

The Workforce Development System: *Opportunities and Recommendations*

An Update to the Manufacturers Council Position Paper:
A Growth and Innovation Agenda for Manufacturing

Prepared by The Manufacturers Council
Workforce Development Committee
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1



Dear Reader,

This position paper highlights the importance of workforce development to the economic health of our community today and tomorrow. Its purpose and scope is to promote and support key recommendations for improving the K-14 workforce development system. For the purpose of this paper, the “workforce development system” and the “educational system” are thought to be the same. The Manufacturers Council recognizes the workforce is comprised of emerging, unemployed, under-employed, and incumbent workers.

Workforce development has gone through many phases over the years as economic and political changes have taken place in Michigan. This paper builds on past successes and highlights a number of current initiatives worthy of broad-based support and promotion. Many of these initiatives are not widely understood in business or the educational community. Yet these initiatives and recommendations represent core improvements to our workforce development system.

Manufacturers Council

We are committed to pursuing the strategies and recommendations contained in the following pages. We urge you to join us in this effort.

Sincerely,

The Right Place Manufacturers Council

Workforce Development Committee members:

- Nancy Ayres, Clipper Belt Lacer
- Michelle Cleveland, The Right Place, Inc.
- Jay Dunwell, Wolverine Coil Spring
- Bill Guest, PM&I Consulting
- John Kaminski, GT Industries
- Ron Modreski, RAM Management Group
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Historical Perspective

- In 1994, the Manufacturers Council published, *World-Class Employees- Mapping the Factors of Success*. This paper increased dialog and collaboration between the “suppliers” (K-12, community colleges, universities, etc) of the emerging workforce and the “customers” (business). As collaboration grew, curriculum was tailored to match the specific skill needs outlined in the paper.
- Since the mid-'90s manufacturers have experienced dramatic shifts in demand for employees. The late '90s saw demand for employees grow to near full employment. However, since 2000 employment in the manufacturing sector has declined steadily. Nevertheless, the forecasted labor shortage by 2010 highlights the importance of improving the workforce development system.
- The late '90s and early 2000s have seen the rise of new, statewide initiatives on work-based learning and career development. Students in the Kent Intermediate School District must participate in some form of career exploration as a prerequisite for graduation. These expectations are helping the students better understand their career options, and also helping the educators and businesses better understand each other's successes and challenges.
- The 2002 Manufacturers Council position paper, *A Growth and Innovation Agenda for Manufacturing*, stresses the need for highly skilled individuals to support the innovative manufacturing infrastructure U.S. manufacturing depends upon.

Premises

- Manufacturing productivity improvements drive ever higher requirements of the workforce.
- Since 1950 only 20% of all careers are professional and require a four-year college degree. There has been a dramatic increase in the demand for skilled workers. Such positions require at least two years of training or experience according to the U.S. Dept. of Labor.
- The manufacturing environment in the United States is changing rapidly as lower-skilled, lower-wage jobs are being lost to overseas competition. The need for improved math and technical skills to maintain our strong manufacturing base is growing.
- Both manufacturing and non-manufacturing industry sectors require a common set of employability skills and are struggling to find enough applicants who possess those skills.
- A strong workforce development system, encompassing a broad range of post secondary training to prepare for high value-added jobs, is critical to our economic prosperity.
- A strong workforce development system is grounded in an ongoing, efficient and effective method of matching the curriculum to the required employability skills.

Global Competition and our Workforce Development System

Michael Porter wrote in The Competitive Advantage of Nations

“While globalization of competition might appear to make the nation less important, instead it seems to make it more so. With fewer impediments to trade to shelter uncompetitive domestic firms and industries, the home nation takes on a growing significance because it is the source of the skills and technology that underpin competitive advantage.”

Today’s manufacturers face intense global competition and need the support of a dynamic workforce development system. The workforce development system needs to produce employees prepared to work in this environment.

