

PRE-EDUCATION PROGRAMS: A COMPREHENSIVE PROJECT AT HENRY FORD COMMUNITY COLLEGE

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Henry Ford Community College (HFCC) in Dearborn, Michigan is a two-year institution of higher education serving a diverse student population of approximately 13,000 students. In addition to providing a broad array of technical and vocational programs, the College provides the first two years of a baccalaureate program. However, the transferability of these programs is not assured. In the absence of a mandated state-wide curriculum, two- and four-year colleges and universities in Michigan develop courses and programs independently, and the transfer of courses between institutions is determined independently by the respective departments. The end result is often loss of credit when a community college student transfers. Other problems faced prospective education majors as well. Students were justifiably apprehensive about the suitability of their academic preparation for the challenges they would confront at the four-year institution. To address this and other problems, HFCC initiated a comprehensive project to develop a structured teacher education program. The project consisted of two components: 1) creation of pre-education programs and 2) institution of articulated transfer agreements as a result of collaboration with neighboring universities. The success of this reform is underscored by a dramatic increase in HFCC pre-education majors from 354 students in 1994 to 697 in 1997, with 80 students designating minority status in 1994 and 179 in 1997.

Background

Prior to 1992, Henry Ford Community College offered some courses that satisfied general education requirements and a few courses designed for prospective teachers, such as Art for the Elementary Teacher or Mathematics for Elementary Teachers I and II. Students often expressed concern about course transferability, the State of Michigan mandated testing, and student teaching. Students expressed a need for guidance, for structure, for community. To address that need, the Future Teachers' Association was founded in 1992. In 1993, the Michigan Statewide Systemic Initiative-Teacher Education Redesign Component (MSSITER), a statewide committee whose goal was the redesign of the mathematics and science curriculum for prospective teachers, invited HFCC to send a representative to serve on the Community College team. Through this involvement, the College became aware of the changing curriculum at four-year institutions in the state that would adversely affect community college students, making it difficult to transfer credits and prolonging the work

necessary to attain a bachelor's degree and teacher certification. To best serve education majors, the College had to respond in a positive and constructive way. After much discussion, it was decided that the College would develop Pre-Education programs that would provide a seamless transition from the community college to a university curriculum in education.

The Inception of the Program

Because HFCC and the University of Michigan-Dearborn (UM-D) are next door neighbors, an initial meeting took place between representatives of both institutions in September 1994. The discussion focused on the feasibility of course and program development and on UM-D's receptivity to collaborating on this project. Dr. John Poster, Dean of UM-D's School of Education, was very receptive to HFCC pursuing a program that would enable students to complete two years of course work (60 - 62 credits) at HFCC which would satisfy course requirements at UM-D. In addition, the development of such a program would nurture the Dearborn Public Schools' Career Ladder Pilot Project, a concerted effort to locally prepare a cadre of paraprofessionals to become bilingual teachers in Dearborn. With this understanding in place, the Pre-Education Committee, a committee of HFCC faculty, was formed to guide the development of the program, the creation of new courses, and the revision of existing courses. The committee met monthly to share ideas, to discuss progress in course and program development, and to set goals for the following month. The result of this work was a 60-credit community college program that parallels the work done the first two years by university students before they are admitted to an education program.

Program Development

As with every aspect of this project, much research preceded the drafting of the program. The committee studied the education programs at several universities, including the College's primary transfer institutions. Because HFCC prepares students to transfer to a number of universities, the committee desired to have a program that would be comprehensive yet flexible enough to serve all of the College's students. In addition to the needs of the universities, the committee recognized other issues. First was an increasing desire of school districts to employ more highly trained education paraprofessionals. This issue has two parts: providing those already in the field with opportunities to increase their knowledge and skills

and so be better able to serve elementary school children, and providing training for people desiring to be employed as education paraprofessionals. The committee also recognized the special need of the Dearborn Public School district to employ bilingual teachers and the initiative within the district to encourage education paraprofessionals to pursue their teaching certificates.

Therefore, in 1995, Dearborn and several other school districts were surveyed regarding their desire for a program for education paraprofessionals. These surveys queried principals, directors of paraprofessionals, and superintendents of school districts about course work that would benefit paraprofessionals and the optimal length of a program of study for this group of aides. Based on all research, a two-step program was developed. The initial step was the 32-credit Certificate of Achievement for Education Paraprofessionals. This program includes courses to enhance students' content knowledge in the specific areas of children's literature, English composition, mathematics, and science. Introduction to Psychology, Educational Psychology, Instructional Technology for Elementary Teachers, First Aid, and Assisting with Elementary Reading are intended to promote the development of interactive skills necessary for working with children. This certificate can be used as a terminal course of study or it can provide the foundation for the 60 to 62-credit Associate in Arts in Pre-Elementary Education.

