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ABSTRACT

Presenting summarized transcripts of sessions at the Michigan Department of Education's second Curriculum Integration Workshop held in Traverse City, Michigan from July 15-18, 1996, this proceedings describes the state's project to integrate academic curricula into vocational programs at the community college level. Following an overview of the workshop and the proceedings, background information on the curriculum integration project is presented, a warm-up exercise used at the workshop is described, and issues related to the role of community colleges in workforce development are reviewed. Reports of career preparation activities are then summarized from teams at seven Michigan colleges and common themes in the activities are described. Next, a discussion is provided of an administrator session reviewing curriculum development strategies and reports are summarized of first-year outcomes for four pilot integration projects: a curriculum development perspective from Henry Ford Community College; a student perspective from Macomb County Community College; a faculty perspective from Northwestern Community College; and an administrative perspective regarding the use of learning communities at Delta Community College. Comments and discussion from session audiences are also included. Connections are then reviewed between the state's integration project and tech prep and school-to-work initiatives and national skills standards. Next, new projects are summarized at eight colleges and continuation activities are described related to sharing information and evaluation methods. Finally, additional resources are discussed and project contacts are provided. (AJL)

Proceedings of the Curriculum Integration Workshop July 15-16, 1996

*A 40-Page Paper**

Prepared for
Michigan Department of Education
Community College Curriculum Integration Project

by
Roberta C. Teahen, Northwestern Michigan College

**Refer to pages 7, 30, and 31*

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Project Overview

The Proceedings were prepared as a summarized transcript of the videotapes of each session that was presented at the Curriculum Integration Workshop held at Traverse City, Michigan, on July 15-16, 1996, at the Waterfront Inn and Conference Center. The Workshop was sponsored by the Michigan Department of Education for the second year as one part of an effort to encourage curricular innovation through integration of academic and occupational instruction. Workshop planners were Dr. James Jacobs of Macomb County Community College, Patti Loncharich of the Michigan Department of Education, and Roberta Teahen, Northwestern Michigan College. Jim Folkening of the Michigan Department of Education was a valuable consultant to the project throughout.

A "Michigan Community College Curriculum Integration Guide" was prepared for use by workshop participants and will be updated throughout the next year. Copies of this guide may be reproduced or purchased at cost.

The reports of each session appear nearly verbatim throughout. Editing was done to bring coherence between sections where text was cut to retain just the major points of each presentation. Many non-essential transitional words and phrases were cut, resulting in a choppy writing style that was more fluid in real life. Each presenter was given an opportunity to edit his/her section for accuracy prior to the distribution of this document. Copies of this report may be shared with any others who share our interests in curricular innovation through interdisciplinary approaches which integrate the topics of the traditionally academic and occupational areas.

Future publications will feature the progress made by each of the teams, assessments of the projects, including the reporting of any data collected concerning student and/or staff satisfaction, retention, and other important indicators of curricular success. Individuals who have comments are encouraged to direct them to the editor of this report. Contact information is provided on the final page.

The Context - Dr. James Jacobs, Macomb Community College

Welcome to the second curriculum workshop for what I consider to be a very important topic. We learned a lot from doing the conference last year. One of the things we want to do is to provide you with a lot of time for interaction so you could get to know and learn from each other. Last year we had administrators meet with the faculty, but this year, because we identified that one of the barriers to integration relates to our own institutional processes, we will be holding a special session with the administrators. We also want to call your attention to a very exciting proposal developed by Patti Loncharich. In Section 6 of your materials there is a proposal for a NSF curriculum development project. A new version is available for you here today. One of the things that we hope will come out of our activities this year is a group of faculty members from different community colleges

who will come forward to work on this proposal from the Michigan Department of Education. We expect this group to be a springboard. I urge you to read it, and if you have any comments, get with Patti in the next day and a half. A successful project is going to take a lot of your involvement.

Let's put curriculum integration into some context. For many of you, this is the first time you have come together to talk about curriculum integration. While the efforts are going to be devoted to the individual process within your institution, there is a big picture that it is important to emphasize. Fundamentally what we are doing here is important to a question that's troubling all of us in community colleges. What we see in many community colleges right now is either a declining or leveling of enrollment. Many are spending untold amounts of energy trying to keep it from dropping any further. We also see students dropping away quicker, taking fewer credits. It is not just in the occupational areas, as some have suggested. Recently Clinton announced tuition incentive programs to attend community colleges, a very good sign for us and an indication of the importance he places on the work we do.

Second, we have had two major school reform efforts - Tech Prep and School-to-Work (STW). These two initiatives don't interact greatly with major parts of the institution. STW in many cases is seen as a secondary issue. At the same time as traditional enrollments are declining, we have seen tremendous growth in the shadow college--the college that deals with the non-institutional programming, non-credit. Customized training and continuing education have increased dramatically in some colleges. Often these programs are not generating credit hour enrollments in the normal sense. We have a curious dilemma. On the one hand, traditional programs are declining but on the other hand, activities are increasing. What is our core competency? Is it to be a transfer institution, a vocational institution, a job training institution? What are the kinds of things that we do best? I would argue that our real core competency is exactly what we are trying to do today at this conference--that is the integration of critical thinking skills and technical skills together. No other postsecondary institution has the capability to do that form of integration.

This is what we should be leading with. Too often we see ourselves as either transfer or vocational and the reality is, from what we see in the workplace as well as in our own jobs, we see that the two are coming together. One of the reasons why there is decline, I would argue, is that students do not see the coherence in the program; they don't see that there is a connection. It is with that overall perspective that I believe that what people are doing here is pioneering. Hopefully we can make this the theme for curriculum in Michigan's community colleges. The first teams came out with some very interesting curricula. We could have this be our distinctive capability--the thing that will distinguish us as a state.

Getting Acquainted - Roberta Teahen, Northwestern

In an attempt to have individuals meet others earlier in the workshop, we will participate in a "get-acquainted" exercise. This exercise is one utilized by Dr. Steve Kaagan at Michigan State University in a Leadership Seminar. Imagine this room is a map of the state of Michigan. Detroit is over here; that's the Upper Peninsula; Kalamazoo, Grand Rapids, and Battle Creek are over in here. I am standing in Lansing. If you came from out of Michigan, go to the periphery in the appropriate direction to find others from similar directions. When the exercise begins, please move to the location in the room where you graduated from high school and talk with others from your area. When we ask you to move a second time, move to the location in Michigan where you had your best meal. Lots of conversation and lots of life resulted from this 20-minute exercise!

Last year's conference was the culmination of a year's exploration into integrated curriculum. We had a difficult time finding anyone anywhere who was doing much with the integration of occupational and academic instruction, especially at the postsecondary level. While there are many examples of multidisciplinary courses, they are generally more closely related disciplines, such as philosophy, religion, and literature. There were few models where academic and occupational instruction had been genuinely integrated - not just related or linked - at the postsecondary level.

We are pleased to introduce today Norena Badway, a researcher from the University of California at Berkeley, who works with the National Center for Research in Vocational Education. Norena will tell you about her research on this topic.

Content Issues - Norena Badway, NCRVE, UCLA-Berkeley

Community college issues are very important in creating a comprehensive workforce development policy in this nation, but they have not been given the attention they deserve. In our experience, students either do or do not get through high school, but regardless, they ultimately end up at the community college. As you know, even those with four years of college may end up at your doorstep.

There are several conditions in the nation that have shaped how community colleges design programs, and the greatest of these is the growth of the business community as our main constituency. The business community has become the nation's prime mover for stronger schools, and whereas in previous times they were content to encourage policy and leave planning and programs to educators, today the business community has become involved at all levels of education. They suggest ways of teaching, of assessing (competency-based measurement), of outcome standards (National Standards Commission), and in some cases even recommend texts and teacher selection methods. In

short, the employers of the nation have named education as not only the cause of economic instability, but also the solution.

Of course, there are many solutions to a nation's economic environment. Tax policy, employment and training policy, immigration and welfare laws all play a part in a nation's economic conditions. However, the public and the employers of the United States have always looked to education in times of social or economic upheaval, and are doing so again in the late 1990s. For us in the community college, this is both an opportunity and a challenge.

It is a challenge because we lack the financial resources and professional development to deal with the increasingly under-qualified students we receive. At the same time, it is an opportunity to ensure our position as the premier providers of workforce preparation. The challenge is that if we, as community colleges, do not move to fill this niche, other providers will. There is enormous competition between private and other public providers of job training services, including proprietary schools and the JTPA. Both of these groups offer training that costs around $10,000 for a 9-13 month program, from which students often receive no credits that are transferable if they wish to complete an associate or bachelor's degree at some point in the future. In addition, JTPA completers earn only about $500 more per year than they would have earned without the training, which is a low return on our investment in their training. These programs serve welfare-to-work adults, displaced workers, and other adults with low skills - groups community colleges already serve. This creates a system that parallels the educational system and draws dollars away from our needs.

In the congress there is a major move to consolidate programs. Whether people get jobs, etc., has traditionally not impacted our jobs. But it is going to. There is a changing constituency and a great increase of power of the business community. There are great changes in the workplace. Employees are required to know more and do more than ever before. It's perfectly possible to ignore everything. I think you will see your funding enormously changed in this state in the next five years. A majority of our colleagues are choosing to ignore the message and are seeing the dollars be moved. That is a real threat. Workforce development is something with which we need to be very comfortable.

The way we have been trying to understand what's happening in community colleges is based on a 1992 survey where we identified some community colleges who seemed to be doing some innovative work. We sent surveys to about 300 community colleges; we got an 85 percent response rate by hounding them to get the response forms; we conducted over 200 interviews and several site visits and several document reviews. If everything that was on paper was really happening, it would be great. We sampled student activities, sample student work products, exams, course outlines. We find a lot of difference between what is said and what is practiced. For example, for Writing Across the Curriculum, it was incredible to see 50 multiple-choice questions, and this is supposedly how it's being assessed. We are finding that meaningful career preparation has to consider three separate perspectives. One is employer demands. We need to know what they are

asking for. We know employers do not speak with one voice, like any other group. Second, the community college mission is a long, substantial one that says we are open access, provide a range of education and training; our own mission needs to be a part of thinking about a perspective of cognitive research.

We have learned a lot about what knowledge transfers. You will hear business faculty talking about students' inability to write abstracts, reports, etc. Technical faculty say even though students have completed math sequences, they are not able to apply to do the math that is required. Transfer is not even happening within the institution between disciplines. Knowing what we know about these things gives us good information about what Career Prep might look like. We know we need to do things differently. How would we do that? What would it look like? Folks are really determined to make a difference in the lives of students but not really knowing what the next step should be.