Specifically, the Manufacturers Council defines best-practice or “world class” companies through a set of competencies and practices described on the next two pages. These models help define the ideal workplace environment and culture to which employees are expected to contribute.

World Class Manufacturing Competencies

Whether large or small, manufacturers need a common set of corporate competencies to compete in today's expanding global markets. In order to continuously adapt and innovate to meet changing customer requirements, companies must possess the following capabilities:

Strategic focus (Purpose).

World class firms have a clear strategic direction and well-articulated market differentiation. They understand their market segments and competitors and have the capacity for rapid adaptation and innovation. And they consistently seek market positioning where they control some element of proprietary intellectual property – they exploit the power of knowledge.

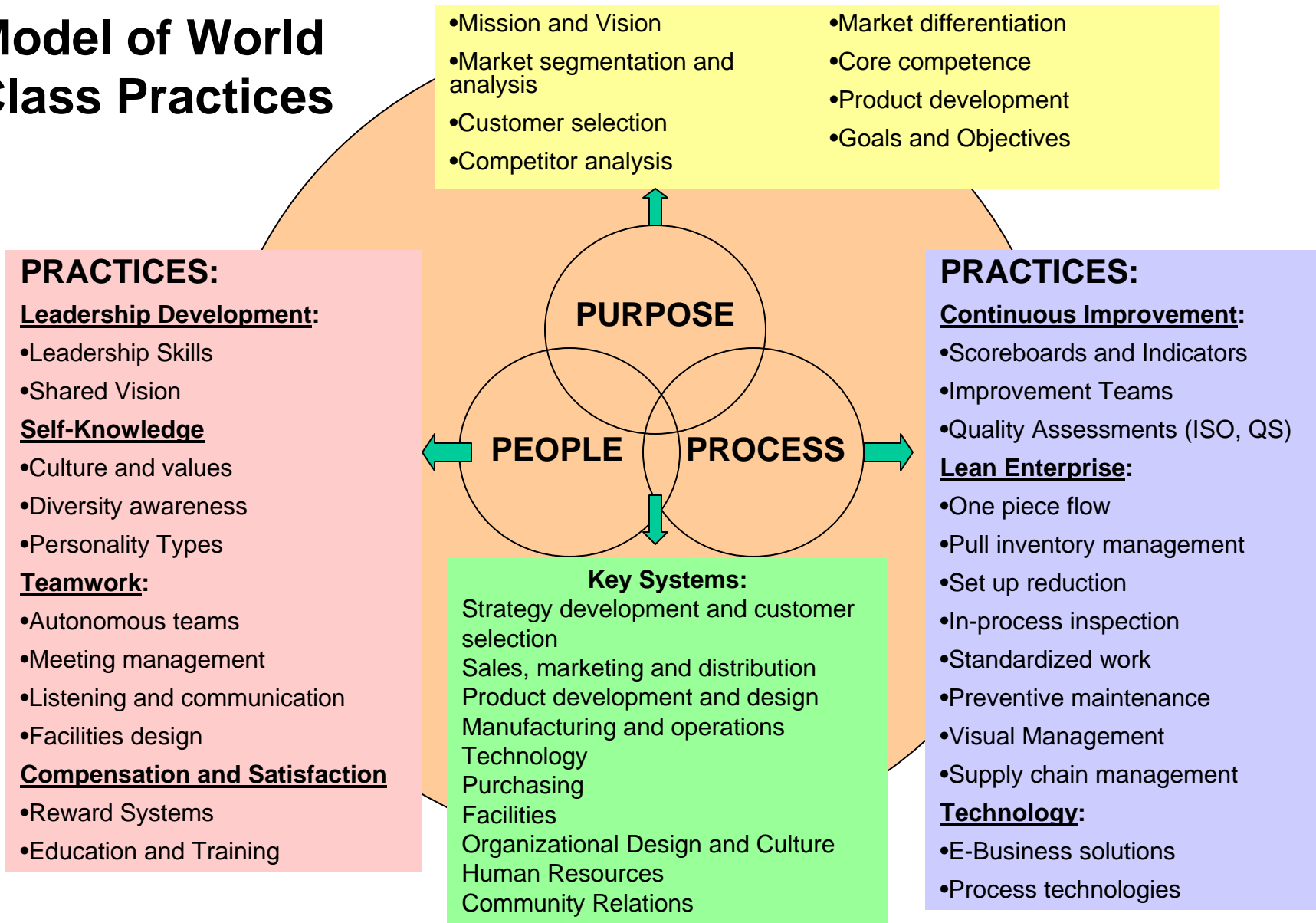
Operational excellence

(Process). These firms also have the ability to continuously improve their key processes through the use of technology and quality improvement tools and processes. They relentlessly work on the elimination of waste using rigorous measurement tools to track performance. And they use state-of-the-art process and information technologies to interact with customers; manage their own operations; and manage their supply chains.

Human capital development

(People). World class companies continuously invest in the competence and creativity of their associates. They build cultures that attract and keep the best talent through strong, shared values; trusted leadership; and performance-based reward systems.

Model of World Class Practices



Workforce Development System Recommendations:

- Companies competing in a global marketplace need a strong workforce that has the technical and critical thinking skills that support world class practices in manufacturing and non-manufacturing environments. This has driven an increased demand across industry sectors for highly skilled workers with a core set of competencies.