The Associate in Arts in Pre-Elementary Education was designed to have three components: core courses, general education courses, and electives. The core and general education components satisfy associate degree requirements and are a part of the elementary education curriculum at all HFCC four-year transfer institutions. These courses are a part of the elementary education curriculum at all HFCC four-year transfer institutions. In addition to the courses required for the Certificate Program, additional composition, mathematics and science courses are part of these components. A political science course and five additional hours of humanities electives are included. Assisting with Elementary Reading and First Aid are not required in the Associate Degree program. The 23-credit hour elective component provides flexibility so that students can complete required course work for the transfer institution of their choice. To assist students, the general Pre-Elementary Education Program is adapted to meet the needs of each transfer institution that has collaborated with the College. These adaptations specify other required courses and more focused elective choices for the particular university.

Upon completion of the degree, a student has met all or most of the general education requirements of the four-year institution, has begun work in major and/or minor teaching areas, and has credits that apply toward education courses. By design, the student leaves HFCC with a minimum of 45 hours of observation in K - 12 classrooms and some insight into the teaching profession.

Other Program Development

With the Pre-Elementary Education Program in place, a need for Pre-Secondary and Pre-Special Education programs became apparent. The committee repeated the research and development process and the additional programs were created.

Course Development

The collaborative process has proven extremely effective in creating courses that transfer as equivalent university courses. To service the programs, four new courses were developed: Assisting with Elementary Reading, Children's Literature, Instructional Technology for Elementary Teachers, and Introduction to the Humanities. Additionally, the Educational Psychology course was revised to meet transferability requirements.

Redesign of Mathematics for Elementary Teachers

From the earliest stages of program development, mathematics educators have been attuned to the changing curriculum in K-12 classrooms. This change has been dramatic, not only in content, but also in desired outcomes and methods of teaching and learning. The curriculum has been expanded to include topics such as data analysis, relations and functions, transformational geometry, and probability. Objectives now include a focus on the understanding of concepts, the ability to problem solve, and the ability to express mathematical ideas in appropriate written and spoken language. Delivery modes emphasize more student-centered learning environments. In short, the K-12 mathematics classroom of 1998 does not resemble the K-12 mathematics classroom of five, ten or twenty years ago. Preparing prospective elementary teachers to be successful in an environment very different from the classroom they remember is a task that embraces many facets. Recognizing the

importance of this task, a committee of mathematics educators at HFCC set out to redesign the mathematics content courses for prospective elementary teachers at the College.

The committee began its task by researching the current state of affairs. To this end, the committee examined textbook series for elementary schools published by Addison-Wesley, Macmillan, and Silver-Burdett, and syllabi for similar courses at neighboring universities, including UM-D and Eastern Michigan University (EMU). Other relevant documents examined included:

- *Curriculum and Evaluation Standards for School Mathematics*, National Council of Teachers of Mathematics, Reston, VA, 1989.
- *Professional Standards for Teaching Mathematics*, National Council of Teachers of Mathematics, Reston, VA, 1991.
- *Preparing Teachers for a Changing World: Guidelines for Science and Mathematics Teacher Preparation in Michigan*, March 1994.
- *State of Michigan Guidelines for Mathematics Content K-6*.
- *Michigan Test for Teacher Certification (Basic Skills Test)*.

In addition, the committee discussed course development with mathematics educators from teacher training institutions and with inservice elementary school teachers. Typical questions asked of university faculty included:

- What direction do you want Mathematics for Elementary Teachers (MET) courses to take at your university?
- What content do you think is important?
- What text and ancillary materials do you use?
- What teaching styles do you utilize in your MET classroom?
- How will the MET courses be structured at your university?

Typical questions asked of inservice teachers included:

- What do you remember learning in your MET courses?
- What do you wish you had learned in your MET courses?
- What can mathematics educators do to better prepare prospective teachers for the modern mathematics classroom?

Based on all findings, committee members instituted a prerequisite of Intermediate

Algebra for the course sequence and identified the topics to be addressed in the MET courses. This level represents the mathematical competence of a high school student who has completed two years of algebra. Thus, prospective teachers have an understanding of the mathematics for which they are preparing their students. Anecdotally, instructors have found that with this prerequisite, students are now better prepared to handle the abstraction and concept development critical to the course materials. Another factor in deciding on an Intermediate Algebra prerequisite was the requirement of some four year institutions that community college MET courses have such a prerequisite, thus ensuring transferability.