A document should be out in another 90 days describing some of the things that are going on in the community colleges. The Appendix will be bigger than the document and will provide examples and useful guides. We are hopeful that community colleges will take leadership so that legislators don't dictate what they will need to do. Each campus is different - the administrators, faculty, and students. Use your non-academic backgrounds to bring to your thinking on this, such as skills you have outside of your curricular area. These are the experiences you bring to the table.

As faculty look at samples and exemplary practices, local planning becomes much easier. To make it simple, there are three things to do:

1. Include the educational domains in every certificate and associate degree program. Too often in the Certificate programs we have just technical skills without any of the general education requirements.

2. Use appropriate integration strategies. It is important for students to begin to build a ladder of career preparation. It should lead from step to step. These units should go forward to the next level of training. Students need to have some of their requirements met Select appropriate intervention strategies.

3. Evaluate • evaluate • evaluate. We have got to have data upon which to make decisions. Too often it sits on shelves. Must get back to the faculty and use it to make changes. Can tell a lot about how you taught your class by looking at the final project. Need to be gathering, disseminating, and using it. Typically organized in a fashion that we have some specialized courses, general education courses that promote citizenship and other skills. What we have decided is that they should be separate and unrelated. We have addressed our employer demands by specialty offerings.

The brain simply does not have a dividing line. All knowledge needs to come to us similar to the way in which it will be used. Very elementary reading and math skills can often have transferability. Beyond that, it simply is not that great. Important to focus on

outcomes. Those do not lend themselves to whether students can do. Knowing *and doing* are important.

Domains (ability to know as well as do) are what all students will need whether immediately entering the career field or going onto college; by breaking out the competencies they will need at graduation, we can break apart classes. Community colleges are extremely good at technical - production skills similar to those used in the workplace. On the sheets, circle the words "all aspects of the industry" - because what we have done is teach *limited* aspects. We must include management, labor, finance. Foundation academics is the reading, writing, arithmetic. Employers tell us over and over that students have no idea of how the business operates.

The way we teach reading and writing in the classroom is not the way it's used at the workplace. What we do traditionally in our colleges is a 20-page research paper.* I've looked in the constitution and the Lord's Prayer and I don't find it anywhere. Don't know how many of you have received a 20-page memo* that you are suppose to read and act on. In the workplace, we want one page; want concise types of writing; want primary sources of information. By the time it's in a book and published, it's probably out of date. Footnotes are not part of the business community but they are very much a part of an English I course. Where the comma and the period goes is critical. Don't tell me you think something; let me know on what basis you think that. Being able to use primary sources; interviews, observations, comparing what's happening in a real live setting--those are critical skills in the business community that often are not taught in an English I class.

Math skills are actually contradictory to what's taught in the workplace. We will hand managers a large stack of information and ask them to make a decision; we never give them a formula. Need them to take a lot of sources of information and come up with an algorithm. In general it's more like a case study. Seeing a few community colleges using a case study in math classes - especially business math classes. Math is very different in the workplace than in the college setting.

The reading that many workers now do tends to use many graphic representations. The new computers collect data. There is lots of information collected, and to get that information, workers follow a flowchart. In most literature texts, instructions are usually in narrative. Workers need to use quality tools like fishbone diagrams, graphs, charts, etc. Work-related applications are critical in foundational academics. MORE IS NOT BETTER. What we have seen from educators is when employers say they need more math skills, we add a second semester of algebra. When we say they need to communicate better, we add a year of English. More does not equate to the kinds of skills that employers are demanding. More statistics are required because that math is used.

Career exploration and decision making is very important for efficiency and for social concerns we have for students. The majority of community college students will check transfer as their goal. Faculty say, all of these students are transfer. It's socially acceptable; yet they don't transfer. The data is really quite clear on this matter. It's a

good thing to be doing socially, so a lot of students check transfer out of a lack of knowledge of any other alternatives. We have this big gap between what we as faculty understand as students' goals and actual outcomes from students completing college. We know the labor market is changing, that students are changing, and that they enter community colleges without knowledge of themselves or the careers they may pursue.

A few community colleges work very strongly at informed decision making. Students usually do not have the background to make a good decision. One college (out of 300) puts this information in their catalog, on the third page in the catalog. The second page goes through major by major describing incomes and employment rates. For example, in one year CIS had 40% unemployment in one community There are some real political ramifications of this. If you pick child care, as one example, students may earn only half of what other graduates will make. We have a responsibility to give that information to the students and they must make the choice. Many states are mandating this kind of report card. Will see more legislation requiring this. What we see in the long term is some major policy ramifications. We subsidize educational programs; students don't pay their full cost of education in Michigan like in most states. As we decrease the number of applicants who know that their wages are going to be low, it will drive up wage scales. It will also drive up costs, e.g. child care.

Repairing computers is not really a useful field these days. Important for us to look at graduates of each of these fields and determine what the outlook is. If you are teaching in a high unemployment and low wage career area, you are going to lose enrollment. There is one incentive for community college faculty: enrollment. It's what happens with people that keeps us in this field. It's what happens with graduates that legislators are interested in.

Students do enroll based on outcomes at that college - not entirely, but in great part. They send this information to advisors in the College and high school counselors, the chamber of commerce, and the state legislators. What they are saying is that there are no secrets here. Unfortunately, we have many four-year college graduates who are unemployable. Four-year degree syndrome has gotten to be pretty frightening for students and for families; four-year degree only guarantees that you have two more years of education, in either graduate school or in a community college to get a J-O-B.

We also know that employers give most of their continuing education to people with an associate degree. Across the nation, students gain mobility as well as wage benefits from an associate degree related to their field of employment. This contradicts research that says if students take a few courses it will raise their income. Our research shows that they have got to complete that degree. Career decision making and exploration is very important and our giving advice is equally important.

Students need to gain general technical skills, because this is the foundation for learning to learn, but less than 5 percent reported any required computer ability or computer graduation requirements. We say students are going to pick it up somewhere, but we

don't say that about math and English - we require courses in those. It's really concerning to me that we have a lot of students who lack the required technical skills. With some of these computer courses, there is too much emphasis on history and hardware. How to read manuals is another important skill and very different than reading literary texts. Some of the best writing is when students are writing manuals or instruction sets. Quality Assurance techniques are needed. There is not an industry in America that is not using some part of Quality Assurance techniques. It is absolutely essential that students understand what are acceptable standards. Being pretty good does not cut it in business any more. Used the example of their family business where pizza dough has very limited tolerance for deviation. If Quality Assurance techniques are only taught in occupational courses, you are dead in the water. This is a good example of using graphic representation of data and understanding what might be a problem in a production situation. Staff needs to understand the flow of a product through a business - the business systems. None of us read a 10-page paper to understand where the product goes in the flow of the work. This sort of sequencing using graphic representations is real important.

We see a lot of emphasis on students learning how to manage time in their courses. My managing my time and my managing the time of a product are two very different things. These help them understand how they might set up a math or technical project. Have seen things arrayed in this fashion before they got out of college. Generic technical skills include a whole lot of quality tools, record keeping, workplace safety; productivity relates to helping students move up in a career. Has to do with primary sources of information, interpersonal skills, allocating human and financial capital to produce a final outcome. These are similar in some ways to the SCANS skills. SCANS skills have been adopted by many states to get community college faculty involved. Some are so general that they are not useful in developing curriculum. Several develop matrixes. If you are just checking off, without measurements, it's junk. Need to know how you are going to measure it. It's systems types of skills that could be taught in English, Psychology, as well as technical. Work organization shows what goes on in the workplace; everything is not in the planned sequence. Multi-tasking - it's doing seven things at one time. Work is messy. It's just not clean like the college classroom. Cannot learn this in a classroom. It simply does not mean the same thing until they are on the job. Students must have experience in the world of work before they graduate from college. Employers want experience as much as they want education. If you have the skills but not the degree; you are more likely to be hired than if you have the education but not the experience.

Citizenship is something employers don't care much about, but it contributes to their life. This is what separates us from job training institutions. These are the courses that keep students from getting associate degrees. Students may get all of these skills in the specialty courses. We say to liberal arts faculty, they have got to get the degree. As colleges adapt this information, it makes a lot more sense for students (the career prep approach). It is from this data that we come to courses like History of Technology which help them to meet their degree requirements and meet the employers' expectations.

In an exercise, participants were to pick a course of their choice. They were to put the title at the top and within the course identify which of the domains are met in that one course and HOW they are met. If anyone fills up all of these blanks, going to have you see a psychiatrist, because you have trouble separating truth from fiction. You will fill them all in over a full program, but not all in one course. You are filling in what domains you teach in the course and how. Then ask how you could add some of the additional domains in some course.

The only time students visit the career center is at the orientation. The great proportion never visit again, unless instructors require course projects that cause them to go there to meet with people or use resources.

Following the students' flowcharts is a good exercise - can even be humorous. Example of changing the oil in a car from the flowchart prepared for the instructor.

Taking a course from two different instructors in the same college is like taking two entirely different courses. Unless there is a common final or a licensure exam, the content is likely to be very different. When faculty say they have to maintain content, question it; the coverage issue may not really be realistic. Help students to see how content relates to real life. If you say to an advisory committee that you need to work with staff to get examples for a number of the skills, their input can be very useful. They like this. Conversely, it's good for faculty. If the set of skills taught are very different from the ones employers want, it is important information. Several community colleges spent a lot of money on application exercises. Others develop economic scenarios, but many don't use the exercises. Important to hybrid or applied courses, where we combine academic and occupational perspectives, such as business math, technical writing, etc. Some get real specific, such as applied physics for respiratory therapy. Better to have high enrollment if you are going to be this specific. Applied courses need to be rigorous. Who is going to teach and get credit become important questions. Would like to see the applied course first and then go to the more abstract, e.g. take the technical writing before the composition; business math before algebra.

Tandem courses have probably had the biggest possible benefit for students. Linked, tandem, or learning clusters is when students enroll in two or more courses. Seeing several developmental communities. Sometimes amused when courses are advertised as fit together and make sense. Is this in contrast to other courses that do not fit together and don't make sense? Have seen the best success when faculty who like each other work together. Faculty members should choose to work together. When faculty don't get along, even when there are logical connections, there will be little or no benefit. 1. Work with someone you like. 2. Keep courses at about the same level. Look at linking two courses instead of four. If you can do three, with enough students, fine; but more than 2 faculty working together and problems increase exponentially. Differences in student retention and achievement is phenomenal. Don't have good broad data on this yet. Get big changes especially when linking courses like psychology with a reading course. Linking occupational with academic course that teaches those skills. Between faculty this

becomes enriching and get intellectual synergy. New F word in education is Fun. For a lot of faculty, the intellectual fun is a great reward. Everything you teach does not have to cross the courses. Research projects should be about things they are learning in other courses. English faculty are the ones that everyone wants to pair with immediately.