- To support the development of a workforce with these skills, the workforce development system must be adaptable, innovative, and well connected to the world of work.
- To support and encourage these qualities within the workforce development system, employers must commit to supporting work-based learning initiatives, provide access to educators and students, and join with educators, administrators, and parents to advocate for supportive policies
- Specifically, the Manufacturers Council recommends the following:

Workforce Development System Recommendations:

1. Promote the Guaranteed Diploma
2. Increase awareness and usage of WorkKeys
3. Increase the number of students in math, science, and engineering
4. All 9 - 12 grade students participate in work-based learning
5. All educators participate in work-based learning
6. Require Educational Development Plans (EDP) for all 8 - 12 grade students
7. Increase awareness of jobs, careers, and skills needed
8. Increase flexible entry/exit post-secondary training
9. Partner with local schools to remove legislative and regulatory barriers that hinder student achievement and career development

Recommendation 1:

Promote the Guaranteed Diploma established by the Kent County superintendents to all stakeholder groups.

“Every high school operated by members of the Kent Intermediate Superintendent’s Association (KISA) guarantees that each of their graduates, beginning with this fall’s freshman class, will have the basic skills necessary to fulfill the expectations of an employer.

If an employer does not feel the graduate hired following the 2005-2006 year has the basic skills that should have been learned in school, remedial education will be provided by Kent Intermediate School District (KISD) at the employer’s request.”

-Guaranteed Diploma text as published by the Kent Intermediate Superintendents Association 2002