The content for the prospective courses was discussed at length. Clearly, the increased coverage of geometry, probability, and data analysis in the K-6 curriculum dictated an increase in geometry topics and the inclusion of probability and data analysis. Integrating Geometers' Sketchpad and LOGO into the curriculum provided a vehicle for learning geometry and for modeling interactive learning.

With the increase in content, the seven credit hours used for the Math 120 - 123 sequence was inadequate. The committee discussed increasing the number of credits to eight or nine. Also, three options for the structure of an MET sequence were discussed. Two of the options involved two courses, either one five-credit course and one four-credit course, or two four-credit courses. The final option was to have three courses of three credits each.

Arguments for the first two options were based primarily on scheduling. Four and five credit hour courses were appealing to faculty for their schedules, and students would be able to complete their math content more quickly. On the other hand, having students in math content courses for three semesters would keep students in an environment nurturing mathematical inquiry for a longer period of time. Weighing these options and the ease of transferability to the major transfer institutions, the committee decided to create three three-credit-hour courses.

Major changes in the curriculum are the addition of topics such as data analysis, relations and functions, probability and statistics, and spatial visualization as required subject-matter. There is an emphasis on reading, speaking, and writing mathematics. Additionally, the structure of the classroom time has significantly changed. There has been a shift from

primarily lecture style where students are relatively inactive participants to an environment where much class time is devoted to cooperative learning exercises, guided discovery lessons, computer activities emphasizing the discovery of concepts, and whole class discussions.

Student assessment now includes assignments, journals, projects, and tests. Assignments involve explanation of mathematical concepts and processes, reading of mathematical content not presented in class and application of this content. Articles from *Teaching Children Mathematics*, *Mathematics in the Middle School*, or *Research within Reach* may be assigned with the students answering follow-up questions. Assignments also require problem solving, explanation of solutions, and creation of original problems. Journals are used to encourage students to summarize and reflect on their daily work. Students are encouraged to note successes and difficulties. Journals help to develop a reflective attitude in students. Projects provide students with the opportunity to explore a topic in depth and to further develop communication skills.

With these courses in place for three semesters, we are seeing that along with the main course objectives, many by-products are being achieved. Students are learning in an environment where multiple delivery modes are being used. They are using manipulatives, calculators, and computers to explore and discover mathematical concepts. In addition they are reading, writing, and speaking mathematics. Working in cooperative learning groups, students are experiencing the positive and negative aspects of this learning environment, experiencing the frustration, the excitement, and the joy in discovering, understanding, and achieving.

In a draft of the Michigan Statewide Systemic Initiative - Teacher Education Reform (MSSI-TER) document, "*Preparing Teachers for a Changing World: Guidelines for Science and Mathematics Teacher Preparation in Michigan*", an example was presented of a fundamental weakness many people experience with division of fractions. Although students are familiar with the standard algorithm that to divide by a fraction, one multiplies by the reciprocal of the fractional divisor, they often cannot write a word problem that requires division by a fraction. That is to say, students do not understand the concept of division by a fraction. In *Mathematics for Elementary Teachers II*, students use fraction bars and pattern blocks to explore the concept of division by fractions. Students, without exception, see the

connection between the model of division of whole numbers where a larger set is divided into smaller sets and dividing a fraction into sets whose size is a fraction. Once students have exclaimed, “Cool, this really works!”, they question how the algorithm was developed. Reflecting on the definitions of fractions, fraction as indicated division is selected to write a division problem as a complex fraction. Simplifying the denominator of the complex fraction to the value one (1) involves multiplying by its reciprocal. Hence, $(a/b \div c/d) \times (d/c \div d/c) = (ad/bc) \div 1 = ad/bc$. Students know the mathematical process that was abbreviated to the algorithm commonly used. Now when posed with the task to write a word problem that requires division of fractions, students can successfully write such a problem and explain why division by a fraction is used to solve the problem. When given an assortment of word problems involving operations with fractions, students are less confused as to which operation is appropriate.

Courses are reviewed by individual instructors each semester and by the MET committee each year. One aspect of the assessment of the courses and the MET sequence is based on formal and informal evaluations by students in their journals and at the completion of the courses. Another is feedback of the individual instructors. A third aspect of assessment is ongoing communication with mathematics educators at four-year institutions regarding appropriate course content and teaching technique. Based on this, the committee has made many recommendations, including: the extent to which certain topics are covered, the integration of some topics, and the omission of certain topics. In addition, the committee remains committed to keeping the MET sequence current with new ideas and developments in mathematics education. The ongoing discussions and exchange of ideas with mathematics educators from other institutions help the courses continue to develop and improve, and so serve the needs of our students.