Look at outcome measures. Look at performance vs. knowledge. Capstone projects that are very worklike and require a lot of academic and occupational skills. Have examples of these and will send to those who are interested. One of the strongest efforts that we have seen to link courses and they are invaluable when students go to employers. Employers are inclined to see that college is teaching things that meet their needs. It is more valuable than portfolios of writing for a technical student. Get what you test for. Assessment drives how we teach and what we teach.

These are the ways in which colleges are addressing students' and employers' needs and interests.

Audience Question: Regarding Internet and teamwork and students getting involved in the classroom--Aren't these going in different directions. Have seen one college that had distance education and still required team projects. Phone numbers were provided to students over the network. Capstone projects may be good way to go between these two things.

We tend to think that classes meet from 9-10. Absolute types of schedules get in our way. Welfare-to-work parents will only be paid for child care while they are in class. Setting up schedules where colleges have gone to on-demand kind of learning; find that the nonidentified populations go into those courses. Adults think in shorter time frames and a concentrated way. Never hear people complain more than when assigned to team projects. Adults don't want this in the classroom. Just say it is just the way it is. Letting them pick is good thing to do so they can find someone whose schedule is compatible. There is no doubt about it, if you use group assessment rather than individual assessment, you are going to get some of the people who will get the grade earned by others. This is why many of us have gone to having students describe exactly what their part in the project was; each will have a part to do and they will be evaluated on it. Some schools with total quality management programs are allowing the students to set up their own standards and they are finding that students are absolutely merciless with each other.

Community college educators are encouraged to adapt a foundation academics approach. One theme that is often used is one of technology, e.g. the history of technology or how it affects our lives. Another common theme is the workplace, where instructors use workplace-related literature as a topic. English I may be a course in which to use work-related literature. There is a group of literature that is written by working class writers. An annotated bibliography is available from NCRVE. This theme should be generically interesting for all students. Another work-related theme that has become popular is economic development. In a business course, you might use writings by successful business people, such as Bill Gates. You could require expository and persuasive writing.

An important distinction between this approach and a traditional applied academics approach is that she would not suggest that you use technical manuals, although these may be required readings, in addition to other literature.

Many skills are very appropriate as one- and two-credit courses. She noted that she often wonders when she sees a catalog where all courses are 3-credit options how much creativity exists on the campus. Many students do not have the time to take three-credit courses to develop some of the skills they need.

We often see Business Math courses with content that does not appear relevant to majors - need to be embedding skills in a context. Don't teach math, teach depreciation tables. Use standard math terminology on one side and the contextual on the other side. Foundation general education requirements can be met with adaptation.

Career exploration can be met through assignments, for example a paper about a sector of the labor market, a speech in the speech class, a flowchart demonstration, a systems analysis for an English class, following review of the processes of a business. We often think of internships as one of the other ways to explore careers. In fact, observations are important ways as long as they have rubrics. For an Introduction to Psychology, students may look at real people - primary sources of information. Another example is where students in a history class do lots of document review. Review the documents and analyze who the document was designed for; this provides practice with primary sources of information. Other options: History of the Labor Force; History of American Health Care; History of Architecture. All of the assignments become more interesting to students.

Activity by the Groups: (Reference form) Look at a set of general education requirements. An example would be English, Social Science, Math, Humanities, Natural Science. Clusters relating to People, (such as health) or cluster relating to Data (business, accounting, technology), or Things related to. In relatively small schools, about 5,000 or lower, make the clusters quite broad to attract a sufficient number of students.

List the courses and indicate what you are going to do with it. Exercise was to define a coherent sequence of courses for a major. Groups would not necessarily have to go back and implement all of this, but people will have ideas of possibilities of what they could implement. Not all teams had all members present, and several lacked members who represented the general education areas which are required for majors.

Norena will be interested in the creativity used - what kind of linkages you find; how you might adapt your current college framework and utilize the seven domains. Integration: suggest that we are no longer talking about integrating occupational and academic - looking at integrating "career preparation" into the community college. Goal going forward is including career preparation in every college program that it is comprehensive - all seven domains will be addressed. Will be looking for how the groups addressed this in their planning.

Team Reports of Career Preparation Activity

Delta College

Program was to work with people, such as allied health, pre-education transfer, and criminal justice. In government, talk about affirmative action, regulation, certification; licensure affects career choice; in English, research and write policy and procedures; emphasize productivity by doing in a committee, like will be required at work. Include career exploration, observations and interviews, and primary sources. Bring math in by looking at salaries and discuss the meaning of differences, costs of living, what the salary of $60,000 means in California vs. Michigan. Also in math, look at measurements; education does grades; nursing does calculations; productivity, creativity and problem solving with natural science could combine dance and physical therapy or drawing and anatomy and physiology. Other items for inclusion are reporting abuse, as required by nursing and law enforcement personnel; Medicare and Medicaid, and their impacts for society. The group reported no difficulty in identifying ways to incorporate relevant topics for people career professionals into existing general education requirements.

The question of "If you need a course, how easy is it to get it added to the curriculum?" was explored. The degree of difficulty in accomplishing this varied among schools, with several reporting much difficulty.

St. Clair County Community College

The St. Clair team produced a comprehensive brainstorming report during their work session. The content of that work follows:

JOB SPECIFIC - TECHNICAL/BUSINESS

- Ability to Write Clearly and Concisely
- Ability to Express Themselves Orally
- Read/Write Technical Manuals
- Computation Skills
- Use of Computer - Spreadsheets, etc.
- Understanding of How Business/Industry Works
- State and National Regulations Regarding Safety, Product Liability, Sales, Law...
- Documentation of Procedures Required to Produce Quality Products

FOUNDATION ACADEMICS FOR BUSINESS/TECHNICAL PROGRAMS

The following courses would be modified and integrated to meet the needs of Business and Technical Programs. Utilize case studies, based on input from Advisory Committees from Business and Technical programs, in all courses.

ENGLISH

- ENG 101
  - Readings from Tech/Business Literature
  - How to Write - **Concise Guide to Writing**
    1. Proposals
    2. Memos

3. Concept Paper
4. Primary Sources - Bibliography
5. Word Processor to Create Paper
   E-Mail - Internet - Communication Technology

Possible Handbook/Text
1. Technical Writing
2. Business Writing

ENG 102
- Research paper - Career Orientation
- Case Studies - Babbitt, Sinclair Lewis, Bill Gates
- Reading Fiction/Non-Fiction
- Visual Presentation - Use of Charts/Graphs, etc.
- Oral/Presentations - (3)
- Teamwork Presentation

HUMANITIES
- Speech
  - Sales Presentation
  - Technical/Process/Project Presentation
  - Demonstration of Equipment with oral Presentation
  - Group Solutions/Problem Solving
  - Conflict Resolution
  - Listening Skills
  - Leadership Skills
  - Dynamics of Communications

MATHEMATICS
- MATH 102 - Basic Algebra/Basic Mathematics
  - Calculators - for Solution of Problems
  - Solution of Technical Problems
  - Solution of Business Problems
  - Multiple Step Problem Solving
  - Problem Sets in the Areas of Business and Technology

COMPUTER INFORMATION SYSTEMS
- Computer Use
  - Data and Graphics
  - Use of Statistics
  - Use of Spreadsheet
  - Use of Excel
- Application Examples From Business and Industry

CITIZENSHIP AND PERSONAL DEVELOPMENT
- Political Science/Labor/Business Ethics
  - Corporate Responsibility with Regard to the Environment
  - Laws that Affect Operation of Business/Industry
  - International Regulations - NAFTA

Safety in the Workplace
Ethics in Business, Manufacturing, Government
Your Responsibility as a Citizen (Civic Duty)
Impact of Technology on Government and on Way of Life
International Markets (The Global Village)
Labor History
Tie in with Case Studies

PRODUCTIVITY
Continuous Process Improvement in Quality
Understanding of Statistical Principles (Basic SPC)
Assessment Techniques
Human Relations/Teamwork Skills
Work Ethics
Employability Skills
Dependability - Punctuality
Understanding of the Workplace Environment
Physical Environment - Similar to Workplace

The Team identified the following as issues that need to be addressed in order to accomplish the goals of an integrated curriculum:
Technical Equipment
Technical Resources
Computer availability
Block Scheduling

Our presentation rests on the Abstract we submitted, printed in the Conference documents.

Northwestern

(Note: The NMC team worked on and then reported on their team's project rather than completing the general education adaptation exercise.) NMC is working on a new initiative with the Maritime program, which trains people to become deck or engine officers for ships of the Great Lakes. The situation existed where the traditional liberal studies courses, such as math and composition, were often viewed by cadets as not being relevant. The team is trying to connect these with the Maritime courses so what they learn in the traditional academic courses connects with what they are doing in the Maritime classes and hopefully students will become better versed in everything. Two main ingredients: vocabulary that exists between the Maritime program and the rest of the world and the specific applications they can relate to within that program. Team has found that students could be studying the same thing in a math class, but they don't see the relationship because they utilize different words. Example would be the meaning of ton - which means 2,000 lb. In math and 100 cubic feet in volume in maritime terminology. Students and staff need to learn that there are different terms in use in different industries. Physics, business, computer applications (including programmable calculators) will be incorporated. The Maritime program is very well equipped with a simulation laboratory that's as good as any you will find most places in the world. There are also computer laboratories and extensive required assignments. In an officer training

program, public speaking includes leadership and technical writing. Students spend 270 days on ships in training. Can sum up in one sentence what we want to accomplish at NMC right now: "We as instructors, speaking on behalf of the instructors, want to provide a truly powerful educational experience to our students."

Grand Rapids Community College

Activity focused on manufacturing where there are five programs, including plastics, machine tool, quality. Have already determined that they need a core competency - about a year's worth of a two-year program. Each track has developed its own niche things and numbers are not that great that they can continue. Teach own math technology classes, but Math Division would prefer to teach the math. Two English classes are required, BUS 101 and 102, which provide the techniques they need. They try to encourage others (faculty of communications) to have some technology projects for the oral and written reports. They recognize the importance of a partnership with them - linkage. In speech classes, same thing can be accomplished; would like to see a hybrid developed and offered to students. They did not address political science yet. Good to get students out into other departments to broaden their perspective. It helps to develop the general education linkage requirements. Another thing going on is the list of competencies from the Grand Rapids Manufacturing Council, pages of competencies to apply the curriculum toward now; checking them off against existing courses; a driver of the curriculum development. One other struggle was Management in Quality, problem solving; have to integrate these into the classes we are teaching. Looking for good ideas on how to integrate these into existing courses vs. adding additional courses, which has been their prior method for incorporating new content. Recognize they cannot just keep adding low-enrollment courses.

