managing the daily affairs of the office, and keeping the other commanders and office chiefs on the base informed of their manpower needs and concerns. It is a very quality oriented job, and recently GFAFB was scored the best in Air Mobility Command under the Malcom Baldridge principles of quality. With a score of 417, we are approaching world class operations. This career field was predetermined for me even as an undergraduate taking AFROTC. When I separate or retire from the Air Force, my desire is to be ready to transition into the civilian world as an instructor, be it as a math teacher or in another field of expertise.

➢ I volunteer time at a youth shelter and tutor students there. This program was one of the best opportunities I had while attending MTU!

➢ I will be attending Northwestern University Institute of Neuroscience for my PhD. I used the pre-service experience on my application.

➢ The only thing I do now is take care of my two small children and husband and take classes. I have no time for much else.

➢ I will graduate in May (possibly August) with a BS in Mechanical Engineering and I will be working for Honda. The pre-service program helped me work on conveying my ideas to other people.

➢ I have become a graduate student at Michigan Tech. The pre-service teaching enhancement program has taught me, that higher education is important to obtaining one's goals.

➢ I am an engineer with McDonnell-Douglas working in the navigation group. My experience with the pre-service helped me improve my people skills and my skills in explaining ideas and procedures.

➢ Going active duty June 11, Acquisitions Management, Maxwell AFB, Alabama!!

Michigan Technological University
Houghton, MI 49931

APPENDIX 7

Appendix 7

Pre-service Teacher Enhancement Project
Educational Opportunity/Department of Energy

Teacher
Follow-up Survey

(approx. 50% return for two years of participation)

1. ***Do you feel that the length of time for the project is sufficient time for the students to gain an accurate understanding of teaching? (20 weeks or 10 weeks - please circle one)***

➢ (10 weeks) it depends on how often the students meet with the teachers. It probably could be reduced to 10 weeks.
➢(10 weeks) yes.
➢(20 weeks) 10 weeks would be sufficient if they could spend a full day for 4 or 5 consecutive days in a high school setting. It's difficult to get a complete understanding of teaching in just a few hours a week.
➢The length of time should coincide with a schedule that they can meet every time.

2. ***Are there criteria for participating that you would like to see used when we are choosing the participants?***

➢Student Interest.
➢Seriously considering teaching and placed in grade level and courses that one would anticipate teaching.
➢Students who are truly interested in looking into teaching as a possible profession.
➢The student should demonstrate an interest and ability in working with young people.
➢I think the ideal candidate would be outgoing and knowledgeable in their field - able to share information
➢Students need to be able to get to the local high school during assigned times (transportation schedule which matches instructors)
➢The participants should have a genuine interest in learning and participating.

(over)

3. ***Is there an aspect of teaching that the program didn't cover that you would have liked the students to investigate?***

➢Workshops on teacher training, certification, status of teachers as professionals in state of Michigan.
➢No, good job.
➢My experience was not a productive one because the student I had was not easy to work with.... I don't want to base the critique on that experience.
➢A full day with a teacher to see the routine.
➢More opportunities for the student to view other teaching environments - elementary, middle school, high school.
➢Working with students in small groups.
➢No!
➢The time it takes outside of school hours to do things like grade papers, make up tests, etc.

4. ***We would like to see this project expanded to other universities as a tool to encourage students in Science and Math curriculums to get certified in teaching. With this in mind, do you have any suggestion on ways that the project could be improved so that students get the most out of their experience.***

➢Students may have to do a few more activities in actual teaching of a concept to local students..
➢More guidelines - what is expected of the student and teacher.
➢Include participation in extra-curricular activities of some sort e.g.: clubs, sports, debate, et al.
➢I liked the freedom to work with the student the way I wanted, yet I think its important to have a basic outline (foundation) for both the teacher and student to follow. It seemed people weren't sure what you wanted from the teacher or the student (a direction).
➢The earlier in their college experience they could be involved in the program the better.
➢Develop a questionnaire to screen prospective participants.
➢I don't think the aim of the program should be to recruit teachers - but to give other professionals an appreciation for the teaching field.
➢Try to schedule a 4 - 5 day period of time where they would spend the entire school day in the high school setting.

5. ***If we are able to get the project funded again next year, are you interested in participating again?***

___ ***yes*** 100% ___ ***no***

Michigan Technological University
Houghton, MI 49931

APPENDIX 8

Michigan Technological University

1400 Townsend Drive, Houghton, Michigan 49931-1295

Cindy Musik
US Department of Energy
Office of Science Education Programs
ET-32
1000 Independence Avenue SW
Washington, DC 20585

July 6, 1995

Dear Cindy,

Michigan Technological University's Pre-Service Teacher Enhancement grant ended on May 31, 1995. A final report will be sent in late July. At this time, the account shows a balance of $4,483.21. Would the Department of Energy consider allowing the University to earmark this remaining amount for a Teaching Awareness Week? The activity was in the process of being developed when it became apparent that we would be unable to initiate it during the 1994-95 school year? The Awareness Week activity would allow the Conferences/Institutes department to match Michigan Tech engineering students with local science and mathematics teachers for two - five days (a mini version of our major project). I believe that, like the long term project, the outcomes will be career option awareness, decisions to pursue teaching as a career and increased appreciation and understanding of teachers, teaching, and the public school system.

The designated funds would be put in a conference account and used during the fall or winter of 1995.

Thank you for your consideration. I look forward to hearing from you.

Sincerely,

Chris Anderson
Director, Educational Opportunity

cc: Anita Quinn