Collaborative Efforts in Mathematics Education

In addition to discussions about curricular issues, neighboring universities have been receptive to engaging in collaborative efforts with HFCC. During winter 1998, two projects involved HFCC students with university and K-12 students. The first project partnered UM-D and HFCC students with K-12 students from the Dearborn and Detroit Public School Districts. The Local Alliance of Dearborn and Detroit Educators for Recruitment and

Success (LADDERS) was a mechanism for university students, community college students, and high school students to work collectively on developing and delivering mathematics activities for elementary students. Through LADDERS, many objectives were set, including the following: to provide a bridge from the community college to the university; to encourage community college students to select mathematics as a teaching major or minor; to attract high school students from underrepresented groups to the career of mathematics teaching; to expose prospective teachers to the environment of the urban classroom, thus acquainting them with the culture, challenges, and rewards of teaching in the urban setting; and to encourage prospective teachers to select the urban setting as their desired teaching setting. An Eisenhower Proposal was submitted July 1998 that outlined an enhanced project based on this work.

A second initiative involving Eastern Michigan University (EMU) and HFCC is funded by an Eisenhower grant. This project has prospective elementary teachers from both institutions and elementary school children from Detroit Public Schools visiting the Museum of African-American Art in Detroit. Geometry activities for elementary school children will be developed based on the art viewed. Prospective teachers will interact with the children in completing these activities. After working with the children, prospective teachers will reflect on the experience and revise the activities to improve them for the next presentation. Faculty from EMU and HFCC will work with Detroit Public School teachers on the content of the activities and on appropriate strategies for classroom use. This unique experience is an exciting opportunity for the prospective teachers designing the activities, the faculty from both institutions involved in the project, and the elementary school children who will visit the museum and engage in the activities.

Articulation Agreements

An extremely important motivation for the development of the Pre-Education Programs is the seamless transition from the community college to four-year institutions. Because education programs are so extensive, it has been a goal of the project to transfer each HFCC course as an equivalent course in the four-year institutions' education programs. This eliminates the transfer of credits as general electives or elective credits that may not satisfy program requirements or may not apply towards the teaching major or minor. Consequently,

students transferring from HFCC will be able to complete their bachelor's degree having earned the same number of credits as students who begin their work at a university. To ensure this efficient transfer, HFCC is working to develop articulation agreements with four-year institutions. To date, articulation agreements with UM-D, Wayne State University, and Marygrove College have been signed for Pre-Elementary Education and Pre-Secondary Education Programs. Strong transfer guides have been developed with other universities and discussions continue with institutions as they reconstruct their programs.

The work on articulation agreements has benefitted HFCC students in that it has established communication between the College and schools of education. It has also increased university awareness and transferability of newly developed or revised courses. Discussion of co-advising practices and linking university and HFCC advisors, promise to maintain communication about programs and more importantly, to alert the university of a student's impending transfer. Referring students to a designated university advisor, who is knowledgeable of the HFCC/university collaboration will smooth the transition for these students.

Student Support

Designing the Pre-Education Programs has been an important first step in providing support for students pursuing a career in education. Along with the transfer and articulation agreements that are being developed, these programs lay the foundation for further work. To enhance the success of its diverse and non-traditional student population, HFCC has worked to provide some "extras."

Advising

As part of the College's pilot faculty advising initiative, members of the pre-education committee advise program students. Committee members who have worked closely in the design of the program and who have been updated on articulation work at monthly meetings are best suited to guide these students. During advising sessions, the Pre-Education Programs are discussed, as well as the articulation agreements that are in place or that are being negotiated. Discussion of a two-year plan of study takes place demonstrating how the Associate Degree can be achieved and how this degree fits into a Bachelor's degree at several transfer institutions. Specific sections of courses are flagged and, when possible, students are

scheduled for those sections. The students are informed that other pre-education students are enrolled in that section and are encouraged to meet those students and form study groups.

Scheduling

When scheduling classes, students need not be concerned with scheduling conflicts. Long before the course schedule goes to print, the Coordinator of the Pre-Education Program meets with Department Heads and Division Directors to synchronize scheduling. According to data from a database created for the Program, the number of students who are ready to take specialized courses is available. Based on this information, numbers of sections of courses are determined. A master schedule of pre-education core courses is created so that no conflicts arise and students can establish a compact, efficient schedule. Students notice that their time on campus is used effectively. This is especially helpful to students with families and/or busy work schedules. This careful planning also prevents students from having to increase their number of semesters at HFCC while they wait for course availability.