Kellogg Community College

Initial team is three individuals from nursing and communications. They reviewed courses to see how they could incorporate more because students come to nursing acting like they have never been in an English course before and that they have never written a paper before that had citations of sources, etc. Thought they could encourage an English section that incorporated some health care topics. If they read and wrote about things that relate to them, they may incorporate the knowledge. Sociology could focus on impact on health and sociological impact, where clients come from, what types of impacts these have on their health, incorporate graphics, have to do with infusion instead of specific courses; some linkages possible between English and sociology. English could use verbal presentations and use of flow sheets, developmental theory, and incorporating foundations skills. Touched on political science, because there are political and economic implications in health care - in fact political and economic factors are driving health care today, so they need to do some reading and writing and talking about this area. Technology - writing lab manuals, drawings, relating the anatomy and physiology; growth of organisms related to nursing procedures. Nursing seminar picks up a number of other topics, including career options, how nursing is utilized in different agencies, professional opportunities and skills, economics, employability, legal and ethical issues. For citizenship, include volunteer projects in class. Grouped nursing classes together because they do similar types of things - incorporate more writing skills, more research papers, write so people understand them, chart, math for med calculations; computer use - simulations and papers; accountability; quality and accountability, organization of care. There are lots of things humanities,

political science, and natural science could do. Will work with others upon their return to get more of these areas integrated with the nursing. They recognize that faculty get into own world and do own thing, and need to communicate more with others in other parts of the college.

Henry Ford Community College

This team looked at the electronics technology program and how they can incorporate additional disciplines into it. Would encourage own department to add these objectives. Program is 32-36 hours in core electronics curriculum plus 6 hours of English, 8 hours of math, 4-8 of science, political science, and physical education, if under 21 when they enrolled. Job specific requirements would be met by the electronics core courses and make use of more case studies, projects, and simulations. Have found they really do improve some of the communication skills, working together as teams, and this would be one area to expand. Foundational academics, instead of hybrid course, would work with department to incorporate Electronics in math and math in electronics. Used examples already operating. Math is taught by math department and science is taught by science. Done by infusion, could add more student work team projects with target of career exploration. Could do field trip, but before students go, develop a checklist of things they should be looking for specifically and when they return make a report to the class. Use word processor and spread sheet for reporting technical lab reports and graphing help facilitate generic technical skills. Make use of student work times on projects. Productivity category: key projects that are open-ended, not how to but having specific outcomes that are required. Method used is up to team members to work out, which should result in some conflict resolution experience. Work organization will be infused, use computer simulations. Department is looking at a possible degree requirement of a required coop experience. Wondering what other schools are requiring in coop experiences. Their experience has been that those students who do have coop get hired first, are more successful, and are more motivated, so they ought to build it into the program. Citizenship component could include workplace issues in political science, something that we have never considered before. Another area to consider would be a capstone project where we would include such things as economic issues, such as how much the project would actually cost if put into production, political issues, etc.

Macomb Community College

Surveying, a basic course in architectural design, was the focus of the Macomb activity. Students can start in surveying and move into certificate, associate degree, or transfer into an architectural degree program. Good example of laddering career and program. Trigonometry is required. Would key math story problems to problems of surveying. Technical component would be taught in math class, with graphing calculators. English would take responsibility for composition, now a one-unit course in technical writing where they would include technical writing, report writing, research, and primary and secondary information. With the Internet, no one knows what's primary or secondary anymore and a good place to put that would be in the English department. Can also link to history class, as it would be interesting to know where some of these things came from - why is a foot a foot, etc. In English, could read about history and in history could write using English standards. Do teach small business, because surveying is generally a small business; construction management can be done on consulting basis and architectural

design is also small business. Included speech because anyone needs to sell themselves. Students who enter this program are very well motivated. A problem is keeping them in school because employers hire them once they have skills. Career center will be important in this, should be aware of the choices they have and make, so they know where they could or should end up. End-of-semester project could be to put on a conference, modeled after a professional conference, publish a monograph, present the expertise that they have acquired over the course of one semester by presenting panels in their areas of expertise. They would present to an audience, which would include fellow students and the larger community within and outside the school. Have people who would respond to what the presenters said, professionals in the field, and get reactions from them. It would be possible for students to attend professional conferences during the semester. This would be a way to bring them into the conversation with a variety of disciplines.

Themes in Evidence - Norena Badway

Even though we had very different sets of career clusters, there were many common themes in the groups' work: teaching approaches, adapting story problems, using case studies, asking students to apply creativity to their skills. It is important to look at our teaching strategies and content; students have not seen some courses to be relevant, and that students can appreciate when the work relates. Looked at some natural connections, e. g. the political and economic aspects of health care. Looked at field trips and specific outcomes where faculty utilize different methods to get to these outcomes. Looked at demonstration of equipment, problem sets, officer training, evaluation by industry standards, including that people were hired before graduation - a significant form of evaluation. There were a lot of technology comments, computers, keyboarding, graphing calculator, Internet relationships. Lot of talk about changed methods. More contact among faculty. New initiatives. Students could start taking general education courses instead of offering competing courses. Lot of emphasis on change.

Look at a sequence of activities for work-based learning. Interviews and doing task analyses allow students to gain experiences before they begin actual workplace experiences.

Norena noted that she is a half-time research person at NCRVE; there is no full-time community college person. She encouraged people to e-mail her and said she would attempt to get information back to requestors informally. Would be willing to look things over that people would send. Some of planning that has been done is dreaming, what could happen - not what will happen. Many have thought in ways very different. She hopes that teams will think about a broader, more comprehensive form of career preparation.

One of the things we know is that colleges that work on individual projects do not move those forward into linked courses or more projects. Think as soon as you can about how you can link to other courses. Colleges that begin by linking courses find that those also expand; think about how you can incorporate all of the domains into your courses. Think big. Colleges that start big stay big, according to the findings of their research.

Administrators' Workshop - Norena Badway

Usually one of the top factors for administrators is to get their faculty a template - the design that will be used in the development of the college's curricula. Release time is more effective than extra dollars. Provide a short planning period rather than a longer one. Six months is a reasonable planning period. Course needs to be "on the ground" at the end of that period. Staff will also learn better by practicing. Suggest an internal competitive grant process to identify projects. It will be important to provide release time to design projects; then give release time to implement proposals. Best projects were those with time support.

It is also critical for administrators to participate in the development and the conferences related to the integration of curriculum. "If you are not there, you don't care." The Center (NCRVE) has published lists of themes that are useful. One was the Twentieth Century Working Class Literature. Use terminology of the culture or college.

Emphasize embedding skills in context. Create a chart for the skill desired and HOW it can be applied. Create a guide like the following:

Math	Applied
Utilize the standard math terms/concepts	How the math will be applied in the learning

Set up a "go" number for the course; cannot come in with that later.

At least once per month, meet to discuss what's working and what's not. We have been using a "groping-along model."

Make the evaluation competency based, not an evaluate of the course. Conduct pre- and post-testing. Give the final exam the first day. Doing that in several courses is an important contribution to data about whether students are learning. Accountability is how you get dollars for continued work.

Let these courses schedule first to get the enrollments they need. Appoint a faculty leader for the effort - a new person generally.

A lot of colleges are dropping some terminal courses and continue to offer transfer options, when we know that only 10 percent of our students transfer. Adaptive general education courses are getting rave reviews across the nation.

Consider developing laddering, such as the American Hotel and Motel Association (AH&MA) does with its multiple courses contributing to a certificate and then certificates leading to designations, etc. The Maricopa Community College district also has laddering. Certificates build toward degrees. These certificates are non-board granted. There are advantages to breaking the programs apart so they achieve preliminary goals. Three or 4 courses are recommended for each certificate. Be sure that one of the courses is a general education one. For those interested, Norena has samples.

There are two different types of learning communities being developed. We need to be doing more sharing with e-mail and faxing; don't need to be on our own. When we teach high-risk students and treat them in traditional ways, we are not being responsible. After students fail at the same method 3-4 times, we need to use different approaches.

The suggestion was made that administrators need to take the integration and student success issue on through organizations. The National Council of Instructional Administrators (NCIA) was suggested. Suggestion was made to write articles for the local newspaper and celebrate accomplishments when we have integrated education that works. Suggested that we make sure that someone from our group is on state Tech Prep conference in February. Schools are spending more money on advertising to tell their story.

We need to incorporate the "F" word: Fun.

The state NSF Proposal is designed to identify core outcomes at K-12 and community college levels. Each student would have an E/EDP plan, another state project initiative. What we are doing must fit with the other things that are going on. Need to define up-front. The curriculum is at the core, and it is the greatest challenge. Need to link to the secondary system and the workforce. It is good to design around the occupational clusters of Tech Prep, which have probably been defined in each area. Define the natural sequence of learning in the discipline. Concepts stay the same. In the Oregon system, they have determined that all learners need these things; they have 6 clusters. Consider

Accreditation will be important. Many groups are setting standards, such as ABET. Gail Conte of Henry Ford noted that they are doing modularized instruction in plants for degree programs. FAMS (A Ford manufacturing curriculum) is really expanding among science teachers at the high school level. For additional information, contact Renae Lurch or Larry Brunow. Katherine White has been the curriculum writer.

Need to change the terminology: Integrating Career Preparation into the Community College. It is no longer "Integration." All seven domains need to be included in all programs (reference NCRVE handouts).

Reports From Year 1 Projects

Curriculum Development Perspective - Paul Holoday, Henry Ford

Mr. Holoday is in the Physics department, science division, at Henry Ford Community College, where they were the recipient of a NSF grant. The school has three semesters of physics. Grant focused on the technical physics, the 120-121 sequence, for students interested in technologies, manufacturing, architecture, etc. Looking at what content was important was the role of an industry committee. Long tradition has been built on over the years since the original Ford school. Case method was identified as a useful means where they can look for real single projects, like a trunk lid, or particular crash, which makes for a focused study. Discovery approach - let students do experiment. Some work was done at Dickinson College for adult learners and thought this would be a good

continuation of that concept. Look at phenomena. Surprising how many things link - study of motion leads to the study of other forces. Wanted to use the latest technology, which NSF helped fund. Big part was to develop concepts from that data and express them in written form. Improve upon last year by addition of oral component into second semester.