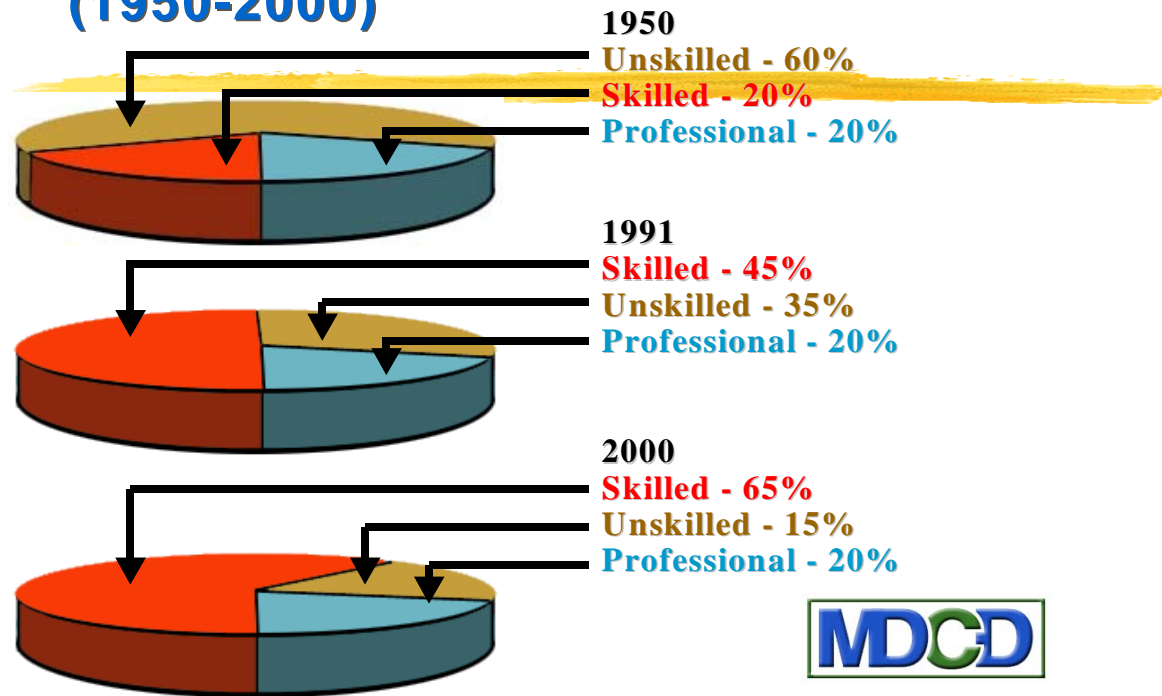
- We urge the superintendents of Kent County to share and promote this concept statewide.
- We urge employers to request the guaranteed diploma of all incoming new hires.

Recommendation 1:

The percentage of skilled jobs continues to increase. The guaranteed diploma is designed for employers to ensure that students possess the required basic skills and capabilities to enter the job market upon graduation.

A **skilled** position requires at least two years of training or experience.

Job Skill Level Changes (1950-2000)



Recommendation 2:

Increase awareness and promote the usage of WorkKeys as an assessment tool.

WorkKeys, designed by ACT, the same test experts that designed the well-known college entrance exams, is a nationally used assessment tool for measuring skills needed by employers. It is a valued tool because it gives employers, educators, and students a common set of measures for understanding an individual's readiness to enter into work based on a variety of skill levels most meaningful to employers. Work-Keys can also be used by students to guide their training to meet the needs of their career targets.

More detail on some of the elements of the Workkeys system is provided on the following pages. For additional information visit: www.act.org/workkeys

The WorkKeys System (The Language of Skill Levels)-

Assessment Categories

- The ***Applied Mathematics*** assessment measures a person's skill in using mathematical reasoning to solve work-related problems.
- The ***Applied Technology*** assessment measures a person's skill in using the basic principles of mechanics, electricity, fluid dynamics, and thermodynamics to solve problems with machines, equipment, and structures found in the workplace.
- The WorkKeys ***Business Writing*** test measures the skill individuals use when they write an original response to a work-related situation.
- The ***Listening*** portion of the *Listening and Writing* assessment measures a person's skill in listening to and conveying information.
- The ***Locating Information*** assessment measures a person's skill in using workplace graphics such as diagrams, floor plans, tables, charts, graphs, forms, and instrument gauges.