Community Building

Although compact, efficient schedules for students was the original intention of the orchestrated scheduling, a far more important by-product has developed. Students are forming informal learning communities. As students become acquainted and recognize each other, they move from class to class together, discuss work from other classes, form study groups, and become a strong support system for each other. They make connections between content from different courses. For instance, while discussing the Van Hiele levels of geometric thinking in a Mathematics for Elementary Teachers II class, students spontaneously question how these are related to the Piagetian theory discussed in Child Psychology. When discussing Polya's steps to problem solving, an introductory topic in Mathematics for Elementary Teachers I, they compare this to problem solving learned in the Introduction to Psychology. Working in communities and comparing content from different courses has created an excitement and enthusiasm for learning that had not been observed before the development of additional courses and the structure of the Pre-Education Programs.

Future Teachers' Association (FTA)

One of the catalysts of the development of the Pre-Education Programs has become a beneficiary. The Future Teachers' Association (FTA) has more than doubled its membership

in the past two years. This increase in membership reflects an increase in the number of Pre-Education students at the College. More exciting than the increase in numbers is the broadening of the activities of the club. In the initial years, the club provided a service to students by bringing speakers from universities and school districts to campus. During meetings, students learned important information about university programs, the job market, creating a resume, or interviewing. In recent years, the club has continued to provide educational meetings, but it has also developed a philanthropic aspect. For two years, students have conducted fund raisers and have contributed children's books for a "Gift of Reading" program. These books have been donated to the Dearborn Public Schools Bilingual and Compensatory Education Program and to the Early Childhood Program. A second humanitarian project is the collection of new toys and stuffed animals for the patients at Children's Hospital. Students volunteer their time to work in the HOST program, an initiative focused on building the reading skills of early elementary children, as readers for blind students at the college, and as tutors in both public and private schools. These projects are evidence that the Future Teachers' Association has become both educational and philanthropic in its focus.

Partners Plus

Universities with which HFCC has collaborated are very enthusiastic about assisting students in making the transition from the College to their university programs. A partnership between the University of Michigan-Dearborn and HFCC targets minority students in business and pre-education programs. This project, Partners Plus, provides mentoring, tutoring, and general support. Regular meetings of Partners Plus are planned to encourage a sense of community among the students. Representatives from UM-D regularly attend and encourage students to use the UM-D mentoring and tutoring facilities that are available to them. Motivational speakers offer encouragement and strategies to help students succeed in course work. Students in need of financial aid or employment often find assistance through this program.

Wayne State University (WSU) offers tutoring and support services to HFCC students prior to their admittance to the university. Students may use university learning facilities that prepare them to pass the WSU competency tests in mathematics and English. Students will also be invited to a community college day each fall. The purpose of this day is to acquaint

students with the WSU campus and the School of Education faculty.

Program Support

The Pre-Elementary Education Programs impact both the K-12 school districts and the universities. In an effort to monitor the programs so that they continue to effectively address the needs of both arenas, an advisory committee was instituted in 1996. The committee consists of a broad array of professionals from school districts and universities. These educators meet twice each school year to monitor the development and progress made with the Pre-Education Programs. Based on their recommendations, subcommittees are formed to examine issues in greater depth. These subcommittees meet one to three additional times to discuss aspects of the programs and to make recommendations to the College.

Internally, the Pre-Education Committee, the group which initially investigated and developed the programs, continues to meet on a monthly basis. Because the programs are still young, this committee continues to address issues of assessment, brochures, and course development. Ways of enhancing the program and of serving students more effectively are being reviewed and tested. The Pre-Education Committee continues to be the thrust behind the programs.

Impact on Students

Prior to the creation of the Pre-Education Programs, students experienced much apprehension about the transferability of HFCC courses, the suitability of their academic preparation for four-year colleges, and the relevance of their course work to K - 12 classroom practices. Although transfer guides were available, students were uncertain that their course work would transfer and doubted whether it would prepare them adequately for the rigors of four-year colleges. Given that few content classes were directly tailored to education and that students had little or no exposure to K- 12 classrooms, education majors could not gauge the relevance of their instruction to the actual practice of teaching. Perhaps most importantly, education studies students lacked a sense of community with other students.