Second course will be looked at in coming year. Involvement by industry was significant, as teachers had one idea of the curriculum and industrialists had a different one. There were objectives for project. Wanted to involve more than one division; included science, English, and technical (Career Development Division) represented by Stan Briggs. Use new methods of Dickinson college, the idea of workshop physics - something that students could see were related. Teamwork, case studies, expression of findings, learning outcomes. Some things interested in were to look at professional topics desired by industry, work together with instructors and students; hard to do physics without problem solving and critical thinking, just comes in by itself. Curriculum completely rewritten from bottom up, with machining, electronics, automotive, and other college programs. Had representatives from each of the departments; Bob Eschelman was project director. Richard Bailey (English) has been a long-time advocate of the case study method. Study of motion, energy, physical properties of matter, heat, under all were subdivisions. In forces, did not have "torque," which industry people requested. Were also interested in coreolis, that force that causes rivers to flow one way on one side of the equator. Had teams work out details of modules, which defined work of the semester. Series of computer screens were developed to help. Used the English instructor as the guinea pig to follow the directions of the experiments. Priscilla Laws of Dickinson College was a contact. Team members presented at Joliet, Illinois, recently. Have microcomputer-based laboratory. Have probes and motion detector; watch it move, graph it, and interpret it.

Spent last summer working on units 1-3 and some on unit 4. Also did some site visits in relation to the crash sites. Completed in the fall a testing of units of 120 with students, one section. More work on units 4 and 5 and decided to move 5 to next semester. Advisory board of community college faculty was convened. Presented at physics teachers' conferences. Going to run all 120 courses utilizing this approach and will present at Trends and other conferences. ATE grant proposal out to move into 120 with addition of oral component and more emphasis on the industrial advisory group. Indicated that team members will be happy to share work with other community colleges.

Responses of Students - Les Beecher, Macomb

Background to project was an integration of mechanical technology, accounting, and basic writing last fall. Course set up so that mechanical tech was 1 hour and accounting was 1 hour; these were specially arranged courses. Writing was the regular 4-credit English class. Students were all in Brian Hamilton's mechanical technology program, 13 enrolled; 11 completed. Students were interested in future management positions. For a third, this was their last class in the program, a frequent occurrence, where students leave their English until the end. What they experienced was a real variety . There were writing experiences ranging from memos to quizzes and short responses to some meetings they were doing to writing sections for a final report of over 20 pages, where each had a role in providing a section. There were collaborations that extended beyond the class. They

experienced contributions from accounting and mechanical technology and accounting. Included a connection to costs in order to solve a problem presented by mechanical technology now that management has mandated a change in the assembly line. Chrysler had switched from one type of line to another, and their work culminated in a final presentation of their written report to their colleagues, four faculty, and some administrators, plus one student's father. Used overhead transparencies, etc. Peer tutoring for meeting problems they might have and for writing, an additional audience.

What they learned was how to work collaboratively on short-term projects and also over the long stretch of the 10 weeks. Learned how to write in a variety of modes - memos, short responses, literary works; pieces were gathered into the final report. Their responses were very encouraging. "This is one of the more gratifying teaching experiences that I have ever had." They were all busy with full-time jobs, families, and more but came every Monday for 16 weeks with very little absenteeism or tardiness. Some met with the faculty at additional times. Most felt more comfortable and confident about writing and did writing above and beyond that required, from students who were apprehensive. They both recognized and really appreciated the efforts of the faculty in developing a course that accommodated their interests.

Things I might do differently: we faculty tended to get drawn away into our own lives. Once course was set into motion, we did not meet as often as we should have. Maybe even with students. Would like to have had in place more linked classes for them to take. Students still had courses to take in liberal arts and they were not comfortable with the prospect. Wondered if more like this were available. Would like to see linked courses available to students much earlier in their educational careers. Taken out of their isolation - they got to know each other, the teachers. Just say that the three (faculty) agree it was a very rewarding experience and a highlight for them in their teaching. All interested in pursuing integrated studies.

Faculty Learning Implications - John Pahl, Northwestern

Tell you what our team got out of it as faculty; hope our students will gain what Les's experience was. Scheduled to do course for the first time in September with 60 in groups of 15, ranging from GED through college grads. Operating on faith that there will be learning improvements. Even if we stopped right now, there would be tremendous amount of gain. Will tell what we did so you understand our work. We looked at national skills standards study for Advanced Manufacturing by NACFAM. They surveyed in 28 states, 500+ industries, and came up with hundreds of skills; industries ranked those and came up with the "skills standards" for entry-level positions. From there, we identified core abilities. Examples of the skills included were ability to use computer spreadsheets, do oral reports, practice teamwork. What is missing according to the employers was Quality. A major discovery for our group was that these skills would be very important for any career and any first-year student. From this, we identified core abilities that college students **and** entry-level workers require. These include: Work in teams, use computers, apply math, maximize quality, solve problems, communicate clearly, and make decisions.

The "Learning" gained by the faculty included:

- Rigor vitalis
- Pertinence of planning
- Objectives in omnia
- Reality bridge

The faculty gained respect for each others' expertise and for the complexity of comprehensive, interdisciplinary approaches. They also, however, recognized both how powerful and how efficient the integration can be for students' learning.

Discussion Comments

Question from the audience: "From your perspective, what do you need from administration to make it happen?"

Response from Macomb: "What I would appreciate is more of an effort on their part to work more closely with faculty to promote interdisciplinary ideas. Basically I had to hustle around to find faculty - have gotten some help - but we tend to operate in a vacuum rather than any kind of establishment. Where there is a sense of program, it's easier to rally around. Need to see a group of students that move through and complete.

Washington state was cited as a place that lends a lot of statewide support for integration.

From the Group: Administrators get a lot of flak on this, but if something starts and it stays with the two or three, they (the 2-3) get tired and they want to do something else. In one case, even had a course description that it's a team-taught class, but the faculty did not want to do it and others did not either. "For something to take root, it needs to be shared among a group of faculty. Administrators would want to support faculty if there could be enough collegiality there that they could sustain it."

Question from the audience: "Where does the origin of the innovation occur?" At Macomb it evolved from the Tech Prep effort. At Henry Ford, it emerged from a desire to update the curriculum. At Macomb it may become more like NMC and less probably main stream because the faculty may not pick up on this course. Introduced episodically, which raises the question of "how do you move from the periphery to the mainstream?" Shadow College was discussed.

Lot of colleges will have experiments, but when will the experiment become the way of doing things. Then there will be systemic reform. Encouraged that Henry Ford will have data, and others need to collect hard data. We have to build into all of our work much more data collection than we ever have before. Have all students sign off at the beginning so a lot of data can be collected and analyzed.

Learning Communities at Delta - An Administrator's Perspective - Dr. Betty Jones

What is a learning community? How is it different from stand-alone classes? How is it

different from Interdisciplinary Studies? Learning Communities were a matter of discovery at Delta. A group of faculty were working on a special class which utilized their different disciplines to present different aspects of the subject, and discovered they had become a community, each learning from the other. Consequently, we kind of meandered into this concept and only later discovered there was a literature about it. Our first purposeful effort to plan a learning community resulted in a program called Quantum designed for developmental learners. The Dean worked with four faculty to develop a template with unique specifications. The teaching faculty were provided time for planning and meeting during the program. Quantum was successful and the faculty and counselors got excited about the possibilities in this model. The English faculty especially took on the task of development and promoted the concept.

The administrative focus on learning communities has been to build our expertise and capacity to do them well. From the beginning, we were convinced that they would be a productive and enriching experience for students which would contribute to the curricula mainstream. We did not start with this as a substitution, but as enhancement. Our faculty began with simple communities. We started where the interest was. Started with model of linked courses. This involves two faculty, each teaching a separate content course which enrolls the same students, and which they link together through related content, shared projects and sometimes joint sessions. Linked courses are a simple model--not hard to do, and have the greatest potential for getting student enrollment. Delta now has about 50 faculty who have developed expertise in learning communities. We have been doing them on a regular basis since 1990, when we first provided release time for a Faculty Coordinator to develop it. **Handout gives ideas of the types of linked courses offered through 1993. We have now begun to look at learning communities for special populations, including honors as well as hard-to-reach students.

When Perkins first indicated that integration would be a goal, we knew that learning communities could be critical to fulfilling that goal--not only from the point of view of the content but also from the view of some of the barriers we have in getting people to work together--the collaboration of academic and occupational faculty and meaningful collaboration between faculty and administrators.

At our first faculty retreat on learning communities, some of the senior faculty said "the administration is never going to support this." Two members of the academic administration, however, were at the retreat and said "this is a wonderful thing, go ahead, move on." In this way, we could challenge the naysayers. In the beginning too, the insider conversations in the separate quarters of liberal arts and occupational faculty were barriers. Liberal Arts faculty talked about limitations in the perspectives of occupational faculty. On the other side, the occupational faculty believed "those liberal arts folk don't ever have their acts together...they are so creative they don't know what they are doing." The two arenas have components of a total solution that they can offer to each other with respect. It has been wonderful to observe the process of mutual discovery at Delta. For example, liberal arts faculty have discovered that occupational professionals know a lot about assessment--and that they have a lot of expertise. Our investment in capacity building for learning communities has been well worth the cost and has produced many benefits.

The Learning Community developed by the Integration Team project involves three classes.

It is an integrated community which is more complex than the linked classes. What we have discovered from our preliminary research is that we retain more students; they are more interested and involved in what they are doing; there is a sense of interactivity and discovery; students develop a sense of belonging and care about their group; there is a lot of shared responsibility that goes on in the process and students tend to have better grades. In addition, the faculty are more involved in the learning interactions. We think there are significant benefits in this process --- the kinds of things we want to encourage.

All the courses included in the community are taught regularly in the curriculum. The interesting thing here is what each of the team members had to learn about each other's discipline. One of the early challenges articulated by even two people working together was "how do I adequately represent the content of my discipline at the same time I am collaborating and seeking common ground with the other disciplines." One of the important roles of administration is to provide the opportunity and climate for this to happen and support so faculty feel they can learn from their mistakes and work to improve. Our approach is that those who learn it coach others. Someone who knows some of the pitfalls or challenges can make valuable suggestions based on their experiences. Found it impressive that Linda, who does the Health Care Ethics, spent a semester following nursing students around at the hospital in their clinicals to identify and document the kind of ethical dilemmas they face in doing their job at the clinic, and then relating these to what she would present and how she would focus on these in teaching Ethics. English teacher, Mary Beth Looby, went to the nursing conference this spring. As a result the student compositions will be on topics drawn from nursing. All three Instructors will collaborate in evaluating the student work. Common ground is represented in the center of the model where the three disciplines intersect and overlap. (A 3-ring visual with intersections was demonstrated). The process begins with outcomes. Each discipline needs to decide on these so you don't compromise your outcomes. What you do is to vary how you go about getting to the outcomes. We have discovered that the quality of outcomes is greater from the community than they might be separately. The learning community serves to enrich, enhance, add depth to the understanding and experience. Commonality is built in. As we do this more often, the areas of overlap are anticipated to grow.