The WorkKeys System (continued)

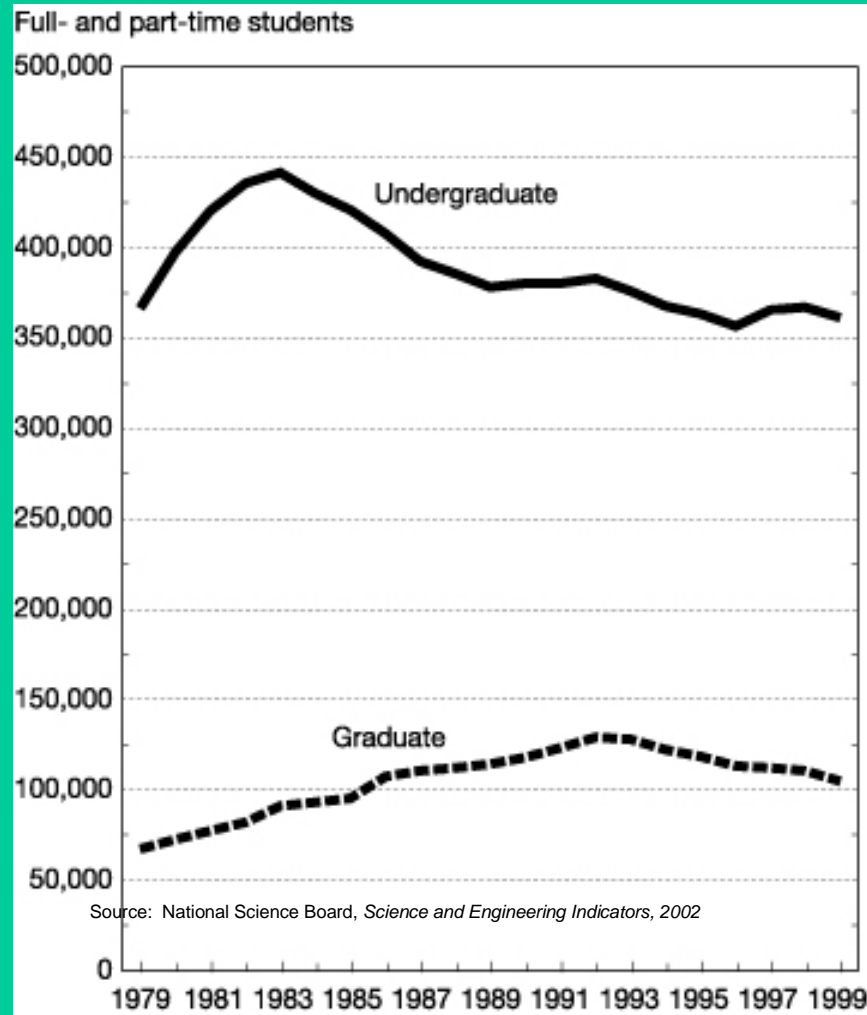
- The **Observation** assessment measures a person's skill at noticing details and paying attention to instructions and demonstrations.
- WorkKeys **Readiness** is a self-scored screening instrument for the two most often used WorkKeys assessments: *Applied Mathematics* and *Reading for Information*.
- The **Reading for Information** assessment measures a person's skill in reading and using work-related information including instructions, policies, memos, bulletins, notices, letters, manuals, and governmental regulations.
- The **Teamwork** assessment measures a person's skill in choosing behaviors and/or actions that simultaneously support relationships within a team and lead toward the accomplishment of work tasks.
- The **Writing** portion of the *Listening and Writing* assessment measures a person's skill in writing work-related messages.

Recommendation 3:

Increase the number of students from K-12 entering post-secondary math, science, and engineering programs to rebuild the dwindling pool of U.S. scientists and engineers.

- The number of research and development workers as a percent of the total workforce has been declining since the late 1980s.
- Enrollments and degrees in science and engineering have declined.
- Foreign students continue to dominate in science and engineering degree enrollment, and increasing percentages of them are returning to their home countries at the end of their studies.

U.S. Engineering Enrollment, 1979 - 1999



Stem the Erosion of our Science and Engineering Talent Base

Attraction

- Increase enrollment in higher education science and technology degree programs, including more women and minorities.
- Encourage college engineering students and working engineers to promote their career choice to high school students.