Transfer of Courses

Student concern about the transfer of courses was well-founded. No mandated state-wide

curriculum exists in Michigan. Consequently, two- and four-year colleges and universities in the state develop courses and programs independently, and the transfer of courses between institutions is determined independently by the respective departments. Often, students completing associate degree programs of 60 - 62 credit hours discovered that as few as 40 of those credits transferred to a four-year school and even fewer applied toward a teacher preparation program. In 1994, the University of Michigan-Dearborn notified HFCC that only 20 HFCC credits could be applied toward the Bachelors Degree in Elementary Education. However, the development of the Pre-Education Program improved dramatically the transfer of HFCC courses. The University of Michigan-Dearborn agreed to transfer all 60 program credits and confer junior status upon all HFCC students who completed an Associate in Arts with a concentration in Pre-Elementary Education with a 2.75 grade point average and a passing grade on the mandatory Michigan Test for Teacher Certification Basic Skills Test. Similar scenarios can be sketched for other major transfer institutions. The impact is a significant increase in HFCC credits that apply toward teacher preparation programs, and a significant decrease in lost credits upon transfer to a four-year school. For students, this means an efficient use of time and education dollars.

Students are now reassured that their course work will transfer and apply toward teacher education program requirements. Student reports of successful transfer have generated increased confidence in the program, one factor leading to increased student retention.

Alliances and Academic Preparation

Partnerships between universities and HFCC have led to the creation of a curriculum designed to prepare the student academically as well as to smooth the transition from HFCC to the university environment. These partnerships focused on enhancing mathematics curriculum at the elementary level, creating service learning experiences for community college and university students, and recruitment of prospective teachers to mathematics education in an urban setting. HFCC built a bridge. As the prospective teachers developed lessons, university students shared information about courses, program requirements, and student teaching. (Yes, they even made recommendations about professors!) This interaction has smoothed the transition from the College to university settings by establishing a familiarity with the respective campuses, by introducing the students to university faculty, and by creating mentoring relationships with university students. Additionally, students are exposed

to K - 12 classrooms and learn how to work in a multi-institutional effort.

Introduction to K - 12 Classroom Instruction

Henry Ford Community College Pre-Education students are exposed to teaching as a profession in the first two years of study and consequently gain familiarity with a K - 12 classroom setting prior to transferring to a four-year institution. Courses such as Children's Literature, Educational Psychology, Instructional Technology for Elementary Teachers, and Mathematics for Elementary Teachers give students an important insight into course work specific to teaching majors and minors. Service learning and practicums require students to observe or actively participate in K - 12 classrooms, thus providing exposure to teaching. Students learn whether teaching is right for them early in their college experience. Again, another means of using time and education dollars efficiently. They also have the opportunity to work in several classroom environments to determine at what level they would like to teach. Consequently, important impacts of the program are student awareness and commitment to the teaching career.

Community Building

Academic advising and coordinated scheduling enable Pre-Education students to form informal learning communities. Students work together on assignments, study together for tests, and support each other when illness, work schedules, or family commitments prohibit them from attending class. This interaction nurtures student success.

Overall, the program has created an enthusiasm for learning among faculty and students, a sense of structure and reassurance in course transferability, and it has provided an opportunity for practicum experience early in a student's college career. Collaborative efforts such as LADDERS, the EMU Eisenhower work, and Partners Plus create opportunities for students to experience innovative learning techniques. These efforts open the door to interaction on the university campus and at K - 12 schools, exposing HFCC students to university students and faculty and the K - 12 environment.

Impact on Community

The work done at HFCC in the area of teacher preparation has impacted many

communities in a variety of ways.

Henry Ford Community College

To focus on the College community itself, the Pre-Education work has influenced the College at several levels. The Mathematics Division has observed the work done by the Mathematics for Elementary Teachers Committee in the research and development of a new course sequence. As a result, this committee process has become a formal part of the Division. As of Fall 1997, six curriculum committees have been formed, each addressing the specific needs of a cluster of courses. The committees are charged with the tasks of review and redesign of curriculum, investigating appropriate delivery systems, text selection, and any other topic relating to their courses which may improve those courses.

Looking beyond the Mathematics Division, the ongoing committee work has been a model for program design, collaborative work with universities, and articulation agreements. The interdisciplinary approach to the project has enriched not only the committee, but the College as a whole.

School Districts

The impact of the Pre-Education programs is felt beyond the HFCC campus in surrounding school districts as well. Individual children are being influenced by the presence of HFCC students who observe or act as tutors and mentors because of course requirements, local alliance activities, or volunteer work through the FTA.

Education paraprofessionals from at least eight school districts are pursuing programs at HFCC to strengthen their effectiveness in the classroom or to provide the foundation for a bachelor's degree, teacher certification, and a teaching career. Although many basic courses could provide this foundation in previous years, the articulated programs make the process more efficient. The existence of formal programs also makes more people in the community aware of the opportunities provided by the courses and the programs. Paraprofessionals find that the courses developed for the program are extremely helpful and applicable to their daily classroom work.