The Rites, Writes and Rights of Nursing is the theme of the Delta Integration project, developed among the Nursing, English and Philosophy faculty team. The learning community is offered for Winter 1997. It had to be timed carefully so that students entering the field will be advised into it. For the last three years, I have had the experience, too, of teaching in a learning community of African American males, who are often very difficult to retain. I wanted to have a sense of what the faculty was dealing with...everything they told me was true. Learning communities are very exciting, but they are not easy to do; and release time for me was not an option. My teaching comrades are the Vice President of Student Services (a Psychologist) and a member of the English faculty--students receive credit for Sociology, Psychology and Composition. We have been successful in retaining many of these young men of color. The learning community has been a very powerful tool in working with them.

In a learning community, every student must enroll in all the classes. It is a total experience. We are trying to develop a system which will group the classes under one number so students can just enroll in the community rather than the separate classes. Learning communities at this point are an acceptable part of the Delta curriculum. We are committed. They are no

longer a task force--but an Advisory Board. The Board has developed definitions, marketing / promotion, and procedures. They are planning the second annual regional conference on Learning Communities to be November 14-16, 1996, in Frankenmuth. At this point the group has received proposals from potential presenters in eight (8) different states. The conference is rapidly becoming known.

Delta has gained much from learning communities and they have contributed much to our capacity for integration. However, the Integration Project Team has brought a special spotlight to this strategy. Most of our prior communities have been collaboratives between disciplines in the liberal arts rather than across liberal arts and occupational disciplines. We have showcased this project widely in the college and community as a model for this kind of integration. We want this to spread in a more purposeful way which serves the vision and goals of the college. A part of that is putting together these kind of faculty teams. We are beginning to structure our resources in that direction so we can provide incentives and encourage more cross fertilization between the occupational and liberal arts disciplines.

As wonderful as Learning Communities are, however, I don't want to obscure the challenges they involve. Development has not been an easy road to travel. When you are trying to develop a new strain in the curriculum, you are going to receive difficult questions all the time. One such criticism is the expense and the investment of faculty release time to do the planning and development. Also the first communities may need to run with lower capacities until they become known. We do it because it is better for student learning and because it adds to the quality of our curriculum. If we are serious about the quality of learning, we have to make these kinds of investments and defend them. Further, we had to use reminders about the added time we invest for science labs and art studios -- because of their value to learning quality. We see more faculty showing an interest now that learning communities have demonstrated some success. Faculty now see there is recognition to be gained.

Comment from Mary Beth Looby. "I teach in a learning community which produced a student magazine. Students earn two credits in art and two in writing. We get in a lot of student work, read through the students' work, make selections, edit and layout the work, set up table of contents, learn a lot about the publication. In the developmental learning communities, students began to feel like family and became very successful."

Question: How do you get students into classes? **Response:** Much of the success of learning communities is attributed to effective advising by the counselors. Also, the Instructors design flyers to advertise the courses and the Coordinator promotes the courses through speaking to feeder classes.

Question: Is there something that is integral to composition or math or other subjects when you can only contextualize it so far? **Response:** That is an issue which has been articulated regarding applied courses ... there is concern about really narrowing everything and in the end only knowing about one context rather than differing points of view. Note that in the integrated learning model, there is still a lot of open space devoted to the discipline. The contextual work occurs in the overlapping spaces. It is not the total ground. That is one of the things we like about the model.

Question: What about course transfer? Any problem here? **Response:** Classes keep their

catalog number and identity and they transfer just as they always have. There has not been a problem. The learning outcomes for the courses are met in the community experience.

Connections: Tech Prep and School to Work - Barbara Schulz, Michigan Jobs Commission

Barbara Schulz is Project manager for School-to-Work (STW). Making the transition from the internal connections to the external. STW has been an initiative in Michigan for about two years. It is heartening to see this development. Task is easier based on the groundwork laid for instructions given to make curriculum relevant: 4 Rs - the fourth one is Relevance in getting our youth ready for adult roles. 1. Status quo of students being prepared for work today and why Tech Prep (TP) and STW initiatives are needed. 2. Connection of STW and economic development. 3. Give picture or vision of what system change looks like in school-based learning, work-based learning, and connecting activities.

She asked several about their engagement in STW, TP, having students in school, etc. The final question asked how many had college graduates who had come home to live in the basement or garage. Barb will mail a complete set of materials which can be added to the conference notebooks. The STW initiative is a joint effort between the Michigan Department of Education (MDE) and the Michigan Jobs Commission (MJC). STW conference has always had a lot of model programs presented that had tech prep as a base. Throughout the state at the local level the two initiatives have been well coordinated. Talking about systemic change with these initiatives. Concerned about institutionalizing the activities to become a part of everything we do. Umbrella approach to workforce development. Created a network of local STW partnerships, so that every corner of the state has something going on in STW. Talking about providing opportunities for all students and not just the select few who might be in a particular project in a particular school at a particular time. Unlike in other states, 1.6 million students (all in the state) are involved. Bottom line is that if you are considering a lifetime of earnings and work, need to look at the wage levels for journey persons and skilled workers. College-level work is required for these jobs. Jobs are very needed, require high-level skills, but not viewed as positively by our society.

Today in Michigan, low levels of math and reading and graduation rates are comparatively low. In many districts, many students cannot pass minimal math and reading tests. Trying to address the need for preparing workers for the changing nature of work and technology. Address the problem of fragmented programs and the lack of a coherent system to enter the labor market. Cited an example of a nephew who had recently graduated and who was unable to identify three career areas that he might be interested to pursue. He and many other young people lack the information they need to make decisions about what to do.

Chart of unskilled workers in 1950; skilled = 20%. In 1990s, 20% are still professional positions. Society does not need more than this. Definite change in the percentage of skilled required, moving from 20 to 45%. Will change again. Looking ahead to 2,000 it's anticipated that 65% will need to be skilled. Unskilled workers has dropped to a 15%. We need to direct young people toward these skilled employment opportunities.

What does a system look like that addresses these problems? We are not talking about

confining elementary school students to a particular choice. We are attempting to enhance their career awareness. In the middle school, continue with academic preparation and career awareness, and add the personal management skills: organizing work, how to work in teams, and manage time. In high school, continue with advanced academics - raised expectations for performance. Young people are capable of learning at an earlier age than we have expected of them. Now get into career specialties - given the opportunity to get onto Career Pathways. Students are not prevented from making changes. Personal management skills continue to be developed. The Alaskan high school that is TQM based was noted.

After high school, there are many options. By laying the groundwork, they can make choices. They will always have personal preferences of what they will do at this point. Some will choose to go out to work. These students are also capable of entering college but may have chosen not to at this time, but they will likely move back at another time. Want all students who leave high school to be prepared to return to college as an adult. Proprietary schools, military, specialized training, universities, and community colleges are all options. Changes are designed to introduce students to a wide range of options to prepare them for their first job in a high-skill, high-wage job. Measurable outcomes - either they have continued their education or in a first job on a career pathway. Not successful until the student has connected with the next stage in their life.

Resources include the award of one of only 8 national grants--$49 million for a 5-year period. Back on firm ground right now, so expect to complete our three remaining years. Award was only for a five-year period and is designed to be used to change the rest of our education system. Sounds like a lot of money, until you consider that Michigan K-12 districts = $14 billion dollars per year. This money is about how we spend the $14 billion we spend each year.

School-based-learning is what happens inside schools: career awareness and exploration and about providing career information to them beginning in elementary school. Other elements have to do with selecting a career major by the 11th grade. This will only make sense if student has had as many as 10 years of career exposure up to this time. Now it should be a well-informed decision.

Important to have regularly scheduled evaluations with the student. With a goal that 90% of students will receive endorsed diplomas, it is our responsibility that we intervene to assure that they are successful. Work-based learning suggests that not all learning needs to take place in the school building. Not just sending young people into a jungle. Workplace must be safe. It's a planned program with preparation up front of both the student and the workplace along with standards and expectations. Workplace is supervised and outcome is measured. It's about having it be a learning experience. Same principles apply, but they just take place in the workplace. Desire for paid work experience for students. Workplace mentoring is a necessary component. They need role models and other adults helping them.

Connecting activities include granting school credit for work-based learning. If there is credit, there must be materials studied, assignments completed, etc. Have academic and occupational teachers jointly develop curriculum. Assure that parents are knowledgeable about what's happening. Other aspects may be providing technical assistance to employers to get the workplace ready, assist students to get their job, etc.

Competencies are what's driving the STW initiative. It is what students can do as well as what they know. Have been very involved with skills standards projects in Michigan. Looking at the skills-standards approach as a model to drive change. Look at what employers expect in performance and then make adjustments in our system to meet those performance expectations.

Question was raised about 30% dropout rates and what was being done to address this. The Macomb alternative school plan was noted, and it was recognized that more will need to be done.

Question was about role of business and industry: They are playing a dominant role. Willingness to accept high school students into their workplaces. Providing job shadowing experiences, coop positions, apprenticeship training, and other engagements. Question was raised about how to work with businesses in the area. Barb referred the group to the STW directors in their areas, a list which she will provide.

Connections: National Skills Standards - C. J. Shroll, NACFAM, Washington, D.C.

C. J. Shroll was introduced by Jim Jacobs as one of the true pioneers of customized training and economic development work. He was one of the prime architects of the technology center at Grand Rapids. About two years ago, he had the courage to do something that a lot of us threaten to do and went to Washington. Beneficial for us. Directed one of the more successful skills standards projects. C. J. Remarked that you can tell a pioneer from all the arrow holes in their backs. His plan is to talk about where skills standards fit in. Skills standards are important for exactly the reason that there is so much rearranging of the deck chairs on the Titanic and too little input from industry. Some was because employers did not know how to provide input well. Response was "we need more good workers." But what does that mean? Skills standards can help to define that. It's hard work to do and get input from industry and how will we know that we got it right? Purpose is not to fix the blame but to fix the system. This advanced manufacturing skills standards project is one of 22 projects doing this work as a part of a broad national effort to gather input from employers in many different fields that can be used to reform education. Now looking at how they can be used. Both have some insights and stories to share about how other people are using them. It is not good enough to embed it in the curriculum or "teach" it, but it is only when students have learned and go to the workplace that we know whether it works. Need to keep track of what is going on. It is only when we have solid data from employers and educators to see what the fit is and how we can keep improving it from that point forward.