Support

- Provide advisory support to the K-12 and community college's math, science, and technical curriculum programs.
- Increase the number of job shadows, company tours, and internships offered.
- Support FIRST Robotics Competition as a means to generate interest in science and technology careers.
- Support Grand Rapids Area Pre-College Engineering Program (GRAPCEP) to increase diversity in engineering careers.

Investment

- Increase funding to higher education labs and physical infrastructure
- Increase incentives to employers to support on-going technical education and development of their employees

Recommendation 4:

Each 9-12 grade student has one or more work-based learning experiences per year.

“The Career Pathway approach is having a positive impact on the students in a variety of ways. Students have better attendance, choose more challenging courses, have higher grade point averages, enroll more often in career-technical education, and attend college in greater numbers. In addition, graduation rates are higher, and disciplinary referrals are down when career contextual classes are compared to traditional ones. Overall, the data shows that the Career Preparation System is helping young people think systematically about their futures and the education that is necessary to achieve their occupational and lifetime goals. Career Pathway students have a better sense of their career direction and feel more certain about what they want to do in the future.”

- The Michigan Department of Career Development, December 2002

Work-based learning experiences enrich the educational experience and provide a direct connection to the world of work. There is a critical need for a strong partnership between educators and employers to provide these experiences.

Critical Issue for *K-12 Schools*: Developing work-based learning opportunities

“Schools are being asked to provide more rigorous and expansive work-based learning opportunities to a broader range of students. Work-based learning is one option that schools can consider for providing meaningful and engaged learning for students. To provide work-based learning experiences for all students, educators must develop an understanding of work-based learning options and facilitate the development of new partnerships between employers and schools.” *-North Central Regional Education Laboratory*

Critical Issue for *Employers*: Demand for work-based learning opportunities in Kent County

K-12 Enrollment during 2002 School Year in Kent County

Public School Enrollment	98,591
Non-Public School Enrollment	17,644
Charter School Enrollment	5,932
Total	122,167

Source: Kent Intermediate School District

Current work-based learning programs can only accommodate a fraction of current student enrollment. Providing work-based learning experiences for the more than 100,000 Kent County students will require an aggressive development of such opportunities by both employers and educators.

Many Types of Work-Based Learning Needed:

- Career Fairs:** An event where multiple employers may present and display Information about their companies in a booth type setting. Grades: K - 12.
- Workplace Tour:** walking tour of workplace to introduce work environment to students. Often includes brief description of overall business. Grades: 6 - 12.
- Job Shadow:** Students in groups of 1-3 are assigned to an individual employee in your company in order to learn more in-depth about a particular occupation or career. Grades: 6 - 12.
- Career Speakers:** Speakers from industry are recruited to speak to groups of students parents or educators & provide information about occupations. Grades: 6 - 12.
- Internship:** Students earn school credit while working in your company. Developed on an individual basis between the school and employer for a specific period of time and may or may not be compensated. Grades: 9 - 12.
- Mentorship:** Work-site mentors serve as coaches, advisors and role models to students. Grades: 9 - 12.
- Mock Interviews:** Employers put students through a simulation hiring process in order for them to gain experience with resumes & interviewing. Grades: 9 - 12.
- Apprenticeship:** This is a registered on the job training program for students working towards a degree or certification. Grades: high school and beyond.

Kent County Work-based Learning Initiative

Workpaths.com

Workpaths.com is a community-wide partnership that facilitates the connection between the educational community and the business community to promote work-based learning experiences.

For more information visit: www.workpaths.com

Recommendation 5:

Each educator routinely has work-based learning experiences to maintain contact with the world of work (beyond the work of education).

Connecting education to the world of work is critical not only for students, but for teachers. The workplace is changing and skill sets are becoming obsolete at a much higher rate than with previous generations. To stay current and connected to that work place, so that new skills are brought into the classroom, the more than 7,000 Kent County K-12 teachers will need easy access to the world of work. Providing those opportunities will require a level of cooperation, collaboration, and commitment between educators and employers beyond anything in our history.