Four-year Institutions

Interaction between the universities and HFCC has been beneficial to all parties. Course

development has catalyzed discussion among faculties. In areas such as mathematics and science, this has enabled faculty to interact and learn from each other in an era when curriculum changes are dramatic. Through discussion of content and methods and the exchange of successful and not so successful strategies and ideas, these partnering efforts have been beneficial to faculty and students alike.

Although the program has not been in existence long enough to see any trends in data, qualitative feedback indicates that HFCC students are acclimating well when reaching their transfer institutions. Mathematics faculty from neighboring institutions note that HFCC students are as well prepared, and at times, better prepared than native students. By sending well prepared students, HFCC is having an impact on the university classes and programs.

Other Michigan Community Colleges

On the state level, the work in Teacher Preparation at HFCC has influenced other community colleges to pursue the same endeavor. An important result of MSSSI-TER is the collaboration of faculty from several colleges across Michigan. Community College Conferences for three consecutive years have been a forum for the exchange of ideas on curriculum, programs, and articulation work. At each conference, HFCC has presented its work, acting as a motivator for other community colleges to pursue the development of teacher education programs.

Successful Strategies

Without a doubt, the careful, collaborative approach to the development of the Pre-Education Programs and to course development is the most important strength of the work done at HFCC. As summarized above, the programs were carefully developed by a committee of faculty from across the College, with the assistance and guidance of Dr. John Poster, Dean, School of Education, University of Michigan-Dearborn. Careful research of education programs and guided development has resulted in a program that fits all major transfer institutions and provides a balance of general education requirements, major and minor course work, and education courses enabling students to determine early in their college career whether teaching is appropriate for them.

Working with university faculty in the development of courses generally proved to be rewarding for all parties involved. Discussion of content, modes of delivery, course structure, and textbooks helped flush out important ideas and helped create strong courses. With university input, transfer of courses was a natural result. Conversation continues between faculty, ensuring ongoing relationships, and further nurturing the improvement of courses. Interchange of ideas, especially in the mathematics education courses, has been especially exciting. Sharing supplemental activities and readings, exchanging classroom experiences, and interacting in the local alliance activities has created a dynamic environment in which faculty and students learn.

Now that the programs are established, monitoring program revision are essential to keeping them current and effective. The Pre-Education Committee, consisting of HFCC faculty, continues to meet each month. From these meetings, assessment criteria, recommendations for a new brochure, creation of a newsletter to program students, and exploration of formal learning communities are a few of the tasks recently undertaken. Overseeing the programs, the advisory committee, consisting of representatives from K-12 school districts, universities, and the College, offers recommendations regarding the education paraprofessional certificate of achievement program and the degree programs. This year the committee targeted the development of continuing education courses, marketing of the program, and creation of a developmental semester and formal learning communities. Subcommittees will be reconfigured based on recommendations from the full committee and possibly requests from the College. Based on the first one and one-half years, the advisory committee has brought important knowledge and insights to assist in maintaining quality programs. Proactive interaction with admissions offices and schools of education to gain transferability of courses and to initiate articulation agreements has hastened progress in this area. Again, communication of course content beyond a catalog description has enabled university personnel to recognize the quality, and often the equivalence, of HFCC courses to their courses. Without the active involvement of HFCC faculty, the transfer of many new courses may have been overlooked.

The Career Ladder program encourages education paraprofessionals in the Bilingual and Compensatory Education Program in the Dearborn Public School district to pursue course work that enhances their skills in assisting elementary classroom teachers and working with

students. Because of a fringe benefit in their contract, Dearborn paraprofessionals may take classes at HFCC at no tuition cost. Before the Pre-Education Programs began, paraprofessionals could complete fundamental courses at the College, but had no exposure to courses specific to an elementary education program. With the Education Paraprofessional Certificate of Achievement and the Pre-Elementary Education Degree Program, these paraprofessionals have a stronger foundation before moving on to the university. Also, they are exposed to content that can be applied everyday to their job in the classroom. This career ladder has been successful in encouraging Dearborn paraprofessionals to pursue course work and teacher certification so that they advance to the career of classroom teacher.

Along with the positive effects of program articulation and course transfer, the affective aspect of this program development has been important. Faculty advisors who have been involved in program development and articulation agreements provide students with valuable information about their time at the College and beyond. This includes details about the Pre-Education Programs, the collaborative work done with universities, and a plan of the courses a student can complete at HFCC before transferring. Targeting sections of courses for pre-education students allows these students to become acquainted, work together, and schedule classes together in future semesters.