Want yourself as a customer. Michigan's auto companies learned that story well. Look at the Current System! What value do employers put on the high school diplomas from Michigan? The answer is very little. Do they place more on the credits you can produce? You may be surprised. You better seek the data. Systems need to be designed for customers and products. What should we be doing? Not what we have always been doing. Not what we want to do. Everyone looks at students and transportable skills. Most of your students will live and work within 25 miles of your school. Skills and knowledge are generally transferable. Best practice moves across the world pretty quickly. While there are differences among jobs, concentrate first on the 80% core - the skills required for most jobs.

Lesson learned, if you want to know what skills are required for people in given occupations, there is only one valid source of information. . . i.e. people working in that position today. It is not known by presidents or human resource professionals. Must get to those people, who are the people talked to in this project. Need to get community and parents involved in the process and get buy-in. These people are friends, voters.

First step is to decide what skills and knowledges are required, which is what we have in the advanced manufacturing performance indicators listed in the notebook. It's only a standard if you have a performance condition and context. Provides information for the teacher and the student about "why we are learning this." When we talk about writing a paper, I defy anyone to show me any workplace where a 20-page paper* is acceptable. What does your data show you about the number who need to be able to produce a 20-page paper?* Standards in the business world are a little different than some of the standards of the English composition classes. People expect a short, bulleted communication. It is also judged by the effectiveness of the communication. Nippondenso plant has as its number 1 problem the communication of people - from one shift to another, to other teams, etc. (Reference transparency: " working alone or in a group, . . ." It is hard to get out there today to make enough money to buy a house, car, and a life. When given the opportunity, parents will select "getting a good job." Going to college is only a variable when they think it leads to a good job.

What we are working on is a better way to do it. . .integrating into existing courses. How much different is the skill or knowledge that someone needs to have? What's the one thing we know about work? It is going to continue to change. Can I apply the skills I have to different situations? What's the best place in the world to learn teamwork skills today? McDonalds. Do they learn it in your college? Do they see you practicing it? It is now a "best way" preparation for future good jobs.

Questions: Where is this going to go? If there is a role to be helpful, NACFAM is available to work with colleges and businesses. Process has to be repeated in your community. Place the list in front of employers - which they have done with about 100 in the last month - repeatability of process. If there are process improvements to be made. If this kind of process is helpful, there is a way to get it done. Michigan Jobs Commission has access to technical assistance funds. This should be going on everyday.

Question: Why are there charges for copies of the skills standards. Projects were initially funded, but many have had funds end. The ones charging, that's unfortunate, because the information is in the public domain. Most of it is on the web. 1-800-292-1606 is a contact number for additional information to gather data.

Reengineering the Corporation is a must-read by Hammer and Champy. Then read the second one, Reengineering Management: The Mandate for New Leadership which is just by Champy (1995). CJ suggests that NACFAM likes to work in communities to work with the community college representatives to work with 4-5 companies to create a set of skills standards for an employer. Only way to get accountability. When you get several of them, you will see the consistency - which should become your core curriculum. Cannot allow this to be a one-sided system. What jobs have what specific requirements because it must be a match. Employers will advertise their jobs by skills and pay accordingly. What they don't

care about is two years of school, unless it specifically translates to two years of experience, which is what they are looking for.

Comment from Macomb: Have to be cautious about what we toss out. It is good to be mindful of good business writing, but I want to defend a 10- or 20-page paper.* Address personal development. Not opposed to what you are saying, but there is not much we can throw out. Somebody said: "They can now see the application of what they were learning and were willing participants and spent extra time." He does not want it too narrowly defined. CJ responded that neither does he.

Referenced CORD's integrated curriculum: State of Michigan is a member, which is a 50% discount on materials. According to Barb Schulz, CORD representatives will be brought into Michigan to assist with other curriculum initiatives.

New Project Introductions

Delta College

Automotive Technology. Each of courses in program is set up so that students get writing credit. Following first course, probably have not taken their English class; students work their way through a year of auto classes without taking any English, math, or humanities which would be beneficial to them in their courses. Propose to improve the reading, language, and writing skills of students entering the automotive program - not after they have gone through a lot of the program. If they can do that, students will be more successful. Want to provide better access to portions of program available through videotapes, interactive TV; create flexible scheduling. AU 100 is combination of lecture and lab; current thinking is to take as much of the lecture part and package it into video or interactive TV. Flexible schedule would come from open lab times when students could come on campus to perform hands-on skills, which should be advantageous to students. Must assure transfer of credit; many transfer to Ferris and that must stay possible. Outcomes expected are that students will be able to effectively communicate with a customer. Depending upon where student is working, may or may not deal directly. Need to be able to write briefly and concisely; it's not that often that graduates need to write a 20-page report*, but on a daily basis in the auto service business they need to write a diagnosis. Be able to read a diagnostic or repair procedure from a service manual or electronic resource, such as computerized handbook. Strategies to accomplish these things will be a collaborative effort among the three automotive and several English faculty. After attending the past two days, proposal may look a little different. Implementation time line had been to be up and running for next fall, so say now it should be ready as a spring offering.

Grand Rapids Community College

Grand Rapids reports being envious on the timetable and the resources that others have for one linked class because they have the whole core curriculum that they need to do. The West Michigan Manufacturing Council basically told us that if we could not figure it out, that they would start their own school. So we are glad to have a chance. We need to meet the catalog by Fall 1997. All these time lines are really tight. Talk with industries and they think 18 months is like eternity; they reorganize themselves in three weeks. Have a lot more to do in

less time. We first need to bring other faculty up to date; we have the leaders, the followers, and those who sit on the fence. Hope to have at least one linked class for our core curriculum and a lot of multidisciplinary classes Also plan to have a hybrid class by taking two classes from the area of business and adapting those. Plan to look at one or two distance or self-paced learning alternatives for our students. For example, if they want to learn CAD, can either take our class or you have these options: independent study, CD-rom based, etc. Want to give our students options like that. Have a whole set of competencies, such as math, which are easy to manage, but for others, we will try to infuse other topics like teamwork. "Have to get it done and have to deliver it. Manufacturing Council has heard about it, it's been in the paper, so we are committed."

Henry Ford Community College

Thinking about the collaboration between report writing and beginning electronics course. Tech Prep coordinator Rosemarie Pepper had idea of doing project with area high schools, through a Goals 2000 grant, with three districts that do not offer electronics to students. Maximum grant is $35,000. One of secondaries is fiscal agent, but two-year sequence in integrated electronics will be developed, working with high schools in mentoring students. Want to start this fall but looking at January as first class; students will be involved in preparatory activities this fall. Will select 6 students per high school; pilot of 18 students. Mechanism will be dual enrollment and will earn high school and basic electronics and first English credit in the high school, which should serve as an incentive to use the credits with Henry Ford. Mentor at each high school will be primarily responsible for helping with math requirements related to the electronics; will have some tutorial materials developed for the math. They have done one instructor to six students on tutorial basis in the high school; 6 hours per week on campus in three-hour sessions. Utilizing a team teaching, integrated instruction approach. Will communicate with memos, reports, etc. Within two semesters, students will have two basic electronics courses and technical writing English completed. Will be using a work-based learning component and getting students involved with learning on the job. Where possible, students will be placed in shadowing and internship opportunities. Third member of the team is Barb Near who has been working with the FIPSE grant and will develop the review and study for math. Students will not be earning math credit because it would be difficult to identify a sufficient number of clock hours to qualify them for math credit.

Kellogg Community College

Kellogg is in the early stages of thinking about what they want to do. They have tried to identify in past couple years where nursing is going to go. Now in the midst of a real big curriculum change. Will take a professional skills course, separate out and make more of it, making it a stronger professional skills type of course. At least we will infuse; will talk with communications and philosophy faculty about where it's going to go. Expect to have it be more isolated - three one-credit courses. Have to start talking with the people who were not able to attend this workshop. Early in the process but really excited after having come here the last two days; it has been exciting to find out where the state is going and what different colleges are doing. It's been a really neat experience.

Macomb Community College

Surveying, a basic course in architectural design, is the focus of the Macomb activity. Students who start in surveying can earn a certificate in this field. They can continue for an

associate degree in architectural design; and they can build on the associate degree by transferring into an architectural degree program. This is a good example of laddering in career and program development. Trigonometry is a course required in Surveying. The Trigonometry class would key on examples specific to applications in Surveying as well as teach the theory associated to these applications. Use of the graphing calculator would be taught in the mathematics class to free up time in the Surveying course.

The architectural design program requires one unit of technical writing. English would take responsibility for composition which would include technical writing, report writing, and research with primary and secondary information. The English courses are a good place to teach that skill. History could be brought into the plan by considering such questions as: why is a foot called a foot? In a History class reading could be taken from history of Surveying and Architecture with writing done in English class. At Macomb we do teach a course in small business which applies very well to many Surveying and Architectural Design Companies. We will explore including Speech since everyone in a small business needs to be able to communicate well.

Students who enter this program are very well motivated. One problem is keeping them in school since employers hire them as soon as they have enough skills to work. The Career Center will be important in this. The students need to be aware of their opportunities and when and how to make the best choices for themselves.

An end-of-semester project could be to put on a conference, modeled after a professional conference, publish a monograph, to present the expertise that they have acquired over the course of one semester. They would present to an audience, which would include fellow students and the larger community within and outside the school.

North Central Michigan College

Barb Kurtz is the sole representative attending for North Central Michigan College. Bad news is that nobody else has heard what I have heard. English and business; great deal of linkage already. Opportunity to develop something that's a little more organized; good clear communication skills in business and emphasize them for communications. By winter semester, we should have developed a strong connection between business communications and English and the applications of office administration. Develop linkages and connections for students. Team will be department chair for business, instructor in office administrative services, tech prep coordinator, department chair for communications.

Northwestern Michigan College

The new-year team is working with the Maritime program trying to make it a more meaningful experience for those cadets to better prepare them for the workplace. They have already had built into the program work on the site and then they return for more course work. Team is focusing this summer on building the materials and writing up examples and presentations in a whole variety of courses. Team includes two in maritime, one physics, one business, one English, and one mathematics. Team is working to overcome a serious problem that we had identified - that maritime students seemed to have virtually no appreciation for the liberal studies courses, and the liberal studies students seemed to have no appreciation for vocational courses. "Started looking at the problem very seriously, and determined that the problem was us." Anytime an instructor says things like "Why would you want to know that"

or "I'm sure you can figure that out," you are limiting their ability to think, and we are trying to create powerful thinkers these days. One group in my classes may come to see how math is connected to life. No one instructor can figure this all out by him/herself. Teamwork is the best approach. Go through the skills needed to handle the course - the topics covered - sit as a group and listen to where our skills can fit in. Talk about it and then write materials. Find it's successful; team approach is the only way to accomplish total integration.