A Changing World

“The world our kids are going to live in is changing four times faster than our schools.”

-Willard Daggett

Emerging 21st Century Careers

The future will bring us careers we cannot even envision today. In order to prepare students for the future, educators must have regular contact with the world of work. Careers such as these may be common in the next decade:

- Insight Manager
- Web Cataloger
- Artificial Intelligence Technician
- Bionic Electron Technician
- Fiber Optic Technician
- Retirement Counselor
- Image Consultant
- Information Broker
- Job Developer
- Relocation Counselor
- Water Quality Specialist
- Environmental Engineer
- Cryonics Technician
- E-Commerce Accountant
- Bioinformaticist
- Broadband Architect
- Technology Recycler
- Smart-Home Technician
- Fuel Cell Engineer
- Data Mapper
- Multidisciplinary Lawyer
- Tissue Engineer

Implications of a Changing World*

How Work Will Change:

- Spend an hour a day learning
- Jobs will become projects
- Hire workers on a project basis
- No job security, but employability security based on what skills you have
- Worker, not the company, responsible for their own training, development, and career

U.S. Employment: Distribution Forecast 2010

- Large Organization: 15%
- Medium/Small Organization: 35%
- Self Employed/Home: 50%

The Generation of Continuous Learning

- Boomers -- 76 million born 1945 - 1964. Half of job skills obsolete in 12 - 15 years.
- Busters -- 65 million born 1965 - 1984. Half of job skills obsolete in 30 - 36 months.

From "Online Learning: How Work is Changing" September 2000 issue, p6-7

*Source: Ed Barlow, futurist

Recommendation 6:

Require the use of Educational Development Plans (EDPs) by all 8 - 12 grade students as a tool to assist in the development of career targets and educational goals linked to careers.

- Educational Development Plans (EDP) are quite similar to the Personal Development Plans (PDP) that are fairly common in industry.
- The training of each student to understand that they are personally responsible for the development of their own career is a positive direction.
- The EDP process teaches each individual to be the guardian over their own life-long learning process.
- EDPs contain the following elements:
 - Personal Data
 - Career Goals
 - Educational / Training Goals
 - Career Assessment Highlights
 - Career Awareness / Exploration & Work-based Activities
 - Course Selection
 - Parent Endorsement

For more information visit: www.mivhsweb.mivu.org/edptutorial/

The Importance of EDPs

- An EDP is not just a document – it is a process that students learn that will become a lifelong career development tool.
- An EDP incorporates the essential elements for successful “learning” – developing a plan, acquiring the proper training and hands on work experience to complete the learning cycle.
- An EDP is a useful tool for employers to evaluate the potential and skill set of applicants.

EDPs are essential and need to continue with or without funding from the state. They must become part of each school’s culture.

Recommendation 7:

Increase the awareness of all stakeholders (students, parents, educators, etc.) of the future trends of jobs, careers, and the skills that will be needed. Promote the use of this information in career planning by and for 8 - 12 grade students.

Increasing awareness and use of career exploration and selection tools will help students:

- choose training paths that match their interests with in-demand jobs,
- understand the breadth and variety of careers available, and
- better manage the education process through having a deeper understanding of the trends affecting their chosen career.

Career Guidance Tools

- The Michigan Department of Career Development (MDCD) maintains a detailed list of jobs in Michigan with the following data:
 - Occupation
 - 1998 Employment
 - 2008 Employment
 - % Change in employment
 - Annual growth
- This database is a good source of detailed information for students to use to plan their careers.
- We urge schools to create programs so that all students and all parents have a working knowledge of this career database.
- Schools are encouraged to allocate resources to programs/curricula that prepare students for high demand jobs.
- For more information visit: www.michlmi.org/LMI/occ_proj/oct_16.htm

Recommendation 8:

Increase the number of post-secondary training opportunities that are flexible entry/exit in order to meet the needs of employers and employees.