More formally, the coordinated scheduling of courses specific to the program has been very effective. The courses have filled to capacity and students have been very pleased with their compact, efficient schedules. This is especially important to the returning students, the students with busy work schedules, and family responsibilities. A by-product of this scheduling has been the formation of groups of students who attend class together, study together, and socialize together. These students have immersed themselves in an environment where their course work has dictated other controllable aspects of their lives. Their learning has become a central focus of their lives.

Also addressing the affective side of this project are support groups such as the Future Teachers' Association (FTA) and Partners Plus. Both organizations provide valuable information and a support structure. FTA offers opportunities for philanthropic projects as well as projects that involve tutoring or working with students who require special assistance. Partners Plus, focusing on minority students, provides mentoring and tutoring to students,

assists students in securing financial aid and scholarships, and helps students find part-time employment to help defray the cost of their education. Both groups provide a sense of community and support that nurtures students.

Assessment

Assessment models for the Education Paraprofessional Certificate of Achievement and the three Associate degree programs have been developed. The Education Paraprofessional Certificate of Achievement will be examined based on the following student outcomes:

- The student will be able to successfully secure employment as an educational paraprofessional or in a closely related position.
- Students who wish to continue their pre-education studies at HFCC will be able to successfully complete the Associate in Arts Degree in Pre-Education.
- The student who successfully completes the Associate in Arts Degree in Pre-Education will be able to receive a Bachelor's Degree in Elementary Education.

These student outcomes will be assessed according to the following criteria (respectively):

- a) Within six months of graduation, 70% of the program graduates who were seeking employment in the field will have been successful in their quest.
- b) 80% of the program graduates who found employment in the field will be judged by their employers to be adequately prepared for the specific tasks required for the position.
 - 60% of students who indicate a desire to pursue the Associate in Arts Degree in Pre-Education and have a cumulative grade point average of 2.50 or above in the certificate program will successfully complete their degree work within a three-year time frame.
 - 50% of students who pursue a Bachelor's Degree in Elementary Education will complete their degree in six years.

The degree programs have the following student outcomes:

- Students who successfully complete the Associate in Arts Degree in Pre-Education will be able to pass the Basic Skills Test mandated by the State of Michigan.
- Students who successfully complete the Associate in Arts Degree in Pre-Elementary

Education (Pre-Secondary Education, Pre-Special Education) will be able to successfully transfer into an elementary (secondary, special) education program at a four-year institution.

- Students who successfully complete the Associate in Arts Degree in Pre-Elementary Education (Pre-Secondary, Pre-Special) will be able to receive a Bachelor's Degree that will enable them to teach at the elementary (secondary, special education) level.

These student outcomes will be assessed according to the following criteria (respectively):

- 80% of degree recipients will be able to pass the Basic Skills Test on their first attempt.
- 70% of degree recipients who apply to (a school of education at) a four-year institution will be admitted (to a school of education) within one year of graduation.
- 50% of degree recipients who pursue a Bachelor's Degree will be able to complete their degree in six years.

Because the program has been active for one and one-half years, there is insufficient data to determine whether the student outcomes have been met. Even though the program is too young to provide sufficient data about student outcomes, one can examine the numbers of students in the program.

When examining the numbers of students in all pre-education programs, numbers of students enrolled in the program from Fall 1994 to Fall 1997 are as follows:

1994	354
1995	393
1996	505
1997	697

If we examine the numbers of students who register an ethnic or racial status, the following data are available:

	1994	1995	1996	1997
Asian	3	3	4	6
Native American	5	3	4	5
Black	54	51	55	97
Hispanic	8	12	16	22
Other	0	1	1	2
White	264	278	352	439
Arabic	*	4	20	47
No Answer	20	41	53	77

Note: * Not tracked prior to 1995

While the program is still in its infancy, an encouraging trend seems to be emerging in this data. While white students still constitute the largest single category, the percentage increase in the numbers of Hispanic, Black, and Arabic students is much greater than that of white students. With recruitment efforts in the Dearborn Public Schools for bilingual teachers and programs such as Partners Plus, this could be the beginning of a trend of increasing the minority population of students choosing the teaching profession.

When focusing on the Mathematics for Elementary Teachers courses, the pre-1996 sequence, Math 120-123, had no prerequisite. The success rate of students was approximately 64%. With the prerequisite of the revised Math 121, 221, 225 sequence set at Intermediate Algebra, the content of these courses is more rigorous and the success rate has increased to 76%. Far more important than internal success rates is the success that HFCC students are experiencing at the universities. In recent meetings with colleagues from four-year institutions, positive comments about the preparation of HFCC students have been made. When assessment tests are required, students are doing well and are placing into their methods courses. This informal, qualitative information indicates that the program is producing students who are well prepared for university work. ■