St. Clair County Community College

At St. Clair County Community College, we have assessed ourselves and determined that we have a jigsaw puzzle of excellent ideas and excellent practices occurring on campus; our purpose is to pull them together. Will work with development of learning communities and infusion courses. For evaluation, will work with development of authentic assessment, because we have done quite a bit of work on understanding that. Will incorporate English, business, math, and industrial technology, which includes several areas. Will consider whether to bring in health . Have changed our minds about starting small and with a theoretical framework, looking at contextual learning and constant emphasis on applied approach for meeting the needs of those students who do not do as well with a pure theoretical approach. Time line will be to hit the ground running in fall semester 1996 with course ready by January 1997 or following fall.

1

Continuation Activities

NSF Proposal

The NSF Proposal is designed to assist and expand the work of the integration projects. Will broaden what we are able to do by identifying skills in math, science, and communications areas in the community colleges. Ask feedback on proposal. Preliminary proposal has gone to NSF requesting support for four years of work to extend the math and science competencies that have been established for K-12 and to align those with the curriculum of community colleges. Plan to do that by identifying core skills and the necessary skills students need to be successful in those classes in our colleges. Will work with groups of faculty. This group (the community college integration project teams) would continue the work because we would have identified skills that would be constant across the state so that gives faculty freedom to develop different ways to deliver content and develop different ways of offering courses. Looking for feedback on whether these objectives are feasible and how it might be helpful to your efforts in working on curriculum integration.

Recommendation was made that we utilize much of the work already done - getting ideas up front - from industry, for example the National Skills Standards. Another good source is DACUM studies, which have been useful in curriculum development in many schools.

Intended that all of the resources would be collected, reviewed, etc. SCCCC has 5 DACUM studies that would be useful to the project. NSF program is in its 5th year at Dayton University and Sinclair Community College. Western Michigan University is brokering part of it. GRCC faculty member is involved in writing models and people all over the country are working on it. It seems similar to what this proposal is proposing. Others' work will be reviewed as a part of the further development of this proposal.

In the northeast U. S., Wentworth Institute has done a large project in math and science and working with the high schools, in Boston; it was about 5 years ago. E-mail and other contact information is in section 3 of the notebook for following up with Patti with your input or others in the group. Final proposal is due in December, but comments would be appreciated within next four weeks (by late August).

Information/Experience Sharing

Discussion ensued concerning how we continue the momentum of this curricular effort over the next years. Suggested were meetings, newsletters, sharing of papers, shared consultants, a ListServ, and more. Presentations will be proposed and/or planned for NCOE, Trends, Tech Prep, LAND, and Learning Communities.

Evaluation

Participants provided input concerning the best things about the workshop, areas for improvement, suggestions for future meetings and activities, and suggestions for expanding the integration effort. Representative comments and a summary of the numerical ratings follow.

Best Things

Norena Badway's information was excellent
Very well organized
Norena Badway presentation
Time allotted for teamwork
Barb Schulz presentation
View of what others are doing in the area of integration
Presentation by Norena Badway and dialogue with other administrators
Framework and worksheet for planning integration
Good material in notebook
Norena Badway's presentation/workshop (repeated MULTIPLE times, so many cut)
Speakers, Workbook, Food, combining STW & Skill standards
Learn what others have been doing
Good presenters
Hear about assessment, etc., from Norena
Lively pace; kept things moving forward
Presentation by "Work in Progress"
Lecture by very good people & opportunity for participants to implement those ideas
Well organized. Clear agenda. Handouts to support verbal presentations
Norena Badway was excellent choice as keynote speaker, facilitator
College "Team Building"
Good chance to work with people you don't get a chance to work with

Enjoyed the presentation by HFCC - thought it was well done (in working with industry). Excellent job by this team.
National Skills Standards speaker was right on target with regard to manufacturing
Identification of job skills required by industry
Good presenters
The chance to hear about what the needs are and what people are doing
Learned many things regarding projects, endeavors in Michigan
Excellent location, food, speakers, facilities
Inter-connections between college teamwork and state (school to work) and national (NACFAM) perspectives
Congeniality, informality
The content (Norena) and the specific examples of what schools are doing
The small groups' time was great, too
Being able to get together and listen to others involved in projects and listen to speakers on related subjects
Exposed to changes in approach to education
Speakers who have a great deal of info about what is going on at the state and national levels
The opportunity to share projects/ideas with others from around the state
Having administrators and faculty present

Areas for Improvement

Afternoon work teams needed more specific directions - coaching
There was a little "down time" on afternoon of the first day
Too much time spent on project reports - some info was not pertinent in helping others develop
Shorten the time period for presentations of projects that started last year
Allow access to additional teams which may not be on the grant - allow observers from participating colleges
Let's strongly encourage other institutions to participate
More space/time to simply mingle with others. Mostly, we were closely on task
Perhaps teams could meet with each other to get direct responses from one another
An overview of why & what for "New" folks
Do not assume everyone is familiar with a speaker's project or background of their activity. What is CJ doing in Washington?
I would have liked to to have had some of the cross-school discussions as was indicated on the original agenda. And either a list or introduction of all participants to establish who's here to facilitate targeted discussion at breaks
Definitions/Exploration of "Technology," "Rate of Change," "Impact of Technology"
Need more free time - Better audio and visual presentations or equipment
Specific examples of Integration (including specific class contents)
Perhaps a table or handout with abbreviations of what the initials stand for in relation to the organization or purpose of organization
More work sessions but shorter durations
Trim back on the number of presentations to avoid time crunch
Not so heavy on food - keep it lighter, since we sit
Teams walk away with a specific plan
Teams have a check list of things to do prior to coming to workshop
Keep agenda simple - STW and National Skills Standards not necessary or directly relevant -

capstone "newsletter" like you do for MODAC could capture these things.
Need college form registrations/planning earlier
Involve more faculty and perhaps more schools
Encourage interaction of teams - working activities should center around groups composed of team members from different institutions
More sharing on the "nuts and bolts" of putting together integrated learning, such getting students enrolled, release time, planning, etc

Suggestions for Future Meetings, Activities

Video clips of classes/models in process
More information on "how to" integrate
Provide clearinghouse of persons and their programs that are in process that I could consult with
Mentoring and forums for teams by email
The term distance learning keeps being mentioned. A session on ways to use it on an integration of instruction
Have Norena Badway in as much as possible to address community colleges
Have Kathy Harris in to work with secondaries, both could be done on a regional basis
Explore the theoretical/philosophical basis for interdisciplinary studies
Explore how can the liberal arts inform business? - i.e. don't the L.A. have something to contribute??
Agree with progress meeting during the year. Also, may have student presenters during a session to see how they liked the integration
Add implementation strategies - that have worked (as a presenter)
What else is going on out there (wider world)
Business involvement/presentations
Expand on National Skills Standards - Who has adopted - How is it being implemented - partially or fully - problems with implementing - advantages of adopting. I would recommend that C.J. Shroll be invited to present at Trends
Resource sharing and team design work
Review from some of the better national curriculum models which may be of use to our schools
Have a fully developed example of an integrated learning module for conferences to do, to complete, as a way of experiencing a multi-discipline project
Keep emphasizing the team approach - need to have an administrator from each school to get to the systemic change
It might be a good idea to assign seats the first day and split up teams for at least half a day to get people to interact with others
"Needs" analysis from participants. Share "published" report with presidents, LAND, and TRENDS
More opportunities for administrators to work in groups
There seems to be an emphasis on *work* in this integration of general education and technology! How are we going to avoid the tendency to let business/work dominate (dictate) what we do at the risk of losing the invaluable benefits of the liberal arts? We need to make sure the liberal arts are not neglected in our rush to prepare students for work. We need to remember to prepare them for LIFE

Suggestions for Expanding Integration Effort

Centralize location. (Lansing)
Publish first efforts as a resource
Presentation teams at different state conferences
Have teams go to colleges to conduct inservice workshops
Try a newsletter
Regional meetings at least once per semester. (T.C. is nice, but a long ride!)
Need to get more business and parents, how?
Start networks @ major meetings: TRENDS, LAND, Leadership 21
Advertising the successes with data
For community colleges, dispensing the information that integration takes multiple forms, i.e. Infusion, Learning Community, etc. I stress this because the majority of writers, i.e. Fogarty, come from a secondary perspective of what is all taught in one big block
Strong state leadership/support - "Mini-grants" as stimulus
Involvement of college administrators
E-mail sharing through a common point, e.g. Dean
Involve students and industry
More publication in discipline-specific journals
Ask administrators to make (basic) information available campus-wide and the responsibilities of a team
Bibliography - related books that were present at conference on back table
Have each team present at its own college, to foster more growth within
Generate, gather, secure more funding for further off-team development
Have each team bring a new team from their school and/or from another community college to the next conference
Have a "tool box" developed by having different schools/teams develop the pieces they are expert at. Then put it all together and disseminate to new teams. Listserv
Survey each college to determine amount of activity, examples, using matrix of Norena Badway's "charts" - publishing a directory with references and listing of courses by faculty
Encourage more faculty to attend meetings as well as administrators who really have the influence to promote and support faculty
Are we including people at four-year universities who teach teachers about how to develop curriculum?

Overall, I "Grade" the two-day workshop (circle one):

No. Rating:	Descriptor
14	4.0 - Excellent
3	3.5
8	3.0 - Good
1	2.5
0	2.0 - Fair
0	1.0 - Poor

Note: Several overlooked returning form.

Overall Rating: 3.57

Year 3 Projects

- Mark your calendars NOW for July 14-15, 1997, in Traverse City
- Monitor and Document the Work and Success of Current Teams.
- Convene an additional team.

2

Resources

A separate document listing many of the resources identified which support curriculum integration, interdisciplinary approaches, and related topics will be produced during the project year. Videotapes from the summer workshop are available for use only with current teams. Copies of the Curriculum Integration Guide are available for purchase at cost.

Administrative Guide

Administrators who attended the two-day workshop participated in a special session while faculty teams worked on their projects. The six-page handout, "Preparing Graduates for High Performance Careers, An Administrative Planning Session" provided by Norena Badway has been provided to the primary contact person at each participating college. This document provides valuable advice on supporting a curricular innovation effort within individual colleges.

Learning Communities

Dr. Betty Jones provided handouts at the conference relating to her presentation on Learning Communities. Attendees are encouraged to place these materials in Section 4 of their Guide, where curriculum models are provided.

A copy of the program for the November conference at Delta College is provided to each College. Many interested in interdisciplinary approaches and/or integrated curriculum will also be interested in Learning Community developments. Many members of the Michigan project teams are encouraged to attend.

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Enclosures:

- Administrative Workshop Guide
- Learning Communities Conference Flyer
- Supplemental Learning Communities Handout

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