1. Employers must be able to react to market demands very quickly. The most efficient way to meet this challenge is to have a flexible workforce that can be trained/retrained quickly.
2. We live in a world of instant communication and instant gratification. The same is expected in terms of meeting training needs. Web-based training, self-paced training via the computer and even classroom training that is flexible entry/exit is expected to be the norm, not the exception.
3. The working environment has changed drastically in the past decade. For example, more people telecommute than ever before. Training options must also be more flexible to meet such needs.
4. There has been a huge shift in the percentage of skilled vs. unskilled career opportunities available. Currently, over 65% of jobs are classified as “skilled.” A new, flexible mode of training needs to be scaled to meet these high demands.

Recommendation 9:

Advocate for public policy that encourages innovation within the school system, by working to remove legislative and regulatory barriers that would hinder our local schools' ability to improve student achievement and create effective career development programs for all students.

- Partner with local school systems to identify ideas and concepts that would benefit from legislative changes
- Promote ideas and concepts to local, and state policy makers and agencies to cause positive changes
- Form more partnerships and inter-disciplinary teams containing a balance of business and education personnel to chart progress
- Identify additional partners to assist with the local school system's implementation of the No Child Left Behind Act
- Target Areas Include:
 - Adequate funding for programs
 - Training of educators
 - Better coordination among separate systems
 - Reductions in regulations that stifle innovative ideas and collaboration

Stakeholder Responsibilities

Strategy	Students	Parents	Schools	Employers
1. Promote the Guaranteed Diploma		X	X	X
2. Promote the use of WorkKeys		X	X	X
3. Increase Math, Science, Engineering	X	X	X	X
4. Work-based Learning for Students	X	X	X	X
5. Work-based Learning for Teachers		X	X	X
6. Require Educational Development Plans	X	X	X	X
7. Increase Awareness of Job Trends		X	X	X
8. Increase Flexible Entry/Exit Training			X	X
9. Partner to Accomplish Legislative Action			X	X

Final Observations

- **We live in an ever changing, fast-paced global environment.**
- **It is critical that high school graduates possess both employability skills and a habit of life-long learning.**
- **A continuously improving partnership between employers and educators is essential.**
- **Information, awareness, and adaptation are critical in a successful workforce development system.**
- **Workforce development contributes to a prosperous community**

						RECOMMENDATIONS					
			X		X	1. Promote the Guaranteed Diploma			X		X
			X			2. Increase awareness and usage of WorkKeys	X	X			
	X	X		X	X	3. Increase students in math, science, and engineering	X			X	
X					X	4. All 9-12 students participate in work-based learning	X		X	X	
		X	X		X	5. All educators participate in work-based learning	X		X	X	
	X				X	6. Educational Development Plans for all 8-12 grade students		X			X
X		X			X	7. Increase awareness of jobs, careers, and skills needed	X			X	
X	X			X		8. Increase flexible entry/exit post-secondary education	X	X	X	X	
				X	X	9. Partner to remove barriers that hinder career development				X	X
<p>Manufacturing productivity improvements drive ever higher requirements of the workforce</p> <p>Since 1950 only 20% of all careers are professional (4-year degree). There has been a dramatic shift in the mix between skilled and unskilled workforce. A skilled position requires at least 2 years of training or experience.</p> <p>The manufacturing environment in the US is changing rapidly as lower-skilled jobs are being lost to overseas competition. The need for improved math and technical skills to maintain our strong manufacturing base is growing.</p> <p>Most industries share a common set of employability skills.</p> <p>A strong workforce development system, encompassing the broad range of post-secondary training to prepare high value-added jobs, is critical to our economic prosperity.</p> <p>A strong workforce development system is grounded in an ongoing efficient and effective method of matching the curriculum to the required employability skills</p>						<p>Workforce Development System - Premises, Recommendations, and Final Observations</p>					
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